



International Forum on  
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**Conference Proceedings**  
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We have always believed that everyone should get involved in improving healthcare, and our mission at the International Forum on Quality and Safety in Healthcare has always been just to do that - make healthcare improvement simple, support effective innovation and provide practical ideas that can be implemented in the workplace.

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**The Conference Proceedings contains work submitted to us via our Call for Posters for this year's International Forum taking place in Glasgow on 27-29 March 2019.**

The work volunteered by abstract authors for inclusion in this booklet is a reflection and a celebration of what the global quality improvement community has achieved over the past few years. You will find many projects from teams in countries such as the UK, the Netherlands, Denmark, Saudi Arabia, Australia, Brazil and many more.

Thank you to all those who have shared their work and have made it available in this digital format.

We hope you enjoy this selection of abstracts and will join the International Forum improvement community to share your experiences, challenges, improvement successes and failures at our future events.

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## **A management tool to improve patient safety culture in primary care, Aarhus Municipality Denmark**

Call for Posters - Building Capability and Leadership

Ane Blom, Maya Damgaard Larsen, Nikoline Rytter  
City of Aarhus Denmark

### **Background**

Aarhus Municipality works continuously with quality improvement in the elderly care e.g by developing a management tool to improve patient safety culture (PSC). PSC is considered fundamental for the delivery of safe care and can be described as an aggregation of individuals' behavior, habits, norms, values and basic assumptions related to patient care. Literature shows that leadership frames the quality of the culture under which the staff practices safety. However, culture is a complex phenomenon. As a manager, a tool to identify PSC can be useful to get insight into the culture. Despite that primary care is the most rapidly growing segment of the healthcare sector, studies of PSC are mostly conducted in hospital settings resulting in a significant knowledge gap in primary care. However, this study shows how a Safety Attitude Questionnaire (SAQ), developed for hospital settings, can be tested and adjusted to primary care and used for identifying quality improvement activities.

### **Methods**

The primary target group was managers and frontline staff in elder care. The intervention was a twostep process of 1) quantitative SAQ-DK questionnaire and 2) a qualitative follow-up concept.

SAQ-DK questionnaire: 10 validated questions from the Danish translation of SAQ were selected (SAQ-DK). For each question explanatory texts were written, and pilot tested to ensure full understanding in an elder care setting. The questionnaire was distributed by e-mail to frontline staff and their managers in 7 nursing home units and 2 home care teams.

Follow-up concept: is a three-step structured process with high level of staff involvement. This gives managers and staff a platform enabling dialogue about their culture and enabling how to prioritize improvement activities. The result is a driver diagram.

### **Outcome**

Average response rate of the SAQ-DK was 87.11%

Follow-up concept showed that 7 out of 9 units participated in a facilitated workshop and the improvement activities were structured in local driver diagrams. One manager from a nursing home expressed that "...the actual measurement gives me an insight into where we can benefit from development and improvement". Qualitative assessment showed that the managers have taken lead and chosen dedicated staff members to implement the improvement activities according to the model of improvement. The units follow their improvement activities with local result and process indicators. A manager expresses that: "improvement activities and culture may be a fluffy size but with the SAQ we express what we can work with in the daily improvement work. It has improved both the workflows and the working environment, and at the same time it has meant that the elderly gets a better care".

### **Conclusion**

Our results showed that using SAQ-DK in elder care can help initiate systematic quality improvement activities and contribute to enhance PSC. However, building a PSC needs a clear leadership focus. Leaders need to enable the staff to take ownership and allow quality improvement activities in their day-to-day practice.

## **Perception of nursing work environment differentiated according to educational level**

Call for Posters - Building Capability and Leadership

Annemarie (JBM) de Vos, Ellen Olsthoorn  
Amphia Hospital, Nursing Council, Breda, The Netherlands  
Brigitte (JM) de Brouwer  
Accuralis Zorgoptimalisatie, Geldrop, The Netherlands

### **Background**

The increasing intensity of patient care requires that the nursing capacity and quality have to be increased. Moreover, in order to attract and retain academically trained nurses, creating a healthy and productive working environment is essential. Sufficient and skilled nurses, good relationships with doctors, autonomy, team leader support, control over professional practice, and patient-oriented care culture are positively associated with patient outcomes, such as pressure ulcers, infection, delirium, malnutrition, patient satisfaction and mortality. The appropriate deployment with regard to all CanMEDS roles and level of education do justice to competencies of both academically (hbo) and vocational trained (mbo-inservice) nurses, without over-demanding and under-utilization them. New nursing profiles in The Netherlands assign the management role, coordination and care improvements to academically trained nurses and the protocol-based individual patient care to vocational trained nurses. Thus far, it is not known what the perception is of the nursing staff in the Amphia Hospital on the characteristics of the work environment, such as autonomy, control over professional practice, and relations with doctors. In addition, insight into the differences and similarities between the various educational levels is lacking. The aim of this research is to obtain insight into the perception of hbo, inservice and mbo trained nurses regarding the work environment. The results will provide input for the implementation of the new nursing profiles in the Amphia Hospital in 2019.

### **Methods**

The Dutch Essentials of Magnetism II was used to measure the work environment of nurses and to identify the strong aspects and the improvement options. This instrument measures eight characteristics of an attractive and productive work environment, which nurses consider important to deliver good quality care: (1) Working with skilled colleagues, (2) Good relations with doctors, (3) Autonomy, (4) Team leader support, (5) Control over professional practice, (6) Education opportunities, (7) Sufficient staff and (8) Patient-oriented care culture. In addition, the perception on the quality of patient care, the overall job satisfaction, and the professional job satisfaction were measured.

### **Outcome**

Almost two third of all nursing professionals (ntotal=1349) in Amphia (61,8%; n=834) completed the questionnaire. The major part was inservice trained (40%), followed by mbo (28%), and hbo (28%). Hbo-nurses are most positive in comparison to mbo- and inservice nurses regarding seven of eight characteristics (Table 1). Yet, inservice nurses score higher than higher hbo-nurses on the characteristic 'Sufficient staff'. Mbo-nurses score lowest on six of the eight characteristics.

### **Conclusion**

All nurses, regardless of educational level, indicate that they are satisfied with their work. Hbo- and inservice nurses, however, have a more positive perception on the work environment than mbo-nurses. This is due to the fact that mbo-nurses have a significantly more negative picture than the hbo- and inservice nurses on 'Team leader support', 'Control over professional practice', 'Sufficient staff', and the result variables 'Quality of patient care' and 'Professional job satisfaction'. In addition, hbo-nurses are significantly more positive about the professional competence of colleagues than mbo- and in-service nurses. These results imply that the improvement potential for hbo-, inservice and mbo-nurses lies in different areas. In order to ensure the correct application of all CanMEDS roles, implementation trajectories in the context of function differentiation should take into account the differentiated perception on the working environment, depending on the level of education.

## **Optimising Strength and Resilience in Healthcare Staff**

Call for Posters - Building Capability and Leadership

Anne-Marie Doyle, Anna Bootle, Elizabeth Haxby

The Royal Brompton and Harefield NHS Foundation Trust, London, England

Myra Hunter

King's College, London, England

### **Background**

There is growing recognition of staff work-related stress and links between leadership, staff health & well-being, quality & safety, and organisational culture. The latest national staff survey (2018) showed 39.8% of staff were unwell as a result of work-related stress, the highest rate in 5 years. The aim of the research was to evaluate the efficacy & acceptability of a new group programme for staff entitled 'Optimising Strength and Resilience' designed to increase staff knowledge, skills and confidence managing stress/distress and to improve health & well-being. The intervention focussed on physical & mental health and was underpinned by the latest advances in health science & third-wave cognitive behavioural theory. The programme recognised complex interplays between biological, psychological, environmental & socio-cultural determinants of health and incorporated both preventative and treatment approaches.

### **Methods**

The study design utilised quantitative and qualitative methodology using a pre- and post-experimental design to evaluate psychological well-being (Warwick Edinburgh Mental Well-being Scale), psychological distress (General Health Questionnaire) and self-ratings related to: knowledge of stress; confidence managing stress; feelings of resilience; behavioural change intentions; and programme acceptability. The intervention was a one-day workshop offering a critical analysis of the concept of resilience and systems analysis of challenges faced by healthcare staff within current organisational & national healthcare contexts. The intervention involved teaching and educational components, interactive discussions and opportunities to learn and practice new skills, including relaxation and mindfulness.

### **Outcome**

The study design utilised quantitative and qualitative methodology using a pre- and post-experimental design to evaluate psychological well-being (Warwick Edinburgh Mental Well-being Scale), psychological distress (General Health Questionnaire) and self-ratings related to: knowledge of stress; confidence managing stress; feelings of resilience; goal-planning and behavioural change intentions; and programme acceptability. The intervention was a one-day workshop offering a critical analysis of the concept of resilience and a systems analysis of challenges faced by healthcare staff within current organisational and national healthcare contexts. The intervention involved teaching and educational components, interactive discussions and opportunities to learn and practice new skills, including relaxation and mindfulness.

### **Conclusion**

229 healthcare staff attended the programme and completed pre and post workshop measures. Results indicated a statistically significant increase in median scores for knowledge of stress, confidence managing stress and feelings of resilience, alongside a significant increase in psychological well-being and a significant reduction in psychological distress. Staff rated the programme very positively with high scores for overall satisfaction, meeting training needs and relevance to clinical practice. Goal-planning and behavioural change intentions were consistent with programme content and related to physical activity, nutrition, sleep, teamwork, managing thoughts and emotions, mindfulness, relaxation and self-compassion. Staff reported that they felt supported, encouraged and able to implement positive health-related behavioural changes in their work routines and personal lives, as well as to apply the skills in their everyday clinical practice supporting patients and families.

## **Building improvement competences: Evaluation of the Capital Region Improvement Program.**

Call for Posters - Building Capability and Leadership

Bente Hansen, Julie V. Holm

Capital Region, Center for HR, Denmark

### **Background**

In 2016 a new National Quality Program was launched in Denmark. The National Quality Program focuses on developing an improvement culture, with local competences to improve quality in local clinical settings. Developing the Quality Program required a plan for building capacity for improvement in the regional setting. In the Capital Region of Denmark, Centre for HR, Department for Organization and Leadership have developed and are executing a program for improvement. The target group is front-line employees and leaders from regional public hospitals and the regional social services. The Capital Region Improvement Program is taught by staff who are trained as Improvement Advisors (IHI) or Improvement Agents (Danish Society of Patient Safety). The program has now been evaluated.

### **Methods**

To measure the impact of the program and the improvement projects, we send out impact assessment questionnaires, six months after the education has ended, to both the participants and their leaders. We asked them to evaluate the impact of the improvements they suggested in their day to day work life. Participants were asked 3 questions, leaders were asked 4 questions.

### **Outcome**

- The improvement approach and the associated methods are still used half a year after graduation of majority of respondents.
- The participants' leaders are supporting the improvement work of most of the participants in the period after graduation.
- In most cases, the local capacity for improvement is visible to leaders after graduation.
- The effect of the education is to some extent beneficial to the patients.
- Sustaining and spread of improvement is a challenge

### **Conclusion**

- Training frontline staff in improvement methods contributes to create an improvement culture.
- Working with local clinical problems and challenges motivates the staff for reaching sustainable solutions.
- There is a basis for maintaining an improvement culture as managerial support is evident during the program and after graduation.

## **Together We are Better: Quality Improvement Award**

Call for Posters - Work in Progress

Clifford Mitchell

Southern Health and Social Care Trust, N.Ireland

### **Background**

The Southern Health and Social Care Trust (SHSCT) is one of 5 HSC Trusts in Northern Ireland, and the first to offer an accredited Quality Improvement Award for Service Users, Carers, and Community and Voluntary Sector workers. We believe that co-production and true collaboration with our Service Users and the public in developing Quality Improvement initiatives within the Trust are essential to produce effective and valuable work. As health care staff we must learn from our own experiences and from those of Service Users to understand the ongoing challenges in an ever-changing environment. Then, with a collaborative approach, actively contribute to the improvement of the provision of Trust wide and Regional services. By delivering a Quality Improvement Award we aim to provide service users, carers, citizens and staff with the knowledge and skills required to take forward or assist with a small scale change project and encourage positive, sustainable and widespread change.

### **Methods**

The aim has always been to involve our Service Users in the improvement process. To achieve this, our Continuous Improvement team has developed, in partnership with our service users, a new accredited Service User QI Award programme through OCN NI which is equipping Service Users with new QI knowledge and skills that will empower involvement in developing services and in leading on innovation. The key components of the Award programme are:

- Successful completion of 'The Introduction to Quality Improvement' E-Learning module which lasts approximately 45 minutes.
- Attendance of 3 practical workshops to test and try a number of core QI tools and approaches.
- Alignment of all Service Users to a facilitator who supports the application of newly acquired knowledge and skills in a small improvement project.
- Preparation and completion of a portfolio of evidence and a case study showcasing the improvement project.

### **Outcome**

The first cohort of Service Users has completed the programme and has led on innovative small scale change projects within the Southern Trust

As a result of this co-production the Southern Trust has gain funding from the Department of Health to spread and scale the implementation across all HSC Trusts in Northern Ireland in 2019. Our Regional Level 3 QI Award for service users programme commences in April 2019. It has been a huge leap forward in our regional approach to involve Service Users in the delivery of their care and services. This will be included in the Evaluation of Quality Improvement in Northern Ireland which has been funded by NHS Health Foundation Q Exchange in 2018-2019.

### **Conclusion**

There have been clear lessons learned.

- Service Users and HSC Staff face the same challenges when driving quality improvement.
- Time management remains a challenge for both groups and so when implementing new idea in this format we need to ensure that the scope of a new project can be delivered in a 16 week period.
- Project Sponsorship is pivotal to open doors, escalate issues, improves communication and dissemination, and facilitates talented people in making real and effective changes.
- Stakeholder engagement is essential from the very beginning.

It has been clear to the team that expectations should be managed from the start. Identifying the challenge of balancing the management of small scale change with day to day life has been a key learning point. Through this work our collaborations have broken down staff and service user barriers to drive real change where we are improving, inspiring and innovating together.

## **Using the Model for Improvement to Increase the Capacity of an Inpatient Rehabilitation Physiotherapy Service**

Call for Posters - Building Capability and Leadership

David Linehan

Mater Misericordiae University Hospital, Ireland

Jenny Hogan

Department of Health, Ireland

### **Background**

The project took place in the inpatient rehabilitation physiotherapy service of an acute urban model four tertiary university hospital. The service consists of acute medicine, general rehabilitation, specialist rehabilitation, neurology, stroke, oncology and care of the older person sub-specialties. There are 14.5-16.5 whole time equivalent physiotherapists working in the service. Patients are primarily admitted via unscheduled care.

The average treatment frequency delivered to patients on the service from January-September 2017 was three times per week. Relative to best available evidence/guidelines, this represents under-dosing. Sub-optimal treatment frequency impacts negatively on patient outcomes.

Unmet demand is measured as the number of treatments 'prioritised out' i.e. the number of treatments that should be carried out in accordance with best available evidence/guidelines but are not delivered.

The median unmet demand was 433 treatments per month for January-September 2017.

### **Methods**

The project had a mixed-methods rapid cycle approach, overarched by the Irish Health Service Executive's Change Model. An Improvement and Innovation Hub which used the Model for Improvement as its framework was established. Each sub-specialty completed a Plan-do-study-act (PDSA) cycle per fortnight, with thirty-nine PDSA cycles taking place over five months.

The changes implemented were selected by the team members. These changes were informed by local knowledge and by demand and capacity management literature. Interventions included planning with partial flexibility, forecasting, throughput focus, realignment of services, adherence to evidence-based practice, alternative ways to use the service and education.

The Hub centred on staff participation and empowerment. Team members completed a SWOT analysis of the Hub during the implementation phase. The Model for Improvement incorporated staff feedback in the Study phase of the PDSA cycle.

### **Outcome**

There was a 31% improvement in unmet demand in the first month. The second month showed a further 40% improvement. Correspondingly, during these months, there was an improvement in treatment frequencies for inpatients in line with best practice. Subsequently, there was a disimprovement despite an increase in the number of treatments delivered. This related to an increase in the number of referrals.

### **Conclusion**

An Improvement and Innovation Hub which uses the Model for Improvement as its framework may act as a resource to facilitate continuous improvement through shared leadership and a systematic, evidence-based approach. A culture of striving for continuous improvement was created.

The results indicate short-term improvements in unmet demand and treatment frequency. The peak performance occurred when the compliance rate with interventions was highest. A dynamic uncontrolled external environment contributed to the difficulty in sustaining improvements.

The sustainability of improvements presents a challenge during rapid cycle interventions. A mechanism for controlling the rate of improvement should be considered. The frequency of PDSA cycles created a sense of urgency but may have had a negative impact on sustainability.

The Improvement and Innovation Hub has the potential for spread as its principles and methodologies are generalisable.



## **Nurses and Midwives are critical to improving the quality and safety of patient care - are they prepared to participate in this field?**

Call for Posters - Building Capability and Leadership

Dr Anne Gallen  
Health Service Executive, Ireland

### **Background**

Quality improvement and safety methods are founded in scientific principles and a plethora of quality & safety policies, standards, guidelines and programmes have been established in many countries. Research evidence suggests that healthcare professionals inclusive of nurses & midwives may lack knowledge and skills in the science of safety and in the policies, methods and tools to continually improve patient care (Health Foundation 2012; Mansour, 2012; Vincent and Amalberti, 2016). Little is known of the quality & safety knowledge, skills and technical competence of nurses & midwives in Ireland. The aim of this research was to investigate the perceptions of practicing nurses and midwives regarding their continuing professional development - based preparedness for and participation in quality and safety and to explore what they perceive as barriers to or enablers of their engagement with the same.

### **Methods**

The study was conducted over a four week period. Survey research methodology was employed. The participants were practicing nurses and midwives. A total of 1787 surveys were issued.

### **Outcome**

A response rate of 37% (N=654) was achieved from nurses and midwives working in both the acute hospital and community care settings. Nurses and midwives were highly trained academically, however a significant proportion were not informed of the models, methods and approaches used to ensure scientifically based quality improvement and safety. Large numbers indicated they were not familiar with national quality and safety related policies, standards, guidelines and programmes and the evidence illuminated the range of actors involved in the development of national best practice documents. The recurring themes of the work environment, clinical leadership and education were identified as perceived barriers to, and enablers of their preparedness for, and participation in quality and safety practice.

### **Conclusion**

The findings from this research provide foundational evidence relating to nurses and midwives perceptions of gaps relating to their preparedness for and participation in quality and safety practice. From a macro systems perspective three key themes warrant further exploration. 1. Quality and Safety Strategy and Educational Framework. 2. Implementation science to bridge the gap between theory and practice. 3. Governance for quality and safety. Further research in the form of an ethnographic study should be considered.

## **The learning goes both ways - An Intensive Care Service - Building Leadership and Capability in Samoa.**

Call for Posters - Building Capability and Leadership

Dr David Galler, Ms Jennifer Stewart, Ms Kathleen Mills

Counties Manukau Health, NZ

Dr Dina Tuitama

National Health Service Samoa

### **Background**

This work in Samoa began in 2015 and continues. Samoa is a small independent Pacific Island nation in Polynesia with a population of 200,000 people who have lived there for over 5000 years. Christian missionaries landed there in the early 19th Century and within a very short time Samoa embraced Christianity and when they became independent from NZ in 1952.

Samoa like other low and middle income nations, suffers disproportionately from the ravages of Obesity related Diabetes and its complications. And as such much aid and development assistance has gone to that area but this seems to have had little lasting impact. ICU mortality was 80%.

Most who become sick present late to the ED at the national hospital with advanced disease; many of these were infants, children and young people with acute reversible disease. It was this group we focussed our attention on developing early warning scores and a very focussed intensive care service.

### **Methods**

During 1 year, as a volunteer, I built good personal relationships with staff in the National Hospital through rounding with all services.

With the help of colleagues, we:

1. Defined our goal to establish a system to better identify and manage those with acute reversible disease and the specific case mix we needed to address.
2. Introduced an Early Warning Score across the hospital beginning in the Emergency Department
3. Invested time working alongside key medical and nursing personnel – demonstrating good practice and learning about patterns of disease and their typical presentations
4. Established systems and processes to support our core work – documentation, bedside trolleys, clinical guidelines and more.
5. Provided mentoring, connection and developed a telehealth system to support supervise educate the local workforce and help manage day to day work
6. Recruited doctors and nurses who also volunteered time in Samoa to continue to develop the local workforce and the service

### **Outcome**

Extraordinary and sustained improvement in mortality – from 80% to 19%

The impact was on:

Patients survival; improving the trust and confidence of the public in the service offered.

The young doctors and nurses involved in the service grew in confidence which fuelled their ongoing learning

A ripple effect across the wider National Health Service was obvious through stories of success and the ICU became a hub for learning

Our work was increasingly supported supported by in patient services

Ourselves - huge personal growth: learning to work in another culture and in a setting of resource constraint; managing the expectations of colleagues and the public that inevitably result from the establishment and success of a new service

### **Conclusion**

A sustained improvement in outcomes

Improved confidence and capabilities of local staff supported by medical staff who volunteer in Samoa

Ongoing support for everyday work using a simple telehealth system.

Support for local staff to set appropriate treatment limitations

Main messages:

1. Develop a clear purpose, plan and measures to guide progress.
2. Show patience and focus to follow through on the strategy
3. A continuous presence helps build relationships based on trust and respect;
4. Demonstrate good practice in all you do
5. Identify and support local champions to take on leadership roles in defined areas
6. Develop a standardised approach for the common conditions and systems and processes to support them.
7. Collect performance data and tell stories to secure greater support

We are now extrapolating the essential elements of our success in Samoa to the establishment of other services in other jurisdictions

## **Building capacity & capability for quality improvement in mental health**

Call for Posters - Building Capability and Leadership

Dr Jane Cheeseman, Paul Smith, Susan Marr  
NHS Lothian, Scotland

### **Background**

NHS Lothian has chosen to tackle the long-term challenges of rising demand, rising costs and limited resources in healthcare by making quality the focus of how to run our services. As a result, the mental health quality improvement programme was launched in October 2016

### **Methods**

The programme aims to focus on improving access to assessment and evidence based treatment with the most appropriate service in the most appropriate setting. Capacity and capability is built through quality improvement training and coaching with all projects owned and prioritised by our staff based on what matter to them.

### **Outcome**

The programme has over 117 active projects across all areas of responsibility. Nearly 200 staff formally trained in Qi and 15 skilled coaches in service supporting the growing network. There have been improvements in waiting times from referral to treatment in psychological therapies, reductions in incidences of self harm and restraint in acute wards, and significant cost savings due to a change in model of care in older adults.

### **Conclusion**

Key success factors - executive and senior management support and investment; widespread engagement from all disciplines; building capacity & capability from the ground up through training and coaching support for projects and making improvement readily accessible to everyone

Lesson learned and future plans - Qi team needs to expand to meet demand; services are at different stages of readiness requiring a tailored approach to support; increase in coaches is required to support sustainable change and aligning improvement with strategic aims

## **What's your capital? What's your field? Using Bourdieu's framework in quality improvement**

Call for Posters - Building Capability and Leadership

Dr Louise E Wilson

NHS Orkney, Scotland, United Kingdom

### **Background**

Pierre Bourdieu is a French philosopher and sociologist known for his Theory of Practice.

### **Methods**

Bourdieu's utilises a framework of habitus, capital and field for purposes of analysis.

### **Outcome**

Understanding the field in which we are interacting, how capital is valued in the field and the unwritten rules of the field can provide a different way of looking at how quality improvement is enacted in settings.

### **Conclusion**

A Bourdieusian framework offers interesting opportunities for the analysis of the practice of quality improvement and may aid the introduction of different quality improvement approaches.



## **Interprofessional collaboration as a catalyst for health systems improvement: the Curaçao experience**

Call for Posters - Building Capability and Leadership

Jamiu O. Busari

Zuyderland MC/Maastricht University, Netherlands

Ashley J. Duits

Red Cross Blood Bank/St. Elisabeth Hospital, Curacao

### **Background**

The health care system in Curaçao is complex, fragmented and poorly organized, typifying a system in a resource limited environment. Deficits in competencies and local cultural barriers hinder sustainable health care in this environment. In 2017, we described an initiative that integrated a medical leadership training program (MLP) involving a multidisciplinary health care team to develop a health improvement project. We present the outcome of this strategy that was aimed at addressing local healthcare needs.

### **Methods**

A Multidisciplinary group of health care professionals in St. Elisabeth hospital, Curaçao, was selected to 1) participate in the MLP and 2) co-design a health care pathway on the management of decubitus ulcers. To evaluate the impact of the leadership program, participants were divided into two groups; the MLP group and the control group.

### **Outcome**

After the training, all participants were reassigned as a single group to develop a care pathway for the management of decubitus ulcers. A mixed-method approach, was used to assess perceived leadership growth, team work and the barriers to the introduction of the new care pathway in their setting. Factors identified as challenging the implementation process included: effective communication, cultural differences, fixed patterns, transparency and lack of personal validation. Participants experienced growth in their leadership capabilities that were attributable to the project itself

### **Conclusion**

Our results showed that the health care professionals were receptive to (and embraced) multidisciplinary leadership development program. The MLP training was instrumental for successfully developing our health care improvement initiative i.e. decubitus ulcer care pathway. This study confirms that MLPs can serve as significant catalysts for health improvement efforts in resource-limited environments.

## **Advanced Practice Leaders: Driving Quality and Safety in High Risk Mental Healthcare**

Call for Posters - Building Capability and Leadership

Jane Paterson, MSW RSW, Margaret Gehrs, RN, MScN, CPMHN(C)

Centre for Addiction and Mental Health, Canada

### **Background**

This presentation focuses on strategic advanced practice leadership development in a Canadian academic mental health and addictions hospital. The hospital is located in the downtown of Toronto which is the largest city in Canada. The hospital has a range of clinical services including an emergency department, forensic division, acute care and long-term care services. These clinical leaders are centrally organized but work with all of the specialty populations. The role of these clinical leaders is modelled after a national framework for advanced practice. It focuses on five quality pillars: Advancing Practice; Optimizing Interprofessional Education; Championing Patient and Family Experiences; Strengthening Quality, Safety and Risk Management; and Leading Practice-based Research and Scholarship. Attendees will learn how to organize clinical leadership to enhance care for high risk populations. Prior to this reorganization the members of this workforce group was decentralized into the clinical program areas. By centralizing them it was beneficial because their work could be standardized and the collective impact of this practice group was realized in a way that could not occur while they were decentralized.

### **Methods**

This intervention involved the redesign of the Practice Leadership workforce so that they became specialists with various clinical populations. This occurred over a 6 month period. This workforce of approximately 25 individuals with nursing, social work, occupational therapy, pharmacy and psychotherapy backgrounds were re-organized to report centrally to two Directors of Interprofessional Practice. The poster will describe organizational and professional development strategies for creating advanced practice roles to support quality and safety. They also have begun to leverage the electronic health record and a data-driven approach to standardize clinical practice and evaluate outcomes of care. This reconfiguration of the workforce has had positive outcomes on the organizations' national reputation for excellence, enhanced patient and family care and academic scholarship. These Advanced Practice leaders are members of program quality councils where they have driven initiatives such as the creation of a family engagement strategy that was developed in partnership with families.

### **Outcome**

The impact of this realignment has resulted in the standardization of many clinical processes such as Suicide Risk Assessment, Violence Risk Assessment, Transfer of Accountability, Falls Risk Assessment and Risk Flagging systems. Prior to the realignment, care was not standardized but instead was tailored to individual populations. This made assessment of patient outcomes challenging and with a move to more standardized processes we have been able to retrieve data to drive quality improvement across the organization. Data has demonstrated an increase in the adherence to standards of documentation that outline the periods and frequency with which many assessments must be completed. We have seen decreases in levels of violent incidents in our inpatient areas and increased rigour in terms of careplanning for high risk populations. In terms of scholarship, the members of this group have presented their work nationally and internationally and have had much of the work published in peer reviewed and other journals.

### **Conclusion**

This poster outlines the steps that organizations can go through to create leadership development in the area of advanced practice. It is important to have a framework to organize the roles and this poster will outline the quality pillars that were used in modeling this organization after a national framework for advanced practice. The quality pillars are: Advancing Practice; Optimizing Interprofessional Education; Championing Patient and Family Experiences; Strengthening Quality, Safety and Risk Management; and Leading Practice-based Research and Scholarship. When the expectations of the roles are clearly delineated, the staff are clear on their accountabilities and others in the organization are also very aware of what they can expect from them. Accreditation Canada has recognized this organization with the

awarding of exemplary status in many care areas. With this reorganization, we saw a heightened degree of standardization of care, greater adherence to standards and a group that enhanced its scholarly and academic output.

## **Achieving more developed simulation pedagogy in nursing through student feedback**

Call for Posters - Building Capability and Leadership

Jorma Jokela

Laurea University of Applied Sciences, Finland

### **Background**

Simulation-based training has been a part of teaching in various fields for decades. Highly developed patient simulators have been a part of everyday life in nursing training since the turn of the millennium. Therefore, critical evaluations of teaching and determined development of practices are required. Simulation-based training must support the students when applying their learned skills in practical clinical nursing situations. It requires thorough the planning of teaching and goal setting, choosing the correct purpose and level of simulation, the pedagogical foundation work of other teaching methods, and the correct allocation of teaching tasks between the instructors in charge of simulation. The pedagogy of patient simulation is facing the challenge of profound understanding about principles, for example in the practical application of multi-professional simulation training.

### **Methods**

The feedback form has been used to understand the students' experiences of simulation-based training and its impact on professional development. The feedback forms are collected daily, for the purpose of fine-tuning the simulations, for example the timetable of the simulation is changed if required. At the end of each term, the feedback is analyzed and any changes required are made to the processes and practical arrangements. The way the feedback is used takes in to account both the outcomes of the simulations and the development of the simulation processes. The data was collected from the simulation training session organized by Laurea University of Applied Sciences. Structured responses were analyzed using EXCEL –program and the qualitative data was analyzed using content analysis. The process of writing this article is an example of collaboration between content specialists and information management specialists.

### **Outcome**

After the orientation, the simulation training continues with small-scale simulations in workshops. The students practice isolated nursing skills in separate training modules, where internet-based learning such as ECGs are used. The feedback received by the students is plentiful and immediate and the learning emphasis is on isolated skills. The emphasis on the students' own decisions and reflections increases, and therefore the need for the instructor's support decreases. The students were finding it hard to collect, a piece everything together. The students are familiarized with simulation-based training by combining independent study, theory lessons, workshops and simulations. This arrangement allows the training to be adapted according to the needs of the students and the observations of the instructors. These developments introduced unique flexibility and the ability to react to the simulation process.

### **Conclusion**

The simulation center in Laurea is a reflection of the workplace, where real life working practices are learned; simulation-based learning does not concentrate only on caring for the patient, but also on how to behave in the working environment and how to grow professionally. Simulations can become a part of everyday theoretical teaching, by paying particular attention to bringing theory to life through simulation, and also by using other teaching methods to enhance the simulation exercises. The use of simulations has reached a stage where, as well as ensuring the smooth running of simulations, we can now also concentrate on developing new pedagogical models, for example for multi-professional efforts.

## **Building QI capacity and capability through QI coaching**

Call for Posters - Building Capability and Leadership

Julia Mackel  
NHS Lothian, Scotland

### **Background**

This work is based within NHS Lothian and spans across all clinical services including primary and secondary care, adult and paediatrics and includes all grades of staff clinical and non clinical. The organisation employs 26,000 staff.

Quality Improvement (QI) capability and capacity will be built across all levels of the organisation by providing QI training and building a QI coach network

The aim is to meet the QI coaching needs of NHS Lothian staff undertaking QI by March 2019

### **Methods**

A driver diagram was developed and change ideas identified. A Pareto chart was used to assess where the training and coaching gaps are across professions to identify key areas to prioritise. Information on QI coaching is shared on the Lothian Quality website.

Feedback has been gained from staff experience of receiving and delivering QI coaching.

QI coaching is being delivered in several ways:

- At service level developing
- QI coaching clinics
- Quality Academy delegates receive individual and group coaching

Recruitment and development of QI coaches through:

- Coaching Development Framework
- QI coaching compact
- Coaching development days are provided on a regular basis to support QI coaches to build knowledge and skills and to encourage network building
- QI coaching competency self assessment used on an annual basis to assess learning needs and identify any gaps for QI coaches

### **Outcome**

Monthly data is starting to be captured of number of hours coaching delivered.

Number of QI Coaches:

April 2017 33

May 2018 60

October 2018 82

300 Quality Academy QI projects have received coaching from 2016-2018 and many more through coaching clinics and in service

93% staff who received QI coaching reported that it enhanced the progress of their project. 81% said the QI coach was very knowledgeable

### **Conclusion**

By building a QI coaching network more staff will have access to support to progress QI projects and a consistent approach to QI is adopted. This has an impact on improved patient and staff experience, reducing waiting times, improving safety of care and builds a more resilient workforce.

Whilst this is a system change on a large scale, learning is building through small tests of change.

A risk register has been developed. One of the main barriers to building a QI coaching network is individuals capacity due to other workload commitments.

QI coaching has been well received and has helped progress QI project progress. QI coaches find it a rewarding role and contributes to their personal development.



## **Intubation in the neonatal unit- improving our performance and fostering human factor awareness**

### **Call for Posters - Building Capability and Leadership**

Kathryn Ferris, Neil Corrigan, Damien Armstrong, Angela Hughes, Athinyaa Thiraviaraj  
Western Health and social care Trust, Northern Ireland

#### **Background**

Our work was within the Paediatric department, Altnagelvin Hospital, Western Health and social care trust.

The focus group were paediatric trainee doctors, GP trainee doctors and foundation year 2 doctor working in paediatrics. The patient focus group was our neonatal patients.

There are instances when neonates require intubation for treatment or investigations requiring a series of complex technical skills. There can be added difficulty in elective intubation where human factors come into play, potentially more so than with an emergency.

Prior to intubating a neonate, trainees said they felt nervous, anxious and stressed amongst other emotions. We felt that all of these factors especially the potential impact of human factors may impact on patient safety.

Aim:

- To increase the rate of 1st attempt successful simulated neonatal intubations
- To reduce the time taken to successful simulated intubation
- To improve trainee awareness of the impact of human factors

#### **Methods**

We sent questionnaires to all our trainee doctors asking them to share their opinions and experiences through open questions, MCQ's and likert scales. We used these results to design an appropriate simulation based teaching programme.

The programme consisted of 4 separate workshops:

1. Preparing, prescribing and administering drugs for intubation
2. Intubation- indications, techniques and simulated intubations
3. Ventilation- set up, modes of ventilation, monitoring and adjusting
4. Human factors- definition, impact and how to identify/recognise these

PDSA 1: Workshops planned, invites sent to all trainees and first cohort of trainees attended the teaching programme

PDSA 2: Challenges identified in PDSA 1 and problems addressed. This included moving to the neonatal unit where a gas supply was available. There was wider discussion on indications for intubation and mechanical ventilation

PDSA 3: The teaching programme was established into the paediatric department teaching schedule

#### **Outcome**

The teaching programme is now fully established into the paediatric departmental teaching schedule as the feedback from trainees has proven it was successful and beneficial. This has meant the trainees attending and staff teaching no longer needed to do this in their free time as it is embedded into their working day.

Some key figures:

- 47% reduction in average time taken to successful intubation.
- 88% intubations successful on first attempt post teaching.
- Improved trainee self assessed competence and confidence in all aspects of neonatal intubation.
- Improved trainee recognition of and ability to appreciate the impact of human factors.
- We anticipate that all these outcomes will accumulate to have a positive impact on patient safety around neonatal intubation.

#### **Conclusion**

The power of human factors dialogues on the whole multidisciplinary team- breaks down hierarchy barriers and promotes morale and team working.

Our workshop on identification of human factors, their impact and how to manage these promoted individual and team awareness of human factors.

All our staff were very willing to give up their free time to teach, all staff were very invested from the outset. Trainee enthusiasm, willingness to learn & desire for knowledge and skills was above expectation. We demonstrated improved competence and confidence in all aspects of neonatal intubation and a reduction in the time taken to successful simulated intubation. The impact of the workshops on trainees has led to us establishing this teaching formally into the paediatric teaching programme.

Ultimately we hope that better recognition of the impact of human factors and self awareness in clinical practice should positively impact on patient safety.

## **MediLead: Engaging, empowering and enabling junior doctors. A unique leadership and quality improvement programme.**

Call for Posters - Building Capability and Leadership

Kerrie Wilson, Sarah Hare  
Medway Maritime Hospital, UK

### **Background**

MediLead is a unique leadership and QI training program for junior doctors delivered in a large Foundation Trust hospital. At the time of introduction the hospital was going through turbulence in leadership and was in CQC special measures. The program focussed on building the leadership and quality improvement capabilities. Uniquely it is supported by the executive team and the MediLeadians have direct access to the board for project support. They are consulted by senior leaders as new strategies and programmes are developed and inform changes throughout the hospital and lead on their own projects. Junior doctors are often overlooked by senior leadership teams and their potential to lead change is not utilised well. This results in missed opportunities to improve patient care and frustration and isolation of the junior doctors who witness opportunities for change but they are not facilitated or enabled to do so. The lack of quality improvement training and support compounds this.

### **Methods**

A questionnaire and communication with junior doctors described they felt detached and ill-informed of what was happening at the hospital. Combined with a focus on CQC work, they felt less able to care for patients. After recruitment, a monthly programme was started including training in QI, leadership, Myers Briggs personality assessment, Resilience, and a session with the Chief Executive. Sessions also included the anatomy and physiology of the hospital. Human factors were uniquely delivered in the style of “the Apprentice”. At the end of year, all MediLeadians presented their QI projects to the Executive Board. Key to the success was engagement by the entire Executive team who supported projects and encouraged MediLeadians to sit on high level boards and meetings. Junior doctors establish their own leadership team ensuring a program for junior doctors, by junior doctors with the vision of enabling, engaging and empowering junior doctors to lead on change to benefit patients.

### **Outcome**

MediLead surveys demonstrated; increased morale, increased understanding of the Trusts vision and values, increased confidence in leading a QI program, increased understanding of how to run a QI project, a feeling of ownership of “their” hospital and increased engagement with key performance indicators and CQUINs such as VTE and accurate coding.

Increased engagement with Trust activities and propagation of change.

Improved coding

Over 35 effective QI projects in each domain of quality

Improved Surveys of training with excellence completion rates

Increased feelings of being able to raise concerns effectively by junior doctors

Improved abilities and confidence to make a change for better patient care

### **Conclusion**

MediLead is now entering its 4th year and will train around another 25 junior doctors. Feedback is gained for each session and overall through online feedback service. Engaging junior doctors and empowering them to lead on change results in excellent care and improved morale. Junior doctors are an important resource of ideas for change and are effective leaders in driving projects or informing high level strategic decisions.

## **The RAH Improvement Den - A Microsystem initiative to Improve Staff QI Capacity and Capability in a Scottish District General Hospital**

Call for Posters - Building Capability and Leadership

Kevin D Rooney, Gautam Ray, Iain Keith, Hannah Simpson, Chris Foster, Lucy McCracken, Mathis Heydtmann, Colette Byrne, Marianne Elliott, Christina McKay, Radha Sundaram, Andy Crawford  
Royal Alexandra Hospital, NHS Greater Glasgow & Clyde, Scotland

### **Background**

To engender a culture of Quality & Safety, it is recognised that staff at every level of the organisation need improvement skills. Traditionally these skills have been taught predominantly to senior clinicians and managers. Lack of engagement with QI is a key challenge to sustainable change. This lack of engagement is mainly down to a perception by staff that QI is a management led activity with little relevance to the frontline.

We wished to empower staff by asking what matters to them as well as to their patients. Focussing QI on what matters to staff creates frontline change agents. Even though there are a variety of different learning opportunities available within NHS Scotland, work pressures, lack of ring fenced time and an absence of QI coaching at the point of care all contribute to an inability to access these resources despite a willingness to learn. This encouraged us to develop a local microsystem initiative to coaching QI skills to frontline multidisciplinary staff.

### **Methods**

A team of 11 Scottish Quality & Safety Fellows including Consultants, Nurses and Pharmacists developed an "Improvement Den" where participants would pitch for their projects to be supported.

Correspondence was sent to all staff to use a structured "Improvement Opportunity e-form" to identify challenges in their workplace with potential solutions.

The respondents were supported by the Den mentors to identify and solve these problems using QI Tools. Responses were collated and aligned to the quality strategy of NHS Greater Glasgow & Clyde.

There was an introductory meeting publicising the Improvement Den objectives and thereafter 8 monthly meetings, arranged over lunch to minimise disruption, where different mentors gave a lecture on the key topics in QI followed by open space small group discussions on each project. The Den was supported by the Clinical Governance Department, Medical & Nurse Directors but had no resource allocation and relied on the goodwill of the mentors.

### **Outcome**

20 participants proposed 16 projects for the Improvement Den. Projects taken forwards included both clinical & non-clinical opportunities which focussed on people, quality, safety, service and waste reduction. At the end of 8 months, 7 learners (29% of the initial participants) fully completed 5 projects (32% of the initial submitted) which were presented as Posters at the end of the Improvement Den.

There were a variety of reasons for failure to complete the project within the 8 month period including rotation of staff and competing interests in the workplace.

Two projects, ward secretary and phlebotomist, saved £650 and £2160 respectively. Whilst the savings from the projects may have been small, extrapolation to all wards across all of the hospitals within NHSGGC, predicts waste reduction close to £500,000.

### **Conclusion**

The Improvement Den unleashed the potential of previously untapped multidisciplinary staff in our hospital. Focussing on what matters to staff and their patients encourages buy in and helps develop a microsystem intervention to change behaviour. Dissemination of power by creating capacity and capability for change at all levels of the organisation can help foster a culture and delivery of care that is safe, effective and person-centred. Small locally owned projects can help move the "big dot", resulting in improvements in safety and person-centredness with reductions in waste, harm and unnecessary variation in our hospital system. In order to facilitate completion of all projects, coaching of improvement teams as opposed to individuals will be tested in the next iteration of the Den.

## **Evidence into action: creating resources that help you use evidence in improvement**

Call for Posters - Building Capability and Leadership

Laura Dobie, Dr Graham Ellis, Dr Paul Baughan, Dr Thomas Monaghan  
Healthcare Improvement Scotland, United Kingdom

### **Background**

The Living Well in Communities portfolio in Healthcare Improvement Scotland's ihub is supporting service managers in Scotland to test and implement service improvements that support people to live well for longer and maintain their independence. We want to ensure that our work is evidence-informed, but it can be difficult to present research evidence in a way that will increase its uptake in decision making and practice.

Our aim

- To make it easy for practitioners and service managers to compare and select different tools and interventions to test.
- To present research evidence in a clear and accessible way.

### **Methods**

Frailty screening and assessment tools comparator

We created a table comparing different frailty screening and assessment tools, with icons to illustrate different tool features. Our Frailty screening and assessment tools comparator has links to summaries of all the tools featured, information on the time taken to administer the assessments and the level of expertise required, and links to relevant research. We also designed a decision tree in Visio to provide an alternative route into the same information.

Frailty evidence review

We reviewed and summarised research evidence on different interventions for frailty. We then created visual abstracts for each intervention, which allow readers to compare the different interventions at a glance, and provide links to the more detailed evidence summaries and further reading. The visual abstracts included information on the potential benefits of each intervention, evidence quality, costs, and frailty level.

### **Outcome**

We are gathering qualitative data on the impact of our evidence resources in service improvements. Feedback from health and social care professionals has confirmed that the Frailty screening and assessment tools comparator is easy to use. 52% of practitioners involved in testing the resource changed their choice of frailty identification tool as a result of the information presented in the guide.

"The tool comparison charts...made finding a frailty screening tool much easier." — Older Person  
Specialist Nurse, Dumfries and Galloway

"Opens up areas to look at and reaffirms what we're doing already." — Lead Allied Health Professional,  
Orkney

### **Conclusion**

Taking it further

We have since developed a Palliative care identification tools comparator, which replicates the format of our frailty screening and assessment tools comparator. We are also currently working on a resource that presents the evidence base on care coordination in palliative care, which has adapted the layout and design of our frailty evidence review.

Lessons learned

- It is possible to create visually appealing evidence resources using basic software that is available on most computers.
- Presenting evidence in a visual way, with clear signposting, helps practitioners and service managers to identify appropriate tools and interventions to test in service improvement.



## **Joy In Work, What Matters To Us 4/4**

Call for Posters - Building Capability and Leadership

Line Rosell Walker, Sabina Lund

Slagelse Surgical department, Denmark

### **Background**

In a surgical department with approximately 200 employees we encountered severe challenges in 2015. We had a rapid turnover in staff, burnout and stress, increased patient load, use of temp-workers increasingly and unhealthy psychologic environment. We implemented a number of different things: in house psychologist, work-life balance application, event calendar, What Matters To You from 2016, service staff and ultimately What Matters To Us 2018, a day for staff.

### **Methods**

All things were implemented as trial and error. We kept those who worked for us, were challenged by lack of hard data but kept going even though we wished for more data. Some, like in-house psychologist, was a regular need. Some were ideas picked up at IHI National Forum or International forum, but were showed to stick. Overall we just had to do something, starting with trying to connect our staff (via RCT a.m. Helen Bevan) and slowly moving towards having a work-place with happy and healthy staff.

### **Outcome**

We now have no vacant positions, 336 days since last stress-related sick-leave, increased staff-satisfaction and no temp-workers.

### **Conclusion**

Our work is still in progress, not finished and never will be. Our motto is like Nike: Just do it. Ask you staff What Matters To Us, join us on April 4 (2019 if possible) and create a movement towards happy, healthy and involved staff.

## **Improving nurses capabilities to early recognise clinical deterioration of somatic inpatients**

Call for Posters - Building Capability and Leadership

M.A. Buijs, S.M. Maassen, G. Prins

Erasmus MC University hospital - The Netherlands

### **Background**

Previous research shows that nurses are not always capable to recognize deterioration of vital signs in an early stage, whereby they respond too late to clinical deterioration (Porter et al., 2011). Additionally communication to physicians in acute situations is often ineffective (S. Y. Liaw et al., 2011). When deterioration of vital signs is recognized timely, adequate treatment can be started in time. This prevents readmissions on the ICU, in-hospital resuscitation and decreases in-hospital mortality (Taenzer et al., 2011). Therefore, the nursing council of a Dutch university hospital advocated to provide nurses working at non-acute somatic inpatient wards and short stay departments a simulation training, aimed at enhancing their capabilities to recognize clinical deterioration in an early stage.

### **Methods**

Between October 2017 and February 2018 nurses followed a simulation training to enhance their knowledge and skills regarding the early recognition of clinical deterioration.

First, participants prepared themselves by completing a 3 hour e-learning about vital signs. Then they followed a five hour simulation training about recognizing deterioration. In this simulation training they learned to apply the Modified Early Warning Score (MEWS) and the ABCDE-method. Additionally, they learned to communicate their findings effectively to physicians by using the SBAR communication technique. Since nurse managers are responsible for the effective implementation of these techniques, they were offered a training which additionally included effective implementation methods. This study examines whether nurses are better capable and feel more confident to recognize deterioration of vital signs timely and communicate this effectively to a physician after the intervention.

### **Outcome**

After following the simulation training nurses were more capable to recognize clinical deterioration and communicate this effectively to a physician ( $p=0.004$ ). Nurses that were certified for 1 to 10 years had the highest increase in the level of clinical reasoning.

When deterioration of vital signs is recognized in an early stage an adequate treatment can be started at the right moment. Previous research showed that this prevents readmissions on the ICU or in-hospital reanimation and decreases in-hospital mortality (Taenzer et al., 2011).

### **Conclusion**

A simulation training for nurses about the early recognition of clinical deterioration is an effective intervention. Therefore, we recommend hospital executives to invest in increasing the skills and knowledge of nurses regarding clinical deterioration, in order to improve quality of care.

Although this simulation training included the SBAR communication technique, the evaluation showed that communication between nurses and physicians can still be improved. Therefore we recommend interdisciplinary training for nurses and physicians in the future, to improve the communication between these disciplines. Additionally, we recommend that future research examines the effect of such a simulation training on the number of readmissions on the ICU, in-hospital resuscitations and the in-hospital mortality rate.

## **Collaboration between four independent county councils Southern health care region in Sweden**

Call for Posters - Building Capability and Leadership

Margareta Albinsson, Per Wendel, Christer Lindbaldh  
Southern Health Care Region Sweden

### **Background**

The health care system in Sweden is divided into six regions, each consisting of a number of independent county councils. Today's challenge in health care includes, demographic changes, increased cost, medical development and lack of qualified staff. In Sweden there is an ongoing discussion of how to meet this challenge, both on a national, regional and local level.

### **Methods**

It handles a number of critical factors, important for this collaboration. These include (i) how to get a common political view (ii) how to handle mutual challenges (iii) how to build confidence between the county councils in the SRHCC, which have different size and focus.

We have created a project organization consisting of politicians within SRHCC's Committee, a management group for joint medical and health care issues and representatives from the professions from each county council. Much focus has also been on involving other important interests such as patients, citizens, unions and line management. All initiatives include relevant profession teamwork and patient representatives. The initiatives have been decided and approved by the project group, SRHCC's regional management group for joint medical and health care issues and politicians within SRHCC's Committee.

### **Outcome**

Our experience is that this way of working has resulted in increased confidence in all levels of the organization, stability and long-term improvements. Since 2016, when this project was initiated, we have started 25 improvement initiatives which involves all county councils in SRHCC. Examples include reallocating patient flows within kidney surgery and collaboration around medical education for physicians and registered nurses.

Key success factors include a collectively high level of change management. Skills have also created a common view and understanding among SRHCC's regional management group for joint medical and health care issues and politicians within SRHCC's Committee. The Southern Health Care regional management group for joint medical and health care issues and politicians within SRHCC's Committee have decided that this way of working should continue and be the preferred way to meet the future.

### **Conclusion**

The Southern health care regional management group and politicians have decided that this way of working should continue and be the preferred way to meet the future.

## **Building Improvement Capability in Dumfries & Galloway**

Call for Posters - Building Capability and Leadership

Maureen Stevenson  
NHS Dumfries & Galloway, Scotland

### **Background**

NHS Dumfries & Galloway is an integrated health and care system in the South West of Scotland, serving a population of approximately 150K. In 2016 an Integrated Joint Board was created to integrate health and care services. This created both opportunity and challenge. Ensuring that we had sufficient capacity and capability to lead change, to transform and improve care and services was crucial.

The integration of health and care services created an additional layer of complexity but also an opportunity to create an infrastructure and learning system which enabled people to learn together. We have been working to improve the quality & safety of healthcare for the past decade with some success. As our system and the health and care needs of our population changed we recognised that we needed to up skill a wider group of staff whilst at the same time creating conditions for improvement to thrive.

### **Methods**

A proposal to develop a QI Hub to connect, to inspire and to enable people to learn how to improve together was approved.

The Patient Safety & Improvement Team created a QI Faculty and delivered practitioner level QI Training Locally.

Now on our 5th cohort we have developed a network of improvers across our health, care and early year's workforce.

Our Strategy for Change included:

- Built will through interaction with senior leaders
- Brought together influential and interested parties to create QI Hub Steering Group.
- Identified need to connect our improvement work and to train staff to practitioner level in improvement methodology.
- Built local faculty and improvement coaches from those with lead level QI Qualifications.
- Adapted NHS Education Scottish Improvement Skills Programme and trained 2 cohorts of 30 a year.
- Coaching skills training for each participant.
- QI project for each participant.

### **Outcome**

Now in our third year we have trained more than 120 improvers who have undertaken more than 100 QI projects.

The impact of the QI education can be felt across every Directorate with a growing understanding and acceptance of the need for QI competence.

All SIS programmes now have a waiting list with competition for places.

Leaders and managers have identified a need for addition training in QI. The first cohort of Scottish Coaching and Leading Improvement designed to target system level leaders commenced in D&G in February with 30 participants from health, social care and third sector.

Professional groups like nursing and AHPs are now asking for practitioners at Band 6 and above to have undertaken a QI education programme.

### **Conclusion**

Research from High Performing organisations around the world tells us that investing in building QI Capacity & Capability supports organisations to deliver better health, better care for better value. We quantified what we had and identified a huge gap at practitioner and lead level QI competence.

Access to national lead level QI Programmes was limited to 1 or 2 people a year - we had to build our own capacity & capability.

We recognised from earlier work that building capability required more than knowledge acquisition, it required practice, reflection and coaching and a system that is fertile and supportive.

We made the work visible, engaged leaders at all levels and encouraged management teams to enable SIS graduates to be engaged in Directorate and Specialty Improvement work.

We recognised that not all leaders were engaged or supportive and sought to understand. We now offer a lead level programme : Scottish Leadership and Coaching for Improvement.

## **Digital Sociable Doable QI - Creating Change Champions in Children's Healthcare**

Call for Posters - Building Capability and Leadership

Nicola Davey

Quality Improvement Clinic United Kingdom

Jane Runnacles, Emma Parish

London School of Paediatrics United Kingdom

### **Background**

A Quality Improvement (QI) programme co-designed by the London School of Paediatrics (LSP) and Quality Improvement Clinic (QIC) for Specialist Trainees in Paediatrics in 2016/2017. Having struggled to secure funding early in 2016, we used existing paediatric meeting facilities and self funding to test a new programme. 11 trainees and one patient participated. Five completed a QI project and presented at 2016 International Forum. However, the programme was not amenable to the scale up. More creative ways were needed to overcome a shortfall in training opportunities and traditionally funded programmes and provide sufficient face-to-face time for trainees to learn about and practice improvement using robust change methods e.g. model for improvement (MFI).

Our aim was to increase numbers of trainees completing a QI project within 16 weeks whilst working alongside parents and members of the multidisciplinary team.

### **Methods**

LSP and learners funded a new blended learning programme 50:50. An online social learning space was designed to augment face-to-face learning: increasing the depth/pace of learning prior to, between and after face-to-face workshops. Learning design interventions included: bite size theory, brief case studies; practical activities completed and posted online; virtual contact with mentor led learning sets and feedback. Feedback captured throughout the programme included evidence of engagement with QI tools and techniques. In programme changes were made in response to this. All feedback, data on engagement and outputs were reviewed at the end of the programme and further changes were made for the second programme including: different start-up process, closer management of first encounters, and greater utilisation of online space during face-to-face workshops. We continued to gather data to assess impact of changes on learner progress and outputs throughout the second programme.

### **Outcome**

Process measures include: i) no. participating and/or completing the programme ii) use of QI tools and techniques iii) confidence in using MFI. Outcome measures include i) No of QI posters ii) presentation of QI work iii) participation in other QI programmes &, longer term, iv) confidence to become a mentor v) online engagement. Results: Spring'18: (8) 40% of completed CPD accredited programme & became LSP QI Change Champions. A further 8 (40%) attended workshops & completed over 60% of the programme. 2 became mentors, 1 mentor joined the teaching faculty. Autumn '18: 10 (60%) completed CPD programme to become LSP QI Change Champions. 4 (26%) QI Role Models. 12 Projects & posters completed. 2 new mentors. 1 parent recruited another to cohort 3. Between the Spring cohort and the Autumn cohort online activity increase despite there being 1 less participant: 'Comments' increased from 334 to 496, 'replies' from 26 to 42, 'views' from 894 to 1124 and 'contributions' from 108 to 264.

### **Conclusion**

Changes to start-up and early online engagement in Autumn'18 accelerated progress prior to workshop 1 & increased online activity during startup. Predictions that changes would increase the numbers of trainees a) completing b) presenting work at conferences and c) expressing an interest in becoming a mentor were all realised. Combining well-designed online social learning with face-to-face workshops can accelerate QI learning & translation into practice. Healthcare is slow to adopt this compared to other industries. We have much to learn & gain. Advanced digital learning provides trainees with good access via their own devices avoiding traditional barriers found in UK hospitals. Social learning elements & use of 'leader boards' generate connection & competition that trainees thrive on. Adult learning requires personal accountability for progress. Co-payment (with reimbursement) may also play a part in increasing engagement. Patient engagement is challenging & fulfilling for all.

## **The Engineering Better Care Toolkit for Healthcare Improvement**

Call for Posters - Building Capability and Leadership

P.John Clarkson, Ian Hosking, James Ward, Alexander Komashie, Tom Bashford, Nicholas Boddy  
University of Cambridge, UK  
John Dean  
Royal College of Physicians, UK

### **Background**

“The challenges facing the health and social care system are considerable – with competing pressures from an ageing population, increasing numbers of patients with multiple morbidities, new technologies, and the need for increasing efficiencies. The complexity of the system, along with the multiple pressures it faces, mean that efforts to improve it often achieve only limited benefits and can have unforeseen consequences. .” (Engineering Better Care, 2017)

The Engineering Better Care report was co-produced with engineers, clinicians, and healthcare leaders, to explore how an engineering approach could be applied in health and care to develop systems that meet the needs of patients, carers and NHS staff. They defined a systems approach, in a health and care context, as a series of questions that integrate people, systems, design and risk perspectives in an ordered manner.

### **Methods**

The challenge of translating the description of a systems approach into a practical implementation guide should not be underestimated. The simple aspiration to develop a Healthcare Design Toolkit masks the complexity of co-designing a framework and tools to incorporate a systems approach within health and care improvement. Cambridge Engineering Design Centre have worked with a number of improvement experts to develop a prototype of the Engineering Better Care Toolkit.

### **Outcome**

The form of the toolkit was influenced by improvement projects with a number of UK Hospital Trusts and Marie Curie, where the scoping and design stages typically took the form of a series of meetings and workshops. The scoping activities are chosen to stand on their own or complement existing NHS improvement approaches. Subsequent design activities introduce further important aspects of a systems approach, with its focus on people, systems, design and risk, along with guidance on their use and design of the improvement process.

### **Conclusion**

The Engineering Better Care toolkit is being tested in a number of live projects within the NHS. Further development of the toolkit will be by an open special interest group within the Health Foundation’s Q community. Those interested in contributing can contact John Clarkson ([pjc10@eng.cam.ac.uk](mailto:pjc10@eng.cam.ac.uk)) or John Dean ([John.Dean@rcplondon.ac.uk](mailto:John.Dean@rcplondon.ac.uk)) directly.

**Building capability for improvement sciences in medical students through service-learning.  
Development and impact of an accredited degree in Healthcare Improvement.**

Call for Posters - Building Capability and Leadership

Peter Davey, Suzanne Grant, Vicki Tully, Evie Fioratou, George Hogg  
University of Dundee, Scotland

**Background**

We describe the development, accreditation and impact of a BMSc in Healthcare Improvement at the University of Dundee, Scotland. In the UK most medical students do not have a previous degree. UK Medical Schools offer an intercalated BMSc (honours level degree), which allows students to take a year out of their medical course to study topics in more depth.

Healthcare Improvement is already integrated in the Dundee Medical Curriculum (MBChB), including opportunities for improving care with clinical teams. However, there is not enough space in the curriculum to develop capability in Improvement Sciences.

Service-learning is our signature pedagogy for Healthcare Improvement in Dundee MBChB. We tested service-learning for improvement sciences by offering Quality Improvement as an option for a Dissertation in an existing BMSc in Clinical Research before designing and accrediting a new BMSc Programme. The BMSc in Healthcare Improvement was accredited by the University in 2017.

**Methods**

We developed two new modules:

1. Applying Behaviour Change and Human Factors Theories to Improving Care with Clinical Teams.
2. Ethnography, in addition to existing modules in Epidemiology and Statistics

We use the IHI Improvement Practicum to guide students through improving care with clinical teams. Students identify the clinical services that they would like to work with and we connect them with clinical teams through NHS Tayside's Patient Safety Network. They write a reflective report on their Practicum, applying theory that includes the SEIPS model for Human Factors and the Behaviour Change Wheel. More detail about learning and assessment is at [www.dundee.ac.uk/study/ug/healthcare-improvement-intercalated/](http://www.dundee.ac.uk/study/ug/healthcare-improvement-intercalated/)

We tested a QI Dissertation in the Clinical Research BMSc for three years before designing the BMSc in Healthcare improvement. Further changes in response to feedback from students, staff and our External Examiner are reported through an annual Quality Enhancement Report.

**Outcome**

Ten students graduated in 2018 with seven first class and three upper second class degrees. Including current students we have worked with 16 diverse clinical teams in hospitals and the community. Demand from students has increased. We reached our maximum capacity of 10 students in the first year of the Healthcare Improvement BMSc, compared with only 2-3 students per year for the previous Clinical Research BMSc,

Students value the opportunity to develop research skills while learning about clinical systems and making a difference for patients and staff. Patient experience and patient and family centred care shadowing are integrated within the BMSc. We are promoting the BMSc to NHS staff as part of a connected curriculum for Healthcare Improvement with clinical teams.

**Conclusion**

If we were starting again we would seek more input from Behavioural and Social Sciences at an earlier stage.

We needed to address three key problems following the first year of the BMSc in Healthcare Improvement:

1. Assessment criteria
2. Establishing a new Core Research Skills course focused on Healthcare Improvement
3. Improving the balance between doing improvement (Practicum) versus studying improvement (Dissertation).



Graduates from the BMSc have established a Dundee University Healthcare Improvement Society and are enabling us to develop student peer support for improvement methods and sciences in our undergraduate medical curriculum.

We expect our graduates to be leaders for improvement sciences. Seven of our students are presenting posters at the International Forum this year.

## **Developing PAIRS; a bespoke paediatric resuscitation programme for limited resource settings**

Call for Posters - Building Capability and Leadership

Rachel MacDonell  
Royal College of Physicians of Ireland  
Ikechukwu Okafor  
Children's University Hospital Ireland  
Stanley Koe  
Tallaght Hospital Ireland  
Trish Scanlan  
Muhimbili National Hospital Tanzania

### **Background**

We have developed and tested a dynamic, context-specific, paediatric resuscitation course with tiered level of complexity targeting different levels of healthcare workers in limited resource healthcare settings. The PAIRS course is now established in Dar Es Salaam, Tanzania with a plan for spread to Uganda and Nigeria in 2019.

Children on the paediatric oncology ward were experiencing poor clinical outcomes after common oncological emergencies and inter-current illnesses. Deterioration was sometimes slow to detect with 100% mortality rates for any child requiring CPR. Multifactorial issues included:

- Poor knowledge of resuscitation skills
- Limited availability of equipment, expertise
- Additional hurdles related to culture, communication and infrastructure

### **Methods**

Established internationally recognised resuscitation courses were trialled over the years, but none was deemed appropriate for the setting.

The one-day Paediatric Assessment of Illness, Recognition and Resuscitation (PAIRS) course was designed to build foundational skills and knowledge of any nurse or doctor working with children in a limited resource setting. A further one-day PAIRS+ module was developed for paediatric doctors and senior nurses.

The three-pronged implementation strategy consists of

1. a massive rollout of the course, targeting the entire paediatric community of the hospital, championed by local nursing and medical management
2. local endorsement and accreditation
3. establishment of local faculty and national accreditation of the course with the aim of handing over to the local faculty after 5 years of sustained annual training.

### **Outcome**

Course participant evaluation, faculty feedback and discussion with local stakeholders informed each iteration of the course. Evaluations show a culture shift towards teamwork and cooperation and a genuine will to improve.

Sustainability of this programme was a key consideration throughout the process and to date, several local faculty members have been identified for focused mentoring in 2019 and one has trained as a Paediatric Advanced Life Support instructor in Ireland.

### **Conclusion**

A variety of engagement strategies are necessary to influence behaviour and drive change. In order to achieve active buy-in for sustainability, it is essential to engage with local stakeholders, foster cooperative relationships and adapt, adopt or generate training programmes that reflect the real-life needs of the clinical team and setting are critical success factors that influence sustainability, scale and spread.

## **Collaboratively Adapting Quality Improvement Approaches to Enhance Perioperative Pain Care in Rwanda.**

Call for Posters - Building Capability and Leadership

Rosemary Wilson, Ryan Egan, Joel Parlow, Ana Johnson

Queen's University, Canada

Gaston Nyirigira

CHUB Anesthesiology, Rwanda

Theogene Twagirumugabe

University of Rwanda, Rwanda

### **Background**

The Centre Hospitalier Universitaire de Butare (CHUB), Rwanda, and Queen's University (QU), Kingston, Ontario, Canada have a long standing and productive academic collaborative relationship. CHUB is represented by two anesthesiologists, and QU represented by clinicians and researchers from the Faculty of Health Sciences have worked collaboratively to improve postoperative pain care policies and procedures at CHUB. Access to safe and appropriate surgery and perioperative pain care is a basic human right. CHUB is a district hospital located in Butare, Rwanda serving a population of approximately 90,000 people. In 2010, 706 surgical procedures were performed per 100,000 Rwandans and over 9,000 road accidents occurred of which 25% resulted in injuries that were fatal or required surgery. Mpirimbanyi et al. (2017) described the challenges of emergency general surgery in sub-Saharan Africa and identify the gaps in surgical care in Rwanda including accessibility, resources and education.

### **Methods**

The Knowledge to Action (KTA) Framework has been used to guide the project and partnership, providing a foundation for identifying the problem, adapting knowledge, assessing barriers to knowledge use, tailoring interventions, monitoring knowledge use, evaluating outcomes and sustaining knowledge use. The Rwandan-Canadian team has recognized the strategic direction and benefits of QI methodologies and aims to utilize the Model for Improvement within the elements of the KTA Framework. Work has been conducted in multiple phases and has included assessment of local context and knowledge using survey, focus group and observational data collection methods, formation of local QI committees, education at multiple organizational levels, development and implementation of new documentation tools and practices, development and implementation of audit tools and practices, local data entry and remote data analysis by QU team and finally, feedback to the local QI committee.

### **Outcome**

Data from focus groups and interviews provided our strengths, weaknesses, threats and opportunities analysis yielded the following barrier themes: lack of hands-on training, fear of adverse drug effects, lack of awareness of pain care protocols, inconsistent documentation practices and conflicting priorities (e.g. large patient load, lack of medication and resource availability). Facilitator themes included enthusiasm of staff for educational opportunities, administrative buy-in and commitment from QI Committee members. In our analysis of monthly audit data from 2018, we were able to share the following with the local team: An average median of 27% of patients had transcription errors where documentation tools were present and an average median of 4 medication scheduling errors, 7 dosing errors and 3 inappropriate medication administration criteria were recorded per patient per audit. The QI Committee is examining options for process improvement and auditing is on-going.

### **Conclusion**

QI was ideal for this application as it goes beyond determining implementation and sustainability strategies to include the context of practice. Grass roots QI has become a mainstay in strategies to cope with increasingly complex healthcare systems. In research conducted in developing countries, there has been little emphasis on needs assessment and co-development of QI strategies. Local challenges regarding resources, infrastructure, political and social stability, and primary care require that QI strategies be contextualized. Moreover, social and cultural diversity requires a collaborative approach that integrates effective practices, while ensuring that cultural and logistic realities are considered.

Ongoing collaborations between Rwandan and Canadian colleagues has been strengthened as a result of the QI approach and application to the project, as the evidence from the QI dashboard has guided discussion and provided data to make adaptations to the interventions.

## **WHOLE SYSTEM NATIONAL APPROACH TO BUILDING QUALITY IMPROVEMENT SKILLS**

Call for Posters - Building Capability and Leadership

Samantha Smith, Laura Allison  
NHS Education for Scotland, Scotland

### **Background**

NHS Education for Scotland (NES) is a national Health Board responsible for the education and training of Scotland's health and care workforce. It works closely with range of national and local public-sector partners, providing training in quality improvement (QI) to staff from all public-sector bodies.

Scotland's 2020 workforce vision recognises the key role the workforce plays in responding to the challenges facing NHS Scotland to improve patient care and overall performance. It explicitly recognises that more people with the right skills and knowledge are needed to spread good practice and support service improvements across NHS Scotland.

Over the past 10 years, NHS Scotland has developed and delivered QI training programmes for staff in leading roles. We then wanted to ensure staff at all levels were supported to use QI skills. Different models to increase the pace and scale of building QI skills were required.

### **Methods**

The aim for the suite of QI programmes delivered by NES is to provide a sustainable model for building QI skills using Scottish faculty. The programmes are designed to empower staff at any level in the workforce, with local networks providing ongoing support where required.

### **Outcome**

The suite of programmes and resources includes:

The Scottish Quality and Safety Fellowship (SQSF) programme (20 staff per year)

The Scottish Improvement Leader (ScIL) programme (120 staff per year)

Scottish Coaching and Leading Improvement Programme (new programme targeted at middle managers, (120 staff per year when funding is secured)

Scottish Improvement Foundation Skills delivered virtually using the GoTo Training platform. (210 staff per year).

QI Zone platform including e-learning, resources and templates for QI tools

Faculty development programme for alumni from SQSF and ScIL where employing organisations support alumni to deliver content on national programmes with new skills transferred back to employer (12 staff per year)

Two annual national education and networking days for programme alumni SQSF's and ScIL's across several Health Boards now deliver in house programmes at practitioner level.

### **Conclusion**

All programmes use the Kirkpatrick model for evaluation to support development underpinned by logic models. This defines short, medium- and long-term objectives and informs any required changes.

While SQSF and ScIL are well established lead level programmes, building capability for other staff is also needed. By utilising the skills of alumni from SQSF and ScIL, a larger faculty base now exists, providing a sustainable model to deliver education for everyone.

Through listening to the demands of stakeholders, programmes have evolved to meet contextual needs of staff. For example, the SIFS is a virtual programme, increasing access, removing time away from work, at significantly reduced costs.

## **Teaching Primary School Teachers To Teach Kids CPR – A School's BLS Program**

Call for Posters - Building Capability and Leadership

Shams Khan

Wrightington, Wigan and Leigh NHS Trust

### **Background**

Based on recommendations from organizations such as Millie's Trust and the British Heart Foundation, I set out implementing a programme to teach first aid and basic life support in a small primary school in Heaton Mersey, Stockport. The school teaches from early years to year 6 and is an independent fee paying school with an average of 60 pupils a year. The initial programme involved teaching teachers to deliver the training and once teachers had been trained to teach first aid and basic life support, a programme was developed to have the teachers deliver this to the pupils. The goal was to have all 6 years fully certified in first aid and basic life support before they finished at the school

### **Methods**

The British Heart Foundation have a programme designed specifically for this called Heart Start. Using this, I obtained training and teaching materials, mannequins and paperwork. With the help of the head teacher we selected teachers who were happy to be trained and trained them fully to deliver the Heartstart teaching package to the children. The office staff kept records and quality was overseen by myself. Once started we began teaching in years 1-2 with the simplest part of the package which involved "Calling for Help" and the recovery position. In years 4 to 5, basic first aid is taught and in year 6 full CPR is taught. In between there are refreshers. The school make efforts to link this to key stage learning eg home safety, healthy eating, science. All parents were kept fully informed of the programme at the beginning and no objections were noted

### **Outcome**

Since beginning we have trained 39 year 6 pupils in the full Heartstart course and have 4 fully trained teachers / parents providing the teaching. I also provide some teaching particularly with CPR. Because of our electronic database of trained children, if anyone misses a session, we are able to arrange "catch up" teaching. The programme has brought praise from parents who have noticed the knowledge and skills of their children. One parent pointed out that their child was commended on their knowledge and skills when a similar programme was taught at an out of school club.

### **Conclusion**

This programme has successfully implemented basic life support and first aid skills teaching in a primary school. All children leaving year 6 have the full skill set taught to them and it is delivered by the school's own teachers. The teaching is now incorporated into part of the school year and links to key stage learning. The confidence of the children is notable and when the current evidence base of basic and advanced life support emphasises the need for high quality chest compressions, early teaching is a step forward to empowering people with high quality life support skills. In my medical practice I see the benefits to those who suffer cardiac arrest and receive good bystander CPR

## **The Registrar Leadership and Management Programme at Northampton General Hospital— Increasing Leadership Capability for the Consultants of Tomorrow**

Call for Posters - Building Capability and Leadership

Sid Beech, Liz Smillie, Jane Bradley  
Northampton General Hospital NHS Trust, United Kingdom

### **Background**

In recent years there has been an increasing emphasis on developing leadership & management skills for clinicians in the NHS. Effective clinical leadership ensures a high quality health care system that provides safe, reliable and effective care. There has been a wealth of guidance, frameworks and reports published by government organisations, charities and think tanks that offer principles and recommendations for development of clinicians.

These reports highlight the variability in leadership development opportunities across different regions in England, with strong recommendations to greatly improve the training offer for all staff.

The Quality Improvement (QI) team in the Northampton General Hospital (NGH) run several academic programmes to support the personal and professional development of the multidisciplinary workforce. These programmes have various components; some with an emphasis on leadership and management, as well as improving the quality and safety of care delivered at NGH.

### **Methods**

Since 2012, the QI team in NGH has delivered an annual advanced leadership and management programme for Specialty Registrars working in the hospital. The aim of the programme is to provide a broader understanding of “how the NHS works”, the wider issues facing primary and secondary care, as well as to introduce practical leadership and management skills and knowledge needed as a senior clinician in the NHS.

Since its inception, this programme has been offered to NGH Specialty Registrars at no cost.

In 2018/19 the programme had 12 modules delivered during 12 weeks. The modules are delivered in a two or three hour slot by senior healthcare professionals. Sessions include Patient Safety, Quality Improvement, Demystifying NHS Finance, Improvement under pressure – confessions of a medical CEO and simulated sessions.

Feedback from participants and faculty has been collected each year in order to refine the content and structure of the programme.

### **Outcome**

Feedback on the 12 modules has been very positive (favourable feedback for each module ranges from 86 % to 100 % positive).

The programme has been evaluated using anonymised participant self-evaluation that was collected before, during and after completion of the programme.

We have seen significant improvements in participants’ self-evaluation of their leadership and management knowledge, capability and skills. Four questions relating to an excellent understanding of NHS structure, regulation, finances and clinical leadership each saw a considerable improvement (Structure 38 % to 87 %, Regulation 24 % to 83 %, Finance 9 % to 83 % and Clinical Leadership 68 % to 100 %.)

There has also been an improvement in every aspect of the self-evaluation tool for leadership capability and style. Examples include:

- I take responsibility for embedding new approaches into working practices (29 % to 78 %)
- I use data and information to inform improvements to services (32 % to 77 %)

### **Conclusion**

We will continue with the delivery of this programme each year to support the continued development of Specialty Registrars’ leadership & management capability, in order to ensure we equip our workforce to lead services and organisations in a modern NHS.

Reflecting on the positive impact of this programme, the QI team in NGH will deliver a new programme in Summer 2019; Trust Grade Development Programme. This programme will be available to Trust and Staff Grade Doctors.

Investment in staff development is imperative in the NHS. Effective clinical leadership leads to safer, more reliable & effective care and with most NHS providers adopting a clinically-led organisational structure, it is ever more important that trainees are actively encouraged to enrol in programmes to support their leadership and professional development.

Utilising the knowledge and skills of senior clinicians and leaders within an organisation, we have been able to deliver a successful programme for 7 years.



## **The Health Education England Wessex School of Quality Improvement; upskilling the workforce to improve patient care**

Call for Posters - Building Capability and Leadership

Siobhan O'Donnell, Fleur Kitsell

Health Education England (Wessex), United Kingdom

### **Background**

This work relates to the geographical area of Hampshire, Isle of Wight, Dorset, and Salisbury, also known as 'Wessex' for the purposes of Health Education England (HEE).

Opportunities relating to quality improvement (QI) and patient safety were often dispersed across the organisation and were not accessed by all groups. These opportunities have a direct impact on an individual's leadership development, team development and patient care through improvement work. A series of consultation events with internal and external stakeholders took place to explore the existing variety of un-coordinated opportunities; methods included De Bono 'Six Thinking Hats'. Reports and proposals were shared via Board reports and email and from this the concept of a School was born. The Wessex School of Quality Improvement is led by a small team within HEE (Wessex), and works with healthcare professionals of all levels and specialties across the region.

### **Methods**

The School brings together, makes visible and co-ordinates the current range of initiatives within all portfolios of HEE (Wessex) relating to QI and patient safety. Capturing opportunities under the umbrella of a 'School', it uses a distributed collaborative model, working with partners to deliver its ambition. A Steering Group ensures two-way communication between the School and the 'system'. The School's offer includes QI Fellowships, Human Factors programmes, a QI Support Fund, and an annual conference (jointly hosted with a partner). Patient and public representatives are involved in recruitment to programmes and dissemination events and have been members of Fellowship teams.

Dedicated webpages support sharing and dissemination of the School's work

[http://www.wessexdeanery.nhs.uk/quality\\_improvement.aspx](http://www.wessexdeanery.nhs.uk/quality_improvement.aspx) alongside a Twitter hashtag #QIWessex.

Fellows are encouraged to publish their work and disseminate this which the School supports financially as budgets allow.

### **Outcome**

The School continues to evolve, flexing to meet local needs based on feedback from stakeholders and partners, requests from the system to support up-skilling the workforce, and from alumni of its programmes. General measures include:

- Number of improvement projects started since 2015 directly supported by School: 112
- Number who have participated in our annual patient safety and QI conference: Over 650 since 2016
- Number attending programmes and courses offered by the School in the previous 12 months (Sept 17-18): 310

Eight of the 14 who have completed our individual QI Fellowship programme since 2016 are now in QI leadership positions within Wessex organisations, with many citing the Fellowship as a key determinant of this. Since the School's inception, many participating Trusts have developed their own internal programmes which feels like success, although the School continues to be oversubscribed to its Fellowship programmes.

### **Conclusion**

The School has increased capability and capacity of those with improvement skills who have applied this learning to priority areas within their organisations. Working with system partners to steer the work of the School is key to ensure its work complements other initiatives in the system.

Some key lessons learnt include:

- QI, like any other field, has a range of strongly held views and people are often quite wedded to these. Recognising this and offering principles to work towards has been helpful to engage stakeholders.

- The importance of improvement work being undertaken being part of something wider in an organisation so the support is there.
- Spend more time teasing out the issue you are wanting to improve at the start rather than the solution.

## **Quality Improvement Training in Primary Health Care Corporation, Qatar**

### **Call for Posters - Building Capability and Leadership**

Sitti Surmiya Laja, Dr. Amal Abdulla Al Ali, Dr. Alia Ghareeb Banna  
Primary Health Care Corporation, Qatar

#### **Background**

The Primary Health Care Corporation (PHCC) is a governmental multi-facility organization with 27 Primary Care Centers situated across the 3 regions of Doha, Qatar. One of the most important aspects to achieving excellent healthcare is embedding a culture of Quality Improvement (QI) within the processes of care and service delivery. The complexity around healthcare organization demands a structured approach towards quality improvement. This challenge requires everyone in the organization to understand and incorporate the basic concepts of quality improvement. These are the improvement areas:

- Leadership support and staff engagement on QI initiatives
- Standardized approach to QI initiatives
- Build quality improvement capacity and capabilities
- Build intrinsic motivation and values
- Collaboration between headquarters and front line staff

In 2015, PHCC initiated the QI training program that targets around 5,000 clinical/non-clinical staff as an initial step to embrace quality culture.

#### **Methods**

The Quality Improvement Training Program (QITP) was initiated in September 2014 through setting up the training framework. Initially, the aim was to train the trainers and eventually cascade knowledge to leaders and staff. The trainer's program lasted until April 2015 graduating 16 QI trainers. In June 2015, prior to full implementation, the training was piloted to a specific group to collate feedback for improvement. With the aim to train 20% of staff per year in August 2015, the training was conducted to around 200 middle managers and leaders being the early adopters and subsequently delivered to Physicians, Dental, Pharmacy, Nursing, Lab, and Radiology staff. QITP has 3 learning methods: theoretical, practical, and e-learning. The theoretical part covers QI fundamental concepts & Patient Safety. The practical session requires conduct of an actual QI project (adopting IHI Model for Improvement) using a standard template. Participants were given access to IHI e-learning to complete QI modules.

#### **Outcome**

Since the QITP implementation in 2015, training was delivered to 2,378 clinical/non clinical staff which accounts to 48% of the current target. Classroom assessment showed 16% yearly average on improved knowledge. Quality improvement projects had become obvious with 318 total completed QI projects across PHCC. E-learning uptake has achieved 2,994 learning hours in the current year and continue to increase. Considering all these evidences, it implied that our initial step to embedding quality culture was a success yet we continue to identify areas for improvement.

- Leadership support are evident in QI projects being tested and implemented
- Staff demonstrated more confidence on QI
- Collaboration between headquarters and front line staff has improved
- Staff are demonstrating intrinsic value in doing QI initiatives

The Qatar Council for Healthcare Practitioner has yearly accredited the QITP providing CPD credits utilized to renew clinical license in addition to the learning benefits.

#### **Conclusion**

The implementation of QITP enhanced staff motivation and engagement on QI. It has demonstrated small improvement to real changes that contributes to system improvement.

Lessons learned:

- Leadership support is the main key to foster a quality culture
- Staff QI engagement can be improved through training and coaching

- Staff resistance can be addressed by making people well informed
- Practical application of the QI concepts should be emphasized
- Successful QI projects should be spread, shared and celebrated
- Proper collaboration with internal and external stakeholders
- Continuous monitoring of indicators is significant to ensure sustainability

Our next step is to advance the QITP by adopting Robert Lloyds dosing approach concept wherein not everyone in the organization needs to receive the same dose of QI knowledge and skills. Recently, selected staffs are trained as QITP champions who will deliver training and support improvement initiatives onsite.

## **Owning your own Improvement Collaborative for Safer Better Healthcare**

Call for Posters - Building Capability and Leadership

Veronica Hanlon, Lorraine Murphy, Catherine Hogan, Orlaith Branagan  
Health Service Executive, Ireland

### **Background**

The Health Service Executive (HSE) / Royal College of Physicians sponsored the Pressure Ulcers to Zero (PUTZ) collaborative delivered over three phases (2014 – 2018) in the Irish healthcare services. The primary aim of PUTZ was to reduce the number of newly acquired pressure ulcers (PUs) across participating teams by 50% within the timeframe of the collaborative. Design and delivery of all phases of the PUTZ collaborative was organic and responsive to both participants' needs and learning from previous collaboratives, and significant reduction in newly acquired PUs was achieved in all phases. Although realising a notable reduction in newly acquired PUs amongst participating teams, the current delivery mechanism of the collaborative has proven to be less effective than desired in terms of sustainability and spread of improvement.

### **Methods**

The National Quality Improvement Team of the HSE aims to modify the current delivery mechanisms of the collaborative approach. This involves designing a training model to enable services develop their own capacity and capability to lead, govern and deliver their own collaboratives.

The anticipated benefits include:

- Increased accountability in a partnering approach between QID and services.
- Providing organisations with a guided infrastructure to engage and sustain quality improvement initiatives.
- Strengthened governance for quality by identifying principal organisational safety priorities and progress reporting to Executive Management.
- Support more active involvement of patients and families at all levels.
- Promote more frontline ownership.

### **Outcome**

The new approach is a work in progress and is currently at the review and testing stage within the HSE's National Quality Improvement Team. Once completed the aim is to have the new collaborative method ready for testing with the services in Q2 2019.

### **Conclusion**

The co-design approach of this programme will enable participating services to lead and govern a self-sustaining collaborative to improve a safety/quality priority area. This requires the HSE National Quality Improvement team to change the model from managing and delivering improvement collaboratives to providing training/education; toolkits and resources; coaching and mentoring; and maintaining an arm's length support to collaborative teams so that they can lead and govern their own collaboratives. It is anticipated that this delivery mechanism will effectively contribute to building and sustaining quality improvement capability across the entire continuum of care whilst also impacting on better outcomes.

## **Developing a compassionate culture - the experience of the North East Ambulance Service**

Call for Posters - Building Capability and Leadership

Yvonne Ormston

North East Ambulance Service, UK

### **Background**

Five years ago, staff surveys in the North East Ambulance Service showed that our employees felt unmotivated, discriminated against and dissatisfied with the way the organisation engaged with them. We had higher than average sickness levels, well above our 5% target, and grievances between colleagues were common. Our reputation amongst key stakeholders and influencers was under scrutiny. Evidence suggests that staff engagement, morale and job satisfaction can impact on patient care and experience so we embarked upon a journey to transform organisational culture to improve the benefits to both patients and employees.

### **Methods**

We set out to develop a compassionate culture which centres around creating an environment where employees feel safe, supported and positive: where leaders have empathy and understanding and show support for individuals and teams to fulfil their potential. We developed a series of initiatives to deliver this work:

We undertook a culture survey to understand where we needed to develop.

Alongside employees we developed and launched our new Mission, Vision and Values.

A new behaviours framework has been developed with employees and is being embedded across the organisation

We have achieved Investors in People accreditation and are working towards the developed level.

We have introduced the GROW coaching model to nurture employee development.

There is a range of leadership development course across all levels to support leaders and managers.

A new integrated induction programme is in place for all employees.

Our appraisal process has been realigned to reflect the new behaviours framework.

### **Outcome**

We have seen our staff survey responses in key areas increase showing our employees are more satisfied with the organisation.

Employees feel more cared for and supported by their managers and peers.

Reporting around clinical errors or unsafe practices is seen as fair and employees feel more secure in raising their concerns.

We have seen our sickness levels decrease on average, a trend that needs to continue to reach our 5% target.

From friends and family feedback, our emergency care service has seen its recommendation rise from 90% in 2013 to 98% in 2018.

Our patient transport service has, during the same period, seen its recommendation rise from 82% to 92%.

We have seen our complaints reduce from 732 in 2013 to 526 in 2018 and at the same time appreciations increase from 481 to 773.

By improving our culture we will benefit our patients through improved quality of care and an improved patient experience.

### **Conclusion**

In the 2018 Staff Survey we were the top ambulance service in 7 of the 10 key areas and our work to develop a compassionate leadership culture continues. We are reviewing our recognition and reward strategy to refresh and build on our existing initiatives. We are also implementing a new health and wellbeing strategy that will provide additional support for employees. In addition our focus will include implementing a consistent quality improvement approach to empower our employees to innovate and improve as part of their day to day roles.

Cultural change takes time and commitment to deliver with no single action as 'the' solution but by understanding the key areas where change is needed, the focus of any efforts can be directed to making a difference that employees can see. We are in a position where we are now able to develop new areas of focus to continue our cultural journey in particular looking at team identity, learning and development in the context of an ambulance service.

## **Early Identification of frailty in the Emergency department**

Call for Posters - Improvement Science Research

Amy Hassan

Royal Bournemouth & Christchurch Hospital- England

### **Background**

With the increase in demand across urgent and emergency care services, there is an inevitable impact on number of admissions, patient flow in emergency departments (ED) and across the hospital pathways. This is likely to have a negative impact on patient outcomes and experience and possible increase length of stay. At Royal Bournemouth Hospital the Older Persons medicine team wanted to improve quality, effectiveness and productivity across the frailty pathway in ED.

A quality improvement project was initiated by a OPAL clinical lead and this was supported by our older persons specialist nurse practitioner (NP) team and geriatricians. It allowed us to promote the importance of ensuring patients are seen by the right person, at the right time, in the right place. We looked at the implementation of a timely, holistic and multidisciplinary approach to our assessments and developed a comprehensive geriatric assessment (CGA) to be undertaken within 2 hours of attending ED.

### **Methods**

The overall aim was that all patients will have CGA commenced within 2 hours of attending hospital. Baseline measures verified that OPAL and NP team were not consistent in reaching this target and therefore initiated the need to carry out x3 Plan Do Study Acts (PDSA) cycles to test change which followed the principles of Quality Improvement methodology. The project was able to measure the following outcomes;

- Increase numbers of patients seen by a specialist frailty team
- Increase number of CGAs commenced within the 2-hour target
- Sustain a high percentage of admission avoidance rates
- Improved flow through ED from observations
- Improved quality of care for older patients
- Collaborative working with NP team and geriatrician

### **Outcome**

Following the completion of the PDSA cycles we successfully managed to reach our 2-hour target. We reduced the time for patients to be seen from 4hrs 54 mins to 2hrs 23 mins (which includes patient arriving out of hours and seen at 8am the following morning). By not including patients arriving out of hours in our data, patients were being reviewed on average within an hour.

We also looked at the impact on length of stay for those that were admitted with a CGA against those that were not seen and found that these patients had a significant reduction in days spent in hospital. Working closely with the NP team allowed us to share knowledge and skills and improve quality of care given to patients.

Further projects have since been completed looking at integrated working with our community teams in ED to support unnecessary admissions into hospital. These projects have been acknowledged by the trust and have impacted on further service development plans.

### **Conclusion**

Identifying frailty earlier in the pathway can have significant impact on quality, effectiveness and flow through our services. This project has shown the importance for the need of a specialist frailty team in ED providing timely, holistic assessments and intervention to our patients. Integrated working between health and social care is required to support unnecessary admissions into hospital. The older persons team in ED at Royal Bournemouth Hospital are continuing to improve and develop new ways of working with our community teams to provide the best care for our patients.



## **Analysing Engagement in the Surrey Crisis Resource Management (SCReaM) through Process Mapping**

### **Call for Posters - Improvement Science Research**

Andy Kermode, Soumen Sen, Suzi Lomax, Louisa Chrisman  
Royal Surrey County Hospital  
Nicola Davey  
Quality Improvement Clinic

#### **Background**

A major proportion of adverse events within the theatre environment are known to be due to human factors. These events have a negative impact on patients and staff. In addition, we know there are often omissions of key safety steps by staff when under stress, particularly during emergencies.

SCReaM is a safety initiative produced at the Royal Surrey County Hospital aimed at improving theatre team performance and patient safety, utilising an additional resource of emergency reference cards. It includes Human Factor and Crew Resource Management training for staff delivered by accredited CRM instructors from the aviation industry.

#### **Methods**

Whilst we currently provide human factors training, our aim is to improve the translation of training into specific behaviour change within the clinical environment. Whilst undertaking training, we will collect data to determine whether institutional factors have become a barrier to change in respect to staff engagement. We plan on utilising the support of SCReaM Champions to model behavioural change. Currently, we have ideas about potential useful interventions and target behaviours. Theatre staff were interviewed to determine why people weren't engaging with the process and this led us to create a process map of the patient journey through theatre to assess the variable engagement.

#### **Outcome**

Using a process map we identified possible changes including :

- Re-structuring prompt cards, to facilitate use in an emergency
- Re-assessing prompt card locations
- A review of the role of "ROC" in light of our assessment of cultural barriers to speaking up elicited from a cohort of cross-specialty staff

Measurement of true engagement is still a challenge.

Engagement with SCReaM, CRM and HF training has been positive however, with courses fully booked. Process measures have now been identified that can be collected easily and quickly through regularly weekly sampling to assess i) their use ii) the impact of their use in emergency situations.

#### **Conclusion**

With large projects which incorporate many different factors, taking a step back to assess the initial process, problem and barriers to change can be useful. This then allows greater creativity in finding solutions.

However, with large project in an institution, instigating change proves difficult.

# **Health and Social Care influences on Long Hospital Length of Stay (LOS): A Critical Realist Study in a large metropolitan hospital**

Call for Posters - Improvement Science Research

Bahare Moradi, Greg Fairbrother

Royal Prince Alfred Hospital- Sydney Local Health District

John Eastwood

Community Health- Sydney Local Health District

Roelof Ettema

Utrecht University | UU · Julius Centre for Health Sciences and Primary Care

## **Background**

Theory-driven design of integrated care interventions requires that research first be undertaken of the pre-existing system performance and factors that might be amenable to improvement. One indicator of health and social care system performance is hospital length of stay (LOS). LOS is one of the single most important indicators of hospital performance and health care delivery. LOS is an important measure of resource utilization with strong associations between LOS and hospital costs.

LOS not only evaluates bed management and the efficiency of hospital internal systems but also the performance of pre-admission and post-discharge community-based health and social care systems. The study of long hospital LOS should therefore also examine the impact, and potential for modification, of complex health and social care, service, policy and system factors.

## **Methods**

Critical realism will provide the methodological underpinning for this mixed method study. Critical realism seeks to understand the underlying mechanisms and structures that are generating the observed phenomenon. The study will use a concurrent triangulated design that will contribute to explanatory theory building and subsequent design of interventions. The quantitative study will use longitudinal administrative data from the study hospital long length of stay committee and supporting health district electronic medical records. Study variables will include: LOS, diagnosis and procedures, patient demographics, and various referral and pre and post discharge parameters. Statistical analysis will use exploratory data analysis, regression and time-trend methods. The qualitative study will use critical realist interview methods, purposeful selection of key staff and patients, and realist grounded theory approaches to analysis and development of realist theoretical propositions.

## **Outcome**

Patients referred to the LOS committee from January 2017 until June 2018 were studied in the first part of the research. In total 69 patients were reviewed. Quantitative analysis will be used to concurrently to inform the qualitative interview questions. The research team will identify underlying structures and mechanisms contributing to long LOS and develop realist MCO theoretical propositions in the form mechanism (M), context (C), Outcome (O).

The findings from the quantitative part of the study confirm some variables were found to have a measurable association with LOS & Extra days. The extra days of inpatient stay for each case were driven by varying constellations of factors. Classic determinants of extra days of inpatient stay were not independently predictive of extra days utilised.

## **Conclusion**

The research team will demonstrate the use of critical realist research methods to study health and social care factors impacting on hospital LOS. The findings will be used to develop realist theoretical propositions that can be used to design service, policy and system-wide interventions.

The research team identified the top five items for action at Royal Prince Alfred Hospital through the Whole of Health Committee. The identified items for further action are

- Review and consolidate resources for patients under 65y
- Collaboration with Primary Health Network/ Community Health
- Pre-admission clinic
- Multiple presentations

- Rehabilitation facilities

These top five findings are taken to consideration for further action by the Whole of Health Committee at Royal Prince Alfred Hospital.

## **Exploring clinician preferences for the clinical adoption of an instrumented insole**

Call for Posters - Improvement Science Research

Denise Lin, Alison McGregor

Department of Surgery and Cancer, Imperial College London, London, UK

Enrica Papi

Department of Bioengineering, Imperial College London, London, UK

### **Background**

Osteoarthritis (OA) is one of the most common long-term musculoskeletal diseases, cause of pain and functional disability. Novel, portable wearable technologies can enhance current tools of rehabilitation and daily monitoring of physical activity. To enhance translation into clinical context, patient and clinicians' preferences have been previously explored to determine views and criteria of users for wearable technologies. However, the ambiguity of previously obtained clinician preferences lacks the definitive feedback required to improve the design of a specific tool. Within our group, we developed a smart, flexible, pressure-sensing insole, named 'Flexifoot'. Our aims were to explore clinicians' preferences for Flexifoot use and to identify specific parameters to be measured by the tool to foster improvements, and to enhance OA patient care. The study was conducted in a University setting; clinicians practiced amongst private and National Health Service settings within England.

### **Methods**

Clinicians are key users of wearable technologies, and can provide appropriate feedback for successful clinical implementation of Flexifoot. 30 clinicians were interviewed (11 physiotherapists, 11 orthopaedic surgeons, 5 general practitioners and 3 podiatrists). Clinicians that had previously or currently worked for the Imperial College Healthcare National Health Service (NHS) Trust were invited via telephone and email invitations to partake in our study. Interviews occurred until data saturation occurred. In-depth, semi-structured interviews gave rise to clinicians' suggestions to optimise its role alongside current strategies. The interview questions highlighted Flexifoot's clinical influence, specific measurements, data presentation preferences, and gave scope for feedback and improvement. Open-ended questions prompted clinicians to explore perspectives regarding its relevance in clinical practice, and responses were analysed using inductive analysis.

### **Outcome**

This study arose from previous work where patients highlighted that their views were not considered in the design of novel wearable devices, thereby limiting uptake and translation. This study directly focused on care practitioners' preferences and requirements for future improvement of technologies. Clinicians' views gave rise to detailed suggestions to optimise the device's role alongside current strategies in patient care. Responses revealed four main themes: use, data presentation, barriers to use, and future development. All clinicians interviewed considered Flexifoot to be a useful tool that could be used in adjunction to current approaches, in a long-term, follow-up setting to support and improve patient care. Participants supported the use of novel devices for feedback for rehabilitation, screening and evaluation of treatment progress/success purposes. The design of future wearable technologies should address challenges of cost, infection control and time.

### **Conclusion**

This was the first qualitative study to specifically refer to implementing the use of an in-house smart, flexible, pressure-sensing insole tool into clinical practice for patients with OA. All clinicians regarded Flexifoot to be useful for the care and management of patients in adjunction to current methods, for OA or other conditions in clinical settings. The clinicians and patients must collaborate to optimise the use of Flexifoot for the long-term disease monitoring of disease. The clinicians had a varied level of experience and familiarity of wearable technologies between them, influencing their perspectives. Findings that emerged from this study can be translated to other similar technologies to promote their clinical uptake and foster new developments. The role of Flexifoot should be tailored carefully on a case-by-case basis. The replication of problems between devices implies a necessity for new approaches in encouraging patients' compliance and appeal for novel strategies.

# **The perceived benefits and expected challenges of adopting and implementing Lean Six Sigma methodology in hospitals in Saudi Arabia**

Call for Posters - Improvement Science Research

Dr. Mahmoud Radwan

School of Management - Leicester University - United Kingdom

Royal Commission Health Services Program - Saudi Arabia

## **Background**

Despite the rapidly increasing interest in Lean Six Sigma as a quality improvement methodology seen in many manufacturing and service sectors, there is a wide consensus that Lean Six Sigma implementation in healthcare is still in its infancy stage. Lean Six Sigma implementation is less established in developing countries compared to developed countries and in healthcare compared to other sectors. Studying Lean Six Sigma in healthcare in Saudi Arabia as an example of developing countries has been inviting due to lack of previous studies or resources. The target group includes healthcare leaders and quality professionals working in Saudi healthcare organizations representing the three main sectors forming the Saudi healthcare system which are the Ministry of Health (MOH), governmental agencies other than MOH and the private sector.

## **Methods**

The study is based on quantitative approach through a structured self-administered questionnaire including mainly closed end questions and minimal number of open end questions with an aim to collect empirical data which can be statistically analyzed. It consists of sections addressing several domains like Lean Six Sigma benefits, tools, challenges and management role after the first section collecting basic data about the respondents. The five point Likert scale was used for rating questions. The results were compared with the results of similar surveys found in literature. The questionnaire has been directed through email to 322 invitees and the response rate was 23.5 percent which is satisfactory in such studies. Although the sample size is too small and its structure is not representative for the Saudi healthcare system which hinders any generalization for the research results or conclusions, but the study is still able to provide good insights to understand the researched topic.

## **Outcome**

The study has identified process improvement, waste reduction, lead/cycle time reduction and medical errors reduction as the main benefits while top management, understanding Lean Six Sigma tool and technique, effective communication and teamwork skills as the most crucial factors for success. Resistance to change and inability to sustain improvements are the most frequent and difficult challenges impeding Lean Six Sigma implementation in healthcare. Basic quality tools requiring no or simple statistical knowledge are more important and frequently used in healthcare compared to tools relying on advanced statistics. Conducting workshops with hand on training is essential as it is the most effective method for training. Problem prone is the most significant prioritization criterion used to select improvement projects which reflects the prevalent firefighting mentality in developing countries compared to quick wins as a top priority in developed countries.

## **Conclusion**

The evolution of quality management profession identity in healthcare is evident. The study has concluded that Lean Six Sigma is still in its evolution stage in healthcare especially in developing countries. The self-administered questionnaire developed in this study is a valuable tool which can be used for future studies. Shifting the focus of healthcare leaders from a problem-solving approach to a careful analysis mentality and changing the decision-making process from experience based to evidence based is a serious barrier impeding successful implementation of Lean Six Sigma in healthcare. Repeating the same self-administered questionnaire in several countries or using larger samples opens the door for future researches to compare the results obtained from different sectors or different countries. Future research studies can combine quantitative and qualitative approaches is highly recommended for better understanding of Lean Six Sigma implementation in healthcare.

# **Refusals to travel, patient empowerment and documentation improvement in the National Ambulance Service: A Quality Improvement Project**

Call for Posters - Improvement Science Research

Eamonn Byrne, Paul Gallen

National Ambulance Service, R.C.P.I., Ireland

Alan Watts

University Hospital of Limerick, R.C.P.I., Ireland

Sasha Selby

Graduate Entry Medical School, University College Limerick, Ireland

## **Background**

A recognised component of modern ambulance work is that a patient has the right to refuse treatment and or transport (RTT). According to international evidence patients not transported to hospital are twice as likely to result in death than patients discharged from an emergency department.

The National Ambulance Service (NAS) Medical Directorate has a guidance document to ensure that these persons are dealt with in a consistent manner.

Except for a trial Community paramedic scheme, NAS staff are only allowed to transport a patient to an Emergency Department and do not have the organizational permission or scope of practice to organize alternative care arrangements. The national rate of RTT increased from below 8% in 2012-2014, to 11.3% of calls (24,735) in 2017. An increase in serious patient incidents was also noted. Subsequent investigations suggested that there was a failure to record relevant clinical information.

## **Methods**

A retrospective analysis was conducted on a randomised selection of both paper and electronic Patient Care Reports (PCRs) from across the country on RTT calls closed between 1st Jan 2017 and 9th Nov 2017. Staff were engaged on how to achieve the stated aim of empowering patients to participate in a shared decision-making process by improving documentation quality from 63.5% to 90% of information dictated by the medical directorate guidance document in Mallow Ambulance Base for all patients that engaged with and subsequently refused to travel to hospital with the National Ambulance Service by 29th July 2018.

Three tests of changes using Plan-Do-Study-Act cycles were undertaken including: education sessions, an aide-memoire and a pilot refusal to treatment/travel form. A further sequential review took place of all refusals-to-travel dealt with by Mallow staff from 29 April to 29 July 2018. Patients who gave written permission were followed up with a semi-structured phone interview.

## **Outcome**

The national and regional peak of refusals to travel at shift changeover was not observed after our education session.

The quality of clinical information collected and recorded was improved from an average of 63.2% to 83.4% of required information.

Confounding factors included the introduction of an electronic PCR and an organisation wide audit of RTT documentation.

Just because information is recorded, it is difficult to determine what information is given to a patient to facilitate a shared decision-making model.

An examination of dispatch priorities was identified as an area for further study.

Although the quality of clinical information recorded was improved in Mallow NAS Ambulance Base and patient reports were positive, we had limited success in determining if our project had helped improve patient experience.

## **Conclusion**

Enhanced mechanisms of patient and staff engagement combined with an education program could bring about further and more widespread improvements.

This was an isolated project run in one semi-rural ambulance base. It forms the basis for a quality improvement initiative with national implications.

## **Quality Improvement in Primary Dental Services - Room for Improvement**

Call for Posters - Improvement Science Research

Emma O'Keefe, Niall McGoldrick

NHS Fife, Scotland

Irene Black

NHS Healthcare Improvement & NHS Education for Scotland

### **Background**

Over 90% of dental care is provided in the primary care setting. Dental care has the potential to cause harm as invasive procedures are carried out. Patients often present with complex medical histories and are on multiple medications which can impact on dental care. Work through the Scottish Patient Safety Programme (SPSP) has helped improve patient safety by reducing unwarranted variation, increasing shared decision making and improved collaborative working within the dental team and with other health care professionals. The wider dental team are key to identifying change ideas and putting systems in place to ensure personalized care is given using evidence based guidance. The two areas explored here concern medical histories and the management of patients with a high risk of caries.

### **Methods**

Within NHS Fife five practices were the 'early adopters' for the medical history work which commenced in January 2016 and ran over 15 months. Thirteen practices engaged with the high risk caries which focused on addressing unwarranted variation in the prescribing behaviour of dentists to promote effective and efficient use of high strength fluoride toothpaste. This work commenced in June 2018 and ran until January 2019. Care bundles were developed using evidence based guidance. Data collection forms were initially on paper and then, with training, completed using Excel, with charts automatically generated for use within individual practices. Tests of change included additional wording asking patients to bring a medication list on the SMS and putting alerts on different patient management systems for the medical histories bundle. Changes for the high caries risk bundle included working with software suppliers to put in risk category markers, developing oral care plans and prompt cards.

### **Outcome**

The aim statements had clear timelines and measured compliance with the care bundle. When the medical histories bundle was introduced we saw a rapidly improving overall compliance from 16% to approximately 85% at which point it stabilized. The high risk caries bundle compliance increased over the study period from a baseline of 10% and reached 90% at the final data point.

For both bundles the domain that was most difficult to change, which influenced the overall compliance, was the patient awareness; all other domains showed greater compliance.

Feedback from members of the dental team were generally positive. Quotes include 'the team had great ideas that the dentists had not considered' and 'we were concerned it would be seen as 'another thing to add to the to do list' but it was the total opposite the team were desperate to make changes'.

### **Conclusion**

The work has introduced quality improvement methodology into the primary care dental setting and this is being rolled out in a coordinated way through vocational training schemes. The development of care bundles, collecting data and the use of PDSA cycles have all helped embed the approach and create a safer environment, resulting in more reliable processes, reducing variation through greater engagement of both the patient and the dental team. The topics have highlighted the benefit of a more collaborative approach. Facilitated local learning events have offered a supportive environment to share ideas, raise concerns and find solutions collectively. Strong leadership at many levels has been essential to drive the work forward. Knowledge and skills should be established within undergraduate programmes to firmly embed patient safety and quality improvement in all curricula for the dental team.

## **Putting the Patient in Patient Safety Investigations: Barriers and Strategies for Involvement**

Call for Posters - Improvement Science Research

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Baltimore, MD, USA

### **Background**

After an adverse event, the involved patient has the potential to add a unique perspective and actionable information to the analysis. However, patients are rarely involved in patient safety investigations. Despite growing awareness of the value of the patient perspective in healthcare, there is little guidance on how to involve patients in incident investigations. The objectives of this study were to identify barriers to patient involvement in patient safety investigations and to propose strategies to overcome them.

### **Methods**

We reviewed literature on patients' active participation in patient safety investigations to help inform development of a framework that healthcare institutions could use to approach patients about a role in investigating an error made in their own care. PubMed, PSNet, and Web of Science were searched for the years 1990-2018. Search terms included: "patient empowerment", "patient involvement", "patient participation", "patient safety investigation", "root cause analysis", "error analysis".

### **Outcome**

Our search yielded limited literature on this topic. All of the six published papers (case reports, theoretical articles, qualitative study) reached similar conclusions, stressing the need for a transparent incident disclosure and increased involvement of patients in error investigations to complement providers' point of view. These papers served as the basis for constructing a framework for healthcare institutions to approach patients regarding their role in error investigation, predicated on the thoughtful disclosure of adverse events. The proposed framework has three levels (i.e., patient, clinician, and institutional level), and for each level the main barriers (e.g., patients' emotional needs, second victim burden, institutional policies) and potential strategies (e.g., valuing patient's unique perspective, easy access to support programs for clinicians, establishing non-judgmental work environments) to overcome them.

### **Conclusion**

Patient safety investigations are crucial in identifying, analyzing, and preventing medical errors. We anticipate that involving patients in patient safety investigations can make error analysis more effective since patients can report adverse events and identify unsafe conditions that healthcare providers may miss. Further, patients will feel they are being taken seriously and more empowered. We proposed a framework outlining specific paths to disclose the error, address the barriers and apply strategies to overcome these barriers. Future studies should test and validate the utility and effectiveness of this model. If it proves effective, it could be adapted for use in different medical settings.



## **Vulnerable electronic transitions for people with dementia**

Call for Posters - Improvement Science Research

Mai Britt Myhre, Gry Haakenstad

Centre for Professional Development and Research, Oslo, Norway

### **Background**

People with dementia should experience the best possible living in their own homes. In Oslo municipality, people with dementia emphasize their need for coping and ability to living on their own. Measures that can support living in home, before home care services, are the aim of national and municipal plans. Oslo is a city with large variations, and the fifteen districts have different age groups, life expectancy and immigration among others. The city's population also increases rapidly, and more residents live alone, compared with the rest of the country. It lives approx. 7,000-10,000 people with dementia in Oslo, and about half of these live in their own homes. It is necessary to strengthen the interaction between employees in the various levels of service to ensure that the needs of people with dementia are met in the best possible way throughout the care pathway.

### **Methods**

In this project we have investigated cooperation and communication between home care service, dementia coordinators, practitioners, health centers, hospitals and other emergency institutions relevant to the project areas. We have had interdisciplinary meetings where we look at how we can improve the electronic communication. To be able to map the transitions for people with dementia, we have completed the project conducted semi-structured interviews in groups and one to one of the various actors for what kind of information they receive in transitions, in total 45 respondents. The purpose of the study was to investigate what kind of information that followed the person with dementia in transitions that took place between the actors involved. The scope of the gap that we found in this study has its limitations caused by the chosen method. We have found a gap regarding standard and local procedures; however, we cannot draw conclusions about the severity of the studied gap.

### **Outcome**

The findings we found were insufficient information about the patient when transferred to hospital and within the home care services in the community. The use of IT and care message for information exchange for patients showed inadequate information about the person being admitted to hospital or other acute institution, but also when they are discharged. We found that day clinics in hospitals did not have access to electronic messages, only the doctors when sending discharge note, which we see as a weakness for a comprehensive patient care pathway. We observed that several actors are involved in prescribing medicines during a patient care pathway. In addition, our respondents reported that they did not receive information regarding the patients resources, their cognitively and physically function and what matters to them in daily living

### **Conclusion**

Constantly improving our services is important to us, because as a patient, you expect the health service to talk together and that information about me is correct no matter where in my health care you are (based on a patient statement). Lack of information can passivate and reduce patients' ability to take ownership of their own health in a balanced view of their own capabilities. The national guidelines for what is to be sent to the hospital do not contain comparative information, this is a major weakness in achieving a good dementia-friendly transition and this is a risk of treatment and diagnosis. Communication through care messages has led to increased contact, frequent clarifications and better quality of information exchanged. Transitions are vulnerable to people with dementia. It is therefore necessary that the transition contains the correct medical information, what resources they have, their cognitively and physically function and what matters to them in daily living

## **TSH3030 Creating a culture of Quality Improvement in a high secure psychiatric hospital**

Call for Posters - Improvement Science Research

Monica Merson, Dr Gordon Skilling  
The State Hospital

### **Background**

The State Hospital is a 120 bed high secure psychiatric hospital in South Lanarkshire, Scotland. It serves Scotland and Northern Ireland (a pop 7.2 million)

It provides psychiatric care and treatment in conditions of special security for mentally disordered men with dangerous, violent or criminal propensities.

Quality Improvement is a central aspect of the Clinical Quality Strategy,. Across the Hospital 9 staff members had been involved in QI training including ScIL and the Clinical Quality Fellowship. Building on the skills and experience developed from these national initiatives, and using the model for improvement, the QI Forum set out to embed a culture of QI in The State Hospital

### **Methods**

To embed a culture of QI, the Quality Improvement Forum agreed to implement an initiative, open to all, to encourage staff to focus quality improvement on projects that were important to them. TSH3030 was launched in October 2018, staff from all areas were invited to form teams and spend 30 minutes a day for 30 days on QI projects, throughout November 2018. Each team submitted an entry form and then were supported with QI methods and process by a QI mentor. The teams provided weekly updates which were viewed by the CEO and Directors and made visible to all staff on notice boards at the reception of the hospital. 'Team of the Week' awards were given over the four week period to teams who had progressed most over the week. At the end of the 30 days, teams produced final posters to highlight their QI projects and learning. Posters were judged and an awards event 'TSH QI Oscars' was held in December 2018 to recognise the achievements of teams.

### **Outcome**

TSH3030 was delivered across the whole system building QI capacity and capability

Twenty three teams registered and 21 completed the 4 week initiative, supported by 7 QI mentors

111 members of staff across all disciplines worked together to improve the quality of our services

Thirty patients were team members and played a key role in projects

QI methods and approaches became more accessible, teams used more than 20 different QI methods including process mapping, run charts, patients feedback surveys and fishbone analysis charts

Eight of the twenty three projects resulted in improved and meaningful therapeutic engagement

An evaluation of TSH3030 was completed 12 weeks after the initiative finished, 18 of the 23 teams completed the evaluation, from these:

All teams reported that TSH3030 had a positive impact on team working and QI culture

### **Conclusion**

TSH3030 provided a platform for QI methods and approaches to be used across the hospital from the canteen to the wards. It demonstrated that QI is an inclusive approach and can help to engage staff and patients to improve services. The 30 days provided a focus and momentum for QI and was manageable for most teams. All teams made progress with their projects, half of the projects continued after the initiative ended and many staff commented on using QI to start new projects. Setting a team name and aim helped teams to form and have a unique identity. Some teams found protecting time challenging. QI mentors helped team's motivation and developed QI skills

TSH3030 created a positive energy and enthusiasm for QI. It enabled and empowered staff to make a difference to what was important to them in service improvement. The QI Forum will support the projects that have continued and plan to run TSH3030 in 2019 building on learning and feedback from staff and patients

## **Reducing unnecessary motion of patients at Dartmouth General Hospital Pre-Operative Clinic**

Call for Posters - Improvement Science Research

Omar Elhag

Rch Kaplan, Saudi Arabia

Vanessa Sweet

Dartmouth General Hospital, Nova Scotia, Canada

Hilal Al Sidairi

Nova Scotia Health Authority, Canada

Colin Wilson

Clinical Quality Lead SE LHIN/ HQO, Canada

Kayla Churchill

Eastern Health, NL, Canada

### **Background**

This Process Improvement Exercise (PIE) project was done by 5 of healthcare professionals as a project in Queen's University "Master of Science in Healthcare Quality". Patients of Dartmouth General Hospital pre-op anesthesia clinic routinely express displeasure with the duration of their preoperative assessment and the amount of walking and navigating they need to do to complete all investigations and conduct all appointments. There is lack of seamless patient flow through the preoperative process leading to waste in the form of long waits and excess movement (retracing steps) through the preoperative process which resulted in productivity loss, particularly for those patients who have other responsibilities such as work, care giving, etc.

### **Methods**

We polled working staff and 17 patients seen in the pre-operative anesthesia clinic about complaints, comments and problems in the clinic. We relied on Lean Six Sigma model (DMAIC) to operationalize this intervention. This entailed defining the widely important goals which were reducing the walking distance and the whole time spent in the clinic. The analysis of these data was by utilizing tools such as PICK diagram, project prioritizer, critical to quality tree. We used the number of steps and minutes as lead measures to monitor the progression of this intervention. In addition, Quality Improvement Project Charter was used to improve the process with each patient visit. To control this intervention from disappearing in the whirlpool of the routine daily activity we engaged the whole team by a weekly huddle to review the quality improvement board which will reveal summarized information such as statistical control chart about this process.

### **Outcome**

Appointment times for patients seeing nursing and anesthesia were rescheduled to minimize gaps and waiting, and X-Rays were done as the last item in the pre-operative assessment.

We were able to increase the VAR of the clinic to 0.53 and also identify further areas for improvement to move us toward our goal of 0.7. We reduced the total time in clinic from 2h25min to 1h33min (36% reduction), reduced the average waiting time from 1h07min to 25min (63% reduction), and reduced the average step count from 944 (or ~660m) to 497 (or ~348m), a 47% reduction.

### **Conclusion**

Simple re-organization of the process with minimal human resources requirements resulted in a significant objective improvement in lead (step count, waiting times) and lag (VAR) measures, and improved the subjective experience of patients going through the pre-operative clinic. Further process improvement exercises within the clinic will enable us to continue moving closer to our target VAR of 0.7 and improving the overall patient experience. Key problems encountered during this process of change are patient scheduling, limited times to fully analyze the intervention and reducing wait times and behavioral changes that need to be addressed, particularly around the work flow of individual clinic staff.

# **Effectiveness of repeated two yearly inspections by CAP accreditation, at teaching hospital, Riyadh, Saudi Arabia**

Call for Posters - Improvement Science Research

Salma alhalafi

College of Medicine, King Saud University

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College of Public Health & Health Informatics, King Saud bin Abdul-Aziz University for health Sciences

## **Background**

Depending upon the institution and setting laboratory accreditation may have a variable impact on the outcomes. Saudi Arabia in the recent past has been relatively successful to implement hospital accreditation in both private and governmental health care organizations. This study performed to evaluate the effectiveness of two yearly inspections by College of American Pathologist (CAP) accreditation on laboratory at a teaching hospital in Riyadh, Saudi Arabia.

## **Methods**

Incomplete or lack of response to the CAP requirements was regarded as a deficiency of the concerned laboratory section. Detected deficiencies had classified into four categories: Test performance, General issue, Safety and working condition & Competency

The deficiencies reported by the inspectors from the different sections were entered in Excel sheets and analyzed. For of statistical analysis the comparisons between proportions were done by Chi Square test or Fisher's exact test

## **Outcome**

Comparison of assessment of inspection revealed a significant decrease in the deficiencies related to general issues, safety and working conditions, and competency after the accreditation. However, deficiencies related to test performance increased. These variations are also found to be dependent on expert carrying assessment and kind of checklist used for inspections.

## **Conclusion**

This study reveals important results process of a laboratory accreditation. These results can inform policy actions that can help hospitals make important policy adjustments to ensure they maximize on positive outcomes of accreditation.

# RELIABILITY OF THE "IHI GLOBAL TRIGGER TOOL" TO ESTIMATE OCCURRENCE OF ADVERSE EVENTS IN ADULT INPATIENTS IN A PUBLIC HOSPITAL IN BRAZIL

Call for Posters - Improvement Science Research

Sara Monteiro de Moraes, Natália Mansur Pimentel Figueiredo, Thais Novaes Costa de Almeida, Regina de Oliveira Benedito, Teresa Cristina de Abreu Ferrari  
Universidade Federal de Minas Gerais, Brazil  
Alline Maria Rezende Beleigoli  
University of Adelaide, Flinders University, Australia

## Background

Patient safety is a critical component in providing quality health assistance. Its improvement depends on the ability to understand frequency and types of adverse events (AE), in order to prioritize actions to improve the structure of the care system. Valid, reproducible, cost-effective and applicable measurement strategies are needed in different contexts of care settings and resource availability. The Institute for Healthcare Improvement Global Trigger Tool (GTT), a methodology of retrospective chart review based on the search for triggers, proposes the estimation of the occurrence of AE by a simple, cheap and easy to execute method. In Brazil, some institutions adopt it as one of the strategies for risk management, however, no studies were found that evaluated its reliability. Objectives of this study are to adapt the GTT for use in a public hospital in Brazil, to evaluate its reliability and to compare the performance of nurses and medical students as primary reviewers.

## Methods

The research was performed in a large, public university hospital in Belo Horizonte, Brazil. Few adaptations in terms and drugs most frequently used in the hospital were made in the GTT-IHI Worksheet. A team of trained reviewers, consisting of four primary reviewers - two medical academics and two experienced nurses - and two medical reviewers, applied the tool in a random sample of 220 admissions occurred in October 2016. Reliability among reviewers was assessed per inter-examiner agreement and Kappa coefficient for the following combinations of reviewers: academic-academic, nurse-nurse, academic pair-nurse pair, academic pair-doctor, and nurse pair-doctor. The outcomes of interest were identification of the adverse event and its level of severity of harm. The data were analyzed considering as units of study: (1) hospitalization; (2) all possibilities of agreement (identification of each event individually added to hospitalizations without events).

## Outcome

We identified 199 AE in 90 admissions (40.9%) with 76.1 AE/1,000 patient-days and 90.5 AE/100 admissions. Kappa (K) values differed substantially between the two study units and the two outcomes studied, with better results for AE identification using the study unit admission (K 0.41 - 0.76) and for category of harm using the unit of study all possibilities of agreement (K 0.43 - 0.77). There was no significant difference between the performance of the student pair and the nurse pair as primary reviewers in any of the analyses.

## Conclusion

This study innovates by presenting reliability analysis that considered all possibilities of agreement, and not only AE presence or absence in an admission or aggregated data. This approach addresses AE individually and allows recognition of most frequent types, harm to the patient and possible factors involved, generating data to support elaboration and implementation of actions that target patient safety improvement. The overall moderate inter-rater reliability found for GTT is an important step in investigating the utility of the instrument for generating patient safety and quality of care data and indicators applicable to Brazilian public hospitals. The reliability of the method does not differ between medical students or nurses as primary reviewers; this is relevant due to the limiting role of allocation of human resources as reviewers in GTT implementation into practice, particularly in the context of professional deficit, which is common in Brazilian public hospitals.

## **Early Identification of Delirium and Falls Reduction on a Ward - A Quality Improvement Approach**

Call for Posters - Improvement Science Research

Sue Menzies, Carol Wright, Alyson Harrison  
NHS Highland Scotland

### **Background**

Royal Northern Infirmary, Inverness is a GP led Community Hospital supporting elderly rehabilitation. It comprises 30 beds. The patient group is predominantly over 65 years of age.

In January 2018 the wards introduced Value Management to support their quality improvement work. They aimed to reduce falls to less than 9 per month. They had successfully introduced Scottish Patient Safety Programme falls bundles but continued improvement had stalled. The Charge Nurse recognised the need to test further change ideas. She highlighted with her team that older people are at significant risk of developing delirium. Delirium is an acute brain injury which is preventable and detectable at an early stage. Evidence shows that it is a high indicator of falls. If not recognized and managed early it can have a major impact on patients, families and NHS. This improvement project was led by the Charge Nurse and Associate Lead Nurse along with the nursing team and Quality Improvement Practitioner.

### **Methods**

Adopted model for improvement, changes tested using PDSA cycles. The project started with 2 month preparation to understand the problem and provide training followed by 5 months of PDSA cycles to test and introduce new processes. Progress was reviewed weekly at value management report outs and displayed on visual management board.

Local review of care plans provided baseline evidence that recognition and management of delirium could be improved. Staff were engaged with a survey, training, process mapping.

Changes

- Develop and implement an education plan for nursing staff
- Implement a standardised approach to recognition and management of delirium
- Test the use of "SQID" the single question to identify delirium
- Use the daily team huddle as a forum to have a delirium conversation and ask the SQID question
- Test use of the 4AT assessment tool on patients identified as SQID +ve
- Identify and test elements of a delirium bundle to achieve optimum management and reliability

### **Outcome**

- In first 5 months of the project 41 people were identified and potentially prevented from developing delirium
- Falls reduced from a median of 9 to 3 per month
- Staff feedback positive outcomes relating to patient care and improved confidence in identification and management of delirium

By getting delirium management right we can have major effects on patient and family experience, length of stay in hospital, pressure ulcers, falls and potentially mortality.

### **Conclusion**

Enhanced team moral. Staff felt involved and valued in improvement work which was reflected positively by improved patient outcomes.

The reduction in delirium and subsequently falls has significant financial implications for health care systems. NHS Improvement cost in-patient falls at £2,600 each. Reduction of 6 falls per month equates to £187,200 per year.

Problems encountered

- Lack of understanding of delirium and QI methodology caused initial delays
- A period of staffing shortage impacted on capacity to participate in change
- Early testing identified the daily huddle was variable and unreliable

Main message

- The use of QI methodology provided a constructive means to facilitate change and overcome resistance
- Through owning the process staff accommodated the application of QI methods and generated an appetite for continuous improvement
- Through value management, use of visual displays and weekly report outs engagement and momentum were sustained

# **Improving the care of patients with dementia through the introduction of a new patient profile**

Call for Posters - Person and Family Centred Care

Catherine Lowe, Liz Smillie

Northampton General Hospital NHS Trust, United Kingdom

## **Background**

Northampton General Hospital (NGH) is a district general hospital that provides general acute services to a population of 380,000. The use of a patient profile has been available at NGH since 2015. An audit was conducted to establish the use of tools already in place for patients with dementia at NGH to inform where the focus of the project was required. This highlighted very low completion rates of the hospital's patient profile for people with dementia and the need to improve this was raised. Patients' needs were missed in relation to information that will aid their appetite, compliance of care and their general day to day experience.

Feedback from staff at the hospital highlighted that the present profile was not user friendly and staff were unsure how to access it or who should complete it. Carers were unaware of the tool altogether. The aim of this project was to improve the completion rate of dementia patient profiles on the elderly medical wards by 50% by September 2018.

## **Methods**

The main focus of this project was re-designing the profile to ensure it was accessible and user friendly.

PDSA 1: The profile was redesigned using the 'This is Me' form by the Alzheimer's Society. The hospital butterfly used to identify our patients with dementia was included as a clear indicator for who this tool could benefit. Feedback was collected and a final draft produced.

PDSA 2: The profile was piloted in the Emergency department (ED) for four weeks. Questionnaires were completed by staff and visitors to collect further feedback on the profile and ease of use. The profiles were completed and followed patients through the hospital.

PDSA 3: Final changes made to the profile following feedback from the trial, before the document was ratified for use across the hospital.

PDSA 4: Profile rolled out to all inpatient adult wards for use, alongside Trustwide communication to inform the change.

## **Outcome**

Dementia patients with a complete patient profile increased from 19% to 64% Trustwide, with the elderly wards increasing from 14% to 72%.

Staff commented that they feel more able to interact and care for this patient group using the information these documents provide. It is anticipated that this will improve carers experience as they are included in identifying needs and feel that staff are seeing their loved one on a more personal level.

The potential impact of using a person centred care tool include:

- Reducing falls risk
- Reducing risk of poor food and fluid intake
- Promoting independence
- Reducing the chance of challenging behaviours
- Reduced hospital stay
- Reduced risk of loss of skills that can result in placement on discharge from a home admission.

Following the initial rollout a drop in compliance was recorded, however an improvement in patient profiles completed from the initial baseline is still evident. Once embedded we anticipate further improvement.

## **Conclusion**

The benefits to patient care when completing these tools cannot be objectively measured due to the amount of influencing factors around a person with dementia's care however the feedback centres on staff feeling better able to interact and care for this patient group by using the information these documents provide.



There were no obstacles in implementing a redesigned profile across the hospital however in the work that will continue to embed this change and improve practice there will be challenges in ensuring staff know where to access these and are proactive to ask carers to complete them. The management of where and how these follow a patient will also be a challenge that will need addressing. The tool itself is the simple part of this project and so it is important to not re-invent the wheel and keep things simple. The ongoing embedment of this project is what will now be the ongoing focus.

## **Improving the use of the Integrated Palliative care Outcome Scale in a Hospital Palliative Care Setting**

### **Call for Posters - Person and Family Centred Care**

Catriona Grant, Professor Peter Davey  
University of Dundee, Scotland  
Dr Fiona McFatter, Dr Deans Buchanan  
NHS Tayside Hospital Palliative Care Team, Scotland

#### **Background**

Patient Reported Outcome Measures (PROMs) can facilitate person centred care by helping identify unmet patient needs, including physical symptoms, as well as psychological, social and spiritual needs. They are a valuable indicator of service quality. NHS Tayside Palliative Care Services have committed to implement the Integrated Palliative care Outcome Scale (IPOS) (a validated PROM tool) into routine clinical assessment. Although beneficial, challenges emerged in integrating the IPOS into the acute palliative care unit in Ninewells hospital. The team recognised a need to develop new strategies to incorporate this tool into routine work.

#### **Methods**

PDSA methodology was used to test strategies to optimise the uptake of the IPOS. Five iterative cycles included: incorporating IPOS onto electronic patient records, staff discussion of IPOS in morning handover, developing a patient information leaflet, hosting an education and feedback session and piloting a nurse-led IPOS process. In order to understand the barriers and facilitators to implementing PROMS, we conducted a staff questionnaire alongside informal staff discussions and non-participant observation. The Systems Engineering Initiative for Patient Safety (SEIPS) model guided analysis of the IPOS work system.

#### **Outcome**

The specific aim within Ninewells Hospital was to ensure that all patients referred or admitted for palliative care are considered to complete the IPOS (3-day recall, patient version) and that all patients capable of performing an initial IPOS are considered to complete a repeat IPOS. The IPOS allows us to provide a safe, effective, person-centred service in line with the 2020 vision. Whilst everyone shares this vision, this project aims to help us understand the smaller yet cumulatively significant barriers to implementing person-centred care.

#### **Conclusion**

This quality improvement project resulted in the following outcomes:

An increase from 60% to 100% of patients considered for IPOS upon first review by the HPCT following implementation of each PDSA cycle

An increase from 0% to 50% of patients performing a repeat IPOS within 1 week of initial IPOS through incorporating the IPOS onto patient electronic notes;

Improved staff satisfaction following development of a nurse led approach to IPOS use in the acute palliative care unit.

Barriers to integration of the IPOS included time constraints, additional staff work pressures and organisational complexity of introducing a new assessment tool.

Facilitators to uptake included staff involvement in IPOS feedback session, diffusion of information to all key stakeholders and raising the profile of IPOS through clinical leadership.

## **Understanding what matters to patients in the critical care environment**

Call for Posters - Person and Family Centred Care

Christine Connelly

NHS Greater Glasgow and Clyde Scotland

### **Background**

This project took place in a 20 bedded critical care unit. We have 119 trained nurses and 14 consultants. The unit admits both high dependency and intensive care patients from both a medical and surgical background.

Critical Care Units look after the sickest patients in the hospital. These patients require a high level of complex care. Due to this critical care staff can often work in a task orientated fashion, rather than in a person centred manner. We wanted to improve our focus on person centred care. We believed this would improve patient and staff satisfaction and wellbeing.

### **Methods**

We aimed to have 95% of patients asked what mattered to them, with goals actioned, on a daily basis. We collected data from our electronic charts. We explored whether patients had been asked 'What mattered to you?' on a daily basis. We also measured whether any requests regarding this had been actioned.

At the end of every safety brief in the critical care unit (these happen once per shift) the team discussed and focussed on how best to undertake this project. These discussions included: when and how to have these discussion most effectively with patients. Staff also discussed how to streamline the process for documenting this in patient's notes to ensure reliable data collection.

Small group education sessions with staff were also held. These sessions focussed on the importance of this approach within the critical care environment. It was also crucial to understand how the change process would be non-threatening to staff and ensure they were engaged with the process.

### **Outcome**

The biggest and most important impact of this change to practice was that the care provided on the unit was no longer task orientated and had switched to shared decision making and patient centred care.

We thought (the team) we were doing everything for our patients, by delivering the vital care which we often deliver in this complex environment. However, there was a mismatch between staff and patients and priorities.

This project has realigned the focus on the patient experience by undertaking a simple activity with patients.

### **Conclusion**

We were able to make the environment more comfortable for patients based directly on feedback. We highlighted needs and bought items for the unit based on what our patients wanted i.e fans and duvets. This project has realigned the focus on the patient experience by undertaking a simple activity with patients.

Accurate documentation about changes and their impact is crucial. Clearer documentation about the impact of changes would be kept.

By engaging patients and staff in the project, we have learnt that the small changes you make in a project are often the most effective.

Be bold, sometimes things may seem more difficult, or indeed may seem infeasible. These are often the tests of change that are the most effective.

Understanding what matters to the staff is also crucial. By improving the patient experience, you will often improve staff morale and wellbeing.

## **Building on the best in palliative and end of life care**

Call for Posters - Person and Family Centred Care

Claire Henry MBE, Dr Michelle Barclay, Anita Hayes  
Hospice UK UK

### **Background**

Research in 2017 estimated that the number of people needing palliative care is set to increase by 42% by 2040 with at least 160,000 more people each year likely to require services for pain management of chronic illnesses as well as end-of-life care at hospitals, hospices, and at home. The impact of co-morbidities, older age survival, new treatments and technology will all place significant pressure on the health and care system to deliver more effective, efficient and compassionate services while at the same time acknowledging the importance of communities and carers in supporting a whole system model for palliative and end of life care. Education and training and supporting the workforce will be vital if we are to meet future needs and are one of the six foundations of the Ambitions for Palliative and End of Life Care.

### **Methods**

Building on the best was a 24-month partnership quality improvement programme delivered by Hospice UK (funded by Macmillan Cancer Support) aimed at improving quality of palliative and end of life care in acute hospitals. Using a flexible collaborative methodology, 10 teams in England and three teams in Scotland (supported by the Scottish Partnership for Palliative Care) worked in alignment with their local priorities, within 4 improvement areas., future care planning in outpatients, shared decision making, communication at handover and pain and symptom management

The theory of change behind the programme a Logic Model, highlighted that by identifying the needs of staff to enable them to provide patients with quality EoLC, the right interventions can be put in place that will support delivery of quality care focused on patient centred outcomes and efficient resource utilisation by a health and care team and system that is empowered to work with patients and carers

### **Outcome**

By using a range of activities targeting different audiences but with a single objective, was identified as one of the factors that contribute to delivering successful improvements by the independent evaluation of the programme carried out by Whole Systems Partnership. In addition, the evaluation provides anecdotal evidence that these interventions have had a beneficial effect on the perceived importance of palliative and EoLC within the whole system as well as some evidence of improvements in processes relating to recording of needs in some sites through relatively simple changes has had an impact. The community of practice was especially important in having a positive impact on improvement

### **Conclusion**

While it is too early to demonstrate the impact of these interventions on patient and carer experience, the evidence collected to date goes some way to support the theory of change for the programme: the right interventions can support the delivery of quality care, focused on patients centred outcomes and efficient resource utilisation, by a health and care team and system that is empowered to work with patients and carers. Ultimately, Building on the Best to improve the quality, experience and outcomes for patients, and their carers, at the end of their lives in acute hospitals.

The evaluation concluded that the programme had also been successful in creating a platform for change. The community of practice continues to meet monthly and this provides an ongoing exchange for peer to peer learning and knowledge transfer.

## **Where patients newly diagnosed with prostate/breast cancer, and their partners, look for information and they judge its trustworthiness**

Call for Posters - Person and Family Centred Care

David Matheson

Faculty of Education, Health and Well-being, University of Wolverhampton, UK

Catherine Matheson-Monnet

Centre for Implementation Science, Faculty of Health Sciences, University of Southampton, UK

### **Background**

Newly diagnosed patients and their partners often turn first to “Dr Google” which presents them with a panoply of diverse results, ranging from articles in peer-reviewed journals, through media reports, to outright quackery. The challenge is to ascertain the eventual impact on these searches on the choice of treatment made.

### **Methods**

We are planning a large-scale survey, collecting both quantitative and qualitative data, supplemented by semi-structured interviews and focus groups with patients and partners who have travelled the breast or prostate cancer journey. Given the epidemiological similarities between early/locally-advanced breast cancer and prostate cancer, breast and cancer patients [and partners] are well suited to being compared.

### **Outcome**

We seek to analyse the information-seeking behaviours in patients diagnosed with early/locally advanced prostate or breast cancer, and their partners. We anticipate confirmation of our anecdotal findings but with respect to both cancers.

### **Conclusion**

The work is in a very early stage and we cannot as yet report on effects. We have the challenge of recruiting sufficient numbers of patients and partners for each cancer.

## **Creating Collaboration: The Positive Effects of a Hospitalist-Steered Patient-Centered Multi-Disciplinary Partnership**

Call for Posters - Person and Family Centred Care

Dhaval Desai, MD

Emory Saint Joseph's Hospital, Emory Healthcare; USA

### **Background**

To be a successful hospitalist, collaboration among the entire multi-disciplinary team is key. Emory Saint Joseph's Hospital, a large community-based Hospital in metro-Atlanta, launched a new Hospitalist Program in 2012. During the initial tenure, the Hospital frequently faced challenges and dysfunction related to poor patient satisfaction scores, prolonged length of stay (LOS), increased incidence of Hospital-acquired infections, and overall decreased staff satisfaction. To alleviate this, Structured Interdisciplinary Bedside Rounds (S.I.B.R.®) was launched on four primary hospitalist-led units between 2015 and 2016. The primary goal was to create a multidisciplinary partnership to ultimately improve the patient and staff experience, with long-term positive outcomes.

### **Methods**

The vision and need of structured multi-disciplinary bedside rounds was first presented to the Hospital Leadership Executive Team. Data was presented demonstrating opportunities for improvement on key hospital metrics. With partnership from the Physicians, Nursing Unit Directors, Care Coordination Department, and Pharmacy, the vision was discussed and fine-tuned at regular follow-up meetings prior to going live. Over a 12 month period, the Hospital Medicine team operationally changed their workflow to make certain Physician teams geographic to allow for 1 to 2 Physicians on the key multi-disciplinary units. Nurses also had to change their workflow also, and rely on the night-shift nurses to aid in organizing patient safety checklists. Case Managers, Social Workers, and Pharmacists solidified staffing plans to participate in this model.

### **Outcome**

There was a clear improvement in the LOS index and patient satisfaction scores related to Physicians. The multi-disciplinary relationship and structured rounds on these key four units have allowed a platform to discuss statuses and needs of the patient that otherwise could be inadvertently missed. Hospital-wide, improvement in the incidence of hospital-acquired conditions continues to be a key driver for improvement. The S.I.B.R.® process has allowed for reviewing daily of key safety measures including the presence of central lines, foley catheters, and reviewing compliance with VTE (venous thromboembolism) prevention. Each of the four units has a Physician Director to help steer the unit with real-time challenges from time management during rounds to variations in practice, which do tend to occur intermittently. The core Physician, Nursing, and multidisciplinary team members meet regularly to review data, and address solutions to real-time issues that arise with the process.

### **Conclusion**

The impact of launching this process and multi-disciplinary partnership has resulted in better patient outcomes, and a complete catalyst of culture and relationships between Hospital Medicine and the other Departments in the Hospital. Patients also continue to feel that there is a positive relationship with the care team, and their feedback is key to success. Just like other processes, variations in the practices do occur, and it is key to have constructive feedback to members of the team to allow for sustainability in real-time.

## **A Quality Improvement Project to reduce the time spent by neonatal jaundiced babies in the Paediatric Emergency Department**

Call for Posters - Person and Family Centred Care

Dr Libby Thomas, Dr Harriet Evans, Dr Siobhan Roche, Chloe Widdowson, Dr Fleur Cantle  
King's College Hospital, UK

### **Background**

This quality improvement project was conducted in the Paediatric Emergency Department (PED) of a large London teaching hospital. The team was comprised of PED doctors and nurses and focused on neonates with suspected jaundice.

All neonatal jaundiced babies (NJBs) in our locality are referred to the Paediatric Emergency Department (PED) for serum bilirubin and paediatrician review. There can be long frustrating waits to be seen, have bloods and await the results. We do not have transcutaneous bilirubinometers and our blood gas machine is not appropriately calibrated for neonatal bilirubins.

Also, NJB isolation in PED leads to cubicle blocking, which can significantly impact on other patients' lengths of stay and departmental flow. At best this leads to parental dissatisfaction and complaints, at worst this lead to delayed instigation of treatment for all patients involved.

### **Methods**

We audited suspected NJBs attendances over a three month period, looking at presenting numbers, duration of stay and causes for any delays and outcome.

We took the results and used change process mapping to explore potential solutions which were then discussed with key stakeholders in attempt to find common solutions.

Using 'The Model for Improvement' change methodology and PDSA cycles, initial attempts were made for NJBs to bypass the PED. When this failed, a PED pathway was developed and implemented by our multi-disciplinary team utilizing a NJB proforma to assess NJBs and enable capillary blood bilirubin testing with heel pricks at triage.

Staff were made aware of proposed changes via e-mails, dissemination in teaching and handover, and posters. The proforma was introduced once the heel-prick lancets were available. Microteaching armed the triage nurses with skills to use the proforma, assess the babies and take the bloods.

### **Outcome**

Change was measured though re-auditing NJB attendances using the same criteria as the original audit. Due to seasonal variation in PED attendances we used NJB attendances in June and July 2017 to act as the comparison samples to the June and July 2018 data.

We matched mean time to blood test and average length of stay for June and July 2017 and 2018. Whilst the median length of stay does not drop significantly, there is an obvious reduction in the maximum length of stay. This was further

highlighted by the subsequent statistical process control chart. These changes should improve the patient experience and reduce crowding in the PED.

### **Conclusion**

We learned that nurse-led assessment and bilirubin testing is feasible and reduces patients time in PED. We plan to extend this work so that nurses can instigate discharge home or referral to neonates negating the need for paediatricians to be involved in these babies care, and freeing their time up to treat other patients.

We still hope to acquire a transcutaneous bilirubinometer to further speed up the turn over and have future proofed our pathways and proforma for this.

## **Audit and re-audit of multidisciplinary management of patients identified with an increased falls-risk in a long stay psychogeriatric unit.**

Call for Posters - Person and Family Centred Care

Dr. Caitriona O'Flynn  
St. Columcille's Hospital, Dublin, Ireland  
Dr. Leonard Douglas, Dr. Ian Callanan  
St. Vincent's University Hospital, Ireland

### **Background**

This audit and re-audit was carried out in a long-stay psychiatric ward for patients aged 65 years and over, with the main purpose of evaluating whether assessment of patients' psychotropic medication use had been undertaken in relation to falls-risk, as per the the NICE falls-risk evaluation guidelines, with the end-goal of ensuring appropriate psychotropic prescribing in order to reduce the falls-risk in this population.

A secondary aim in the context of falls-risk was to audit osteoporotic fracture preventative measures undertaken within this patient group according to the 2012 NICE risk of fragility fracture guidelines.

### **Methods**

In an initial audit, patient records were searched for any record of psychopharmacy review in relation to falls-risk, psychotropic medication prescribed, a medication's falls-risk classification according to the British Geriatric Society's FallsSafe program, the amount of osteoporosis prevention medications prescribed per patient as well as details needed to calculate individual FRAX osteoporotic fracture risk scores.

Following initial audit, a new field, 'psychopharmacy falls risk review', was added to the existing multidisciplinary team (MDT) review proforma document to ensure that for each patient the risk and benefit of treatment with psychotropic medication was discussed at MDT review going forward. The affiliated G.P. reviewed osteoporotic medications for patients with a high fracture-risk.

Intervention effect was assessed four months later by re-audit.

### **Outcome**

Initial audit showed that no review of a patient's psychotropic medication had been documented in relation to falls-risk. On re-audit, 63.3% of patients had undergone MDT review. The remaining patients were due for MDT review following this time period.

Initial audit showed 76% of patients were above FRAX fracture prevention treatment threshold. 23.8% of patients were receiving osteoporotic fracture prevention medication which rose to 63.2% at re-audit.

In the initial audit, patients were prescribed an average of 1.6 psychotropic medications associated with high risk of falls and 0.5 with a medium risk. On re-audit, this rose to 1.9 and 0.7 respectively.

A high level of Vitamin D deficiency was discovered (73% of patients tested) and was treated accordingly. No falls or fractures occurred in the four-month period after implementing changes and it is hoped that this intervention will continue to reduce risk of both into the future.

### **Conclusion**

Results indicate the benefit of developing a proactive policy in relation to a MDT approach as regards falls prevention by developing a systematic ongoing review of those patients identified with a high falls-risk including pharmacist input regarding psychotropic medication use.

A high proportion of patients received review, however, the average amount of high and moderate fall-risk medication prescribed rose in the re-audit, in part due to changes in overall patient profile due to death, the arrival new patients and moving patients between units audited.

Staff are now more aware of the falls-risk associated with medications and are given the opportunity to consider lower risk alternatives if possible.

A regular review of fracture risk will ensure improved fracture prevention. Fracture risk should decrease as osteoporotic preventative measures are implemented in a more structured manner.



## **Improving The Mealtime Experience for Patients In Critical Care**

Call for Posters - Person and Family Centred Care

Emma Monachello

NHS Greater Glasgow and Clyde ,Scotland

### **Background**

The work was done at Glasgow Royal Infirmary, Scotland, a tertiary referral acute care hospital. This project took place in a 20 bedded critical care unit. The unit admits both high dependency and intensive care patients from medical and surgical backgrounds. In critical care we provide many therapies to patients in a complex, challenging environment. Often the multidisciplinary team (MDT) are concerned with physiological problems and fundamental care such as appropriate nutrition is overlooked. Poor nutritional care has been linked to poor patient experience, longer length of stay and slower recovery time. This project aimed to achieve 95% reliability in the delivery of a mealtime bundle by 1st February 2019. Improving the patient experience during their hospital stay was also a key aim. The problem was assessed using patient and staff surveys, mealtime observations and nutrition audits. All aspects of the Mealtime Standard Operating Procedure were not delivered consistently.

### **Methods**

A team of interested healthcare staff was created. The process for change initially involved Quality Improvement methodology including a process map and a force field analysis. These were used to highlight main areas of concern during mealtimes and to create ideas amongst the group for tests of change. We ensured representation across all of the MDT including health care support workers and domestics. Data focused on 4 main areas of concern. These areas were used to identify changes to practice and a mealtime bundle was created which included:

- a) Identifying a mealtime coordinator on each shift.
- b) Using a whiteboard to communicate patient preferences and requirements.
- c) Protecting mealtimes from healthcare professionals, ensuring all non-essential care was not carried out during these times.
- d) Offering hand hygiene prior to meals.

Feedback was gathered from staff and patients following PDSA cycles and this happened throughout the 10 month period of the project running.

### **Outcome**

The main impact has been improving the mealtime experience for patients. Patient satisfaction was measured initially and has increased over time. Patients are no longer interrupted during mealtimes unless it is absolutely necessary. There is an increased awareness surrounding mealtimes and improved communication. The project has improved the delivery of nutritional care in the critical care. The mealtime bundle compliance has risen from 45% to 95% over the course of the project, with all 4 areas of the mealtime bundle increasing in compliance. The mealtime process in critical care now has a higher priority and it happens consistently and reliably every day.

### **Conclusion**

There was some staff resistance to change initially and some unwillingness to try something new. Reliable and consistent data collection that wasn't person dependent was also a problem.

Celebrate success but expect some setbacks. Small tests of change worked well, PDSA cycles were easier to manage and interpret if they were small. Patients were involved throughout the project and feedback from them changed the way we delivered mealtimes.

Involve all members of the MDT as they all have a different perspective and priority. Collecting data over time showed that changes were leading to improved compliance and increased satisfaction levels.

Displaying of the data and regular feedback helped to engage staff and ensure sustainability. Some of the change ideas we tried are now embedded which we are delighted about, proving that using QI methodology to implement change does work.

## **Patient, Caregiver, and Provider Perceptions of Care Before and After Implementation of a Multidisciplinary Lung Cancer Clinic**

Call for Posters - Person and Family Centred Care

Geneviève C Digby, Geordie Linford, Geordie Linford, Danielle Robinson, Scott Wakeham, Christopher JL Stone, Angela Coderre-Ball, Nancy Dalgarno, Rylan Egan, Andrew Robinson  
Queen's University, Canada

### **Background**

Context: Kingston Health Sciences Centre (KHSC) is an academic tertiary care hospital serving a primarily rural population of >500,000 in Ontario, Canada. The KHSC region serves 600 new lung cancer (LC) patients yearly, and approximately 60% of new LC diagnoses are made through the Lung Diagnostic Assessment Program (LDAP), a rapid assessment clinic.

Problem: LC is a complex and heterogeneous disease requiring the coordination of multiple healthcare professionals. We identified assessment and treatment delays of two weeks from LDAP assessment to oncology consultation.

### **Methods**

We implemented a weekly MDLCC involving Respiriologists, Medical Oncologists (MO), and Radiation Oncologists (RO) where patients with a new LC diagnosis are offered concurrent oncology consultation. Plan-Do-Study-Act (PDSA) improvement cycles included: a MDLCC pilot (2016); MDLCC launch (Feb 2017); group debrief to discuss lessons learnt (Apr 2017); a MDLCC retreat with all MDLCC physicians discussing improvement strategies (Jun 2017); increasing the clinic frequency to meet increasing demand (Sept 2017); and partnership with a community MO (Apr 2018). We conducted semi-structured interviews with patients and caregivers who received care in either the traditional or MDLCC model. We recruited participants by mail and phone. We identified 46 patients from the traditional model and 40 from MDLCC; 6 from each model participated. Eight physicians who provided care in both models were interviewed (2 Respiriologists, 2 MOs, and 4 ROs). Data was analyzed using thematic and comparative designs.

### **Outcome**

Four overarching themes emerged: communication and collaboration, efficiency, quality of care, and impact on patient outcomes. Patients in both models had positive impressions of their care, noted strong communication and collaboration among physicians, and reported receiving consistent and complete information. MDLCC patients reported increased convenience and a positive impact from having caregiver presence at appointments. Physicians reported perceived benefits from MDLCC including improved communication and collegiality, consistent information provided to patients, efficiency, and improved patient outcomes and satisfaction. Ongoing challenges to MDLCC include a lack of physical space for multidisciplinary review. Within 1.5 years of clinic implementation, all KHSC thoracic oncologists have participated in the MDLCC. Relentless efforts to standardize clinic templates, centralize scheduling, and routine in-person MDLCC case review have led to sustainability.

### **Conclusion**

Lessons Learnt include:

- Physician engagement was key to clinic success, buy-in and sustainability.
- Patients in both care models reported high satisfaction, raising the possibility of recall bias and highlighting the difficulties in comparing patient experience when only one model is experienced by the patient.
- The main patient and caregiver benefit to MDLCC was convenience of a concurrent care model that facilitated family participation.

Overall, this study adds important information to our understanding of the effects of changes in a multidisciplinary healthcare delivery model by directly studying those involved. We have demonstrated that transformation of a LC delivery model can occur rapidly if stakeholders are highly engaged in the change process.

## **Five Guide- A Quality Visual conversation to improve Caesarean section Recovery**

Call for Posters - Person and Family Centred Care

Janine McKnight-Cowan BEM Queens Nurse  
United Kingdom RCNFT

### **Background**

More than a quarter of all babies born in the United Kingdom are delivered by caesarean section (1) NICE guidelines in the UK suggest that general postnatal care of women who have had a caesarean section should be provided with; specific care related to recovery after their caesarean section, and care related to the management of other likely complications (2)

As healthcare professionals we are ideally placed to deliver health messages and explore what health information works better for patients and be more appropriate, more specifically, what is essential 'post-operative' information? (3)

This project demonstrates a gap in the rhetoric and reality of patient information to support women's recovery from a caesarean section. The project impact clearly identifies that 'Five Guide' used as a simple visual narrative is a cost-effective sustainable and clearer health promotional tool. The Five Guide Tool is a 3D narrative explanation, in which at any time, before or after caesarean section, can be used to support a woman, providing a consistent health message. This tool will assist the clinician to explain, visually, the reason behind 'the take thing easy' narrative. It does this by the simple 3D use of the clinician's own hand to help explain and create a visual anatomical picture of her own abdominal healing, and additional health promotion.

In a simple Plan-Do-Study-Act (PDSA), the findings clearly reflect a powerful set of results where improvement in public health care can be beneficial to health professionals, women and families.

### **Methods**

The project activity following submission to RCN meant a tight period was ahead of the project lead. With support from RCN mentor the PDSA cycle was implemented. Following consultation with Derbyshire Community Healthcare Services NHS Foundation Trust's (DCHS) research and Innovation team, it was agreed a service review at local level would be implemented.

To achieve the aims and objectives highlighted above, I carried out:

- A Patient experience survey
- Staff pre-training questionnaire
- 'Five Guide' training
- A reflective review questionnaire for staff, after delivery of Five Guide with women

This project was targeted to two south Derbyshire locality health visiting teams., which included a total of 15 health visitors. Once the team members and management understood the aims, the project was given full support by service leads.

Between September 2017 and November 2017, 15 respondent health visitors received a pre-training questionnaire and a visual training on Five Guide caesarean section surgery and recovery. Health visitors provided feedback to the project lead, including the patient experience on the service their patient had received. This also included client and staff comments following Five Guide Tool training and delivery. During this time, a total of 14 women (9 who had received emergency sections and 5 who had a planned section) provided feedback, including the information and the format of their education from the hospital or Midwife, if it had occurred. Women were also asked about which information were they most likely to remember following exposure to Five Guide Tool, as well as their opinions about it.

### **Outcome**

Outputs:

The PDSA tool was useful for documenting a test of change presumed by the project lead. Carrying out the test (Do) and observing and learning from the consequences (study) have determined the lessons learned (change). Outputs included:

All 15 Health Visitors had not received any specific training on how to care for women in the community following C-Section delivery.

- Only 2 Health visitors had either an obstetric/Midwifery clinical background. A total of 13 had no experience of the surgery or recovery impact.
- None of the 15 Health Visitors had ever seen the NHS Choices, or NICE guidelines for Recovering from a caesarean section information sheet.
- Levels of care offered to women varied from Universal care (low level) to Universal Plus care (Higher short-term care) following C-Section delivery. There is no current guideline to reflect care that should be offered to women.
- All 15 Health visitors documented Five Guide was a 'very effective and important tool they will continue to use with women recovering from C-section'. Comments included: "visual, always at hand"; "powerful and easy to remember"; "each time I now use it, it reminds me every woman needs to hear the same information!"
- Women were asked to compare the information they had received prior to the Health Visitor visit. One woman had no information prior to discharge, 2 had had verbal information but could not remember it. A total of 11 women felt that Five Guide had been the most beneficial information they had received. Comments include: 'I wish I had known this 12 days ago'; "each time she goes to try to Hoover, I remind her by holding up my hand, she has 5 layers healing!"

We had further results we were not expecting, these related to healthcare knowledge and skills.

This has resulted in a fully developed new training proforma. This is a competency based training that up skills clinicians in the health visiting role to consistently use Five Guide in practice. Up skilling all staff competencies as mandatory if in a role where they care for women who have had a caesarean section.

Actual benefits include patient safety, trust board assurance, Nursing competency standards and clinical effectiveness within role. Staff benefits give patient care, and safety assurance. Care pathways have been developed to support this care plan, specific for a woman recovering from invasive acute surgery.

This work has been submitted for further development with the Institute of Health Visiting. It is an innovative award winning development.

## Conclusion

Five Guide allows every health visitor despite their clinical experience to explore an effective consistent and sustainable approach to develop their public health communication skills and to enhance the patient and Health Visitor therapeutic relationship. As part of Nursing Midwifery Council's (NMC) Standard of professional registered and Specialist Community Public Health Nurse (SCPHN) training. A health visitor should be competent to deliver her nursing care, that is measurable against NMC standards, the innovation and its subsequent mandatory teaching pack and relevance to the code include:

- Prioritising people- All health visitors despite clinical background will be able to prioritise women who have had a caesarean section.
- Practicing effectively- All health visitors will receive mandatory Five Guide training and Sepsis awareness training
- Preserve safety- This innovation will give assurance to NHS Boards that staff are appropriately trained to care for surgically delivered women.
- Promoting professional trust- Women can feel empowered to trust the health visitor has the knowledge to keep them safe from harm.

Patient experience: All women who have a Caesarean section will receive Five Guide care plan. A consistent and visually sustainable health promotional coaching following the birth debrief at primary post birth visit. Being offered an enhanced level of care planning will ensure follow up visit before the 6-week post-natal visit. In line with Better Births and NICE Guidelines on Sepsis awareness.

My main message from what Five Guide does for 'Person and Family Care' is that we challenged the policy rhetoric and changed how carers and women could receive a 'gold standard' of caesarean care care., that remains consistent and sustainable and transferable to other organisations, communities and countries.

<https://www.england.nhs.uk/wp-content/uploads/2016/02/national-maternity-review-report.pdf>

<https://www.nice.org.uk/guidance/qs161>

## **Early Mobility within Paediatric Intensive Care: Breaking boundaries, challenging cultural norms**

Call for Posters - Person and Family Centred Care

Jenna Hills, Mark Davidson  
Royal Hospital for Children, Glasgow  
Sapna Kudchadkar  
Johns Hopkins Hospital, Baltimore

### **Background**

Early mobility (EM) in Intensive Care (ICU) helps to optimise functional recovery. Within the adult setting EM has been found to reduce length of stay, decrease number of ventilator days and prevent ICU Acquired Weakness (ICU-AW). Evidence within paediatrics is emerging to demonstrate EM is safe and sustainable. Paediatric Critical Care Units are beginning to adopt early mobilisation as part of care bundles to ensure patients receive high quality, evidence based care which can improve long term outcomes for PICU survivors. However, it is yet to be widely established as routine care within PICU. This may be due to perceived barriers to EM such as; safety concerns, lack of resources and low prioritisation by medical staff.

### **Methods**

Following the successful implementation of the first established EM QI intervention PICU Up! within Johns Hopkins (JH) Hospital in Baltimore, key learning objectives and educational resources were presented at the JH Critical Care Rehabilitation conference. PICU Up! followed a QI framework and a change management methodology which was translatable for the wider PICU community. This guidance was used to design an EM QI intervention delivered in the RHC Glasgow PICU. The aim of Move on Ventilation Early (MoVE) was to provide EM to all patients in PICU regardless of age or ability. Goals for MoVE included three activities for each patient each day, and initiation of activity within the first three days of admission. Monthly data was collected on 20 randomly selected patients to monitor the goals of MoVE as well as daily parental involvement.

### **Outcome**

Following implementation of the EM QI intervention at RHC Glasgow;  
90% of patients achieve three daily activities  
89% of patients start activity before their third day of admission to PICU  
95% achieve 2 out of 3 of their daily goals  
85% of patients have parents involved in their daily activities

The effect on families has been overwhelming positive, with feedback such as “MoVE has revolutionised our stay in hospital” and “I feel honoured to have been part of the process”. While MoVE was designed initially to run Monday-Friday the number of activities carried out on an average weekend day exceeds the number carried out on a weekday.

### **Conclusion**

The results exhibit an adoption of EM by the MDT staff including bedside nurses, and families. Both PICU Up! and MoVE were collaboratively designed with families and patients to deliver family and person centred care. They have demonstrated leadership for change within the PICU and these examples have encouraged the rise in interest across international paediatric intensive care centres. By utilising QI principles and encouraging shared ownership of MoVE a culture change had been effected within the PICU without adversity or recoil. PICU Up! and MoVE have shown with a robust MDT inclusive plan and team buy in, that EM can be effectively and timely delivered to PICU. Having achieved the initial goal of providing safe, sustainable and efficient EM; future objectives will be to investigate how EM affects the outcomes for the paediatric population. EM may prove to be the most significant shift in PICU culture in recent years.

## **Audit of Assessment of Functional Baseline in Emergency and Acute Medical Admissions**

Call for Posters - Person and Family Centred Care

Joanna Shak, Ilhaq Billy Masih  
Kettering General Hospital, UK

### **Background**

Kettering General Hospital NHS Foundation Trust is a busy 576 bed district general hospital in the United Kingdom. It serves 330,000 people across North Northamptonshire, South Leicestershire and Rutland. The Department of Acute Medicine manages approximately 18,000 acute medical admissions per year. The Royal College of Physicians (RCP) sets standards for clinical record keeping, and includes "Social Context". This includes functional baseline such as care needs and mobility. This is reflected by a template for functional assessment in the admission proforma at Kettering General Hospital. Despite this, completion is anecdotally variable, impacting clinical assessment and senior decision making on busy post-take ward rounds, resulting in delayed discharges.

This project aims to raise awareness and improve functional assessment in medical admissions.

### **Methods**

A cross-sectional study of 50 medical admission proformas were assessed for record of patient demographics and functional assessment. Results were presented in mortality and morbidity meetings, mandatory junior doctor training teaching sessions and nursing staff in acute medical wards. A mnemonic was suggested as a memory aid:

Home

Care needs

Instrumental ADLs

Cognition

Mobility

Personal ADLs

....How Can I Clerk More Patients.....

The audit was repeated two months later. The audit was also repeated in the Emergency Department in 181 adult admissions in a 24 hours period.

Feedback from juniors and trainees is discussion included:

"Doesn't help the diagnosis", "I did think about it", "Relevance in the fit and well", limited resources for information and a constant pressure to clerk faster.

### **Outcome**

In Acute Medicine, there was an overall improvement in recording of home situation, from 36/50 (72%) to 43/50 (86%,  $p=0.08$ ), care requirements from 15/50 (30%) to 27/50 (54%,  $p=0.01$ ), mobility from 16/50 (32%) to 33/50 (66%,  $p=0.0007$ ). baseline cognition from 1/5 (20%) to 2/8 (25%).

There was a lack of use of presentation specific functional markers through both collection periods. There were 25 presentations of shortness of breath, yet only 4 recorded exercise tolerance. 7 of 9 cases of reduced mobility recorded baseline function, 1 of 12 cases of delirium mentioned baseline cognition.

In Emergency Medicine, recording of baseline function was less consistent. Home situation was recorded in 47/181 (26%), care requirements in 51/181 (28%), mobility in 50/181 (28%). Those brought in by ambulance and aged >65 years showed more consistent recording.

### **Conclusion**

After education, there was an improvement in documentation of basic social information, improving compliance with the RCP standards and efficiency of conducting post take ward rounds. However, there remains a lack of habitual use of presentation specific functional markers.

Further educational intervention should therefore be aimed at emphasising the impact on deviation of functional baseline on holistic patient management and as an effective predictor of clinical outcome. A decline in exercise tolerance is a more reliable marker than C-reactive protein for severity of illness, and is certainly a major limiting factor to safe discharge.

Meanwhile, increased age and living alone are risk factors for increased length of admission. This audit against RCP standards has paved way for a focused effort on promoting presentation specific functional markers. This is important for effective history taking, discharge planning and ultimately, patient-centred care.

## **Intergenerational Practice - Improving outcomes for children and older adults**

Call for Posters - Person and Family Centred Care

Laura Haggarty

Care Inspectorate, Scotland

### **Background**

Through a Care Inspectorate national improvement programme, a specific piece of work was undertaken with Gargieston Early Childhood Centre (ECC) and Springhill Care Home, East Ayrshire. People in care homes can spend 80-90% of their day seated or lying down, affecting their physical, emotional and psychological health. Community partnership working and providing a wide range of learning opportunities and environments is fundamental to ECC's. Building on early work where observation of intergenerational sessions showed that whilst there were clear benefits, there were also many opportunities for learning, communicating, physical activity and relationship building on both sides that were not taken. The aim of the project was to take the concept of intergenerational practice and make fundamental changes to sessions to ensure opportunities for learning, physical activity and relationship building were maximised, improvements sustained and learning spread locally and nationally.

### **Methods**

Focussing on two central indicators of quality early years provision: children's 'wellbeing' and 'involvement', ECC staff identified which sessions and activities provided the best opportunities for deep level learning, explored where there were learning opportunities and adopted a PDSA approach to test out ideas. Resident's average physical activity level for the duration of each session was measured using ActivPAL activity trackers and change ideas were developed based on individuals' abilities or preferences. Bringing both sets of data together after every session, over an 8 month period when planning PDSA cycles, the impact on both generations was considered and therefore outcomes maximised. Care home residents and children are at the heart of this project and were involved and represented at every stage of change: a key principle of intergenerational practice.

### **Outcome**

Resident's activity levels during sessions improved and hand grip strength increased by an average of 12.5%, meaning they're ability to carry out day to day activities was improved.

Scoring >4 on the Leuven Wellbeing & Involvement Scale results in deep level learning. This project demonstrated opportunities for deep level learning were maximised with children consistently achieving a score of >4 after 2 key changes were adopted. Themes of language and children's perceptions of older adults changed over time demonstrating a greater understanding and respect of the older generation. The project led to the development of a model for intergenerational practice which as far as is known is not currently available. By using the model developed the improvements have been scaled up and implemented across other services/centres with a successful spread across the local partnership area with emerging positive outcomes for all.

### **Conclusion**

The learning and impact of this project has shown that adopting the model for improvement and truly working collaboratively can have a far greater impact on the outcomes for both generations which are more measurable, meaningful and importantly sustainable. Intergenerational practice and the significant positive outcomes from this project could and should be experienced in every community across Scotland.



## **InS:PIRE-ing Improvement: Redesigning care by listening to patients and setting personal goals**

Call for Posters - Person and Family Centred Care

Malcolm Daniel

Glasgow Royal Infirmary, NHSGGC, Scotland

Joanne McPeake

North Sector, NHS Greater Glasgow&Clyde, Scotland

Tara Quasim

Univeristy of Glasgow, Scotland

### **Background**

ICU survivors can struggle when discharged home. While they have recovered from the initial acute illness, they often continue to have significant physical, social and psychological problems in the months and years following hospital discharge. Follow-up in the format of standard outpatient appointments has been studied in randomised trials but has minimal impact on health quality.

We thought it would be possible to design something far better by listening to patients and their families.

Poster PF15

### **Methods**

Patient and Family Advisory Council established in GRI ICU in 2014. Listening to patient + families identified challenges they faced once at home.

InS:PIRE (Intensive Care Syndrome: Promoting Independence and/or Return to Employment) was designed. A 5-week multidisciplinary programme integrating healthcare, social care and peer support: the latter with patient & family volunteers.

To clarify patient + family's personal goals, we ask "What Matters to You?" Alignment of programme to individual patient needs helps improve health outcomes.

It runs in 1 room, everyone is together. This builds peer-support, aided by patient and family volunteer who attended previous cohort. The volunteers man a cafe area; a relaxed engaging area helps individuals to speak about similar experiences.

We recruited seven cohorts totalling 49 patients.. Initial data, have been published and show an improvement in health (measured by EQ5D) and self-efficacy (measure of patient empowerment).

### **Outcome**

Having worked well in one location, the next step was to find out if this intervention was scalable and could be spread to 4 other Health Boards in Scotland. This work ran from August 2016 to October 2018 as part of the Health Foundation's Scaling Up Improvement Programme. Each of the Scaling-Up sites was able to implement the InS:PIRE model of care. Each site varied the model slightly after listening to what their patients said their needs were. The final report on this will be available on the Health Foundation website later this year

### **Conclusion**

Having worked well in one location, the next step was to find out if this intervention was scalable and could be spread to 4 other Health Boards in Scotland. This work ran from August 2016 to October 2018 as part of the Health Foundation's Scaling Up Improvement Programme.

Each of the Scaling-Up sites was able to implement the InS:PIRE model of care. Each site varied the model slightly after listening to what their patients said their needs were.

The final report on this will be available on the Health Foundation website later this year

Listen and watch what patients say about InS:PIRE:

Being Told You Are Getting Home - <https://youtu.be/KLiGC9WwAfo>

What it is Like Attending InS:PIRE - <https://youtu.be/fCTV23jlajs>

The Benefits of InS:PIRE - <https://vimeo.com/221287391>

Supported by The Health Foundation SHINE 2014 programme, and Scaling Up Improvement 2016 programme.

InS:PIRE Project Website: <https://www.nhsggc.org.uk/about-us/professional-support-sites/inspire/>

## **Supporting Carers in the Stroke Early Supported Discharge Service (ESD)**

Call for Posters - Person and Family Centred Care

Michelle Heath

Royal Bournemouth and Christchurch Hospitals Trust, Bournemouth, UK.

### **Background**

This piece of work was carried out by the Stroke Early Supported Discharge (ESD) Team at Royal Bournemouth Hospital in order to improve support to carers in the first weeks after a patient is discharged from hospital. The project was initially inspired after being involved in research carried out by Dr Sara Demain and the University of Southampton, which aimed to understand the burden placed on carers during the ESD process.

Informal carers play a vital role in the recovery of people with stroke, however we know that discharge from hospital can be a particularly worrying and stressful time. This project aimed to evaluate exactly what support carers would like, what interventions they wished to be implemented and then to measure the impact of the intervention on carers once introduced.

This work was a collaboration between ESD, Clinical Audit, social services and our Clinical Psychologist.

### **Methods**

We held an initial carer focus group to generate ideas for improvement. This session identified that carers wanted more information and that they felt they would benefit from a one-one stand alone session solely for them.

We then organised a follow-up focus group in order to co-design how the session could run with carers, so that we could meet their needs accordingly. .

A pre-intervention survey was then conducted to establish what support carers felt they needed and was audited over a 3 month period and this questionnaire was developed with the help of the Clinical Audit team and the Patient Experience team.

This survey highlighted key areas which carers would like more support and would take place whilst the patient was being treated by another team member.

Our Clinical Psychologist then provided training for the ESD team on communication and dealing with distress.

The ESD Team lead then planned how the session would run and the sessions were audited again over 3 months.

### **Outcome**

A post-intervention survey was carried out and significant improvements were reported in every key area, as measured against the pre-intervention audit. These key areas were:

- Having enough opportunity to ask questions about your relative's care
- Having enough opportunity to ask questions about your own needs as a carer
- Having enough information about stroke to feel confident in caring
- Having enough information about rehabilitation prognosis
- Knowing how and where to access further information in the future
- Being able to understand the information given to you
- Feeling that your needs as a carer have been considered by the ESD team
- Feeling that you have been supported in adjusting to changes in your life following your relative's Stroke
- Being involved in the Stroke ESD input as much as you would have liked.

Carers also reported great benefits from having specific time for them which could be in or out of the home.

### **Conclusion**

The final results showed that carers felt better supported with greater confidence after having a one-one session with the most appropriate member of the ESD team, whilst their family member received therapy

from a another member of the team. Staff have also found the sessions hugely rewarding. The processes which greatly assisted the project were:

- having time solely for the carer and being freed from caring responsibilities for that hour
- the ability to be flexible in planning the location for the session, so that if preferred the carer can be taken out of the home e.g to a cafe
- use of the carer support planning questionnaire which is given in the first week and allows planning for what topics should be covered.
- provision of a resource pack.

Issues to be taken into account are reduced access to social care and time/staffing constraints.

Overall the outcomes show that the project has enabled carers to feel better supported and the sessions are now embedded in ESD.

## **The power of narrative feedback in transforming healthcare education and improvement**

Call for Posters - Person and Family Centred Care

Nancy El-Farargy, Gill Walker

NHS Education for Scotland, Edinburgh, Scotland, UK

### **Background**

The human and financial burdens of Healthcare Associated Infections (HAIs) are costly. Annual figures currently estimate that over 4 million people in Europe contract a Healthcare Associated Infection (HAI) and 37,000 die as a result of their infection. At a UK wide level, HAIs currently cost approximately £1 billion per year. Globally, the real burden of HAIs is unknown; partly due to current difficulties in obtaining reliable data. Commissioned by the Scottish Government HAI Policy Unit, NHS Education for Scotland delivered two national HAI events entitled “Strengthening our Defences: engage, inform, interact”. The main aim of the events was to raise awareness of the impact of HAIs across health and care, and to support attendees to reflect on their practice. As part of the proceedings, a fictional patient perspective story was presented. Through dramatization, this intervention focussed on the experiences of Helen, and outlined her emotions, feelings and onward journey of recovery.

### **Methods**

At the end of the events, over 750 delegates were invited to reflect on their own practices and to outline any potential improvement and change actions. After approximately six months, a short evaluation questionnaire was designed and distributed to all attendees. Its main aim was to gather any improvement or change actions implemented since the events. Additionally, delegates’ views and perspectives on the utility of narrative feedback – to drive any changes or improvements – were also sought. Potential respondents could participate via an online survey or its Microsoft Word equivalent (through email). The questionnaire yielded both quantitative and qualitative data. Quantitative data were analysed via descriptive statistics and qualitative data were content reduced into themes. This work (El-Farargy and Walker 2017) builds on other intelligence gathered on the use of patient and practitioner narratives in potentially supporting reflection, ongoing improvement and change.

### **Outcome**

Overall, the questionnaire attracted 64 responses. Whilst this is a relatively small sample count, the rich qualitative feedback obtained highlighted a wealth of improvement and change actions. This also included a range of future intended actions to improve health and care practices. Respondents articulated how they resonated with Helen’s story and how it triggered reflective practice. Practitioners also described the emotive aspects of feedback in driving change. Additionally, there were deliberations on a desired improved future state – where the notion of 100% compliance is standard (i.e. freedom from HAIs; ‘every person, every time’). The results were overwhelmingly positive towards the utility of patient narratives in driving change and improvement, and so there is a risk of bias. Additionally, it is not clear what other delegates thought about patient perspective stories. Despite these caveats, questionnaire respondents valued the description of care via the patient journey.

### **Conclusion**

In summary, stories allow listeners/viewers to immerse themselves into the world of narrators. Here, the needs, values and personal preferences of a fictional patient journey was retrospectively conveyed through emotive narrative. Respondents in this study highlighted a range of implemented and intended change and improvement actions. These changes can be the result of measured, deliberate and step by step approaches to attitudinal, intellectual and behavioural development. Alternatively, there can be a sense of urgency to change and this may be in response to a major turning point. Common to both cases, there is general dissatisfaction with the status quo. In conclusion, the patient voice and staff experiences are central to understanding quality and levels of care. Narrative feedback offers practitioners the opportunity to reflect on experiences, build on exemplary practices and to implement improvements during the planning, design and delivery of health and care services.

## **Developing a Patient Information Leaflet for patients listed for Trauma Surgery at University Hospital Lewisham**

Call for Posters - Person and Family Centred Care

Rayhab Mashal, Motaz Ahmed, Mohammed Abdus-Samee  
University Hospital Lewisham, United Kingdom

### **Background**

This audit was conducted within the Trauma & Orthopaedic (T&O) department at University Hospital Lewisham (UHL). The focus was to work with patients listed for trauma surgery after presenting to the Accident & Emergency (A&E) department.

The T&O team receives daily referrals from the A&E department with an average of 20 patients operated on weekly. Patients are added to a trauma list which is reviewed every morning, to determine scheduling for surgery. Patients are contacted by phone and informed of their proposed operation, surgery date and fasting instructions.

A lack of written information supporting patients attending A&E was identified. Patients were concerned about preparation, expectations on the day of surgery and how to contact the team. Incidents were reported of patients failing to follow fasting instructions due to unclear or misunderstood verbal instructions. This caused delay in trauma lists and unnecessary anxiety, which in turn negatively impacted the standard of care.

### **Methods**

An initial assessment of the pre-existing written information accessible to patients showed that no patient information leaflets (PILs) were available. On the day of surgery, patients expressed their need for written information on fasting instructions, and what to expect prior to surgery.

We designed and presented a new PIL to the (T&O) team during the monthly audit meeting. All staff were supportive of the idea. Our proposed PIL included subsections on preparation before surgery, what to expect on the day, fracture management, post-operative advice and follow-up.

The content was reviewed by consultants, registrars and the trauma coordinators. Patient and staff consultations were held to obtain feedback. We audited the number of patients accessing the leaflet in A&E when initially informed they would require surgery. The low number of picked PILs warranted reviewing the content.

We are currently in the final approval stage to have the PIL officially available on the trust intranet.

### **Outcome**

Patient satisfaction with the quality of written information was the main measure of our effect of change. 30 patients were asked for feedback during the first audit cycle and all were in favour of it being issued.

During the first cycle, 20% of patients (6 out of 30) received a leaflet. This increased to 33% in the second cycle. We anticipate that the distribution of leaflets would increase once the leaflet is officially issued.

Patients were much more satisfied and felt better informed with the required information. Additionally, staff felt that patient safety and concordance was being addressed as patients were better informed regarding fasting, managing their fractures and preparing for their surgery.

Patients found written information easy to follow and felt it addressed their concerns and bridged knowledge gaps. Patient feedback was central in optimising the designed leaflet, particularly the accessibility of clinical information and the layout to make it patient friendly.

### **Conclusion**

One obstacle during the first cycle was the low number of patients accessing the leaflet on presentation to the A&E department. This was attributable to lack of awareness of the leaflet among several doctors. This could be justified by the high turnover in junior doctor's rotations and limited channels of communication regarding the presence of supportive material. We aim to overcome this by incorporating relevant instructions into the team induction booklets.

Written information is as crucial for patients as is verbal discussions with them. It makes them better informed, minimises misunderstandings and maximises patient satisfaction. This is useful for improving patient concordance, maximising safety, and optimising patient-centred care.

## **Creating Awareness Through a Cookie**

Call for Posters - Person and Family Centred Care

Robert Greene

HungerNdThirst Foundation, The Netherlands

### **Background**

The HungerNdThirst Foundation focuses on non-pharmacologic management of dysgeusia, through education, collaboration, taste profiling, research and product development. 2 out of 3 cancer patients treated for cancer experience taste alteration during treatment. Taste alteration increases the risks of loneliness, depression and a shortage of important nutrients.

### **Methods**

To help create awareness for dysgeusia and to facilitate the discussion and education on the subject, the ATE (awareness through experience) Cookies were developed. The cookies stimulates empathy also among carers, and helps to understand how taste alteration may affect the quality of life for cancer patients.

### **Outcome**

The ATE Cookies are being used by a broad number of stakeholders involved with oncology, such as researchers, health care professionals (nurses, dieticians), medical nutrition suppliers (such as Nutricia).

### **Conclusion**

The ATE Cookies has proved to be a great tool to create awareness for taste alteration. It is also a great educational tool for discussing taste alteration, nutrition and malnutrition.

## **Quality Improvement in the Committal Process in HMP Maghaberry**

Call for Posters - Person and Family Centred Care

Ruth Gray, Jocelyn Harpur, Brenda Carson

SEHSCT Northern Ireland

Alan McKittrick

University of Ulster Northern Ireland

### **Background**

This Q.I. project was conducted in Maghaberry Prison, N. Ireland, for the South Eastern Trust (SEHSCT). The committal process, when people enter HMP Maghaberry, has been criticised as being chaotic and unsafe in inspection reports. It has been highlighted as an area for improvement in quality, safety and user experience by the SEHSCT and the N. Ireland Prison Service (NIPS). Multiple studies report that incarceration is a difficult time with increased risk for people entering custody.

The committal process is a complex system involving many organisations with differing operations and cultures. There was poor information transfer and dissatisfaction for staff and people in custody. It was a failing system with uncontrolled prescribing variation resulting in 89% of first dose of medications being missed when people entered prison.

The project aim was to provide a welcome as people enter custody by reducing the percentage of omitted doses of medicines and improvement of communication.

### **Methods**

Central to Q.I. is the involvement of the patient. A survey with 102 people entering prison highlighted two main themes: receiving medication on time and good information about prison healthcare, focusing change on what matters most to people in custody.

Improvement initiatives applied Lean Thinking to reduce wastes and smooth the prescribing process flow. PDSA cycles were used to reduce administration tasks, co-locate staff, introduce medicines reconciliation and prescribing directives. There was a change in skill mix of the team and the introduction of pharmacy led medicines reconciliation at the time of committal.

Improved communication involved the development of healthcare peer mentors as navigators and design of a multi-organisational peer mentor support hub.

A multi-disciplinary team of healthcare staff, prison officers, agencies and people in custody have been involved in the Q.I. project. This has been a cultural shift in the prison regime towards co-design.

### **Outcome**

The impact of this project has been the introduction of operation management principles to the prescribing pathway with new metrics and real time reporting. The prescribing process data was analysed using SPC and revealed a marked reduction in time delay variation, resulting in first dose omitted medication being reduced from 89 to 30%. Improvement in the quality of prescribing was shown by the significant reduction in prescribing errors. The skill mix of the committal team has been enhanced with prescribing pharmacists working extended hours to improve the timeliness and safety of prescribing. A co-designed Peer Mentor Support Hub has been established in the prison with opportunities for training, supervision and achieving advocacy qualifications which are transferrable on release from prison. The first healthcare peer mentor has enabled relevant and accessible information for people entering custody, with initial findings of reduced anxiety and incidents on the committal landings.

### **Conclusion**

This Q.I. project has significantly improved the flow of medication at time of committal, with correct medication being given at the right time. The improvements in the system have reduced risk for people entering custody and increased satisfaction for staff.

Barriers to effective information transfer have been addressed by developing the role of peer mentors, starting with a 'Hello' on the first day in prison.

The foundation to the project was building relationships between the organisations, and using data as leverage to improve. Systematic change occurred by embedding real time quality control measures into the system.

Prison Health is Public Health, by improving the welcome for people as they enter custody, it is the first step towards support, belief and rehabilitation. The Committal Process is a complex system, by using improvement science methodology and building a 'coalition of the willing' centred around the patient, significant improvements in care are possible.



## **Audit on Dental Recall Intervals of High Risk Paediatric Patients**

Call for Posters - Person and Family Centred Care

Sanjana Sudarshan  
London, UK.

### **Background**

Childhood caries is a significant issue in both permanent and deciduous dentition, with at least a third of children across all age groups having caries into dentine.

Short recall intervals for high-risk patients is imperative as it allows for increased frequency of preventative measures, early caries detection and treatment. This is particularly important in young children as deciduous teeth have broad contact points which can cause rapid progression of caries. In addition, the relatively large pulp chambers mean early pulpal involvement can occur causing significant pain and deterioration of the tooth. Having shorter recall interval will help avoid these issues.

The aim of this audit is to assess and measure whether the current practice at a General Dental Practice in Suffolk is in accordance with the recommended national guidelines regarding the recall intervals used for high-risk children. The standard to be achieved has been set at 3 months recall intervals for all high-risk children.

### **Methods**

The clinical records from the Software of Excellence EXACT for each paediatric patient (under the age of 18 years old) attending the practice for an Oral Health Assessment/Review from 1st September 2017 were assessed and analysed for the first 50 high-risk patients.

The following data was collected for each patient by reviewing clinical notes, and then analysed:

- Date of Birth
- Date of Appointment
- Risk Assessment Given
- High-Risk Factor Present and Risk Category
- Recall Interval Given
- Actual Interval
- Dentist (who assessed the patient)

The clinical records from the Software of Excellence EXACT for each paediatric patient (under the age of 18 years old) attending the practice for an Oral Health Assessment/Review from 1st September 2017 were assessed and analysed for the first 50 high-risk patients.

The following data was collected for each patient by reviewing clinical notes, and then analysed:

- Date of Birth
- Date of Appointment
- Risk Assessment Given
- High-Risk Factor Present and Risk Category
- Recall Interval Given
- Actual Interval
- Dentist (who assessed the patient)

### **Outcome**

Results from Audit Cycle 1 showed that out of the 50 high-risk children assessed, only 32% (16 of 50) were given the correct recall interval of 3 months, 68% (34 of 50) of the high-risk patients were being incorrectly recalled at 6 months. Furthermore, it was noted that only 56% (28 of 50) of high-risk children were assessed and assigned the correct risk status according to the high-risk factors suggested by the Scottish Intercollegiate Guidelines Network. The remaining 44% (22 of 50) of high-risk patients were either being incorrectly assigned as low-risk (28%, 14 of 50) or not being assigned a risk status at all (16%, 8 of 50).

Interventions:

- The results of the audit were presented at a staff meeting.
- Focused teaching and training were provided for all Dentists.

- Handouts of guidelines from FGDP, NICE, and DBOH were printed and given for all Dentists to read.
- Summary posters on identifying high-risk factors and appropriate recall interval for high-risk children were placed in all surgeries to act as a visual reminder.
- A suggestion was made to all Dentist to add a reminder in their clerking proformas and templates, to remind themselves of corresponding recall intervals.

#### Results – Audit Cycle 2:

After allowing 3 weeks for the interventions to take effect, the same method as used in Audit Cycle 1 was used to collect data for the second cycle. Results from Audit Cycle 2 showed that 60% (30 of 50) of high-risk patients were now correctly being recalled at the set standard of 3-month intervals, and only 40% (20 of 50) were still being recalled at 6 months. In addition, all high-risk patients were now being assessed for risk status, and 96% (48 of 50) of patients were correctly assigned their high-risk status.

#### Conclusion

The results indicate that the Practice has significantly improved at recalling high-risk children at the appropriate interval of 3 months. There has been an 87% increase from 32% to 60% in the primary outcome of accurate recalls for high-risk children. There has also been an 68% increase in the secondary outcome as nearly all high-risk paediatric patients (96%) are now being correctly risk assessed as high-risk, (Table 1 & Figure 1). The ambition however, is to reach 100% in both outcomes, thus indicating need for further improvement.

Simple changes made in practice such as annual teaching for dentists can have significant results and allow children to be assigned the correct risk status and be treated appropriately. This can directly help avert rapid progression of caries, early pulpal involvement, pain and deterioration of the tooth.

Furthermore, it can also help change negative connotations associated with visiting a dentist and improve relationships.

Simple changes made in practice such as annual teaching for dentists can have significant results and allow children to be assigned the correct risk status and be treated appropriately. This can directly help avert rapid progression of caries, early pulpal involvement, pain and deterioration of the tooth.

Furthermore, it can also help change negative connotations associated with visiting a dentist and improve relationships.

## **“Parents as partners: changing culture in our neonatal units” A multinational experience.**

Call for Posters - Person and Family Centred Care

Shanthi Shanmugalingam

Royal Free London NHS Foundation Trust, London, UK

Neil Patel

Royal Children's Hospital, Glasgow, Scotland

Alison Bartlett

Ulster Hospital, South Eastern & Social Care Board, Ulster, Northern Ireland

### **Background**

Brains and families are being formed for a lifetime every day in the neonatal unit. However, parents experience a profoundly different start to parenting with significant impact on their mental health. In the current model of neonatal care healthcare professionals deliver care with parents encouraged to be involved in limited day-to-day care of their infants.

“ I cared for him the best as I knew but he did not feel like mine and I did not feel like a mother” (mother of preterm baby)

Pioneered in Canada, Family integrated Care (FiC) transforms the traditional philosophy of care to one where parents are primary caregivers in partnership with clinical teams. We describe the experience of three pioneering neonatal units in England, Scotland and Northern Ireland who have adopted and adapted FiC within their neonatal units.

### **Methods**

Three neonatal units across England, Scotland and Northern Ireland have embraced FiC, placing families at the heart of their work, and the heart of their clinical teams. Each team has adapted the four pillars of the FiC philosophy of care to introduce:

1. Parent education: to empower parents with skills and knowledge to be primary carers.
2. Staff education: has focussed on giving staff skills to implement change through comprehensive training in quality improvement as well as providing a framework of training to mentor parents in attaining practical skills in looking after their baby.
3. Communication and neonatal environment: Based around "what matters to you" conversation with parents, teams introduced ways to facilitate communication between staff and families through out their stay.
4. Psychological support for parents

### **Outcome**

1. Parent education: regular parent education sessions led by the multidisciplinary team. Sessions are informal, welcome the wider family members and are run at various times to facilitate attendance by both parents.
2. Staff education: In both QI methodology and a training framework for parental skills
3. Communication strategies include:
  - a. unrestricted 24/7 parent presence including during ward rounds and handovers with unrestricted visiting for grandparents. Highly specialised parent accommodation is available in one unit where parents can stay alongside their newborns as soon as they are clinically stable,
  - b. Parents involvement in daily ward rounds,
  - c. Whiteboards for messages including “what matters to you today”,
  - d. Co-designed milestone celebration cards,
  - e. Video messages for parents
4. Parent psychological support: formal and informal provision of psychological support including peer-to-peer support involving “veteran parents” extending post-discharge.

### **Conclusion**

The positive impact of adopting a FiC-based philosophy of care encompasses the baby, the family, staff and the wider NHS. We have demonstrated a reduction in parental stress and length of stay (resulting in

NHS specialist commissioning cost reduction). The immeasurable impact of the improved emotional wellbeing of parents, improved infant- parent bonding, and increased breastfeeding rates will lead to improved neonatal outcomes with significant longterm benefits to health and education. All three units have experienced a noticeable change in culture with “a new common sense of purpose, collaboration and cohesion”.

## **Implantation of a Consultative Council of Patients and Relatives in a Public Pediatric Hospital in Brazil**

### **Call for Posters - Person and Family Centred Care**

Simone Mattoso Mitushima, Sueli Romero da Silva  
Hospital Menino Jesus - Brazil  
Marcelo Alves Alvarenga, Celina de Oliveira Lima Dias  
Hospital Sírío Libanês - Brazil  
Marco Aurélio Vitorino Cunha  
Instituto de Responsabilidade Social Sírío Libanês - Brazil

#### **Background**

The Hospital Municipal Infantil Menino Jesus (HMIMJ), a public and pediatric hospital, located in the city of São Paulo, has become one of the national reference centers for an Intestinal Rehabilitation Program aimed at the treatment of intestinal failure and prevention of complications associated with the disease in children. Although patients were followed by their parents or relatives 24 hours a day during hospitalization, we realized that their participation could be increased and that this would contribute to better care as well as better preparedness for patients to be discharged in chronic conditions. Patients treated in this program have a long hospitalization and require the use of a long-term continuous central venous catheter (CVC). One of the strategies for preventing infections and preparing families for these children's catheter care would be to encourage the involvement of their families in the care of these children.

#### **Methods**

One of the strategies for preventing infections and preparing families for care would be to encourage the engagement of their family members in the care of these children. We evaluated the possibility of creating a council of patients and families at our maintaining institution, the Sírío Libanês Hospital. In May 2017 a committee of hospital professionals was created, which planned the organization of the Patient and Family Advisory Council, and prepared the multidisciplinary team for the progressive participation of families in co-creation projects. Documents and board regiment were approved by the hospital's legal department. Involved in the project were the direction of the hospital, nurses, physicians and the patient experience experts. At each meeting the environment was prepared to promote the reception and integration of the participants. The teams were trained to approach the programmed issues, including active listening and conflict mediation.

#### **Outcome**

In July 2018, one year of meetings of the Advisory Council was completed in a total of 10 meetings and 12 opportunities for improvement identified: revision and dissemination of the rules of coexistence of families in the hospital environment; expansion of access of other relatives to visit patients; review of rules for the use of toy libraries; revision of the admission guidance manual for inpatients and in the ICU; translation of the manuals into English and Spanish; co-creation of guidance materials for hospital discharge; elaboration and participation of families and patients in the hand hygiene campaign. After this year of work integrated with these families, three patients of the Intestinal Rehabilitation Program, whose families were part of the Consultative Council, were discharged. These families demonstrated a greater commitment and security to continue the care in their homes.

#### **Conclusion**

In June 2018 a new selection process was carried out, through which a further 05 families were selected for the Consultative Council of outpatients with the objective of increasing the possibility of the participation of families in all types of hospital care. We have learned that involving families in care and in institutional decisions strengthens the integration and respect among health professionals and families which improves patient safety and care.

## **Open all Hours' – NHS Lanarkshire's journey to visiting enlightenment**

Call for Posters - Person and Family Centred Care

Susan Friel, Carol Andrews, Claire Rae, Gillian McAuley, Brian McGurn, Rick Edwards  
NHS Lanarkshire, Scotland

### **Background**

There are 3 District General Hospitals - University Hospital Hairmyres, University Hospital Monklands and University Hospital Wishaw - within NHS Lanarkshire, which serves a community of just over half a million. The initial aim was to review our visiting times to ensure relatives, carers and friends could visit their loved ones with a cognitive impairment / dementia more flexibly while in hospital. The preserved benefits of this included improving our patients' experience and providing a more person centred approach, based on the fact that patients belong first and foremost to their loved ones and not us.

### **Methods**

Over the last 5 years we had moved to 'flexible' visiting times within NHS Lanarkshire. This meant visiting times were extended from the traditional times to any time between 2pm - 8pm, excluding mealtimes. However a few years ago, after her mum was a patient, SCN Carol Andrews saw the negative impact of not being able to visit her at any time. She immediately decided to carry out a test of change within her own ward in University Hospital Monklands, where visiting times were completely removed and people could visit whenever they wanted to, as long as this was what the patient wanted. Carol asked her staff to work with her and the team agreed that they would discuss any issues or problems at their safety brief every day.

### **Outcome**

Falls, pressure ulcers, complaints and length of stay have all reduced within the test ward since Open Visiting was introduced. Although it is hard to conclusively prove a direct link, these improvements are strong indicators of improved clinical care. Staff satisfaction has also improved, with staff sitting a quieter environment, less phone calls to answer and better communication with families. Following this test of change, Susan Friel, Chief of Nursing Services at University Hospital Hairmyres, and Gillian McAuley, Chief of Nursing Services at University Hospital Wishaw both began to introduce Open Visiting - or as we now refer to it; Person Centred Visiting - across their hospitals, with University Hospital Monklands following shortly behind.

### **Conclusion**

Now all three hospitals have fully embraced this approach, as have our associated hospitals. On the whole this change has been very successful; however this approach has not been without its challenges - e.g. while most visitors are reasonable there are a few occasions where they have been challenging when asked to step out while care is delivered, confidentiality can be an issue at times, particularly during ward rounds. Our NHS Lanarkshire policy has been updated to reflect the board's approach to Person Centred Visiting. The policy includes a helpful guidance document, which lays out the responsibilities of the nursing and the medical staff, the visitors and the patient. In hindsight this document has been key to provide all with the 'rules of engagement'. However overall I am proud that as a board we enable families to support their loved ones when they are in hospital. We are working towards the concept of 'visiting times' to be a thing of the past.

## **Assessment of Patients' and Family Members' Needs During the Perioperative Period at King Abdullah Medical City**

Call for Posters - Person and Family Centred Care

Wid Alsabban

King Abdullah Medical City, Saudi Arabia

Ahmed ALHadithi, Saeed ALTheeb

King Khalid University, Saudi Arabia

Abdullah alkhudhair

Inmam Abdularahman bin Faisal University, Saudi Arabia

Faisal ALHumaidi, Ahmed Albedri

Umm Al-Qura University, Saudi Arabia

### **Background**

The perioperative period is a stressful period for both patients and their family. Because prioritized needs and satisfaction factors might differ culturally, it is important to explore them locally. In this study, we are aiming to explore patients' and family members' needs in the perioperative period in King Abdullah Medical City.

### **Methods**

In this descriptive study, a convenience sample of patients and accompanying family members were surveyed the day after surgery. Two questionnaires from a previous study were adapted for this purpose. Each questionnaire the participant was asked to assess the importance level of a group of items using a Likert scale and to evaluate whether these needs were actually met. The needs were ranked in order of importance based on average need scores.

### **Outcome**

We have surveyed a total of 77 patients and 67 family members over a five-week period. Patients' needs with the highest scores were related to post-operative pain management and being physically comfortable in the recovery area. Family members' needs with the highest scores were related to being informed about the surgical procedure, communication if the surgery is taking longer than expected and reassurance from the surgeon once the procedure was done.

### **Conclusion**

Surprisingly, being informed about the details of the surgical procedure was the highest need rated by the family member group, compared to similar studies done in the western context. An understanding of the cultural competence in healthcare delivery is likely to support the judicious utilization of patient and family-centered care intervention.

## **Using Team Resource Management to Provide Post-Operative Care of Patient with Subdural Hematoma**

Call for Posters - Person and Family Centred Care

Yuan-Chuang Cheng

Min-Sheng General Hospital, Nursing School of Fu Jen Catholic University & 台灣

### **Background**

In Taiwan, accidental injury is one of the top ten leading causes of death for the past 30 years. Approximately 30 % of subdural hematoma (SDH) was caused by car accidents. 50% of the patients would require immediate surgical treatment with a mortality rate ranging from 20 to 60%. If the patient's Coma index (Glasgow Coma Scale, GCS) decreased by 2 points or more, which reflected by the reduction of Pupil reflection and the decrease in the stability of vital signs. Fortunately, it is possible to minimize brain damage and improve the neurological intensive prognosis if the decrease of GCS point was detected early.

### **Methods**

Four core projects of Team Resource Management (TRM), leadership, situation monitoring, mutual support and communication, were implemented in interdisciplinary collaboration and provided holistic care to support the patient during recovery and prognosis. In practice, companionship, listening, and psychological support were integrated to alleviate patient's stress during hospitalization and shorten the time for patient to adapt to the situation during hospitalization psychologically and sociologically.

### **Outcome**

Utilizing TRM strategy to provide post-operational care for a 39-year-old woman with acute SDH caused by car accident. She could actively initiate pleasant conversations with physicians, nurses, and her family members. After discharging from hospital, she is capable of handling her own need, such as get out of her bed and walk by herself. In addition, she could play her family role properly even though her right limb was slightly weaker than left limb. The regular rehabilitation schedule in hospital three times per week did not add additional stress to her family life.

### **Conclusion**

For middle-aged women, the most worrying thing during hospitalization is they can't play the role of themselves and family roles. Nursing staff should take the initiative to find the problem, use TRM to integrate care, and give the case appropriate treatment plan. Family's companionship, listening, support, encouragement, and affirmation can help cases involved in self-care actively. With this, the rehabilitation process will do more with less effort.



## **Improving safety on our roads; are we fulfilling our duty to inform patients about the DVLA driving requirements for ophthalmic conditions?**

Call for Posters - Population and Public Health

Aisling Higham, Pavandeep Sandhu, Stephanie Hartley, Nicola Cronbach, Mandeep Bindra  
Buckinghamshire Healthcare NHS Trust, UK

### **Background**

The driving and vehicle licencing agency (DVLA) mandate that drivers inform them about a range of ophthalmic conditions. Patients can be fined for not informing the DVLA or prosecuted if they're involved in an accident as a result of their condition if the DVLA have not been notified. The general medical council states that doctors should advise patients on the impact of their medical condition on their driving ability, the legal requirement to notify the DVLA, and to record these ongoing discussions in the medical notes.

We were concerned that as healthcare professionals we were not fulfilling our duty to inform patients regarding their obligation to inform the DVLA about certain ophthalmic diagnoses. We felt this was particularly the case for patients with blepharospasm.

This work was performed at Stoke Mandeville Hospital, Buckinghamshire Healthcare NHS Trust, Ophthalmology department.

### **Methods**

To review the patients with blepharospasm we contacted all those attending our botox clinics. We sought to answer the following questions 1) Are patients aware of the need to inform the DVLA? 2) Are we informing patients about the DVLA requirements? 3) Is this being documented? 4) Are patients informing the DVLA? Of 20 patients with blepharospasm, no patients reported being informed by their ophthalmologist of the DVLA requirements and no patients had documentation in the medical notes of any discussion about driving. 11 patients were drivers. Only 3/20 patients had informed the DVLA of their condition. As we suspected, the results showed that we were not fulfilling our duty to inform patients about the need to inform the DVLA. These results were presented at a departmental audit meeting, where all clinical staff members were present. The issues identified were 1) unfamiliarity of DVLA guidelines by some staff, 2) driving issues were not always addressed during the consultation.

### **Outcome**

We conclude that it is vital that driving requirements are considered and documented for all patients at each visit. We have opted for a team- based approach to achieve this. Firstly, to raise awareness of the DVLA standards we did a teaching session during a compulsory clinical audit session. In the patient waiting areas there are posters regarding driving. In some areas we have displayed a car number-plate at 20.5metres so that patients are able to test their driving vision and can raise this discussion with their clinician. When nurses check patients' vision, there is a section on this front sheet to ask about driving, which alerts the doctor to discuss this further. We are working closely with the eye care liaison officer (ECLO), to help with difficult discussions, particularly in time-pressurised clinic settings. We have made specific leaflets for patients with blepharospasm in regards to driving and provide the V1 DVLA form and other contact details for the DVLA medical team.

### **Conclusion**

Many of the changes were quite simple, yet effective. We plan to continue to develop the role of the ECLO and to empower HCAs and nurses who often have the first point of contact with patients to make direct referrals to the ECLO service to discuss the implications of their condition on driving.

The DVLA regulations are in place to ensure the safety of all road users. For the individual patient, they can be fined by not notifying the DVLA. As healthcare professionals we hope that by informing patients of the DVLA notifiable conditions, the patients will go on to report their condition, and the DVLA medical officers will carry out the necessary assessments to ensure the patients are fit to drive, and in turn some accidents or loss of life could potentially be avoided.

Particularly in light of recent, tragic, high profile cases, driving safety is under the spotlight. It is important to consider driving at all ophthalmic consultations.

## **Involving Patients in the Danish Clinical Registries**

Call for Posters - Population and Public Health

Anne Nakano, Lea Grey Haller, Annette Odby

The Danish clinical registries (RKKP)

### **Background**

The specific knowledge patients and their relatives have about their condition and life circumstances is valuable for the development of health care services. There is substantial evidence that patient involvement can improve the quality of care

In Denmark we have 80 clinical registries. The Danish Clinical Registries (RKKP) aims to contribute to a better health care system by including patients in management of the clinical registries. The purpose is to consider patients' needs and preferences in the development and interpretation of quality indicators.

### **Methods**

Based on literature studies, a report was written, containing recommendations on how patient involvement should be implemented:

Recruitment by patient organizations.

At least 2 patients or next of kin in each steering group: one representative with personal experience and one representative from a patient organization.

Introduction for patient and next of kin representatives in cooperation with The Danish Knowledge Center for User Involvement in Health Care (ViBIS).

Individual needs to support participation should be taken into account.

Reimbursement of transport costs and meeting diets.

All introduction materials for patient representatives is developed in cooperation with clinicians, patients and RKKP employees.

### **Outcome**

15 clinical registries have patient representatives. Furthermore 17 registries are in a recruitment process. Patients can ask clarifying questions for specific indicators so that common people also can understand the indicators

(patient representative, RKKP)

Patients can give a different perspective

(patient representative, RKKP)

### **Conclusion**

26 patient representatives have participated in the introduction meeting for patient and next of kin representatives.

The evaluation from the patient representatives indicates, that the introduction meeting qualifies them to take on the task as a representative

## **Availability of antidotes in Belgian hospitals: is there still room for improvement?**

Call for Posters - Population and Public Health

Anne-Marie Descamps, Dominique Vandijck,  
Ghent University Belgium  
Jonas Moens, Jonas Van Baelen, Martine Mostin  
Belgian Poison Centre Belgium  
Freek van Ham  
KERTENZA Belgium

### **Background**

The aim of this study was to investigate the availability of 22 antidotes in all Belgian hospitals with an emergency service and to analyze if the stock of antidotes in the Belgian Poison Centre (BPC) met the needs of the Belgian hospitals. A third objective was to investigate at hospital level the maintenance cost to hold a selection of 12 antidotes and to calculate the expense of an optimal availability of antidotes to treat a 75 kg patient for the first 24 hours. Furthermore, we wanted to explore the added value to develop an online platform by the BPC with shared information on the real-time availability of antidotes in Belgian hospitals.

### **Methods**

An online questionnaire was sent between February and April 2018 to all 126 hospitals with an emergency service. A group of 22 antidotes were included in the questionnaire. For each hospital, the list of available antidotes was compared with a selection of 12 out of the 22 antidotes, based on the most frequent intoxications in Belgium (methylene blue ampules, hydroxocobalamin powder for injection, calcium gluconate ampules, calcium gluconate gel, pralidoxime ampules, DMSA = Succimer capsules, digoxin-specific fab fragments, CaNa2 EDTA ampules, dimercaprol ampules, obidoxime ampules, DMPS ampules, DMPS capsules).

### **Outcome**

Response rate was 29%, of which 4 university hospitals and 33 non-university. Methylene blue, deferoxamin, hydroxocobalamin, calcium gluconate and intravenous lipid emulsion were available in more than 60% of the hospitals. Digoxine immune fab (DIF) was ordered most frequently in urgent cases and was considered to be the most important antidote to be available via the depot of the BPC. The availability of a selection of 12 antidotes in the hospitals could be realized with an average extra budget of €3,500/year. Most respondents were interested in an online platform sharing the stock of other hospitals in real time, developed and controlled by the BPC.

### **Conclusion**

Not all antidotes commonly used in toxicology are available in the Belgian hospitals. Mutual cooperation between hospitals and the Belgian Poison Centre, together with the development of a real-time online platform by the Belgian Poison Centre, could boost the availability of antidotes.

## **Diet, nutrition and physical activity in people with disabilities**

Call for Posters - Population and Public Health

Beate Osgjerd Rekve, Ida Holstad  
Voss kommune, Norway

### **Background**

Voss municipality's nutrition strategy is based on the nutrition strategy for Bergen municipality. The strategy gives recommendations on how to assess the risk of becoming overweight, underweight or malnourished. It builds on national guidelines for nutrition and physical activity. This is based on research and national reports from the Norwegian Directorate of Health.

People with impaired functional ability need extra stimulation and adaptation for physical activity and a healthy diet (St.meld. 45 2012-2013, p. 65). It is vital that people with intellectual disability can influence their own life and be given the opportunity to make their own decisions. The services need to ensure that each service user has an active lifestyle based on their own needs and preferences.

The goal is that these routines for nutritional care become part of routine daily care.

### **Methods**

The project is a low threshold intervention in nutrition and physical activity for persons with impaired functional ability. Throughout the course we work towards a greater understanding of nutrition and physical activity.

This is a course to help the clients set goals and strategies for their lifestyle and health. We start with small improvements. The service users work with motivational goals and focus on intrinsic motivation for improving their own health. The course includes practical workshops as well as theoretical lectures. In the practical workshops the service users have the opportunity to be creative and explore their own combinations of food. The course is person centered and we focus on giving the service user freedom to experiment and make their own choices.

### **Outcome**

The course was limited to small groups, to ensure a more open communication between all participants and course providers. The advantage with small groups is that the participants become more confident in participating in discussions.

During the planning stage we made a conscious decision to have an equivalent number of practical sessions as theory. This was based on our clinical experience of working with people with intellectual disability. Practical and fun sessions have a greater potential to improve active participation, motivation and independence. We felt it was imperative that they felt secure and safe, both with each other and staff. The practical work can make it easier to learn and continue with the new habits at home.

An additional goal of having a group based course is that the participants get a greater degree of social interaction and a chance to create a peer support network. A successful support network can improve long term compliance and change.

### **Conclusion**

The participants had new ideas and developed motivation for making healthier choices. For example one of the participants had never tried some of the vegetables/fruits we offered and wanted to try them at home as well after the course.

All the participants became inspired to set goals and have made an attempt to implement the goals in their daily routines. 50% of the participants improved their food and physical activity habits throughout the course. Repetition and supervision are important factors for initiating change to improve lifestyle for all individuals, and even more important for people with impaired functional ability (Groundhuis and Aman, 2014)

## **Improvement Science approaches for assessing the impact of interventions: unhelpful mission creep?**

Call for Posters - Population and Public Health

Colin M Fischbacher

NHS National Services, Scotland

Jim Lewsey

University of Glasgow, Scotland

Jill Muirie

Glasgow Centre for Population Health, Scotland

Gerry McCartney

NHS Health Scotland, Scotland

### **Background**

This was a collaborative project across four institutions. The authors all work in the area of population health and have separately noticed that improvement science approaches are increasingly spreading from clinical settings to population-wide interventions and are being extended from supporting the adoption of proven interventions to making generalisable claims about the causal impact of interventions. In some instances improvement science methods are being advocated for evaluation purposes. We view this trend as problematic given the limitations of improvement science methods when it comes to making causal claims. We set out to review examples of improvement science work in population health in Scotland to consider how widespread this practice is, to consider the strengths and weaknesses of improvement science for this purpose and to suggest some constructive approaches to improve the situation.

### **Methods**

We looked for examples of reports of improvement science work in population health in Scotland which made causal claims about the impact of the intervention on health outcomes or which drew generalisable conclusions. Given the lack of reports published in peer-reviewed literature it was not possible to take a systematic approach to the search. We reviewed the potential strengths and limitations of these reports. We looked for potential alternative approaches to assessing the impact of population-wide interventions.

### **Outcome**

We found a range of reports of improvement science work in population health in Scotland. Most were identified from internal project reports or short overviews posted on websites. We found a number of reports that made causal claims or drew generalised conclusions about the impact of particular interventions. Those carrying out improvement science work in population health in Scotland often make causal claims about interventions, most often based on unblinded comparisons of outcomes at single time points before and after the intervention, measured by staff involved in delivering the intervention. None of the reports included comparison groups.

### **Conclusion**

Reports often provided very limited and sometimes contradictory detail about the figures on which causal or impact claims were based. Causal claims in improvement science work do not take sufficient account of well-recognised issues such as the need for appropriate comparison groups, the risks of multiple testing and the lack of blinding. We suggest that improvement science approaches are unsuited to drawing conclusions about the causal impact of interventions and should be used for their original purpose, to support local improvement. Methods such as trials are often not feasible for population health interventions, but new methods are increasingly available, including interrupted time series methods, instrumental variable approaches, difference in difference analyses and regression discontinuity designs. We suggest that where impact is the question of interest these newer methods offer a more robust alternative approach to improvement science methods.

# **Influenza vaccination among staff in Toa Payoh Polyclinic, Singapore**

Call for Posters - Population and Public Health

Gan Wei Chun

Singapore

## **Background**

The Project was done in Tao Payoh polyclinic. It is one of 6 National Healthcare Group Polyclinics serves population in the central and northern parts of Singapore. In year 2017, only 66% of staff had influenza vaccination. Benchmark was 90%.

Mission statement: Increase the percentage of clinic staff who had influenza vaccination in the past 12 months from baseline 66% in year 2017 to 95% in year 2018 over 6 months.

Our team are made of 9 members from Medical, Nursing, Diagnostic, Dental, Pharmacy and Operational Service Department. The top 8 root causes out of 25 as followed:

1. Lack of staff education on flu vaccine (32.2%)
2. Vaccination room close after office hours(22.2%)
3. Staffs are busy during office hours(18.9%)
4. Negative peer Influence(10%)
5. Side effects with previous flu vaccine(5.6%)
6. Worry of potential side effects(5.6%)
7. Lack of manpower to cross over during vaccination(3.3%)
8. Multiple drugs allergies(2.2%)

Number 1-4 are accounted for 80% of votes in Pareto chart

## **Methods**

Intervention(IV)s were planned based on the top 4 root causes in the Pareto Chart.

1. Lack of flu vaccine education among staff  
#IV 1 at 1st March 2018
  - a. vaccine slides presentation/talk at different department roll call
  - b. empower team members
  - c. address staff's concern at personal level
2. Staff busy during Office hours & Vaccination Room not available after office hours  
#IV 2 at 15th April 2018
  - a. extended vaccination room opening hours for staff until 5.30pm on weekdays and 1.30pm on Saturday
  - b. active appointment arrangement by department representative in registration, queue chit collection and reminder to go for vaccination
3. Lack of seniors' staff influence on flu vaccination(specific to pharmacy department)  
#IV 3 at 13th May 2018
  - a. address senior staff's concern
  - b. seniors to receive vaccination and lead as example
  - c. encourage photo-taking then photo-sharing in department roll call/social media communication platform(eg:watsapp/facebook)
  - d. involve influential seniors to encourage staff

## **Outcome**

Percentage of Toa Payoh Polyclinic staff who received influenza vaccination in past 12 months increased from baseline 66% in year 2017 to 90% in year 2018 over a 6 months duration. Baseline 51% in Jan-Feb 2018 increased by 39% to 90% at the end of project. The team communicated with staff at all different level(eg:from junior staff to all heads of department) to acquire root causes and reinforce interventions.

Anticipated staffs' benefit as follow:

- Reduce risk of staff acquiring influenza
- Among infected staff, vaccination reduces risk of getting influenza illness related complications, severity and hospital admission
- indirectly, reduces work absence and increase clinic productivity

- Decreases influenza transmission risk from staff to other vulnerable staff/patients
- By knowing importance of vaccine, staff may encourage patients to get vaccine, leading to decrease overall influenza illness related healthcare burden in outpatient/inpatient setting.

### **Conclusion**

Percentage of TPY Polyclinic staff who received influenza vaccination in past 12 months increased from baseline 66% in year 2017 to 90% in year 2018 over 6 months.

Problems encountered during the process of change were specific to Operational Service(OPS) Department and Pharmacy Department.

After Plan, Do, Study, Act (PDSA) cycle, noted issue specific to OPS Department as some staff leave before 4.30pm as part of the working schedule and not enough manpower to cross-cover at 4.30-5.30pm period.

- special arrangement by coordination between operational service department representative and vaccination nurse, for staff to receive flu vaccination during office hours when there is free slot

It was my first quality improvement project(QIP), it is very useful to involve fellow colleague with great experience in QIP to provide valuable guidance and feedback. Attending a QIP toolkit course prior was useful for meaningful learning and knowledge application later during QIP journey.

## **Proton pump inhibitor deprescribing initiative: A multi-disciplinary and multi-pronged approach**

Call for Posters - Population and Public Health

Goh Leng Chuan, Elena Lee  
Changi General Hospital, Singapore

### **Background**

Inappropriate polypharmacy is a growing concern in Singapore due to its ageing population.

'Deprescribing' is the process of stopping or reducing the dose of medications in which risks outweigh benefits. Locally, proton pump inhibitors (PPI) are one of the most commonly prescribed medications and have been identified as a potential drug class to be deprescribed by the Pharmaceutical Society of Singapore.

Healthcare professionals need to be made aware of the issue of polypharmacy and their role in mitigating it. A guideline can help them to deprescribe PPI appropriately. The effort also needs to be sustainable to effect change in the long run. An initiative was hence led by the Department of Pharmacy in Changi General Hospital, a tertiary hospital located in Singapore, to tackle the issue.

### **Methods**

In September 2015, we embarked on a two-day, hospital-wide message campaign to educate both healthcare professionals and members of the public about polypharmacy and the concept of deprescribing PPI.

From January to June 2016, we carried out an internal audit to assess the prevalence of inappropriate PPI use. During our quarterly departmental meetings, we also highlighted to fellow pharmacists about the issue of polypharmacy and their role in deprescribing PPI.

From November 2016 to October 2017, we worked with clinician representatives from the departments of Cardiology, Gastroenterology and Hepatology, General Surgery, Geriatric Medicine, Orthopaedics and Rehabilitation Medicine to craft an in-house PPI deprescribing guideline. Periodic dissemination of the guideline was then carried out from November 2017 onwards using Microsoft Powerpoint login slideshow on all hospital computers to encourage judicious prescribing of PPI and deprescribing when appropriate.

### **Outcome**

Omeprazole is the most commonly prescribed PPI in our hospital. We monitored its use over 4 years by calculating the monthly proportions of patients dispensed with low- (20mg/day), medium- (40mg/day) and high-dose (80mg/day) omeprazole. We plotted a run chart to identify any shift in trend from the baseline median in the year prior to the start of our intervention. We also estimated the potential cost saved over the subsequent 3-year period using the baseline consumption in the first year.

At baseline, the median monthly proportion of low-, medium- and high-dose omeprazole dispensed were 37.7%, 53.1% and 9.2% respectively. Our run chart demonstrated a shift in the prescribing trend. At the end of the monitoring period, there was a higher proportion of low-dose omeprazole (54.1%) and lower proportion for medium- (39.6%) and high-dose omeprazole (6.3%). A potential sum of approximately £410,000 was saved over the 3-year period.

### **Conclusion**

Our initiative is the first step towards combating polypharmacy. Patients who are indicated for PPI but on medium- and high-dose may have their dosage reduced, which leads to a measurable reduction in healthcare cost. We also anticipate that treatment regimens may be simplified and drug adherence rate may improve.

During the journey, we learned that a multi-disciplinary and multi-pronged approach is effective in making a significant difference at the institutional level. We believe that the concurrent implementation of the various steps during the early stages of the initiative could have resulted in a greater magnitude of change in the long run.

As polypharmacy is a highly complex issue, it is important to engage the various stakeholders in order to tackle it effectively. Our changes led to reduced healthcare expenditure and potentially improved patients' medication adherence.



## **Introduction of Medical Termination of Pregnancy at a Major Regional Centre, Victoria - Mind your own Uterus**

Call for Posters - Population and Public Health

Jacinta Smith

Ballarat Health Services, Australia

### **Background**

Ballarat is a major regional city with approx 110,000 people located 110 kilometres from Victoria's capital Melbourne, Australia. In July 2015 we began a Choices clinic for Medical Termination of Pregnancies. Prior to July 2015, women only had the option of a Surgical Termination of Pregnancy. Research has shown us that 1 in 3 women seek a termination of pregnancy.

At present we have only one GP service who offers MTOP within Ballarat. We currently receive on average 5-10 referrals per week requesting MTOP at Ballarat Health Services.

Women in a regional centre find it very difficult to obtain a referral for a MTOP with many women advising they receive bad experiences from both GP's and sonographers. Women today are still being judged for their difficult decision/s with having a termination of pregnancy.

### **Methods**

Choices clinic was initially set up with a GP and a gynaecology nurse. The gynaecology nurse would do the initial booking ensuring that all test results were available to the doctor prior to the appointment. This nurse also advised the patient on what to expect and also spoke about contraception post MTP.

It took over 18 months to obtain approval for our Choices clinic within Ballarat Health Services. The processes for this clinic to begin were longwinded

We have the capacity to see 8-10 new patients each week and require a strict 2/52 follow up with repeat BHCG blood test to ensure levels have decreased appropriately. 40% of women take contraception at the 2/52 follow up appointment.

A MTOP can only be performed up to 9 weeks (63 days) gestation. Over that only a STOP can be performed. Early referrals from GP's is paramount to ensure we are able to offer a MTOP to these women.

### **Outcome**

Speaking with GP practices and GP's has allowed me to educate the majority of GP's with the strict requirements that a MTOP requires.

Communicating with local GP's also advises them of the need for more test results or if a referral requires rejection due to no surgical capacity available at Ballarat Health Services.

Dr Paddy Moor from Royal Women's Hospital in Melbourne, Victoria has organised along with the help of many MTOP providers within Victoria a call centre 1800 myoptions to allow women and GP's to call and find their nearest clinic that may be able to help them. This has been a huge success in Victoria.

### **Conclusion**

With the commencement of our Choices clinic we have saved over 300 surgical spots for other gynaecological procedures.

It is a very difficult decision for the majority of women who seek a termination. My role as a gynaecology nurse to help them with this journey and not judge or assume anything. Every woman has their own story.....

My main message women require these services and not to be victimised for the difficult decision they face. We require more doctors taking up the option to provide MTOP without the repercussion of being victimised themselves.

## **To increase the take up number of Cardiovascular Risk Screening (CRS) appointments at Yishun polyclinic to 19% of total eligible patients per month**

Call for Posters - Population and Public Health

Jayalakshmy Aarthi Ananthanarayanan  
National Healthcare Group Polyclinics, Singapore

### **Background**

Based on WHO's 2017 statistics, 31% of all global deaths were caused by cardiovascular diseases. This meant that 1 in 3 deaths in Singapore were caused by heart diseases or stroke. To address this concern upstream, National healthcare group polyclinics (NHGP) devised Cardiovascular Risk Screening (CRS) to contribute to Ministry of Health (MOH)'s priority 5. This priority aims to keep the population healthy through evidence based health screening. Despite the importance of screening and potential high costs involved if patients develop diabetes, hypertension or other CVDs, the number of patients who took up this screening especially at Yishun Polyclinic was low.

### **Methods**

From a fish bone diagram analysis, 9 main root causes were identified. Interventions proposed included getting clinic operations staff to consistently staple the screening advice slip and brochures to the patient's itinerary, encourage doctors to order as many CRS for eligible patients as possible and seeking nurses to engage and educate patients to take up screening. The clinic doctors, nurses and operations staff were closely involved in this entire process. Most of the interventions took place between October to December 2015.

### **Outcome**

More patients were educated on the importance of screening and saw the value in screening. With the workflows in the clinic and the different interventions, more operations and nursing staff were involved thus allowing the patient to be nudged at multiple service stations. When the screening frequency changed from once a year to once in 3 years from end FY 17 onwards, patients wanted to do their screening on a yearly basis due to habit. Though a plethora of factors have caused the screening numbers to drop within the polyclinic, the rate of engagement and education is no less. Patients are still encouraged to take up screening and are actively referred to GPs for this screening.

### **Conclusion**

In Yishun polyclinic, we managed to reach out to over 3000 patients over 2.5 FYs. Compared to the other NHGP clinics, Yishun polyclinic was the last clinic to have implemented the CRS workflow. Furthermore, due to funding constraints, they did not have any health promoter (dedicated resource) to offer screening to patients either. Thus their take up numbers tended to be lower. In FY 17, there was a change to the workflow as well as a government push to offer "Screen for life", a screening package offered by the private general practitioners (GPs). Thus patients were intentionally pushed away from taking up CRS and toward the GPs. Nevertheless, overall, we learnt that it is very important to have support from the clinics (clinicians, ops, lab staff) for any intervention to be successful. When one party does not play ball, implementation becomes very challenging.

## **Optimising HIV testing in community alcohol and drug recovery services.**

Call for Posters - Population and Public Health

Lee Middleton, Trina Ritchie

Glasgow Alcohol and Drug Recovery Service, UK.

### **Background**

As part of the implementation of the United Nations HIV targets to tackle HIV globally, HIV testing was embedded as an intervention in Glasgow Alcohol and Drug Recovery Services (GADRS). Staff were trained and Dry Blood Spot (DBS) tests were made widely available. Despite these measures, uptake remained low. An audit in 2015 in South West Care and Treatment (SWCAT) team opiate substitution therapy (OST) clinics found only 15% of patients had been tested for HIV within the previous 12 months. In 2015, a significant increase in new HIV diagnoses was noted in Glasgow in people who inject drugs (PWID). This included some low avidity cases, demonstrating recent infection and therefore ongoing viral spread. A new approach was required quickly to address the low uptake of testing in OST clinic patients in an effective and sustainable way, in order to significantly increase not only detection of HIV, but treatment and prevention of spread.

### **Methods**

Awareness campaign

- Poster campaign in OST clinic premises
- Integrated SWCAT staff team briefed (admin, social care, nursing, medical)
- Dialogue between patients and staff around HIV, new treatments and reducing stigma

Testing

- Prioritised annual testing month identified
- Targeted approach by staff promoting tests and raising awareness
- Opt out testing adopted
- Instant access to DBS testing for all patients
- Consistent medical support to staff and patients

### **Outcome**

2015 – 148 offered HIV test, 146 accepted (acceptance rate 98.6%)

2016 – 172 offered HIV test, 172 accepted (100%)

2017 – 172 offered HIV test, 169 accepted (98.2%)

2018 – 201 offered HIV test, 198 accepted (98.5%)

Over the four years, a total of 382 patients were HIV tested. Of 198 tested in 2018, 119 (60.1%) attended SWCAT during previous testing periods, with 119 (100%) accepting retest in 2018. Of 172 tested in 2016, 136 (79.1%) have had an additional test during one of the other annual testing periods.

In the 2017 group, 3 new cases of HIV were diagnosed. None were low avidity cases so were not recent transmissions, but all tested negative in 2016. All have engaged with specialist services, commenced treatment and now have undetectable viral loads. Two subsequent cases diagnosed in 2018, were again not low avidity, so either had not been offered tests or had not accepted them since the episode of risk-taking behaviour, highlighting the importance of repeat testing.

### **Conclusion**

There are a variety of factors which could have potentially influenced such a positive result, with the overall effect likely being multifactorial:

- Opt out tests
- No stigma
- Increased awareness
- Integrated team
- Consistent staff

Annual opt out HIV testing offered in this way is both highly acceptable and effective in the OST clinic setting, with the acceptance rate remaining above 98% all four years. Annual testing at SWCAT will

continue with aim of identifying new infections and quickly linking with specialist treatment services. The approach will be rolled out to all community teams.

## **Multidisciplinary intervention to decrease the incidence of Clostridium Difficile acquisition at a public hospital**

Call for Posters - Population and Public Health

Lisa Saidel-Odes, Ronit Nativ, Nurit Cohen, Orli Sagi, Jacob Dreier, Abraham Soroka  
Soroka University Medical Center, Israel

### **Background**

Nosocomial infections are one of the major causes of morbidity and mortality. Clostridium Difficile (CD) is a Gram-positive anaerobic, spore and toxin forming bacteria. CD is the major cause of nosocomial diarrhea. The primary way of transferring CD from one patient to the other is by direct contact with environmental CD spores. Preventing this cross-transmission requires strict isolation practices, disinfection, and intensive cleaning. Our aim was to assess the effect of rapid identification and diagnosis of CD, isolation, and environmental cleaning on the incidence of CD acquisition in the hospital.

### **Methods**

The intervention began during 2017. The indication for sending a stool sample to the lab for CD toxin (CDT) identification was revised according to the CDC guidelines. A form was designed which includes the date, time, and indication for sending the sample. The bacteriology laboratory doubled its service for testing CDT. A positive test result was immediately reported to the department that sent the test and to the infection control unit. A dedicated cleaning team was formed under the guidance on the infection control unit.

### **Outcome**

Compering the pre-intervention (1-4/2017) to the intervention period (1-4/2018) there was a decrease in the total positive results from 54 to 43 respectively; total hospital acquisition decreased from 72% (39/54) to 63% (27/43) ( $p=0.22$ ), acquisition in Internal Medicine departments decreased from 51.8% (28/54) to 25.6% (11/43) ( $p=0.007$ ). A medical indication was documented in 81/5% (44/54) during 2017 and in 100% (43/43) during 2018 ( $p=0.002$ ). The time period from the lab receiving the stool sample to releasing a result was shortened from six to two hours. Physician's documentation of a positive result in the patient's file increased from 68.5% (37/54) to 86% (37/43) ( $p=0.056$ ). Terminal cleaning of the patient zone by a dedicated team was performed within 75 minutes vs. 3 hours in 2017. The incidence of nosocomial CD acquisition was reduced from 27/10,000 hospitalization days in 2017 to 20.7/10,000 hospitalization days in 2018 ( $p=0.004$ ).

### **Conclusion**

Multidisciplinary intervention for rapid identification and diagnosis of CD, immediate patient isolation, and using a rigorous environmental cleaning team has decreased the incidence of CD acquisition in our hospital.

## Co-production in the Development of a National Framework for Community Mental Health Care Services

Call for Posters - Population and Public Health

Mary Ryan, Tom Ayers, Jessica Barrett, Michelle Costa, Helen Greenwood, Chris Lynch, Aiden Sellick, Shubulade Smith  
NCCMH UK

### Background

NCCMH promotes the role of evidence synthesis in healthcare policy, putting people's experiences of services alongside data, research evidence and NICE recommendations. It was commissioned by NHS England to use this approach to produce guidelines for community mental health care services to improve

- Wide variation across England in the quality and outcomes of community mental health care
- Marked inequalities for certain groups
- Significant premature mortality for people with serious mental illnesses
- The use of community resources to improve mental well-being

NCCMH is committed to working collaboratively with people with personal experience of care services and those who support them. It recognises the value which comes from bringing people together with different perspectives, experiences and skills.

We present our experience of working in this way to co-produce guidance for community mental health care and the key learning points from our evaluation

### Methods

The work began in 2017 and a guidance document was submitted to NHS England in March 2019.

Key features were

- A commitment to the principles of co-production
- Underpinned by values of respect, mutuality and equality
- Proactive recruitment of 'Experts by Experience' including from groups experiencing the greatest mental healthcare inequalities
- A richly diverse team of National Advisors and members of an Expert Reference Group
- A comprehensive approach to evidence gathering, literature review and best practice examples
- An evaluation of the co-production process to identify how this could be improved

Patients and families were at the centre of this work. Their perspectives enriched our shared understanding of what good community mental health care means and how services can work more effectively to provide it.

### Outcome

To develop national guidance

- We met our primary objective to co-produce a guidance document for NHS England, setting out better ways to provide community mental health care in the form of a Framework approach, seeing services in the context of the individual, their community and the resources available to them.
- The Framework encourages effective working between healthcare providers and agencies contributing to improving the social determinants of health and well-being
- There is an emphasis on the importance of collaborative care planning for everyone who needs community mental health care

To understand the co-production process

- a. Questionnaire exploring contributors' experiences n= 36  
50% response rate

Likert scale 0-10 Median score Range

Able to contribute thoughts, ideas and feelings 8.3 2.5-10

Felt contributions valued 8.2 4-10

Optimistic that the Framework will improve community MH care 7.1 4-10

- b. Thematic analysis of what went well/better if?

## **Conclusion**

Working collaboratively shifted our focus from what services do to one which places interactions with care professionals in the context of people's everyday lives and their communities. We believe our Framework approach which will lead to better ways of shaping, providing, receiving and contributing to community mental health care.

Next steps include

- To evaluate all subsequent co-produced work and make this embedded in the continuous improvement at NCCMH
- Use QI methodology to implement and test changes to our way of working co-productively
- Change ideas include:

Different formats for meetings

Better briefing and debriefing

Improve ways to help people to contribute fully

The ultimate test of this document will be the quality of care people receive. If it produces better care, it will be in large part because co-production has rooted it in the lives of ordinary people needing help for their mental health.

## **‘Improving Health Outcomes in Communities-Smoking’: A qualitative evaluation looking at outcomes from an assets-based community project in Hull**

Call for Posters - Population and Public Health

Milena Marszalek

United Kingdom NHS Royal Free Foundation Trust

Tim Fielding, Sally Barlow, Claire Farrow

Public Health Department; Hull City Council

### **Background**

Hull has some of the highest smoking prevalence in England; 32% among men and 29% in women comparing to the national average of 17%. Almost 50% of smokers in Hull live in the eight most deprived wards.

Hull City Council launched The ‘Improving Health Outcomes in Communities-Smoking’ Project in October 2017: a community-driven programme aimed at reducing harms from smoking in the most deprived wards in Hull. The team involved in this work included Local Neighbourhood Area Teams, Community and Commissioning Public Health Staff and local community residents

This project is based on the theory that underpins Assets Based Community Development (ABCD). It involves the use of existing assets within a community to motivate behaviour change from within and to deliver smoking cessation promotion within a variety of community settings. It is hoped this work is transferrable to other areas of Public Health.

### **Methods**

The project was implemented between October 2017 and July 2018. Information about developing assets-based community resources was collected through monthly feedback forms circulated to neighbourhood teams. This data was used to create a map of all viable community assets across the target wards.

Neighbourhood Staff gave feedback at two workshops. Semi-structured interviews were performed with staff stakeholders; 3 neighbourhood coordinators, 3 smoking cessation service staff and 1 public health council staff. This particular aspect of the evaluation focussed on staff feedback.

This qualitative evaluation design allowed stakeholders to put forward their ideas regarding the development of an assets-based community approach to tackling public health issues; in the context of smoking cessation. Thematic analysis of the semi-structured interviews was performed to draw out common ideas amongst stakeholders.

### **Outcome**

The map showed a large difference in positive case studies, assets-based community resources and smoking cessation clinics within community settings emerging across target areas.

The semi-structured interviews highlighted the following:

- The dynamics of the relationship between the neighbourhood coordinators and smoking cessation services
- The effects of different community dynamics on self-emergent assets.
- Obstructive factors such as community perceptions of short-term interventions and communication difficulties

These sources of data formed the foundation for project recommendations, including the use of a framework for an assets-based community approach in the future to standardise resources across all wards.

### **Conclusion**

Positive case studies from the project demonstrated a potential gold-standard model for work between communities and smoking cessation services that would narrow the discrepancies seen across wards.

The barriers around communication between neighbourhood coordinators and smoking cessation services demonstrated the need for a framework that clarifies their relationship.



It arose that communities perceive a lack of continuity in how interventions have been implemented in the past. For the community to trust a service, relationships will need to develop over a prolonged period of time. Therefore, the project requires a longer period of evaluation to determine outcomes. A community assets-based approach to tackling public health issues can be viable providing the relationships between the workforce are clearly clarified, standardisation is achieved across all areas of implementation and small areas of positive work are encouraged.

## **Pharmacists' knowledge and practice towards antibiotic resistance**

Call for Posters - Population and Public Health

Nada Atef Shebl

University of Hertfordshire, United Kingdom

Amnah Taqi, Fatemah Ashkanani

### **Background**

Antimicrobial resistance (AMR) is an increasingly serious threat to global public health that requires many actions to tackle it. A recent publication indicated that about 2 million people develop infections with antibiotic-resistant pathogens each year. Moreover, an estimated 23,000 people die each year as a direct result of these infections (WHO, 2018). In 2006, a study by Awad & Al-Saffar (2010) was carried out to identify the patterns of antibiotic resistance in China, Kuwait and the USA. It showed that Kuwait had the second rapid growth rate of antimicrobial resistance.

Pharmacists have a unique position within the health care system because they are the most accessible health care professionals and are able to intervene in the process of inappropriate antimicrobial, whether in hospitals or the community.

This study aims to assess pharmacists' knowledge and practice regarding antimicrobial resistance in primary care centres in Al-Asema and Hawalli districts in Kuwait.

### **Methods**

This research is a cross-sectional survey using an online questionnaire. The survey was conducted during the period from 19th of June to 2nd of July 2018. The study population included all pharmacists working in primary care centers in two districts in Kuwait (Al-Asema and Hawalli districts). The initial version of the questionnaire was subjected to both face and content validation with another experienced researcher. After modifying unclear questions, the survey was piloted with 10 pharmacists working in different settings other than the primary care centers included in this study. All 274 primary care pharmacists working in Al-Asema and Hawalli districts in Kuwait were invited to participate. The survey was distributed through WhatsApp®. Eight questions about knowledge toward antibiotic resistance, eleven questions about practice and four open ended questions were included. Ethical approval was obtained from the University of Hertfordshire and the Ministry of Health in Kuwait.

### **Outcome**

161 pharmacists participated in the survey (response rate =59%)

Participants showed an excellent level of knowledge about antibiotic resistance. Participants demonstrated a good level of practice regarding antibiotic resistance. According to Mann-Whitney U test, pharmacists who graduated from Kuwait University obtained higher score of knowledge in Hawalli district compared to other graduates. According to Kruskal-Wallis test, pharmacists from age group (20-29 years) had higher level of knowledge compared to other groups in Al-Asema district. Due to the lack of educational courses about antibiotic resistance after graduation, antimicrobial stewardship term was not known by 78.6% of the pharmacists. Only a small number of campaigns and workshops related to antibiotic use and resistance have been carried out in Kuwait and they target mostly the public and prescribers. Only 26% of the pharmacists took part in such awareness campaigns about appropriate antibiotic use.

### **Conclusion**

This study concludes that pharmacists have excellent knowledge and good practice toward antibiotic resistance so they can work collaboratively with other health care professionals to limit antibiotic resistance in Kuwait.

This study can be used also to implement antimicrobial stewardship in Kuwait and improve pharmacists' practice by involving them to be an active part in antibiotic awareness campaigns

Further studies need to be carried out in order to validate these results by including pharmacists from all districts in Kuwait.

Government must provide recommendations for improving the role of pharmacists as antibiotic resistance defences.

## **A prescription for a healthy environment- preventing unintended harm from medicines**

Call for Posters - Population and Public Health

Sharon Pflieger

Consultant in Pharmaceutical Public Health, NHS Highland, Scotland

Professor Stuart Gibb

Director, Environmental Research Institute, University of the Highlands and Islands, Scotland

Diane Duncan

Head of Low Carbon, Highlands and Islands Enterprise, Scotland

### **Background**

NHS Highland is a remote and rural board which covers 40% of the land mass in Scotland and has a population of 330,000. The region benefits from tourism, plentiful green space for activity, food and drink production including seafood and whisky production which need clean water. More than 600 pharmaceuticals and their metabolites have been found in the environment worldwide as waste water systems cannot remove them all. For the first time in the UK, public organisations have come together to tackle this wicked problem that none of them can solve alone- pharmaceutical pollution of the environment. The One Health Breakthrough Partnership has been formed by NHS Highland, Highlands and Islands Enterprise, University of the Highlands and Islands, The Hutton Institute, Scottish Water and the Scottish Environment Protection Agency taking an upstream approach to reducing environmental pollution with pharmaceuticals (medicines) and working towards a nontoxic environment.

### **Methods**

Medicines enter the environment by consumption, 90% of a dose is excreted as an active medicine/ metabolite in urine and by improper disposal down sinks and toilets which enters the waste water system. With the prescription of a medicine being the most common intervention in healthcare and the use of medicines increasing every year (35% over the last 10 years in Scotland) due to a growing population, more older people, technological advances and a "pill for every ill" culture it is important to protect our environment against further damage from pharmaceutical pollution. The work takes a multifaceted upstream approach to reduce the volume and impact of medicines in the environment- considering prescribing choices, developing media campaigns, working towards the Alliance for Water Stewardship standard for water stewardship in Caithness Hospital, influencing the construction of new buildings.

### **Outcome**

Research in Caithness Hospital found pharmaceuticals in the hospital wastewater, the wastewater treatment plant influent and final effluent being discharged in the water system. Seven medicines out of eight being tested for were detected in the hospital effluent- paracetamol, ibuprofen, diclofenac, trimethoprim, clarithromycin, fluoxetine and carbamazepine. Some of these are known to be environmentally hazardous and bioaccumulate in fish, delay development, impair reproduction and result in intersex fish. Antibiotics have been shown to lead to the presence of new antibiotic resistant strains of bacteria and induce genetic alterations and mutations in a number of aquatic species. We don't yet know if daily exposure to sub therapeutic doses over a period of time have negative human health impacts so are taking a pragmatic approach to protecting human, animal, food and environmental health.

### **Conclusion**

The impact of this work will lead to prescribing formulary choices which maximise patient and environmental health and will hopefully be incorporated into the Single National Formulary to benefit the whole of Scotland. Clinicians will be more aware of the implications of their prescribing and may be more likely to discuss social prescribing and self care with patients. Hopefully we will have a population which only takes medicines when needed, considers other treatment/ prevention options, doesn't stockpile medicines, understands that antibiotics do not work for coughs/ colds and disposes of medicines safely leading to better health and reduced harm from medicine for them and the environment. Challenges include data sharing, public expectations and clinical awareness. The key is working in partnership with

many stakeholders, assuring clinicians and the public that patient care is uppermost and framing the issue as key for human health as well protecting the environment.

## **Developing a global quality of care report to improve health outcomes for men with localised prostate cancer**

Call for Posters - Population and Public Health

Sue Evans, Fanny Sampurno, Ashwini Kannan, Jeremy Millar, Jacinta Opie

Monash University, Australia

Sarah Connor, Emily Pearman, David Elashoff, Lorna Herbert

UCLA, USA

Caroline Moore

University College London, United Kingdom

Christoph Kowalski

German Cancer Society, Germany

### **Background**

The TrueNTH Global Registry was established in 2016 with funding provided by the Movember Foundation. Its aim is to monitor quality of care and benchmark performance across participating sites, currently located in 13 countries. Data from centres is transmitted each six months to the Data coordination Centre, located at Monash University. Given the diversity in sites and languages, a challenge for the registry was determining how to best present the quality of care report, which will include 33 quality indicators (QIs) determined through a consensus process (1).

Issues of how to preserve anonymity of sites in the quality of care reports and the level to which reports should be generated, were identified. As completeness of data is an important limitation when generating benchmark reports it was important to ensure that data quality metrics were included in the report.

### **Methods**

A literature review identified numerous types of graphical displays. Seven working group sessions were held (2018) with project team members to understand current data display approaches, share findings of the literature review and source ideas for new innovative approaches. Subsequently two surveys were developed to vote on preferred displays. Survey 1 included 10 members [5 clinicians/5 non-clinicians], and had a 83% response rate. It included a section to obtain suggestions for enhancement by participants, which were incorporated into the second survey. Survey 2 included 35 members [17 clinicians/18 non-clinicians] and achieved a 93% response rate. The first quality of care report will be distributed in May 2019 and will be preceded by a data completeness report.

### **Outcome**

The quality of care report has three sections.

1. A dashboard which summarises performance across the 33 QIs with a comparative section demonstrating each site's performance against other sites and the previous reporting period.
2. A data completeness report which provides feedback on the quality of the data provided by each site.
3. Clinical performance data section. Clinical data are presented as funnel plots and time series demonstrating each site's overall comparative performance, with control limits demonstrating 2 and 3 standard deviations. The time series demonstrates sites improvement or deterioration over time, relative to the population median levels during that reporting period. A bubble plot reports on patient-reported outcome measures, where axes consider both function and bother for domains assessed by the EPIC-26 quality of life survey.

### **Conclusion**

Development of the quality of care report benefited from input by many clinicians and researchers. Impact will be measured as reports are distributed in 2019. Patients have been actively involved in the development of the patient reported outcome measures collected in the global registry. The local dataset used to develop the quality indicators was developed with consumer representation. Locally, it is anticipated that consumers, patients and partners will be involved in quality improvement activities arising as a result of the feedback on quality of care reports.

(1) Sampurno F, Zheng, J., Di Stefano, L. et al. Quality indicators for global benchmarking of localised prostate cancer management J Urol 2018: 10.1016/j.juro.2018.02.071

## **A multi-approach management intervention can lower C-section rates: the experience of a Third Level Referral Centre**

Call for Posters - Quality, Cost, Value

Antonio Giulio de Belvis, Carmen Angioletti, Caterina Neri, Antonio Lanzone, Walter Ricciardi  
Fondazione Policlinico A. Gemelli - IRCCS - Università Cattolica Sacro Cuore, Italy

### **Background**

Caesarian Section (CS) is one of the most frequently performed surgical procedures and is one of those with greater impact for the clinical appropriateness in the Italian National Health System.

Italian hospitals experience an high level in CS rates, due to progressive modifications in socio-demographic factors, as well as changes in the attitudes of health professionals towards legal medical issues and different approaches of women towards pain and labor.

The aim of the present study is to report the experience developed in Fondazione Policlinico A. Gemelli Teaching Hospital IRCCS, a Third Level Referral Center in performing a multifaceted intervention strategy to reduce Caesarian Section (CS) rate. In addition, we seek to compare our results with the performance of the best Italian hospitals on deliveries and CS, by adjusting for case complexity

### **Methods**

To evaluate the impact on CS, a monitoring system was set up, based on a prospective collection of all deliveries from 2013 to 2017, according to Robson's classification.. In addition, to compare with the best performing Italian hospitals, data were collected at regional and national level, respectively..

The multi approach intervention consisted of evidence based tools: process management, training, multi-professionalism, development of planning and control systems, continuous monitoring, audit and feedback. The intervention took place in an Italian Third Level Referral Center between 2013 and 2017.

### **Outcome**

Between 2013 and 2017, the percentage of primary CS decreased from 26.71% to 15.03% (RR adjusted considering the regional average: 0.87 in 2013 with a p-value<0,001; 0.57 in 2017 with a p-value<0,001). In the meanwhile a raise of 19.76% in the annual volume of deliveries – from 3300 to 3952 –was registered. Such results have also been confirmed by comparing the Hospital with the best performing Italian centers. From 2013 to 2016 the percentage of primary CS decreased from 27,02% to 18,04% (RR adjusted considering the regional average: 1,04 in 2013 with a p-value >0,05; 0.74 in 2016 with a p-value<0,001); while there is an increase in the annual volume of deliveries – from 3311 to 4219.

### **Conclusion**

Our study confirms how multifaceted interventions can strengthen a continuous quality and safety improvement approach. This is of crucial relevance in the obstetric field and in Country, like Italy, whose overall performance in CS needs to be improved.

## Enhancing Pediatric Developmental Screening in a Primary Care Setting

Call for Posters - Quality, Cost, Value

Ahmad AL-Musa

Senior Whole Health/MCPHS & USA

### Background

#### Abstract

In primary care, wait time has always been an issue for both the patient as well as the clinical practice (Mohsin, 2007). To take advantage of such non-valued time, many clinics have been utilizing their waiting room wait-time to push for providing more useful value-added approaches towards patients (Henize, 2018).

In this paper, we are demonstrating these efforts by switching the responsibilities of an age-adjusted pediatric developmental screen from clinical providers to non-clinical front-line staff at a local health center in Boston. The design of the project allowed the use of the front-line staff to provide the screens to patients as they checked in on the team. Once patients received the screens, they filled them out in the waiting room prior to being called in by the medical assistant. Post implementation efforts provided to demonstrate that more screens were being conducted and completed by the patient and that providers were more likely to remember to bill for the screens when provided with a pre-filled screening tool. The pilot team provided a 58% effort pre-project implementation screening rate compared to an 81% effort post-project implementation screening rate. This concluded to show a +23% difference between pre- and post-implementation efforts. Results of the project were based off billing reports of the age adjusted screens. These encouraging results could pave a way for a promising unified approach towards delivering primary care screens in the world of health care.

#### Background

In 2009, the state of Massachusetts became the first state to mandate an age-adjusted screening tool for social/developmental/behavioral health needs for ages 21 and younger during the annual physical visit (Giusy, R., Michael H., T., Dean C., X., Harwood S., E., Roger C., P., Hayley S., K., & ... Michael J., M., 2014). This court ruling was announced after the *Rosie D. vs Romney* case in 2008, and since then, the collection of screening tools (eight in total) would be referred to as the *Rosie D. screens* (Giusy et al, 2014).

The various screenings are targeted for different areas of mental/behavioral health development. The names and age ranges of these screens include the following; Ages and Stages Questionnaire: Social-Emotional (3-60 months), Brief Infant and Toddler Social and Emotional Assessment (12-36 months), Child Behavior Checklist/Youth/Adult Achenbach System of Empirically Based (1.4 -20 years), Car, Relax, Alone Forget, Friends, Trouble (14-18 years), Parents Evaluation of Developmental Status (0-8 years, Modified Checklist for autism in Toddlers (16-30 months), Patient Health Questionnaire-9 (12-20 years) and the Pediatric Symptom Checklist (4-16 years) (Kuhlthau K, Jellinek M, White G, VanCleave J, Simons J, Murphy M.2011). Given the above, the health center has not adopted the Brief Infant and Toddler Social and Emotional Assessment and the Child Behavior Checklist/Youth/Adult Achenbach System as part of their screening workflow.

To better understand the importance of this issue, according to research, one in every five children below the age of twenty-one are diagnosed with a behavioral health disorder (Hacker, K. A., Penfold, R. B., Arsenault, L. N., Fang, Z., Murphy, M., & Wissow, L. S. 2014). However, only 30% of patients do receive follow-up and treatment (Hacker, 2014). To clarify this further, for every 20 patients below the age of 21 identified as having a behavioral/developmental health disorder, only six patients receive treatment.

With the engaged mandated law efforts from the state, the overall screening rates has increased drastically since 2009. According to one study, the rates of screening prior to the *Rosie-D* case estimated to be 16.6%( over a three-month period) in Massachusetts and identified roughly around 1600 patients in 2008 (Kuhlthau et al, 2011). However, post-policy changes led to a staggering 53.6% (over a three-month period) screening rate and identified roughly around 5000 patients in 2009 (Kuhlthau et al, 2011). This shift also contributed to an average increase of 1000 follow-up evaluations post diagnoses per month (Kuhlthau et al, 2011)

Even with a change in policies and mandated laws from the state, primary care providers face many obstacles and challenges on delivering the screens to the patients during the visit. These challenges might impact the delivery of such screens during the office visit hours. Some of these challenges include the



complex state the patient arrives in. In some situation, such age groups might present with multiple health disorders and co-morbidities, and so screening for developmental disorder might not be considered a priority during the time of visit (Sherwin HN, McKeown M, Evans MF, et al. 2013). Another barrier seen in primary care can be aligned with amount of time allocated for clinical visits (Sherwin, 2013). On average, clinical primary care visits range anywhere between 10 to 15 minutes long, this suggest that the provider has a maximum of 15 minutes to conduct a history, physical examination and order labs/medications (Sherwin, 2013). Such time strains might not leave much room for preventive maintenance/screenings towards patients. Hence, this might impact their overall health and cost of care in the long run.

Admittedly, the American Hospital Association (2012) has illustrated that problems in patient's care might be strongly related to the defects in patient-flow throughout the clinic. In fact, one of the most understudied and underutilized areas of patient-flow is the waiting room (Sherwin, 2013). Further, according to one research article, waiting rooms are considered the perfect breeding ground for healthcare education (Kamimura, A., Tabler, J., Myers, K., Ahmed, F., Aguilera, G., & Ashby, J. 2017). Not only because the waiting room is considered the first step in any process map around patient care/flow, but also because patients spend the bulk of their time in that location compared to any other location in the clinic (Kamimura, 2017)

Given the above information, a problem statement has been generated that would help potentially enhance the way care is delivered in relation to the Rosie-D screenings. The proposed problem statement question includes the following "In a primary care setting, does shifting the responsibilities of primary care screens from clinical to non-clinical (front-line) staff help enhance clinical quality outcomes?". The targeted audience would be the front-line staff, the intervention would include front line staff distributing primary care screens(Rosie-D) to patients, the comparison would include clinical providers distributing primary care screens to patients and finally the outcomes would be an increase in the number of screens performed.

To clarify, at the Health Center, there are five primary care teams that utilize such screens. These screens include the Pediatric team, Blue team, Purple team, Green team and Sunflower team. The only team that was using the front-line staff to help distribute the screens was the Pediatric team. The remaining care teams were dependent on the provider delivering the screen. The steering team wanted to reinforce the screening model on the Pediatric team, then once promising results achieved, spread of the model took place.

In conclusion of this background, we are assuming that by answering the proposed question, initiatives could be developed to enhance pediatric developmental screening efforts, comply with state standards for organizations within the state of Massachusetts, decrease the pressure on providers to remember to provide screenings to patients, develop a standardized/unified approach towards screening efforts, decrease non-valued time/ enhance value added time during clinical visits and improve collaborations efforts between front line staff and clinical providers.

## **Methods**

We reviewed the organization's protocols on screening/monitoring of the Pediatric Developmental Screening process(ROSIE-D) between the months of October to November 2017. We then developed and launched a new system that would replace the clinical providers with the front line staff on providing the screening tools(Rosie-d). In order to avoid confusion with front line staff, we color coded the screens and also created a color coded key. In addition, in order for providers to ensure proper billing standards, the committee also created a "HOW-TO-BILL" guide. The project initially focused on the pediatric department as the pilot project, until a goal of at least 80% could be reached. Two chart audits were conducted in order to help identify any gaps in the pilot project. In addition, monthly departmental screening data was distributed to the pilot team to further highlight patients that were due for the screen , percentage of departmental completed screens and percentage of individual provider completed screens. These data reports were pulled using billing codes

## **Outcome**

To help better embrace a sustainable pathway towards positive transformation, a steering committee was developed during the first stages of the project (November 2017). The committee members included

the lead pediatric provider, lead behavioral health integrated provider, lead nurse, the manager of patient access support services and the quality improvement integrated project manager. To align with lean standards, the committee designed an observational study (Gemba study) to help better understand our current condition at the front line area on the Pediatric Team (Benjamin C., L., Kheng F., W., Carolyn A., T., Nadia M., K., Fairenna B., F., & Jerry E., L. (2017). The observational study included 2 phases, the first phase was dedicated to understanding the front-line staff current condition and the second was set to be around the workflow of the clinical providers on the pediatric team.

The purpose of the observational tool was to capture two main objectives, the spectator's perspective and the employee's perspective of the current patient flow. Once both perspectives were gathered, the steering committee would determine the actions and counter actions needed to move forward. In addition, the second phase of the observational study included generating two major medical chart reviews to better understand the current conditions around clinical documentation and billing standards.

The observation at the front desk on the pediatric team was designed in whereby the quality improvement project manager would be embedded behind the front desk receptionist for one hour - twice a week for three weeks. The observation was directed towards understanding the communication exchange efforts between the front-line receptionist and patients. The observations were mostly conducted around noon time because it seemed that this was the busiest times for that department.

The second round of observations included receiving feedback from providers about the screening process. This was done by scheduling 10-minute discussion sessions with randomly selected providers throughout the clinic. The lead pediatric provider and the quality improvement project manager asked questions to providers about what they thought about the billing and documentation process.

In addition, two medical record chart audits were conducted to help obtain a deeper understanding of what was being captured in the EHR. The first audit occurred during the last week of January and the second audit occurred during the last week of February. A list of all patients that were identified as having a "yearly physical" encounter during that week were included in the audit. The patients that were audited only pertained to the pediatric department.

The pediatric department was used in a pilot study designed to test the changes suggested by the steering committee because this department had previously shifted screen completion responsibilities from the clinical providers to front line staff. Once the changes resulted in an 80% screening rate on the pediatric department, both the shift in screen completion responsibility as well as the recommended steering committee's changes would be implemented across the other care teams in the clinic

Outcomes: We observed our pilot data screenings rates from July 2017-June 2018. The mean screen rate for the measured time frame was 71.3%. We divided up the screening rates to identify post and pre-protocol change. This concluded to show a +23% difference between pre- and post-implementation efforts on the piloted team. After, reaching our targeted goal of 80% on the Pilot project, we engaged in spreading our success to other teams within the organization. When compared the pre implementation efforts to the post implementation efforts for the rest of 4 teams, the results included a (+)7.5% change since implementation

## **Conclusion**

After the first phase of the observational study, the steering committee concluded that there was much confusion from the front-line staff on which screen to give to which age group. Because of this, a color-coded system was developed to link specific colors to specific age groups. This move was geared to help the front-line staff rely less on memory and more on the color of the screening tool that had been linked with age of the patient(as shown below in table 2). For instance, if a 16-year-old patient checked in with the front desk, the front line would link the age to the color on the key color card. In this case, they would know to give the blue and red screen. In addition to implementing a standardized color-coded system, the committee also provided a hands-on training session for the front-line staff on the importance of the screen

The second change implemented after the first observational study was to provide an on-site screening training session for all front-line staff to emphasize the importance of the screen from a qualitative and financial perspective, as well as to ensure the transmission of the proper screening procedure.

The Pediatric team was the first team to employ the changes developed by the steering committee and, as shown in Figure 2, has seen an overall 15% increase over 8 months. Although, in the first month post-implementation, the Pediatric team saw an initial decrease in screenings from 75% in January to 69% in

February. This initial dip in performance was a trend present in all except one of the departments in which these changes were implemented. This can be attributed to the adjustment period necessary to address the confusion and lack of practice issues induced by large-scale revisions to existing protocols. However, in March, the third post-implementation month, the screening rate of the pediatric team increased to 81%. Thus, because the rate of screening had surpassed 80% on the Pediatric Team, the changes introduced by the steering committee were employed and the responsibility of completion of developmental screens was shifted from clinical providers to non-clinical front-line staff. The spread of these modifications were then introduced to the Sunflower team, which has seen a post-implementation increase of 70% over 5 months, from 20% in March to 90% in July, with an average post-implementation screening rate of 49%. The modifications were then implemented on the Blue and Green teams in April. The Blue team which has seen a post-implementation increase of 11% over 4 months, from a 35% to 46%, with an average post-implementation screening rate of 48%. The Blue team is the only team that has seen a significant post-implementation decline in performance, as the rate of screening decreased from 60% in May to 46% in July. This anomaly can be attributed to the fact that the team's clinical lead was temporarily appointed to a different position, and thus the Blue team lacked the same clinical guidance that other teams possessed. The Green team has seen a post-implementation increase of 25% over 4 months, from 50% in April to 75% in July, with an average post-implementation screening rate of 63% over 4 months and has not seen any dips or declines in their monthly screening rate since the launch of the changes. The Purple team has seen a post-implementation increase of 28% from 35% in May to 63% in July, with an average post-implementation screening rate of 63% over 3 months.

Overall, the enhancements have yielded an average increase of 30% in pediatric developmental screenings within the studied departments across the health center over the course of 8 months. This increase in efficiency was accomplished without major expenditure on additional resources, as well as the employment of lean methodology.

In Conclusion: Because developmental/behavioral health disorders can increase the risk of social isolation, identifying the signs and symptoms can be delayed, which may impact the diagnosis and treatment. Such delays may impact the prognosis of such disorders. Our shift to distribute the screening responsibilities allowed us to screen, monitor and identify more patients who had clinical signs and symptoms of developmental disorders. These encouraging results could pave a way for a promising unified approach towards delivering primary care screens in the world of health care.

# **Improving the quality and efficiency of our angiography service in NSTEMI using a patient-centred, multi-disciplinary team approach**

Call for Posters - Quality, Cost, Value

Anna Kate Barton

Golden Jubilee Foundation, United Kingdom

Philip Anderson

NHS Greater Glasgow and Clyde, United Kingdom

Richard McFarlane

NHS Lanarkshire, United Kingdom

Jacqueline Cappie, Carolyn Probert, Catherine Labinjoh

NHS Forth Valley, United Kingdom

## **Background**

The acute coronary syndrome (ACS) is a common medical emergency. Patients with ST-elevation myocardial infarctions are generally admitted directly to an interventional cardiology centre for primary percutaneous coronary intervention. Conversely, patients with non-ST-elevation myocardial infarction, or unstable angina, together termed non-ST-elevation ACS, or "NSTEMI", are usually admitted to their local hospital, with onward referral made for invasive coronary angiography if this is indicated, often to a different hospital where these facilities are available. It is recognised that NSTEMI patients requiring inter-hospital transfer for angiography wait longer than their counterparts admitted to a centre where interventional cardiology is available.

In Forth Valley, a district general hospital without interventional cardiology, transfers to tertiary centres for angiography after NSTEMI were delayed, leading to increased length of stay and inconvenience/anxiety for patients and families.

It was unclear who was responsible for making angiography referrals using Scottish Care Information (SCI) Gateway (the established local mode of referral) once requested by the cardiology consultant. Often this was not done until the patient reached the ward, often several days after presenting. Early outpatient angiography was under-utilised despite many patients being suitable for, and agreeable to this rather than an inpatient procedure.

Led by nursing staff and doctors in training, we explored methods to reduce time from admission to referral for angiography and increase uptake of early outpatient angiography.

## **Methods**

We analysed baseline data held on a database maintained by ward nursing staff of routinely collected information to establish average time from presentation to transfer for angiography. The existing referral pathway was analysed by process mapping to understand where obstacles and potential gains existed. Cardiology medical and nursing staff were presented the data, and together, we brainstormed ideas to improve the situation. All cardiology staff were briefed on changes we planned to trial.

We re-assigned responsibility for, and the pathway concerning angiography referrals for patients in the acute receiving unit following cardiology review and then we enabled cardiology specialist nurses, developing an outreach role, with a "pull not push" admissions model, also facilitating earlier and better conversations and decision-making. Medical and nursing staff worked together to identify patients suitable for early outpatient angiography shifting urgent care to planned care for lower risk patients. Advanced nurse practitioners assumed this role after a 6-week trial of cardiology ward staff providing an outreach service to the acute receiving department.

## **Outcome**

Date of admission was added to routinely-collected data for all referrals. At baseline, mean and median time from admission to referral in hours was 72.6 and 59 respectively; 61.5 and 47 for presentations Sunday-Thursday; and 121 and 74 for Friday or Saturday. At the end of our 6-week trial, mean and median time to referral was 16 and 15.5 hours respectively for Sunday-Thursday presenters, and 60 and 58 hours for Friday to Saturday.

These reductions were sustained with advanced nurse practitioner-led referral. In July, mean and median time to referral in days was 1.6 and 1 for Sunday-Thursday presenters, and 2.7 and 2 for Friday-Saturday

presenters. In August, mean and median waits were both 1 day for Sunday-Thursday presenters, and 2.9 and 3 for Friday-Saturday.

For the trial period, 25.5% of angiograms were OP mean 7.6/median 6 days after discharge. For the same period in 2017, this was 4.1%. In July 2018 this was 14.3%, and August, 15.2%.

Data were fed-back to the cardiology team on a weekly-basis during the trial period to drive further improvement. Monthly analysis and communication of % outpatient angiography and time to referral continued following the trial period.

## **Conclusion**

Early outpatient angiography is acceptable to both patients and clinicians. This work reduced waste and led to better outcomes (sooner angiography for higher risk groups). We were also able to create capacity on busy inpatient lists for higher risk cases.

Assigning responsibility for tasks and redesigning our pathway as a proactive outreach service led to a sustained reduction in inpatient stay. As a speciality, it is important to take responsibility for patients requiring complex, time-sensitive interventions with a proactive “pull” approach.

Sustainable change depends on buy-in from all relevant stakeholders, and involving them from the outset is key to success. Further interventions are required to reduce transfer times for patients presenting on Friday or Saturday, who current wait until Monday for a cardiology review.

Listening to the frustrations of our patients our the driver to undertake this project. Shared decision making with patients surrounding early outpatient angiography allows a flexible approach that offers greater freedom than a prolonged inpatient stay for appropriate low risk cases.

## **Acute poisonings admitted to a university hospital in Belgium: characteristics and impact on the costs.**

Call for Posters - Quality, Cost, Value

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Walter Buylaert, Peter De Paepe  
Ghent University Hospital Belgium  
Martine Mostin  
Belgian Poison Centre Belgium

### **Background**

Poisoning poses a significant global public health problem. According to WHO data, an estimated 193,460 people die worldwide from unintentional poisoning. Hospitals, and in particular emergency departments (ED), are faced with a considerable number of admissions leading to a substantial number of hospitalizations and costs. Therefore, the aim of the present study is (1) to inventarize the characteristics of acute poisoning admissions to the emergency department (ED) in a Belgian university hospital, (2) to identify risk factors for hospitalization type and (3) to calculate the direct medical cost of acute poisonings charged by the hospital and paid by the government and the patient.

### **Methods**

Data of 2017 (1st January to 31st December) were collected and analyzed retrospectively using patients' medical records and hospital invoices.

Patients were categorized in three groups: (1) ambulatory patients discharged home after treatment in the emergency department (ED-amb), (2) patients requiring observation in the emergency department for a maximum of 24 hours (ED-24h) and (3) patients admitted to the hospital ward (Hosp). Factors possibly associated with the type of hospitalization were identified by logistic regression.

### **Outcome**

A total of 1,214 hospital admissions were included, accounting for 3.6% of all ED admissions. Men (62.2%) and the age group 21-40 years (43.0%) accounted for the largest proportion. Substances most commonly involved were ethanol (52.9%), benzodiazepines (9.7%), cocaine (4.9%), cannabis (4.6%), antidepressants (4.6%) and psychostimulants (4.6%). Patients were discharged home after having received care in the emergency department (ED-amb) in 54.5% of admissions, were admitted to the emergency-department-24-hours-observation unit (ED-24h) or were hospitalized (Hosp) in 24.6% and 20.9% of admissions, respectively. Factors found to be associated with hospitalization type were hour of admission, category of ICD-10 involved agents, Manchester triage score, use of antidotes and need for medical imaging (all  $p < 0.05$ ).

The total direct cost for the treatment of 1,175 poisoned patients with an mandatory health and disability insurance amounted to €1,512,346.38.

### **Conclusion**

Acute poisonings account for a considerable proportion of emergency department admissions representing a significant organizational and financial burden to hospitals and healthcare workers. Efficient triage of patients to the appropriate level of care in a safe and qualitative way contributes to avoiding the negative aspect of overcrowding in emergency departments, resulting in less time left for qualitative care for the most severe cases. In this context, insight into the elements associated with the hospitalization is one of the key factors.

## **Hospital at Night - Monash Health**

Call for Posters - Quality, Cost, Value

Anton Glagovski, Alistair Miller, Martin Keogh, Rachael Yates  
Monash Health, Australia

### **Background**

Monash Health is a large public health service that sees more than 238,000 patients across five major hospitals each year. Through continually driving innovation, we identified an opportunity to significantly improve the delivery of patient care at night.

A rudimentary and unidirectional paging system was used for overnight communication and task allocation. This system: required multiple manual steps in order to complete a communication feedback loop; offered no transparency over task delegation or prioritisation; did not align with staff expectations; put patients at risk of delayed assessment and treatment.

Junior Medical Staff indicated significant frustration during their shift, with 71% experiencing much/great deal of time pressure to complete their task requests.

The combination of a unidirectional paging system and paper-based task list were found to be a suboptimal framework for communicating and tracking patient related tasks afterhours.

### **Methods**

Our aims were to enhance clinical communication and to optimise clinical task management afterhours. Based on research and learnings from other healthcare organisations, we implemented an electronic clinical task management solution (mobile app) for use by clinical teams at night.

The change process was led by a steering committee, working groups and clinical change champions, with staff consultation occurring at each stage of the project. Staff engagement occurred from initiation, which was pivotal to ensure a solution was procured and implemented that met their needs and expectations.

The change strategy was managed as a project with clear timelines and deliverables. The project commenced in September 2016, with transition to “business as usual” in September 2018. Over 72% of the project’s duration was spent in the planning phase, 4% in implementation, 16% in monitoring and review and 8% in sustainability phase.

### **Outcome**

The project implemented a digitally enabled task management solution resulting in significant improvements to team communication and delivery of timely patient care afterhours.

Since the system’s implementation, clinical staff have reported:

- Improved access and quality of patient care through quicker response times and ability to track deteriorating patients
- Significant time saving (up to several hours per shift)
- Improved ability to manage their workload

Junior staff are feeling 20% less frustrated and 17% less time pressure to complete tasks at night. The system has enabled clinicians to instantly identify and connect with other night shift colleagues - improving a sense of team.

Staff feedback has been overwhelmingly positive with many saying that “it’s awesome” and “[we] hope to see it during the day as well.”

### **Conclusion**

The implementation of a mobile clinical task management solution can result in significant improvements to the delivery of timely patient care afterhours. Through comprehensive real-time data sets, response times to care delivery can now be measured, monitored and continuously improved over time.

Health services intending to replicate this initiative should build in adequate planning and lead time into the project timeline to ensure the product is fit for purpose and performs at a level that meets expectations.

The implementation of a modern communication platform to replace the aging LANPage infrastructure for non-emergency clinical communication can result in improved communication, increased staff satisfaction, improved workload and patient care overnight.



## **Linnean-initiatief: building a 'coalition of the willing' to accelerate value-based healthcare**

Call for Posters - Quality, Cost, Value

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Erasmus Medical Center, the Netherlands

Willem Jan Bos, Professor of Neurology

St Antonius hospital Nieuwegein/ Utrecht and Leiden University Medical Center, the Netherlands

Marloes Zuidgeest

National Health Care Institute, the Netherlands

### **Background**

Starting point: ICHOM 2017. At the Dutch embassy Dutch attendees of the ICHOM conference 2017 gathered at a side event organised by the Netherlands Ministry of Health, Welfare and Sport.

Why? We felt the urge to accelerate the use of healthcare outcomes to improve the quality and value of care for patients. The same goal as relevant stakeholders, the National Health Care Institute and the Ministry of Health, Welfare and Sport. But, we are independent from formal decision making, board rooms or personal interests. Our collective ambition: to accelerate value-based health care and to create an irreversible change in our healthcare system from a coalition of the willing.

### **Methods**

Coalition of the willing', in one year we grew to 300 participants Patients together with doctors, board-members and policy makers exchange insights, driving collaborations and composing (unsolicited) advice to inform and challenge each other on the challenges of VBHC, outcome transparency and shared decision making.

### **Outcome**

- Formulating a common ambition and specific goals for the initiative
- Creating an open, inclusive network which could be joined by anybody, e.g. believers, frontrunners and critics
- Personal opinion, not behalf of an organisation
- 7 meetups since oct '17
- >100 attendees per meetup
- Every meeting, an inspiration example of a hospital(group) about VBHC is shown and discussed.
- Active participation: contributing via one of the workgroups, be a visible advocate, share insight among colleagues or by attending one of Linnean-gatherings.
- Products: publication of the whole initiative, more information

### **Conclusion**

Take-home message

- Focus on exchanging insights and lessons-learned, but also create an atmosphere of action: with clear (short term) goals and deliverables. Avoid "All talk, no action".
- Be visible on a national level (e.g. in the media, journals and at conferences), create a sense of belonging and value by simply connection and sparking existing energy

## **Improving Quality in the Thai Labor Room by Using Nursing Quality Assurance Guidelines**

Call for Posters - Quality, Cost, Value

Armarapas Atthachaiwat, Dr.Teeraporn Sathira-Angkura, Sophis Suwankesawong  
Nursing Division, Ministry of Public Health, Thailand

### **Background**

#### **Background**

Maternal death is a major public health problem. The quality of healthcare services provided in the labor units is the key factor to reduce maternal death. In 2014 - 2016, maternal mortality rate in Thailand has increased from 23.3, 24.6, and 26.69 per 100,000 live births, respectively.

The most common cause of death during labor is postpartum hemorrhage. The quality control and improvement of service deliveries are necessary for the labor unit. The Nursing Division, Ministry of Public Health, is responsible for quality development of the nursing care services in the hospitals under the Ministry of Public Health, Thailand. The Nursing Division has also set up the guidelines for the nursing quality assurance system in the labor unit aimed at driving nurse-midwives to improving the quality of nursing care and to ensure the safety of the mothers.

### **Methods**

Method: This descriptive study consists of 3 periods: 1) Preparation; 2) Implementation; and 3) Evaluation. In the preparation period, the 796 nurse-midwives, who work in the targeted labor unit, get a comprehensive training on the nursing quality assurance system and guidelines with the emphasis on the nursing standards and their assessment tools. During the implementation period, the 796 trained nurse-midwives practiced the nursing quality assurance system and exercised self-assessment evaluation with assisting from the Nursing Division. In the evaluation period, performance analysis of the 796 labor units was calculated using a series of 2-year (2016 – 2017) self-assessment evaluation score and maternal mortality rate, one of the Ministry of Public Health indicators.

### **Outcome**

Results: The results revealed performance improvement of the 796 labor units yielding a number of 81.65% in 2016 and 85.59% in 2017 respectively. In addition, maternal mortality rate was decreased from 26.69 in 2016 to 10.41 in 2017 respectively.

### **Conclusion**

Conclusion: Using the nursing quality assurance system and guidelines in the 796 labor units of the hospitals under the Ministry of Public Health, has established a system for quality assurance, thereby improved quality of service deliveries and reduced maternal mortality rate, a key health indicator worldwide.

## **To Improve case review mortality rate from mean 93.4% to 100% in General Medicine Department over 6 months and sustain this over the next 5 years**

Call for Posters - Quality, Cost, Value

Ashish, Anil Sule, Casipit, Penelope, Red-Oliver, EJI Nadine  
Tan Tock Seng Hospital Singapore

### **Background**

Data for our General Medicine Department in Tan Tock Seng Hospital Singapore for the year 2013 showed that all the mortality cases were not reviewed within 90 days. Total of 441 case notes were reviewed for mortality cases between 1st January 2013 to 30th June 2013 but 28 cases were not reviewed within 90 days. Ministry of Health (MOH) mandates that all cases need to be reviewed within 90 days. The project was undertaken with support of Clinical Standards Improvement (CSI) department to reach 100% target and sustain over 5 years. The target was to show improvement at the end of 6 months and to sustain it over at-least the next 5 years.

### **Methods**

Macro and Micro flow chart created by the members of the team based on cases identified as those patient who died in the wards, summary done by junior doctors less than 48 hours, PSA sent case noted to Health Information System (HIS), HIS sent case notes to department, department assigns doctors to do death review on weekly basis, Clinical standards Improvement (CSI) reminder and Department trace case notes form wards/HIS. Data were discussed in weekly QAC meeting and HOD (head of department) signs forms and after was returned to CSI. Cause and Effect diagram was plotted to identify the reason of delay among different departments, followed by a poll to identify main concerns for the delay as plotted on the Pareto chart.

### **Outcome**

GMD performance in terms of percentage of cases reviewed within 90 days from Death occurrence where done in a 6 monthly basis. Jan-June 2013: 83%, July-Dec 2013: 95.8%, Jan-June 2014: 99.3%, July-Dec 2014: 100%, Jan-June 2015: 100%, July-Dec 2015: 100%, Jan-June 2016: 99.6%, July-Dec 2016: 100%, Jan-June 2017: 100%, July-Dec 2017: 100%, Jan-June 2018 100% and July-Oct 2018 100%. Strategies for sustaining the gains were Identified which includes:

(a) Senior Doctors (QROs) will expedite case reviews of case highlighted by CSI (b) Educate New Doctors to summarise case notes at ward level within 48 hours (c) Educate PSA that transit care notes from ward to HIS should be done within 48 hours (d) Department Executives to liaise with senior doctors in the department of any unsummarised cases are delayed from HIS/ward level and (e) CSI to liaise with department regularly biweekly reminders and highlight cases >60 days not reviewed by the department.

### **Conclusion**

- Education of the doctors is important
- CSI biweekly reminders for mortality cases >60 days not reviewed by department will be crucial
- Senior doctors in the department (QROs) to expedite review cases highlighted by CSI
- The department executive to co-ordinate processes between movements of case notes between ward- HIS department
- Team work is the key to success of this project
- Sustaining the goal is also critical after achieving it.

## **Implementation of a Choosing Wisely recommendation: reduce inappropriate use of urinary and intravenous catheters**

Call for Posters - Quality, Cost, Value

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### **Background**

Catheter-associated bloodstream infection and catheter-associated urinary tract infection are common healthcare-associated infections (HAIs). Therefore, catheters should only be used if indicated. However, inappropriate use of intravenous and urinary catheters is still frequent. An efficient way to reduce HAIs is to avoid this inappropriate use. Therefore, our quality improvement project aims to reduce inappropriate use of catheters.

### **Methods**

In this multicentre, interrupted time series study, a de-implementation strategy with several interventions to avoid inappropriate use of catheters was carried out for all hospitalized patients in internal medicine and non-surgical subspecialty wards in seven hospitals in the Netherlands. Data were collected once per two weeks during baseline and postintervention period of both seven months. The primary outcome was the percentage of inappropriate use of peripheral intravenous catheters (PIVCs) and urinary catheters on the days of data collection. The indications for catheter use were based on international guidelines.

### **Outcome**

Data were obtained from 5691 patients. Inappropriate use of PIVCs decreased from 22.0% during the baseline period to 14.4% in the intervention period ( $p<0.0001$ ), representing an overall decrease of 35%. Inappropriate use of urinary catheters decreased from 32.4% to 24.1%, which is a 26% reduction of inappropriate use of urinary catheters associated with the de-implementation strategy ( $p=0.013$ ). Most inappropriate indications were because catheter were not removed when the catheter was no longer needed. The time series analysis showed no significant trend during the baseline – , and intervention period. No difference in complication outcomes was observed between the baseline and intervention periods, which is probably due to no difference in overall catheter use, where the intervention group had more severe comorbidity.

### **Conclusion**

Our de-implementation strategy reduces inappropriate use of intravenous and urinary catheters in non-ICUs. It is important to increase awareness for unnecessary use of catheters.

## **Evidence-based care reduces unnecessary medical procedures and healthcare costs in the outpatient setting**

Call for Posters - Quality, Cost, Value

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### **Background**

It is estimated that about 30% of all healthcare resources are wasted and that unnecessary medical tests and procedures account for about 10% of all healthcare costs. Effective healthcare systems should simultaneously improve patients' experience of care and patient outcomes, and they should reduce per capita costs (the Triple Aim). Medicover is one of the largest medical services provider clinics network in Poland cooperating with ~ 1 800 doctors, taking care for ~500 000 patients in an outpatient setting.

### **Methods**

We analyzed quarterly number of medical events and variation of per-patient costs generated by individual physicians in different specialties with specific diagnoses (ICD-10 coded). Medical event was defined as a patient visit, laboratory test, or an imaging test, such as ultrasound examination, computed tomography (CT), or magnetic resonance imaging (MRI).

617 doctors with highest overall costs and variation in 17 selected diagnoses were briefed quarterly on their individual results and practice recommendations, based on relevant international guidelines and legal requirements applicable in Poland for each of the studied diagnoses.

Moreover, physicians could check via an electronic application (Doctors Dashboard) updated quarterly, mean number of medical events (visits, tests) that were ordered by them compared to the overall median other physicians for patients with particular diagnoses, as a peer-benchmark support for the intervention.

### **Outcome**

The intervention resulted in significant improvement in the number of medical events and cost per patient after 2 years. After one year the decline of the number of unnecessary medical events per patient in selected 17 diagnoses was 14.6% and after 2 years it reached 21.7%, which was markedly higher than change in medical events for all diagnoses, which also declined by 3.5% and 6.6%, respectively.

Over the two years of the intervention, the greatest decrease in the number of events per patient was found in orthopedics (M70, 37%; M54+, 31%), followed by gynecology (Z30, 35%), and neurology (M54+, 33%); the smallest decrease was observed in urology (N30+, 0.8%).

Patients' trust in their physicians remained high: 91% at start of the intervention, 89% at the end of 1st, and 91% at the end of 2nd year.

### **Conclusion**

Evidence-based practice reduces both the number of unnecessary medical procedures and healthcare costs in the outpatient setting while not affecting patient satisfaction. Our finding can encourage other health providers to implement similar interventions in the outpatient and inpatient care. Further investigations in this field may improve both cost-effectiveness and quality of healthcare services.

## **Does a Daily Consultant Review affect Length of Stay and Patient Perceptions of Care?**

Call for Posters - Quality, Cost, Value

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### **Background**

At the Queen Elizabeth Hospital in Gateshead, we aimed to investigate the effect of daily consultant review (DCR) on quality of care and patient experience, as well as quantitatively assessing any impact on hospital length of stay (LoS) and length of delayed discharges. A high proportion of patients on medical wards are waiting for discharge planning, and this demand inevitably increases during winter months. We aimed to assess if we could model a more effective and efficient delivery of care over winter, on a designated winter pressure ward (WPW). NICE recommends all medical patients should have a daily consultant review and previous studies have shown daily consultant input to decrease LoS from 11.5 to 8.9 days as well as increasing total patients treated in a 12-month period by 37% (Singh, 2012). The department of health recommends that patients are discharged once medically fit and suggests a maximum threshold of 3.5% of bed days lost to delayed discharge (NHS England, 2018).

### **Methods**

Prior to commencing our audit, we agreed upon a specific patient group to compare to fully assess how the addition of the DCR would impact on our outcomes. Our prospective audit during January 2018 compared our WPW to a standard model which involved boarded patients who were randomly allocated to available bed space within the hospital. On our WPW, we established a 5-day week of DCR that consisted of a continuous consultant and clinical team. Daily ward-rounds were implemented and daily review of patient's clinical need for their acute medical bed and expected date of discharge. This is compared to the outlier group who had a standard medical consultant designation which varied and was undertaken after their prior commitments. We consecutively sampled with our 11-point questionnaire until reaching our target size of 60 patients (32 from WPW, 28 outliers), and daily categorised beds as 'clinical need' or 'delayed discharge', using online, written and clinical consensus.

### **Outcome**

Our audit found that DCR halved the average LoS (7.7 days Vs 14.1). We more accurately estimated a Date of Discharge for WPW, within +0.96 days compared with +2.5 days.

The DCR model had 26.9% of their bed days lost due to delayed discharges, compared with 79.8% of days lost on the outlier wards. Finding 70.9% of total bed days lost due to awaiting social input.

The WPW patients felt they had received better explanations surrounding their care (90.6% Vs 50%), also feeling they understood their management plan more thoroughly, (96.8% Vs 53.6%). We found 96.8% of WPW patients could describe the diagnosis they had received during this admission, in contrast to 70.4% for the outliers. No statistical difference occurred between the satisfaction of care, which is testament to the global care delivered.

In our DGH, undergoing similar pressures as those around the region, we managed to empty the WPW in February where these pressures continued until mid-March for our surrounding trusts.

### **Conclusion**

Continuity of care improved both the qualitative and quantitative outcomes for our patients, in spite of the winter period. The greater accuracy of the EDD allowed for improved bed planning. Subjectively it did not appear that the social problems faced by those on the WPW were distinct from those faced by outlying patients. It is clear the patients seen on the base ward significantly benefited from the daily consultant input. This model of care also reduced bed days lost by almost 3-fold.

We believe DCR should be introduced hospital wide, not just in acute settings as suggested by NICE. This can improve patient perceptions of care and reduce LoS in all clinical areas. Additionally, during winter, it would be beneficial to allocate a consultant to the outliers to allow them the same model of care.

Ultimately we believe patients' perceptions of care should be something every trust looks at and hopefully we can improve efficiency without compromising on this most vital of priorities.

## **Who Cares About Mouth Care**

Call for Posters - Quality, Cost, Value

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### **Background**

Mouth care is a vital component to basic patient care. As per the World Health Organisation (2012) "Oral health is essential to general health and quality of life". This is a growing area of clinical interest with the introduction of Mouth Care Champions in the NHS in 2015 and the current SOCLE II RCT in Scotland. Oral health care has also been shown to play an important role in the prevention of aspiration pneumonia in the frail elderly (Van Der Maarel-Wierink et al, 2013). Thorough review of national and international literature highlighted that there are limited published, evidence based, formal assessment protocols and treatment plans available for the acute care setting. Interdisciplinary clinical practice in our large, acute, teaching hospital in Dublin, Ireland showed inconsistencies in the perception of mouth care and interdisciplinary roles, staff training and practices.

### **Methods**

This quality improvement initiative took place over a two year timeframe. A hospital-wide audit of mouth care practices was completed with staff using random sampling (n=111). The audit analysis was completed using Sphinx software. The results of the clinical audit highlighted inconsistencies in mouth care practices & identified key stakeholders enabling the formation of interdisciplinary working group led by SLT including pharmacy, palliative medicine, physiotherapy, nurse practice development and clinical audit. The working group aimed to address the audit outcomes, namely the development of a mouth care algorithm, the provision of mouth care training and improved availability of mouth care resources.

### **Outcome**

The SVUH Mouth Care Algorithm was developed by the working group. The working group also coordinated the provision of increased mouth care resources at ward level. The SVUH Mouth Care Algorithm has been rolled out hospital wide. Education sessions were completed at ward level and a mouth care information stand was held in a prominent area of the hospital across two days. The SVUH Mouth Care Algorithm has been incorporated into hospital's new nursing assessment booklet to identify the mouth care needs of all patients at time of admission. A laminated copy of the SVUH Mouth Care Algorithm is available in each patient's nursing folder. Anticipated effects of change include increased staff and patient awareness of mouth hygiene and improved patient mouth hygiene. Increased staff and patient knowledge and support in mouth care is also anticipated. This project addressed our initial clinical question, gap in care and problems identified in the original audit.

### **Conclusion**

Problems encountered during the change process included maintaining the interdisciplinary working group's momentum over the entire course of the initiative including balancing conflicting priorities, schedules and varying levels of enthusiasm & adherence to broader hospital policies. However, it is worth acknowledging that without the varied skillset of our working group this initiative would not have been possible. This quality improvement initiative resulted in the development of the SVUH Mouth Care Algorithm. The interdisciplinary working group have also managed to facilitate the improved availability of mouth care resources at ward level as well as provide education that has served to increase awareness of the importance of mouth care hospital wide. This will subsequently provide an improved quality of care to our patients.

# CONCEPT MAPPING: TOOL FOR THE IMPROVEMENT OF THE HAND HYGIENE COMPLIANCE AMONG HEALTHCARE WORKERS

Call for Posters - Quality, Cost, Value

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## Background

The study was conducted by the Infection Control Program of the Epidemiology and Evaluation Service of Hospital del Mar, a tertiary care hospital in Barcelona. The fieldwork took place in two hospital services (General Surgery and Infectious Diseases). Health care-Associated Infections (HAIs) are infections acquired as a result of health care that are not present, nor in incubation phase, at the time of such assistance. They are a cause of high morbidity and mortality and represent an increase in healthcare costs. Healthcare workers' hands are the most common vehicle for the transmission of HAIs. Nevertheless, it is well known that the compliance rates of hand hygiene are only around 40% and differs between services. Concept Mapping is a mixed tool that combines a qualitative perspective and statistical analysis and allows us to identify influential factors in the compliance of the hand hygiene of healthcare workers, in order to be able to apply interventions to improve these rates.

## Methods

Group sessions of 8-10 people for each professional category were conducted. In first session the methodology to be followed was described. In the second, the participants identified the factors that could influence the compliance of hand hygiene. The collected information was transcribed and processed using Concept System Core® software. We obtained 59 ideas that were grouped in 6 clusters: 1. Positive reinforcement, 2. Need for training, 3. Health care pressure, 4. Bad influences, 5. Ideas that lead to malpractice, 6. Resources. The different factors identified were scored using a score from 1 (relatively agreement) to 5 (extremely agreement) according to importance and influence they had on hand hygiene compliance. For the analysis, maps of the influence versus importance were made comparing correlations (r-score) between: professional categories and service. In addition, we compared correlations between doctors and nurses according to influence and importance stratified by service.

## Outcome

We included 42 volunteer professionals from the general surgery (6 doctors and 10 nurses) and from the infectious diseases (11 doctors and 10 nurses) hospitalization units and 5 hospital porters. There was a very strong correlation between doctors and nurses of the Infectious Diseases Service in the perception of the influence and importance of factors related to hand hygiene compliance ( $r=0.93$  for the influence and  $r=0.69$  for the importance). However, correlation was very weak in the General Surgery Service ( $r=-0.17$  for the influence and  $r=0.51$  for the importance). Professionals identified the most influential factors in compliance being training and adequate resources, taking into account professional category and service.

## Conclusion

The dynamics of surgical services make teamwork and communication between professionals more difficult, unlike the Infectious Diseases Service. The recruitment of participants was more difficult in the General Surgery Service.



The intervention allows us to verify that there are different perceptions of the factors that influence the fulfilment of hand hygiene among professionals and services. This implies that when formulating strategies to improve hand hygiene, they have to be addressed specially for each professional group and health service, since their perceptions and work dynamics are different.

## **Improving Quality at Mayo University Hospital: a whole hospital story**

Call for Posters - Quality, Cost, Value

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OLuanaigh, Andrea McGrail, Adrian Burke, Annette Kelly, Eddie Conran (members of Hospital

Management Team); Marie McGuire Administrative support; Staff Engagemen

### **Background**

Mayo University Hospital (MUH) a model 3 acute hospital and member of the SAOLTA University Health Care group in the West of Ireland signed a declaration of commitment to quality and patient safety agenda in July 2014. The hospital management team (HMT) set out to formalise a process to achieve excellence in service delivery from bed side (front line) to the management table supported by national QI team with hospital wide staff and patient involvement in the implementation.

The overall aim is to achieve excellence by meaningful patient engagement in service delivery from bed side (front line) to the management table; driven by engaged staff from all disciplines and grades, who are empowered by a commitment of support from senior management, for continuous quality improvement.

### **Methods**

Using the Framework for Improving Quality in Our Health Service (HSE, 2016) and the Model for Improvement methodology (Langley et al., 2009) an integrated whole hospital approach was taken. A team was identified to lead and progress each area of the six driver themes (i) leadership for quality, (ii) person and family engagement (iii) staff engagement (iv) method for improvement (v) measurement for improvement (vi) governance for quality.

Wide involvement of staff and patient and family experience advisors in tests of change. Driver diagrams created the picture and focus for the developments setting out the aim, primary and secondary drivers.

The quality improvement initiatives were deemed exempt from formal research ethics review as they are part of normal operations and not intended for research purposes, ethical mindfulness guided all decision making.

### **Outcome**

MUH now has a governance system with clear accountability, a proactive staff engagement forum, strongly linked with patient and family engagement forum, improved in all themes in the national patient experience survey, an open and transparent process of measurement visible through "Excellence boards" introduced throughout the hospital and on the web.

The restructuring of our governance system embedded the national standards creating transparency and confidence in us by our staff (evident by feedback) and patients. Three HIQA (regulator) inspections reports recognised and acknowledged that MUH are governing for quality. Patient and staff engagement were the main drivers, we set about achieving meaningful engagement by formalising a patient / staff forum, influenced by the Canadian model of incorporating patient experience advisors throughout the services.

### **Conclusion**

The introduction of the role of patient and family experience advisors partnering and co-designing improvements with hospital staff propelled meaningful change. Using all six drivers of the framework for improving quality to guide the approach worked effectively. The focus on each driver at different times

and paces (over a two-year period) allowed flexibility. The integration and synergy between all the initiatives accelerated the depth of improvement.

MUH staff welcomed patients as part of services delivery. Our patient experience survey results are now above the national average in 33 out of 36 questions asked of them in 2018 a noted improvement on 2017 for all areas. The foundation of strong governance was critical in driving all the other elements, it created a safe environment for patient engaging and ensured this sat clearly with the requirement of meeting the national standards in service delivery. The commitment is here and sustainable.

## **Saving time, money and energy. Reducing unnecessary blood tests in General Surgery**

Call for Posters - Quality, Cost, Value

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### **Background**

This was a quality improvement project undertaken on the general surgical ward in a district general hospital in Larbet, Scotland.

From clinical experience the team members felt that there were many unnecessary “routine” blood tests being ordered without indication on the general surgical ward. Few of them seemed to influence clinical care and they were felt to increase the junior doctors workload significantly and cost the hospital money. The aim of this project was to reduce the number of unnecessary blood tests being done on patients in the general surgical ward.

After reviewing the literature and discussing the problem we developed primary and secondary drivers which we felt were influencing junior doctors test ordering behaviour. Anonymous online questionnaires were circulated to the current junior doctors to help identify these. Up to date information regarding the project was displayed in the doctors’ room

### **Methods**

Our improvement efforts initially concentrated on educating the team with posters displaying the cost of blood testing and inappropriate indications for regular LFTs. We also attempted to improve continuity of staffing on the ward by redesigning the rota. Additionally, new doctors had information about the project included in their induction. Feedback was provided to the team via posters displaying run charts with the most recent data. Furthermore, the ward round safety checklist was changed to prompt the team on the ward round. Over the 28 weeks the project ran we tried to implement the changes and interventions through multiple PDSA cycles. Information was disseminated by posters, email and at the departmental meeting. Feedback could be given in person or anonymously via the online questionnaires.

The results were presented halfway through the project, this allowed development of a group consensus about what could be done to further reduce unnecessary blood testing.

### **Outcome**

Data was collected retrospectively every 2 weeks by the biochemistry department from the electronic ordering system. Diagnosis were obtained from discharge letters.

A “colorectal” sub group was defined as patients with conditions not normally requiring regular LFTs such as appendicitis, diverticulitis, hernias etc.

We measured:

- The number of total blood draws per patient per day
- The number of LFTs tested per patient per day
- The number of LFTs tested per patient per day in the colorectal subgroup

We compared this with data from the previous year. There was a 7% absolute decrease in the average LFTs per patient day in all patients (16/17: 0.80, 17/18 :0.73) and a 8% the colorectal group (16/17: 0.77, 17/18: 0.69). The greatest difference was observed between November and January.

In the 28 weeks the project was running an approximate estimate can be made of £480 saved.

### **Conclusion**

This project saved money and saved patients from having blood taken needlessly. A decrease in the number of LFTs being ordered is possible with several simple interventions. It confirms what other studies have shown in that education and feedback can positively influence doctor’s behaviour in ordering blood tests. It demonstrates the difficulty of sustaining a change in peoples behaviour. Careful planning using QI methodology and regular data collection and analysis following interventions are crucial to maintaining change. Anonymous questionnaires were extremely beneficial in gaining insight in to what factors were driving behaviour.

If this project was to be run again we would try and create more interventions centred around feedback, such as weekly email updates and changes to the electronic blood test ordering software.

## **Delirium Prevention in Elective Orthopaedic Surgery: A quality improvement project**

Call for Posters - Quality, Cost, Value

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Chesterfield Royal Hospital NHS Trust, England

### **Background**

This quality improvement project was aimed at reducing delirium and length of stay (LOS) in elective orthopaedic patients at Chesterfield Royal Hospital. The East Midlands Academic Health Science Network Patient Safety Collaborative funded the nursing post to develop this piece of work. Post-operative delirium is a serious complication in elderly patients with Incidences of delirium estimated at between 3.6 and 28% in elective orthopaedic patients. It may also increase patient's length of stay (LOS), and it is also associated with increased nursing time and higher per day costs.

### **Methods**

A new Delirium Nurse Specialist (DNS) post was created. Patients with any of the following indicators were counselled and referred to the DNS for an orthogeriatric assessment for possible optimisation of their conditions prior to surgery:

- a. Frailty score above 7.
- b. Unstable medical co-morbidity.
- c. Polypharmacy.
- d. Any patient with any general cause for concern

Strategy for change

The project aims were to:

- Identify which range of screening tools is a best fit application for these patients.
- Develop and deliver a training package and support materials for staff to identify and manage delirium in elective orthopaedic surgery patients.
- Reduce incidents of delirium and associated adverse effects, to impact LOS.

### **Outcome**

Effects of changes

1. Saving of 1,015 bed days
2. This saved the trust up to £179,200 (depending on optimism bias factor rating)
3. Set against the direct nursing costs of a Band 7 DNS at £40,863 – £52,940, this project is cost effective.
4. HCA costs reduced by 212%
5. 63% of patients returned a questionnaire with 78% finding the information about delirium useful.
6. Potential for national scale up;

The AHSN ROI methodology has been applied to a sliding scale of LOS from the national mean of 16 days down to 4.2. Based on optimism bias of 0.4, (lowest level) and a population of 400 (small district hospital input), the model demonstrates that costs could be cut by a minimum value of £704,000. This clearly could be applied nationally leading to millions of savings.

### **Conclusion**

Lessons Learnt

- The intervention has provided an assessment and tailored care management process which has reduced the LOS.
- LOS reduction is evidence of the process effectiveness and its effect on the severity of the post-operative delirium and its clinical sequelae.
- The DNS gave education sessions to the nursing staff on the recognition of delirium

- Consultant Orthopaedic involvement in the project has been crucial, the trust developed between the DNS and the consultant group has enabled culture change.
- 78% of Patients said the information given to them prior to their operation was useful.

## **360 degrees protocol development; set-up of a national multidisciplinary working group for enhanced recovery after lung cancer surgery**

Call for Posters - Quality, Cost, Value

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### **Background**

In the Netherlands length of stay after lung cancer surgery varies considerably. We previously analysed data from the National Cancer registry and Dutch Lung Cancer Audit, which showed that after correction for case mix, treatment characteristics and complications, variation in length of stay persisted. Our hypothesis is therefore that this is the result of variation in perioperative care. Our subsequent survey on perioperative care among all Dutch lung surgical centers indeed showed variation in care.

Simultaneously, an European guideline on perioperative care after lung surgery to enhance recovery was published. A Dutch guideline is currently lacking. Translation of the European guideline to the Dutch situation and implementation seems a promising improvement to provide uniformity and strive for overall improvement of care in lung cancer surgery.

### **Methods**

We created a national working group with delegates of the scientific societies of all perioperative disciplines, as well as representatives from the Dutch patient association for lung cancer, to develop a perioperative protocol that aims for enhanced recovery after surgery for lung cancer, incorporating the recently published European guidelines.

Within the working group we created four subgroups, which developed a part of the protocol focusing on one phase of perioperative care (pre-operative care, intra-operative care, post-operative care, patient information). Communication within the groups was done through email and teleconferencing. The different protocol parts were finally assembled into the definitive protocol in a consensus meeting.

### **Outcome**

With our working group, we were able to develop a nation-wide, concise and practical, scientific based, patient directed protocol, with incorporation of the recent European guidelines, applicable to the Dutch situation. We also initiated a simultaneous discussion about prehabilitation, resulting in a prehabilitation protocol which is currently tested in a pilot study. The protocol is supported by all stakeholders and involved scientific societies in the Netherlands, which facilitates upcoming implementation.

### **Conclusion**

We developed a Dutch perioperative protocol for lung cancer surgery with a multidisciplinary working group, including patient representatives. Concrete discussion points in short teleconferences with preset times facilitated a quick developing process. As financial support is difficult to get, the success depends on the enthusiasm of participating professionals. Administrative and organizational support was lacking and would have probably improved the process and alleviated the administrative burden for the involved professionals.

Our protocol is an important step towards standardisation and improvement of perioperative care for patients undergoing surgery for lung cancer in The Netherlands. The next step is a nationwide implementation study, including training teams in the participating hospitals and developing feedback tools in electronic patient record system to enable hospitals to monitor and improve upon their own results.

## **Improving front line staff welfare, support and clinical development through innovation**

Call for Posters - Quality, Cost, Value

David Morgan

North East Ambulance Service Foundation Trust, UK

### **Background**

The Ambulance Service covers a large geographical footprint. With a remote workforce it was found to be increasingly difficult to share clinical information. Frontline employees did not have access to the care they deliver to patients in a timely manner. This meant that staff, their managers and the Trust could not easily recognise good practice, identify any requirements for training and development and to support employees in their role. On attending a patient having a stroke, frontline crews will provide care based on evidence to support the best outcome. CARE will provide feedback to staff to show them the excellence of care they deliver, and highlight areas of learning or improvement. The current system is a manual process where the feedback on cases may be up to six months delay from the episode of patient care taking place. CARE delivers directly to clinicians within twenty four hours with specific feedback about both excellence and areas for improvement.

### **Methods**

A review of literature was undertaken to see best practice around feedback to clinicians. There is a lack of pre-hospital evidence in this area, so aspects and approaches were taken and adopted from other healthcare settings. The change of practice was to design a bespoke piece of software to capture and collate information from many sources and to display it quickly in an easily accessible way. The information to be displayed was decided on using focus groups of clinicians and frontline managers, with a vision to concentrate on areas of practice that most effected patient care and staff welfare. Current systems use email to feedback to line managers, who are not easily able to discuss any face to face support due to operational demand. CARE will allow direct access to all aspects of a clinician's care that is delivered with use of IT systems and a web based platform.

### **Outcome**

The outcome was an unexpected one. The initial design looked at the following:

1. Enable clinical staff and their managers to view care bundle delivery
2. Help staff maintain a portfolio of the types of cases they have attended
3. Complete documents such as self-assessments.
4. Display details of drug treatments, impression and intervention
5. Notify staff of all Patient Care Updates and to show managers who has accessed them
6. Provide links to other Trust systems

CARE delivered this, however it was also found that there was now more data to be looked at a significant Trust level. The data collected will need analysis to understand the next stages, but the initial pilot showed the below in the first 12 weeks.

- IPC audits up 500%
- JRCALC new monthly uses up by 300%
- Missed Clinical impressions reduced by 8%
- Quality Walk rounds captured and recorded against KLOE

There is the ability to influence a positive change in practice due to the chosen methods of communicating

### **Conclusion**

CARE was built around the pillars of staff welfare and patient care. It aims to increase engagement with frontline employees as research shows engaged staff will help in better outcomes for patients. It was to also provide up to date information about an individual's care to patients, and all aspects of an individual's clinical practice, with the ability to reflect and create a portfolio of evidence.

As we were starting from a blank canvas we had no guidance to see if we were on the right track. The biggest challenge has been able to get feedback at each stage. The main reason for this is CARE has so many areas that integrate, that in isolation there was nothing transformational about the data, but it is



more about how and where the information is collated and then shared. From a positive note is if felt that this system would be transferable to other clinical settings outside of the ambulance service, and others can learn from our two year journey.

## **Implementing clinical guidelines increase better patient care, capacity building**

Call for Posters - Quality, Cost, Value

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### **Background**

A gastroenterological and a geriatric ward participated in a local project for implementing delirium guidelines. The assessment tool (CAM) and a list of non-pharmacological interventions (NFI) was central focus.

We experienced a number of cognitively impaired and restless patients, and a lot of our budget was spend on permanent guard. We did not systematically assess for delirium and signs of delirium, and interventions to prevent delirium were under-reported. This might lead to delay in treatment and care, indicating that patients were suffering unnecessarily.

The staff did not have sufficient capacity for going through systematic improvement processes.

Therefore, the clinical management called for assistance from the regional improvement office.

The overall aim for the implementation project was to prevent delirium for patients in increased risk by implementing CAM and NFI to improve the quality of care.

### **Methods**

Initially, nursing staff was introduced to CAM and NFIs at a staff-course.

We organized Improvement Team meetings, focusing improvement methodology and tools, how to encourage and involve staff and how to use Model For Improvement (MFI). We used MFI, Driver diagram, Data and PDSA-circles. The improvement team meetings were planned as masterclasses to support exchange of ideas and methods and to build will. In addition, the improvement process was followed and coordinated every two weeks in the local improvement team, thereby we evaluated and analyzed PDSA's and planned for the next step.

Data from clinical practice was collected and showed on the improvement board. These everyday data was important to staff as well as management to indicate the number of patients with delirium and to further motivate for the implementation process.

To focus on the NFIs, we created a "Delirium puzzle" as a magnet-game for staff-teams.

### **Outcome**

CAM assessment and NFI interventions have become indispensable tasks in daily work. Today staff are aware of which patients are either in increased risk of or have developed delirium. Now, the staff proactively initiate NFIs and evaluate the effects on patient care.

The overall quality of care has improved: less patients are developing delirium and the use of permanent guards has decreased.

A benefit of this program is a change of the culture. The mindset among staff has changed and the delirium care has become systematic and proactive. Relatives are more involved in patient care, giving patients and relatives a better experience and outcome.

### **Conclusion**

Nursing practice has become more focused on preventive care rather than treating patient with delirium.

NFI interventions has become an equal supplement to the pharmacological treatment. The nurses contribute to a higher quality of care for patients in risk of delirium and their relatives. The staff addresses the perspective of patients and relatives and actively involve relatives in delirium care.

Multidisciplinary improvement teams with nurses, physicians, therapists etc. involving patients and relatives might contribute with more will, new ideas and increase the overall capacity for execution.

## **To reduce three monthly MRSA bacteremia incidences in General Medicine Wards from mean of 5 to less than 2 in 1 year and sustain over next 1 year**

Call for Posters - Quality, Cost, Value

Dr Ashish Anil Sule, Dr Aileen Ramos Alvarez-Tiu  
Tan Tock Seng Hospital Singapore

### **Background**

There were increasing cases of Methicillin Resistant Staphylococcus Aureus (MRSA) bacteraemia in early 2015 (Jan-March 2015) in General Medicine (GM) Department with 7 cases of bacteraemia in 3 months. The mean rate of MRSA bacteraemia in GM Department from periods May 2014 to March 2015 was 5. This project was undertaken to reduce the rates of MRSA bacteraemia in GM department over 1 year and sustain over 1 year. To Reduce three monthly MRSA Bacteraemia Incidences in General Medicine Wards from mean of 5 to less than 2 in 1 year and sustain over next 1 year. This project was carried out in Tan Tock Seng Hospital in Singapore as Clinical Practice Improvement Programme (CPIP) for the Hospital.

### **Methods**

Case analysis of all the MRSA bacteraemia cases was done to identify the causes and effects. Study group members then voted as to the most frequent cause then plotted into Pareto diagram. Then group members also identified interventions to reduce MRSA bacteraemia. Based on the voting, the two main root causes are: Lack of staff education in hand hygiene and lack of training in procedures. Thus, the following 2 interventions were suggested: Intervention 1 – To improve staff education on proper hand hygiene techniques. Intervention 2 – To train staff in procedures such as Peripherally Inserted Central Catheter (PICC) blood taking, IV cannulation and wound care.

### **Outcome**

Effects of changes:

The MRSA bacteraemia cases reduced from mean of 5 to less than 2 from February to July 2017. There is always a spike in cases of MRSA in certain periods as shown due to the new junior doctors joining and undergoing training of hand hygiene and aseptic catheter techniques.

Interventions suggested:

Intervention 1 – To improve staff education on proper Hand Hygiene techniques

Intervention 2 – To train staff in procedures such as PICC blood taking, IV cannulation and wound care.

### **Conclusion**

Lessons learnt:

1. Co-ordination between doctors, nursing and infectious disease specialist is important.
2. Hand hygiene is the key for prevention of MRSA infections.
3. Training of the doctors to take blood via lines is very critical. Only trained doctors can take blood via lines if needed.
4. Regular education to the junior and senior doctors regarding hand hygiene and blood taking is very important.
5. Sustainability is a challenge and we need to continue education of junior doctors and nurses in our institution

# **ASSESSING THE EFFECTIVENESS OF MANAGEMENT TOOLS IN HEALTHCARE: A CASE STUDY OF THE QUADRUPLE AIM MODEL AT A PRIVATE DIALYSIS COMPANY IN SOUTH AFRICA**

Call for Posters - Quality, Cost, Value

Dr Chevon Clark

National Renal Care and Regent Business School, South Africa

Dr Sanet Barac

Regent Business School, South Africa

A/Prof Ivor Katz

St. George Hospital and UNSW, Australia

Prof Piet Becker

Faculty of Health Sciences, University of Pretoria, South Africa

## **Background**

Healthcare systems are being challenged to reform by rising costs and disparities in quality. South African healthcare is unable to support RRT for everyone with only a select few making it on dialysis. In an era of significant change, effective management is essential for sustainability. The study aimed to assess the Quadruple aim model as a management tool in the dialysis supply area in South Africa.

## **Methods**

A descriptive correlational research study carried out on 1197 HD patients and 60 healthcare professionals in 20 privately run dialysis units, evaluating the Quadruple aim: 1) patient satisfaction; 2) clinical outcome; 3) cost and 4) provider experience.

## **Outcome**

The research study provided a holistic understanding of how the organizational context influences the operational effectiveness of a dialysis facility and ability to optimize its resources and strategies. The study revealed economies of scales are achieved in a larger dialysis unit, however an inverse correlation was seen between profit before interest and tax and patient satisfaction. The top box patient satisfaction score for a dialysis unit, and dialysis staff were higher in comparison to the nephrologist score. A higher patient satisfaction score was seen in smaller dialysis units. The study exposed a high extent of burnout in nephrology professionals. The overall dialysis unit safety grade was high although shortages of healthcare professionals was highlighted. The study has indicated that the Quadruple aim model has the potential to guide the redesign of healthcare systems in the chronic hemodialysis delivery business and provide a template to the transition to quality care.

## **Conclusion**

The Quadruple aim model has been shown to be a relevant and a valuable framework which can be used to address the challenges facing the supply of dialysis in South Africa. This evaluation could prove to be invaluable with ongoing regular successful implementation.

## **Improving efficiency of prison in-reach mental health clinics using a quality improvement approach**

Call for Posters - Quality, Cost, Value

Dr Chris O'Shea, Dr Jo Brown, Dr Fionnbar Lenihan, Dr Debbie Nelson  
NHS Lothian, Scotland

### **Background**

NHS Lothian has responsibility for mental healthcare of prisoners within HMP Addiewell prison. There is a high demand for psychiatric services within the prison. Psychiatrists provide in-reach mental health care to inmates within the prison, in collaboration with nursing staff. Providing mental health clinics in a prison environment is challenging. There are delays in accessing the health centre due to security procedures, inmates are housed some distance from the health centre, and prison 'routes' restrict prisoner movements. The end-result of these processes was significant gaps time in the outpatient clinic, with an increase in waiting list and patients not being reviewed in the outpatient clinic.

### **Methods**

Over sixteen consecutive clinics, the author timed their movements in the prison.

We generated metrics on the mean number of patients seen per clinic (2.78), time spent waiting on the first patient to arrive in clinic (22 minutes), time waiting between patients (29 minutes), and the proportion of clinic spent in direct patient contact (under 60%).

These findings were presented to the forensic services clinical director, and a project sponsor identified. Primary drivers focused on optimising flow of prisoners at the start of the clinic, reducing wait time between patients, and involvement of prison staff. We implemented several change ideas:

1. The arriving doctor calling ahead to the health centre on arrival to the car park, proactively encouraging the first prisoner to be sent for.
2. Closer liaison with prison officers to plan the clinic order considering routes and restricted prisoners.
3. Rearranging medical cover to the prison so both clinics were provided over one day.

### **Outcome**

Following our interventions we are now seeing a mean of 3.70 patients per clinic. The mean time spent waiting on the first patient to arrive has reduced to 8 minutes, with our 'call from the car park' successful 74% of the time. The mean time spent waiting between patients has reduced to 12 minutes. Our time spent in direct patient contact per clinic has increased to over 70%.

Through the measures above we have reduced our waiting list for persons spent waiting on mental health assessment.

### **Conclusion**

Providing mental healthcare within a prison setting poses unique challenges. It is possible for one to improve efficiency of complex systems using creative and lateral approaches.

Prison is a complex system to work in, and effective change required involvement of prison and healthcare staff.

Buy in from stakeholders across two working groups has been difficult, and it would have been useful to seek out a project sponsor from the prison estate. Empowerment of staff is necessary to make change ideas become a reality.

## **Improving prison clinic efficiency through improvement science**

Call for Posters - Quality, Cost, Value

Dr Chris O'Shea, Dr Jo Brown, Dr Fionnbar Lenihan, Dr Debbie Nelson  
NHS Lothian - Scotland

### **Background**

- NHS Lothian has responsibility for the mental healthcare of prisoners within HMP Addiewell.
- There is high demand for psychiatric services. Psychiatrists provide inreach mental health clinics.
- Providing mental health clinics in prison is challenging. There are delays in accessing the health centre due to security procedures, inmates are housed far from the health centre, and prison 'routes' restrict prisoner movement

### **Methods**

We aimed to reduce the time spent waiting on and between patients by 50% by the end of 2018, whilst increasing the number of patients seen per clinic by 30% by the end of 2018.

- Primary drivers focused on optimising flow of prisoners at the start of the clinic, reducing the wait time between patients, and increased collaboration with prison officers. January 2018 – the arriving doctor calling the health centre on arrival to the prison car park, proactively encouraging the first prisoner to be sent for.
- June 2018 – introduction of a briefing with the health centre officer at the start of the clinic, ordering the patient list based on routes and restricted prisoners.
- August 2018 – rearranging medical cover to the prison so that both clinics were provided over one day.

### **Outcome**

Following our interventions, the mean time spent waiting on the first patient to arrive in clinic has reduced to 8 minutes. We are now waiting 12 minutes between patients. This is a reduction in waiting time of over 50%. Our 'car park phone call' measure was successful 74% of the time.

- We are now seeing a mean of 3.70 patients per clinic. The proportion of clinic in direct patient contact has now risen to over 70%

### **Conclusion**

Prison is a complex system to work in, and effective change required involvement of prison and healthcare staff.

## **Intraoperative Blood Cell Salvage for Major Vascular Surgery**

Call for Posters - Quality, Cost, Value

Dr Indran Raju

NHS Greater Glasgow and Clyde Queen Elizabeth University Hospital

### **Background**

Intraoperative blood cell salvage (ICS) is a technique that recovers and 'washes' blood lost during surgery. The 'washed' blood is then reinfused into the patient during surgery. This reinfusion of the patient's own blood (autologous transfusion) reduces the need for the transfusion of stored blood into the patient (allogeneic transfusion) when there is major blood loss. This reduces the hazards associated with a blood transfusion during surgery and minimises the use of stored blood, which is a valuable resource. With the opening of the QEUE in 2015, ICS for major aortic surgery was not routinely offered. The standard of care provided to patients undergoing aortic surgery was variable, depending on the availability of ICS operators. To address this deficit, we commenced a quality improvement project in August 2017 with the aim of offering ICS to all patients undergoing elective open aortic surgery by August 2018.

### **Methods**

Baseline data from 2003-2004 was compared to data from 2015-2016, after ICS was introduced. 61% of patients undergoing aortic surgery in 2003-2004 received a transfusion compared to only 5% in 2015-2016. The median blood loss was 1290mls (590-2105mls) the median volume of autologous blood transfused from ICS was 485mls (350 – 655mls). These findings showed that with the use of ICS during open aortic surgery, we can reduce the amount of blood transfused intraoperatively, even with large intraoperative blood losses.

We then developed a local training programme for ICS using an established training process from the UK Cell Salvage Action Group. For the pilot training programme, two ICS operator candidates were selected from the vascular theatre team to commence their training in August 2017. The first cohort successfully completed their training in December 2017.

### **Outcome**

Since commencing the ICS training programme, we have successfully trained seven ICS operators bringing the total number of ICS operators to 12 (2 SCNs, 2 Midwives, 5 HCSWs and 3 Consultant Anaesthetists). We also have three further ICS trainers to drive the expansion of the service. With the increased availability of ICS operators, we have performed 50 open aortic replacement procedures without an allogeneic transfusion. Having achieved the aim of providing ICS for all patients undergoing elective open aortic surgery by August 2018, we are now training more ICS operators to be able to provide a 24 hour ICS service within the QEUE operating department. In addition to ongoing training, we are currently in the process of updating our documentation and quality assurance practices.

### **Conclusion**

The availability of ICS for all elective aortic cases has contributed to improved patient care at the QEUE by reducing the use of allogeneic blood. ICS is now embedded into our routine practice for this group of patients. The successful trial of a training programme to meet the needs of one group of patients has allowed us to establish and implement an ICS training programme within the QEUE operating department. This will have benefits for patients when undertaking other forms of major surgery, trauma surgery and in obstetric patients. There is also the added benefit to blood transfusion services with the conservation of donated blood stocks.

## **Electronic Medical Records in a Word Document**

Call for Posters - Quality, Cost, Value

Dr Jack Yu, Dr Shaad Manchanda, Dr Sanjiv Lath, Dr Mohammad Ahmedullah  
Lyll McEwin Hospital, Australia

### **Background**

Our work was done at Lyell McEwin Hospital in Adelaide, South Australia (SA), Australia. The team included two chief investigators as medical registrars, two consultant physicians and an intern. Support and feedback was sought from nursing staff, allied health and the administrative team. We had a patient base of general medical patients who required more than 48 hours of in-hospital treatment. The implementation of an EMR results in improved information access, eliminating handwriting illegibility and improved work flow efficiency. However, adoption of EMR is coupled with significant costs. In 2011, AUD\$421.5 million dollars was allocated for a 10 year period for SA to implement an EMR system called EPAS. At present, EPAS has not commenced at our hospital and we are currently using a traditional paper based system. Our aim was to develop a minimum cost EMR that does not require major investments in retraining or infrastructure while attaining the benefits.

### **Methods**

We created a template in "Microsoft Word" that was used as electronic clinical documentation. "Microsoft Word" is widely used and is available on all hospital computers. The template mimics the same paper notes staff normally use, providing familiarity and minimising staff retraining. The template is printed on existing hospital paper allowing it to integrate into the existing hospital structure. Medical notes are kept in paper form as is current practice. To ensure confidentiality, the electronic version is temporarily but securely stored within the hospital network with restricted access and monitoring by hospital IT services.

Our study was a pre-post interventional analysis. Our study was rolled out in June 2018 for a two month period. Anonymous staff opinions and pre-post interventional discharge summary statistics were collected and compared as representation of improvements in communication and efficiency.

### **Outcome**

Feedback from nursing and allied health staff was mainly positive focusing on the legibility and the easy to read template layout. Constructive criticisms were on the teething issues of the study implementation, and were addressed throughout the study period.

The pre-intervention month for discharge summaries done within 24 hours of discharge was May-23% and post intervention June-76% and July-67%; and for summaries done within 48 hours; May-32% and post intervention June-85% and July-76%. We demonstrated several benefits of EMR, including improvements in communication, documentation, and discharge summary statistics as a reflection of improved efficiency. The key feature has been the minimal cost as the system utilises existing software and infrastructure. The positive staff feedback, better communications and workflow efficiency ultimately translate to better patient care and clinical outcomes.

### **Conclusion**

By incorporating existing hospital infrastructure we minimised staff retraining. This improved the implementation as the electronic template was already familiar. The focus was not to reinvent the wheel, but to make what we do daily into an electronic process and achieve the benefits of EMR at a low cost. Our Microsoft Word template does this at zero cost and as such, it is a cost effective improvement in quality and safety of medical care that needs to be considered in all paper based health systems around the world.



## **Increasing access to psychological therapies for older people by reducing waiting times**

Call for Posters - Quality, Cost, Value

Dr Lucy Birch, Dr Donna Gilroy, Dr Tom Weavers, Dr Bryony MacGregor, Dr Victoria Thomson, Stuart Airey, Marie Mirfield, Linda Wilkie, Kate Forsyth, Dr Belinda Hacking  
NHS Lothian - Scotland

### **Background**

The work is being carried out in NHS Lothian's Older People's Psychology Service. The focus is on people referred for psychological therapy in two geographical sectors. The team involved are clinicians delivering psychological therapy, including Clinical Psychologists, a CBT therapist, Clinical Associates in Applied Psychology and an Assistant Psychologist. It is important to staff and patients that we are able to provide a timely and effective service.

### **Methods**

The project aim was to reduce waiting times for psychological therapies by introducing measures to optimise efficiency. The specific aim is for at least 90% of patients to wait less than 18 weeks for assessment for psychological therapy by August 2019. We worked to achieve this by introducing measures to optimise efficiency. Changes to date have included the following:

- offer weekly therapy sessions
- maximum clinical session duration 50 minutes
- send opt-in letters to people who have been waiting longer than 12 weeks, and
- introduce a written Therapy Contract

### **Outcome**

A higher percentage of patients wait  $\leq 18$  weeks for psychological therapy. Thus access to psychological therapy has been increased. Further changes are required to facilitate sustained improvement, e.g. automatic booking of new patient appointments.

### **Conclusion**

This experience has enabled us to use readily available data to systematically monitor the effects of changes within our service.

- It has facilitated collaboration between clinicians, and sectors, in relation to service development.
- Some of the change ideas have been adopted by clinicians in other sectors which were not involved in the project, e.g. weekly appointments, Therapy Agreement, opt-in letters.
- Focussing on more than one sector highlighted the importance of considering the unique setting in which the work takes place.
- Waiting times have been a longstanding source of concern for patients and staff. It has been helpful to have methodology and support to explore the options, however, there are no easy solutions. Availability of clinician time is fundamental. Efficiency measures can only make an impact when the staffing level is adequate.
- This work is still in progress.

## **Assessing Variation in Hysterectomy Rate at a Major Regional Centre, Victoria, Australia**

Call for Posters - Quality, Cost, Value

Dr Natasha Frawley, Jacinta Smith  
Ballarat Health Services, Australia

### **Background**

Australian women living regionally have poorer health on a number of indicators compared to metropolitan counterparts.

The Australian Atlas for Healthcare variation (the Atlas) reported significant variation in the rate of hysterectomy in Australia by where women live ranging from 115 to 763 hysterectomies per 100,000 women. The Grampians region in Victoria was highlighted as having hysterectomy rates significantly higher than the national average. Due to low hysterectomy rates occurring in areas of very high socioeconomic status, the implication is that the high rates warrant further investigation.

Ballarat Health Service (BHS) is the largest public hospital in the Grampians region, servicing a catchment of 250,000 people. Therefore we decided to retrospectively review 18 months of data pertaining to hysterectomy at BHS, and to assess specifically the appropriateness of hysterectomy against national guidelines for benign heavy menstrual bleeding.

### **Methods**

Our study retrospectively reviewed hysterectomies from Jan 2017 until August 2018. A gynaecology nurse collected the data for women having hysterectomy at BHS including demographic data, indication for hysterectomy, pathology, treatment offered prior and any complications. A consultant gynaecologist doctor then checked the data as well.

### **Outcome**

In total 169 hysterectomies were booked over the 20 months with an average of 8.5 per month. There are 3 hysterectomies performed monthly for cancer by a visiting gynaecological oncology surgeon. The median age of patient was 48 years with range from 28 to 83.

Regarding surgical approach of hysterectomy: 54% were abdominal, 21% vaginal and 34% laparoscopic. Our data has shown 68% hysterectomies booked from review visits, the other 32% were mostly after referral to the public hospital from a private gynaecologist. The majority of patients had been managed appropriately in accordance with the national guidelines and offered conservative management prior to hysterectomy.

The indication for hysterectomy were: 19.9% cancer, 52.2% Heavy menstrual bleeding (HMB), 17.4% prolapse, 4.3% pain, 4.2% other.

In the HMB group the histopathology was split with dysfunctional uterine bleeding, leiomyoma and adenomyoma. Only 7% of hysterectomies had normal histopathology.

### **Conclusion**

This audit illustrated that over a 20 month period, on average 8-9 women per month have a hysterectomy at the major public hospital in the Grampians region, Australia. On review, these women were appropriately managed beforehand in clinic, and the major indications for hysterectomy were heavy menstrual bleeding, gynaecological cancer, or prolapse. In response to the Australian Atlas report, it appears that further work is needed to understand why there is variation in hysterectomy rates across regions.

Further research would be also useful to understand the reasons leading to the patient decision for hysterectomy in benign conditions, and patient satisfaction scores. Possible factors are education level, socioeconomic status, patient demand, or lack of understanding of potential complications.

## **Pressure Injury Prevention**

Call for Posters - Quality, Cost, Value

Dr. Noura AlNowaiser, Dr. Yasser AlOtaibi, Mrs. Amal AlGosi

Medical Services General Directorate, Ministry of Defence, Kingdom of Saudi Arabia

### **Background**

The Medical Services General Directorate (MSD) is a healthcare system, which provides healthcare to the Ministry of Defence employees in the kingdom of Saudi Arabia (22 hospitals). In 2017, seven hospitals had high rates of hospital acquired pressure injuries.

In 2017, the MSD Quality Department launched an improvement project to reduce the prevalence of hospital-acquired pressure injuries across MSD hospitals to reach 4% by the end of 2018.

### **Methods**

The Healthcare Improvement (IHI) Model for Improvement was used. The scale up of the project was based on the IHI collaborative model.

The change package consisted of the following:

1. Adoption of an evidence-based pressure injury prevention guideline.
2. Daily risk assessment for all in-patients using the Norton tool.
3. Standard order sets for bundled pressures injury prevention (PIP) interventions.
4. Reinforcement of the role of the multidisciplinary wound care team.
5. Staff training.

A single page tool for risk assessment and pressure injury prevention interventions was used.

### **Outcome**

The improvement team ran 3 'Plan -Do -Study-Act' (PDSA) cycles in Kharj Armed Forces Hospital (KAFH) (Pilot), a decrease in the rate of hospital-acquired pressures injuries was noted (from 7.5% to 1.2%) with a relative risk reduction RRR; 84%, RR 0.16 (95% CI: 0.07 to 0.3; P-value < 0.0001). The compliance to Norton risk assessment tool was 97% with limited variability. Patient turning had the highest compliance compared to the rest of the bundle elements.

The change package was scaled up to the remaining hospitals. Six out of seven hospitals demonstrated significant sustained reduction in the prevalence of hospital acquired pressure injuries.

### **Conclusion**

A key lesson learned during the project was the importance of iterative 'Plan -Do -Study-Act' (PDSA) cycles, which helped to ensure that at each stage the tool was optimised.

Daily risk assessment using Norton tool and standard order set ensured the application of the intervention promptly.

Implementation of an evidence-based pressure ulcer prevention bundle results in significant reduction in the prevalence of hospital acquired pressure ulcers across MSD hospitals.

## **Seed Funding- An Attempt To Make Healthcare Accessible To The Financially Under Privileged**

Call for Posters - Quality, Cost, Value

Dr.Vinit Samant, Dr.Sandeep Sawakare, Dr.Sarita Khobrekar, Dr.Sumedha Patankar  
Tata Memorial Hospital

### **Background**

Tata Memorial Centre (TMC), is a 600 bedded cancer hospital under the Department of Atomic Energy under the Government of India. The Hospital has worked with a philosophy of providing affordable and accessible care to all care seekers irrespective of their social, economic and geographical background. 60% of patients visiting the hospital seek care under the General category through which they are eligible to receive treatment at highly subsidized rates. TMH has been constantly making efforts to provide the best possible cancer care to its patients at the most affordable cost.

One initiative in this regard, was the 'Seed Money Funding Concept' introduced by the medical administration team with the involvement of Medical Social Worker's Department and Finance Section of the hospital.

### **Methods**

It was proposed that a basic minimum amount of financing be provided upfront by the hospital to patients belonging to financially unprivileged class, after necessary evaluation by trained medical social workers. This money was called the Seed Money. Owing to this initiative, it has been possible to avoid any undue delays in initiation of treatment after a patient is registered at the hospital.

### **Outcome**

The early initiation of treatment, not only helped in achieving better patient outcomes but also helped in reducing the overall financial burden of cancer care to the patient, either by directly reducing the cost of medicines or indirectly by reducing the length of stay in hospital surroundings, number of visits to the hospital and obviation of the need for high end therapies. The average amount of seed money offered to each patient was about INR 6500 and the average amount of concession offered to patients was INR 1300. It was observed that the gap between registration of a patient and initiating treatment at the hospital was drastically reduced after the implementation of the project. On analyzing the data for 'patients fulfilling the criteria for which they were considered eligible for seed fund', it was found that the gap between registration of patient and initiation of treatment was reduced from 15 days (before deployment of the initiative) to 2.5 days (after its implementation).

### **Conclusion**

Following are the key success factors in channelizing community raised funding towards achieving financial inclusion:

- Although the basic idea of providing financial support to indigent patients was established, there were several grey areas about the implementation of this idea. It was necessary to have clearly defined SOPs in order to drive the project and to ensure that there are no disparities during implementation. Also the SOPs made it possible to remove dependence on specific persons and helped easy handovers.
- It is important to have sufficient checks and balances built within the system to avoid any undue errors. This was done by setting up a multi-level review system wherein the recommended account is reviewed by the Medical Superintendent's office and the Accounts section.
- Considering the high volume and value of transactions, regular monitoring is necessary for which monthly MIS was maintained and monitored.

## **Decreasing blood culture contamination rates via novel reorganisation of hospital supply rooms.**

Call for Posters - Quality, Cost, Value

Eoin Roche, Cian Gallagher

University College Cork and Mercy University Hospital, Cork, Ireland

Ciaran Judge, Teresa Marshall

Mercy University Hospital, Cork, Ireland

### **Background**

This initiative was undertaken in an urban tertiary referral centre in Cork, Ireland

Hospital supply rooms are often configured to serve the needs of the specific ward in which they are located. This often creates difficulty for staff members such as junior doctors who navigate through several wards over the course of a normal working day. This creates a time barrier to implementing efficient patient care, as staff search for the relevant supplies necessary for patient interventions and procedures.

Moreover, missing equipment from certain supply rooms and wards may also delay the implementation of care bundles / patient procedures. This difficulty in obtaining and/or locating equipment creates barriers to the implementation of bundles and procedures according to international best practice. Dawson (2014) concluded that hospitals should aim to minimise their blood culture contamination rates and aim for a rate of  $\leq 3\%$ .

### **Methods**

Non-consultant hospital doctors (NCHDs) were interviewed to assess how the variation in supply rooms on different wards altered their workflow throughout the day.

Regular point prevalence audits were conducted of each ward at key times, such as before weekends, to ascertain what equipment was / was not available and the time taken to procure these items from different wards.

Results of the interviews were fed back to management and the Supplies Department. A communication channel was opened between wards and laboratory staff to ensure the supply and availability of Equipment necessary for the taking of blood cultures.

Laboratory figures were identified with total number of culture bottles, contamination rates including number of total positive bottles and false positive.

The equipment required for these procedures (blood culture, phlebotomy, cannulation, obtaining a venous blood gas) were all re-arranged and co-located within the existing hospital supply system or Kanban.

### **Outcome**

The blood culture contamination equipment rearrangement and co location ensured that all relevant pieces of equipment were easily identifiable, readily available and in adjacent storage units. This aimed to improve patient care by optimising efficiency and ensuring procedures were undertaken using the equipment defined in international best practice standards.

As a result of the intervention and ongoing education, blood culture contamination rates decreased from 3.28 to 1.88% (Percentage of total bottles - change : 1.4%).

The anticipated benefits of this project are increased efficiency of patient care and increased compliance with international best practice standards for blood culture preparation and sepsis six implementation.

As a result of this we anticipate blood culture contamination rates will continue to decline helping to decrease false positive rates within the hospital.

### **Conclusion**

The impact of decreased culture contamination rates includes a decreased need for repeated invasive access for duplicate culture access and repeated venepuncture. It also reduces the incidence of potentially inappropriate anti-microbial prescription, with its associated impact on cost, length of stay, adverse reaction etc.

This project remains part of a continuous and ongoing quality improvement project. The impact of the layout and education changes were readily noticeable through a decreased contamination rate for blood

cultures within the hospital, and an increased doctor satisfaction rating for accessibility of supplies/devices.

A multidisciplinary approach to quality improvement is essential. Procuring and learning from the issues faced by frontline staff can help identify smaller issues that can have a significant impact on the quality and efficiency of patient care.

## **Timely Assessment of Acutely Ill Frail Elderly Patients in the Older Adult Assessment Unit (OAAU) – A Change Concept**

Call for Posters - Quality, Cost, Value

Gautamananda Ray, Janice Murtagh, Oona Mary Lucie, Carol Ann McGowan  
NHS Greater Glasgow & Clyde, Scotland

### **Background**

This project was conducted in the Older Adult Assessment Unit (OAAU), Royal Alexandra Hospital, Paisley by all the Multi Disciplinary Staff in the OAAU looking after the acutely ill frail elderly patients. Frailty is a distinctive health state related to the ageing process in which multiple body systems gradually lose their in-built reserves. Around 10% of people over 65 years age have frailty, rising to between a quarter over 75 and half over 85 years. The presence of one or more frailty syndrome should trigger a more detailed comprehensive geriatric assessment (CGA) to start within 2 hours (14 hours overnight) either in the community, person's own home or as an in-patient, according to the person's needs. Baseline audit showed majority of frail elderly acutely ill medical (FEP) patients were traditionally being assessed by a Consultant Geriatrician after 24 hours of admission in the Acute Medical Unit that resulted in suboptimal care, increased length of stay and potential harm.

### **Methods**

A customised OAAU was proposed within a Geriatric Ward where the FEP will be seen directly after admission. A number of planning brainstorming sessions with relevant stakeholders and a multidisciplinary team were conducted with pre-mortem hindsight analysis to look for potential barriers to implementation of the OAAU. A six bedded area in the Geriatric Bed was ring fenced for the OAAU. The aim was 90% of Frail Elderly Acutely ill patients by 31st May 2015 will have a CGA within 4 hours of arrival in OAAU. It was led by a consultant geriatrician supported by a junior doctor. Data collected to look at the impact and reviewed by a multidisciplinary team that included a Scottish Quality and Safety Fellow and Consultant Physician from Acute Medicine out with the Geriatric Department. The FEP were identified by using the Frailty Tool designed by the Healthcare Improvement Scotland.

### **Outcome**

Process Measures : Percentage of Patients seen by Junior doctor within 2 hours of arriving at OAAU

.Percentage of Patients seen by Consultant Geriatrician within 4 hours of arriving at OAAU

Outcome Measures : Discharge rates : Same day /24 hours - 26% , 24to 72 hours - 32% , >72 hours - 42%

Patient Satisfaction Questionnaire : Very Positive feedback

Balancing Measures : 28 day Readmissions Rate of 21%

Time to CGA of frail elderly patients in the Acute Medical Unit

### **Conclusion**

Lessons Learnt : Flipping the system of frail elderly acute care in our hospital by developing an OAAU resulted in early CGA in these patients. Though final project aim was fully not achieved we found that one in four patients were discharged on the same day thus avoiding unnecessary admission. One in three patients were discharged from OAAU within 72 hours thus reducing length of stay in hospital. Our message for others and key learning points from this project are : a) Need to understand group dynamics and human factors and engage local team stakeholders to drive change b) A trained Quality and Safety person independently acting as facilitator to drive improvement. Understanding that change takes time and trying to rush change can demoralize the team. c) In one month 600 bed days saved equivalent to opportunity cost savings of £180,00 in a month and approximately £ 2.1 million annually.

## **Monitoring and assessing the quality of cardiac rehabilitation - Moving cardiac rehabilitation from a hospital setting to a municipal setting**

Call for Posters - Quality, Cost, Value

Hanne Soendergaard, Klaus Nordentoft Lemvig, Tina Veje Andersen  
Central Denmark Region, DEFACTUM, Denmark

### **Background**

Treating patients across health care sectors is a high-risk area. At the same time, the incidence of cardiovascular disease is increasing. In order to ensure focus on these crucial parts of the health care system, disease management programs have been developed.

In the Central Denmark Region, the disease management program for cardiovascular disease was revised in 2015. The revision included moving the phase 2 non-pharmacological cardiac rehabilitation from a hospital setting to a municipal setting.

Consequently it was decided to monitor the quality of the cardiac rehabilitation in the 18 municipalities. To meet the requirements of monitoring The Cardiac Rehabilitation Database (HjerteKomMidt) was created.

The municipalities started registering in the database on January 1, 2017.

#### **Objectives**

How can phase 2 non-pharmacological cardiac rehabilitation be monitored in Danish municipalities? And how can the quality of the rehabilitation and validity of the data be assessed and improved?

### **Methods**

Clinical indicators enable professionals and organizations to monitor and evaluate health care delivery to patients and allow the quality of services to be measured. The results are based on data from HjerteKomMidt for 18 municipalities in the Central Denmark Region. The database registers patients with cardiovascular disease above the age of 18, who are referred to phase 2 non-pharmacological heart rehabilitation in municipal settings in the Central Denmark Region. The results are indicators monitoring patients with cardiovascular disease who: 1) are persistent during the cardiac rehabilitation, 2) complete at least 80% of the scheduled physical exercises, 3) participate in physical exercise and increase work capacity by at least 10%, 4) reported being non-smokers at the end of the rehabilitation program, 5) have received an intervention from a clinical dietitian during the cardiac rehabilitation, and 6) have been screened for depression during the rehabilitation program.

### **Outcome**

In total, for 2017, 1,710 patients are registered in HjerteKomMidt. The results of the six assessed indicators on a regional level for cardiovascular disease are: One indicator meets the national standard; one indicator almost meets the national standard; three indicators are not meeting the national standards; one indicator does not have a national standard.

Each municipality receive continuously feedback on the results of the indicators. Thereby the individual municipality is able to act on its own results to improve the quality of the rehabilitation services.

### **Conclusion**

HjerteKomMidt is a newly started database. The 18 municipalities are committed to register clinical data in the database and are working very intensely to unify the way of registration to ensure valid data. The indicators are calculated and the municipalities act on the results of the indicators in order to meet the standards. The database has great potentials for quality improvement and for research.

Ongoing close cooperation among the main players improves the validity of the data. Support from the management team is essential and it is important that collecting data to cover the indicators are making sense for the frontline staff. Otherwise the quality of data will be poor.

It is paramount that the development of a monitoring system takes place in close dialogue with the users to give ownership of the system. Likewise, the system should support the clinical practice in which the rehabilitation takes place.



## **Play and Say: Communicating Together. Service redesign for Pre-school children with Communication delay**

Call for Posters - Quality, Cost, Value

Hilary McFaul

Southern Health and Social Care Trust. Northern Ireland

### **Background**

This project was carried out in a Speech and Language Therapy Service (SLT) within an NHS Health and Social Care Trust in Northern Ireland. The client group for this project was pre-school aged children (18months to 4 years) who could be described as 'late talkers'. This means they have less than 25 words at 24 months, not linking words together, not understanding what is being said to them.

The SLT team working with these children is made up of junior staff (Band 5)

Children were waiting too long for assessment (up to 10 months) with a further wait for Intervention.

SLTs felt the current model of service delivery did not give them enough time to engage effectively with parents in giving them the advice and support they felt was needed. Children were not accessing the appropriate support quickly enough and their communication development was not progressing as well as it could given the right advice.

### **Methods**

We set up a project team and devised a communication plan which included how we would communicate with our staff team and our stakeholders.

We used a range of QI methods including, frustration and ideas board with staff, 20 second feedback with Service Users, audit of referral activity and waiting times and Fish Diagram to identify barriers to change.

### **Outcome**

We devised a pilot model and ran this in one clinic locality. This consisted of a play-based initial assessment with a parent group following within 6 weeks. The parent group looked at everyday strategies which could be used at home to develop children's communication skills and this information was presented through role play. Handouts were presented in a sketchnote style to make them more attractive and therefore more likely to be read. Parents were then invited to a 20 min 1:1 with the SLT who saw their child for initial assessment (ensuring consistence) on the same day as the parent programme. Joint aims were agreed and support given as to how strategies will be used at home. Waiting times were significantly reduced for both assessment and intervention through the pilot, innovative ideas were tested, evaluated and further developed including co-production of a series of 5 animations.

### **Conclusion**

Problems encountered include staff leaving post, sick leave or maternity leaves resulting in programmes not running when planned and the knock on impact on waiting times for families. My experience has taught me to involve service users from the outset and engage with them in a meaningful way - be prepared to listen and make changes based on what they are telling you. Everything takes longer to do that I thought!

## **Impact and professional's perception of an e-consulting strategy implemented at Pamplona's Health area**

Call for Posters - Quality, Cost, Value

Isabel Rodrigo, Nekane Arraiza, Guillermo Ezpeleta, Isabel Irigoyen  
Complejo Hospitalario de Navarra  
Marian Nuin, Oscar Lecea  
Gerencia de Atención Primaria

### **Background**

The work was done at Complejo Hospitalario de Navarra, a 1086 bed tertiary teaching hospital located in Pamplona (Spain) which attends a total population of 479533 inhabitants.

The increase in health care costs is an unsolved question in healthcare systems planning and Navarre is not an exception to this issue. Despite the explanation to this rise in healthcare expenditure is multifactorial, one of the principal components identified is the intensification of hospital-based specialist care demand. This situation leads to undesirable effects on health assistance, such as: excessive wait times, inequitable access to specialist care and poor communications between healthcare providers and patients leading to their dissatisfaction. Besides, the high demand for specialized medicine can reduce access to such sort of consultancies increasing the problem, if no solution is implemented.

### **Methods**

One of the most innovative approaches relies on the developing of electronic consult (e-consult) services, which aim to reduce the need for traditional specialist face to face consultation when this is not necessary. However, its global impact on the traditional consulting has not been resolved yet.

The Healthcare System of Navarre has gradually implemented an interrelation circuit between primary care and other specialists. The project started as a non-face to face consultation system through e-consulting adopted by some medical specialties to resolve situations that do not require physical presence.

The circuit works as follows: structured electronic referrals are sent to the appropriate consultant who reviews the reason for consultation, patient's clinical data and additional material such as images or ECGs. Then, the specialist provides detailed clinical recommendations to the referring doctor or cites the patient to traditional outpatient consultancy.

### **Outcome**

There was an increase of the total number of e-consults done (from 1,734 in 2013 to 20,700 in 2017) ( $p < 0.001$ ). However, the trend analysis by specialty suggested that if the referral criteria are maintained, a ceiling can be produced after 5 years of the e-consult implementation. Additionally, an improvement in the adequacy of the response time has been registered. Since in 2013 only 48.8% of the referrals were resolved after 48 hours of their reception this percentage raised up to 81.7% at the end of the period. The professional perception of the e-consulting revealed that 74% of the questioned physicians (PC+OS) considered that this tool was useful for an effective patient management and will increase its importance in the future. However, only 69% of the OS physicians thought that the adequacy criteria were optimal.

### **Conclusion**

The number of e-consult is going to continue to increase in Health Care Organizations but this increase reaches a plateau after several years. The assessment carried out revealed that the satisfaction among physicians is good but there are some discrepancies between GPs and consultants' perceptions. The e-consult facilitates the integrated care; it is useful for patients' monitoring, treatment support, as well as any other question that does not require a face to face consultation and finally speeds up the diagnosis process.

- **KSS AHSN Alliance for AF. Detect-Review-Protect**

Call for Posters - Quality, Cost, Value

Jen Bayly, Dr Richard Blakey, Ellie Wells, Justin Roccliffe  
Kent Surrey Sussex Academic Health Science Network, England

### **Background**

Aim: To reduce the number of people dying or disabled by AF-related stroke, by optimising the use of anticoagulants in line with NICE CG180 guidelines.

### **Methods**

We collaborated with 3 independent review organisations to work in 29 GP Practices from December 2016 to May 2018 across Kent, Surrey & Sussex (KSS).

The project identified 1,390 individuals who were eligible for anticoagulation and would benefit from a change of treatment to reduce their risk of AF-related stroke.

### **Outcome**

Impact so far:

By the end of May 2018, 503 individuals had had their medicines optimised by their GP Practice. This has reduced the risk of AF-related stroke to such an extent that the equivalent of 14 AF-related strokes have been avoided, avoiding debilitating effects on individuals and their families and avoiding costs to state-funded Health & Social Care of over £380,000.

The impact would be far greater if all of the remaining 887 individuals were optimised on anticoagulation therapy. A further 24 AF-related strokes could be avoided, with an additional Health & Social Care cost saving of over £620,000.

### **Conclusion**

Opportunity:

If we extrapolate the data for the KSS population of 4,739,731 based on the current impact with only around 1/3 of the identified eligible patients being treated this could potentially save 202 strokes in 1 year, with a potential cost saving of £5,691,911 over a 5 year period.

If this data was extrapolated for the KSS population and scaled so all the eligible patients were treated, 559 strokes could be saved in 1 year, with a potential cost saving of £15,729,139 over a 5 year period.

We believe the project has made a difference to our population. However, there is more to do, and support is needed to help us share our learning and scale-up the project across the region.

## **Antimicrobial Resistance Safety Stewardship (AMSS): empowering healthcare workers through quality management**

Call for Posters - Quality, Cost, Value

Julia Keizer, MSc, Dr. Annemarie Braakman-Jansen, Dr. Nienke Beerlage-De Jong, Prof. Dr. Lisette van Gemert-Pijnen

Centre for eHealth and Wellbeing Research, University of Twente, The Netherlands

Rebecca te Riet

Ziekenhuisgroep Twente, The Netherlands

Dr. Nashwan Al Naiemi

Laboratorium Microbiologie Twente-Achterhoek & Ziekenhuisgroep Twente, The Netherlands

### **Background**

Quality management (QM) by monitoring quality and safety performance has become essential in recent years. Because of the increasing threat antimicrobial resistance (AMR) poses on the sustainability of modern healthcare, monitoring and providing feedback on performance of antimicrobial resistance safety stewardship (AMSS) is crucial. AMSS comprises all AMR-relevant tasks of healthcare workers (HCW), such as timely and adequate diagnostics, treatment, infection control, logistics, and outbreak management. HCW are expected to take a proactive role in AMSS QM. However, little guidance is provided on how to monitor and provide feedback on AMSS-performance, which is currently only organised for infection control by infection control professionals (ICP). Therefore, this qualitative study in a regional hospital in the Netherlands (687 beds) focused on exploring ICP' and HCW' attitudes towards and needs for AMSS-performance monitoring and feedback.

### **Methods**

A focus group with ICP (n=6) and individual interviews with HCW (n=6 medical specialists; n=5 residents; and n=5 nurses) were held about current AMSS quality management, attitudes towards and needs for monitoring and feedback, and expected effects on quality and safety of care. The interviews were held at the Emergency Room, Intensive Care, and Surgery and Urology departments, because of the high emergence of AMR/infections and vulnerable patients treated. A multidisciplinary research team created the focus group and interview schemes, which were then tested with a clinical microbiologist, an ICP and a nurse to assure clarity. The focus group and interviews were recorded, transcribed verbatim and inductively coded. The code scheme was discussed within the research team to define overarching themes. The University's ethical committee (BCE18321) ethically approved this study.

### **Outcome**

Currently, HCW don't play an active role in AMSS QM. ICP and HCW advocate the importance of increasing the proactive role of HCW in AMSS QM to improve all aspects of their daily work that determine the quality of AMSS. To do so, HCW require feedback on AMSS-guideline-adherence, patient outcomes, HRMO contamination and resistance patterns over time. Insight in such AMSS-performance measures raises awareness and promotes competition, which expectedly leads to desired behaviour-changes and thus improved AMSS quality. However, AMSS QM heavily depends on a safe communication culture, in which feedback on each others' behaviour can be provided. Some still experience hierarchy as a barrier for effective communication. Therefore, HCW believe that feedback should be positive and include a good sense of humour to have optimal effect. This can be facilitated by incorporating feedback in structural topic-driven discussions and targeted training.

### **Conclusion**

Infection control professionals and healthcare workers should cooperate to improve the quality and safety of care for patients and limit AMR, by supporting HCW' proactive role in improving their AMSS-performance. AMSS QM is expected to support HCW in taking ownership of AMSS, because it reveals where improvements are required. One of the biggest challenges for successful AMSS QM is creating a safe and open culture, which requires long-term efforts. Having objective AMSS performance measures would help to discuss AMSS more easily. This study provided a first step towards empowered HCW through AMSS QM. By incorporating a participatory, holistic, and human centred approach in future

development and implementation of AMSS QM, a fit between AMSS-QM, HCW' needs and the context (i.e. AMSS in hospitals) can be ensured.

## **Improve management of Infectious diseases at Kutaisi D. Nazarishvili Family Medicine Regional Training Center**

Call for Posters - Quality, Cost, Value

Ketevan Jugheli

Kutaisi D. Nazarishvili Family Medicine Regional Training Center; Georgia

### **Background**

Kutaisi D. Nazarishvili Family Medicine Training Centre is the outpatient clinic with 15 GPs teams. It serves about 60 000 patients per year; This is one of the leader clinics in Georgia that always tries to improve health care quality from year to year; More satisfied patients, better educated and well-trained doctors is the aim of the Top-managers.

Fever is among frequent reasons for outpatient visit in Georgia. As it can be one of first symptoms of infectious diseases we decided to assess the management of patients with fever. Timely and adequate diagnosis and management of infectious diseases is essential for reducing risk of spread of infection as well as improve readiness for potential epidemics. Baseline assessment included knowledge assessment of family doctors using questions from BMJ Learning courses and review of patient's medical charts with pre-determined indicators.

### **Methods**

We developed SOP to ensure basic standard of assessment and care is provided to every patient every time. We agreed on relevant modules from BMJ Learning that every doctor will complete according to agreed schedule. Nurses will be responsible collecting vital signs and travel history;

Baseline was conducted in September 2018, the project will be implemented till reaching 80% of compliance

Based on baseline assessment we decided to collect biweekly the following indicators:

- Duration documented
- Respiratory Rate measured
- Temperature measured
- Travel History
- Charts without Non-EB Medications

### **Outcome**

We anticipate that these changes

- will improve patient care,
- decrease unnecessary costs for patients and
- will help detect infectious diseases faster.

Despite intense workload and reporting requirements providers still are willing to participate in QI.

Access to high quality online resources is a great asset to incorporate in internal CPD programs

### **Conclusion**

The project will achieve significant improvement in management of infectious diseases.

It will give us opportunity to decrease unnecessary costs for patients, detect the problem faster and report cases to the relevant public authorities.

## **Improving Paediatric outpatient clinics efficiency - our experience**

Call for Posters - Quality, Cost, Value

Krishnakumar Jada, Stephanie Ibrahim  
Royal Free London NHS Trust

### **Background**

The Paediatric department in Barnet and Chase farm hospitals - a business unit of Royal Free London NHS Trust receives referrals to outpatients' clinics, from boroughs across North London and Hertfordshire. The Paediatric outpatient service in BCF has evolved organically incorporating changes to NHS services nationally and locally, eg commissioning, mergers/closures of sites, changes in clinical practices, RTT etc. The service is provided across multiple sites spread over large geography to one of the largest CYP populations in the country, which poses several challenges. The aim of the project was to make, the process of administering and delivering clinics more responsive to patient needs, efficient and adaptable to future demands. The team comprised of clinical (medical & nursing) and operational staff.

### **Methods**

Change ideas targeting stages of patient journey were identified and prioritised based on the size of the impact. The changes were introduced in stages through PDSA cycles including consolidating multiple triaging portals into a single electronic referral system, use of advice and guidance function within eRS to educate GPs and reduce referrals, standardising triage outcomes and reducing triage turnaround time by spreading responsibility across more consultants, referrals from external and internal sources were used to estimate demand and clinic capacity mapped out to meet it. This was spread across sites with more clinics allocated to sites with more clinic rooms reducing pressure for space on sites with limited space. New and follow up clinics were separated so that specific templates could be built. Team job planning and transparency of allocation of clinics lead to ownership of clinics to be delivered per year.

### **Outcome**

We were able to reduce waiting times to less than 9 weeks within 4 months with several change ideas still in progress. In addition we achieved more efficient use of clinic space leading to a better environment in outpatient depts, greater staff satisfaction, better understanding of demand and greater flexibility in clinic administration and greater ownership of the outpatients by consultants.

### **Conclusion**

QI methodology was very useful in defining the task and allowed us to manage, what initially appeared to be a huge undertaking into a series of minor changes and tackle them individually, which has led to tangible results. The time commitment is a major on-going challenge and we are hoping that changes introduced once embedded will need less time to sustain.

## **Applying value stream mapping to reduce waiting times for dementia diagnosis**

Call for Posters - Quality, Cost, Value

Laura Cook, Jeremy Isaacs  
NHS England (London Region)

### **Background**

The Prime Minister's Challenge on Dementia 2020 set a key ambition to decrease waiting times for dementia diagnosis. Following this, NHS England produced an Implementation guide for dementia care which included a requirement to increase the number of people receiving a diagnosis of dementia and starting treatment within six weeks of referral. The Dementia 'We Statements' state people living with dementia have the right to an early and accurate diagnosis wherever they live. Most people with suspected dementia are referred to memory services.

In 2016, an audit of London memory services examined 590 referrals across 10 services and demonstrated significant variation in assessment, diagnosis, post-diagnostic support and waiting times. Average waiting time from referral to diagnosis varied between services from five to 23 weeks. Overall 30% of patients were diagnosed within 6 weeks of referral (varying from zero to 79% of patients per service).

### **Methods**

Pathway meetings using semi-structured interviews were held with 28 out of the 30 London memory services. Information was obtained on pathways, initiatives to decrease waiting times and barriers preventing improvement. Memory service pathways were jointly reviewed and recommendations were made on how to streamline services whilst maintaining or improving quality of care. All recommendations were taken from current practice.

A second meeting was held with services where a value stream mapping approach was used to identify specific areas to streamline their pathways. Lean methodology was applied using four main techniques: eliminate, combine, simplify and sequence. Learning from other memory service pathways was incorporated into discussions.

A guidance document on streamlining memory service pathways was published and circulated across London and nationally.

### **Outcome**

Informal data from pathway meetings highlighted that waiting times from referral to diagnosis and initial treatment currently vary from 5 weeks to 6 months. Formal data collection from providers on compliance with the 6 weeks ambition in London is due to begin in November 2018 and we plan to perform a full re-audit in spring 2019. Preliminary results are promising; for example; one service has already decreased their waiting times from 15 weeks to 9 weeks.

This project aims to reduce the variation in memory service waiting times, and will support people living with dementia to receive a timely diagnosis, and therefore timely access to post-diagnostic support. In order to sustain this work the NHS England London region will be formally collecting memory service waiting time data and the Dementia Clinical Network will continue to offer support to services to decrease their waiting times.

### **Conclusion**

The key learning from this work has been the importance of services learning from each other. Memory services were more receptive to suggestions to change their pathways when it was explained that another service worked in that way. If this project was starting again we would have included training to memory services on value stream mapping to support them to continue to review pathways locally.

Taking the time to map pathways and apply lean methodology and learning from other providers can significantly improve pathways without additional investment. This methodology can be used in many other settings.



## **When a good audit goes bad: A reflection on the implementation of quality improvement processes by junior staff**

Call for Posters - Quality, Cost, Value

Lauren-Jane Bowyer, Helen Weaver  
GB

### **Background**

Both the audit and the re-audit were conducted on one ward over a period of four months in 2018. The ward almost exclusively holds cardiac surgery beds with some cardiology outliers. This audit only used the medical notes of cardiac surgery patients. The initial audit was designed to introduce a cumulative blood results sheet to the front page of the notes in order to save time both logging and accessing blood results and trends. The audit demonstrated this was the case. However, when we came to reaudit, the process had to be abandoned due to the project failure. The results sheet wasn't being used by other staff members and therefore, was redundant. We discovered that a good or even evidence based idea is not enough to make a project successful. It must also be implemented correctly. This led us to reflect upon QI and what went wrong with the planning and implementation of our project in order to learn from it.

### **Methods**

The initial project measured the time taken to log and recall blood results using both the original method (logging the bloods in the body of the notes) and with the new sheets. Different types of healthcare workers were sampled to try both methods. The methodology of the reflective part of this project was literature searches and wider learning about the form and process of QI. This was then applied retrospectively to the original audit, to see where it may have erred in its application.

### **Outcome**

The reflection showed that our project fell down universally in all domains listed in the NHS sustainability model and therefore, it is unsurprising that it had little success in the short to medium term. However, it was a very useful tool for highlighting how we could have strategized and delivered the intervention more effectively.

### **Conclusion**

Junior doctors and other healthcare workers are conducting QI projects across the country. But how many of these are having an impact on services or safety in the medium to long term? We should aim to educate all willing staff with the tools necessary to benefit their trusts by making evidence based interventions a success.

# **Assessing the impact of healthcare accreditation from the perspective of professionals' in primary healthcare centres: A mixed methods case study from Kuwait**

Call for Posters - Quality, Cost, Value

Limya Alaradi  
Ministry of Health, Kuwait  
Catherine O'Donnell, Graham Watt  
University of Glasgow

## **Background**

To date much of the work on healthcare accreditation has focused on the hospital sector. However, the shift from treatment to prevention and the movement of care from hospital-based settings to primary care are key drivers for striving to implement accreditation in PHC. Accreditation is now very much linked to quality improvement (Shaw, 2004). Although a modest body of literature exists on accreditation, little research has been conducted on the impact of accreditation on primary healthcare organizations in the Middle East. There is currently an increase in investment towards primary care. Thus this study was designed to assess the impact of accreditation on primary healthcare centres in Kuwait, from the perspective of healthcare professionals. It also aimed to develop an understanding of the impact of implementing an international programme of accreditation in Kuwait's developing PHC system and to identify the facilitators and barriers resulting from such a programme.

## **Methods**

The work employed a mixed methods approach, with three inter-linked studies in order to answer the research questions. The first study was a systematic review of the international literature published between 2003 and 2013. The results were analysed using Normalization Process Theory which is often used to understand the implementation of complex interventions such as accreditation. The second study was a self-administered anonymous questionnaire distributed to 520 employees in three PHC centres, defined as early adopters, in 2016. The return was 375 questionnaires (72 % response rate). The third study was qualitative semi-structured interviews with 18 key stakeholders in the Kuwaiti Ministry of Health, including the Quality and Accreditation department, local surveyors and heads of PHC centres. Finally the key results from each study were compared and synthesised using Normalization Process Theory to fully understand the work' underpinning the implementation of accreditation.

## **Outcome**

Employee engagement and participation in the accreditation helped break down professional barriers, created a sense of teamwork, and increased confidence in the process. Strategies that promoted staff engagement are: selecting key 'champions', assigning credible leaders that champion continuous quality improvement, and explaining the ethos behind the accreditation. Participating in the tasks associated with accreditation, made employees more confident about the positive impact of accreditation on quality improvement. Financial support was a major barrier that hindering factor among other barriers: staffing issues, information dissemination, and training. An important facilitator was the provision of training and documentation, including guidelines and clear standards. Finally accreditation was seen to improve the quality of services delivered through standardising delivery of services, improving the local healthcare culture and improving teamwork and collaboration across the PHCCs.

## **Conclusion**

The suggested findings show that while professionals project a positive attitude towards accreditation, their views are not built on substantial information and not supported by evidence based research or monitoring plans that could determine and quantify the exact benefits to accreditation when it comes to quality. This study has been able to combine data from staff and from key stakeholders with a rigorous systematic review. The mixed methods approach thus provided rich data from several perspectives thus reducing the potential for professional bias, and allowing methodological triangulation. Although this study contributed to the knowledge of how professionals perceive the outcomes of accreditation, there was no opportunity to assess patient views. Patient views of accreditation remains an under researched

area and, again, a programs of research would beneficial to the long-term implementation of accreditation programs.

# **Improve evaluation of prophylactic antibiotic use in operations by applying the quality indicators using function design in excel: antibiotic stewardship program**

Call for Posters - Quality, Cost, Value

Lin, Jing, Hsu, Chiu-Hsiang, Chang, Shih-Yang, Wang, Hsiu-Wen, Lin, Chi-Ying  
National Taiwan University Hospital Yunlin branch

## **Background**

Prophylactic antibiotics are commonly used in all kinds of surgeries in current clinical practice. In our hospital, about 1500 surgeries are done every month. For identifying inappropriate use of prophylactic antibiotics that may lead to variable adverse outcome, regular monitoring of prophylactic antibiotic use is important. As manual review of prophylactic antibiotic use is very laboring, time consuming and may easily make mistakes, by setting of the quality indicators in database using function design in excel, we can improve the quality of monitoring and thus can feedback any inappropriate antibiotic use to the primary care team.

## **Methods**

The project is conducted by collaboration between the department of infection control, department of pharmacy, medical affairs office, center of quality management and department of surgery. Microsoft office software is installed in the computers in our hospital. Firstly, we clarify the content and requirement of the quality indicators, the inclusion and exclusion criteria of evaluation. All parenteral antibiotics for prophylactic use in operations are included. For prophylactic antibiotic use, the choice of antibiotic, time of administration in the operation rooms and the duration of antibiotic use are all evaluated. Secondly, we use ICD-10-code for collecting all surgeries that are done in our hospital through the network of hospital. The lists are converted into excel files. Thirdly, we set the parameters and criteria for selection step by step. Finally, the reports are created and we would verify the correctness of data by randomized sampling.

## **Outcome**

After the establishment of the process, we can obtain and evaluate the list of prophylactic antibiotics use promptly. Monthly monitoring and feedback of prophylactic antibiotic use is undergone. The correctness of surgical prophylactic antibiotics use improves time over time. Currently, the properness of choice of antibiotic, and the time of administering prophylactic antibiotic can reach 100%.

## **Conclusion**

With the assistance of applying quality indicators by using function design in excel, we can obtain a more proper list of prophylactic antibiotic use for monitoring, evaluation and feedback. Thus, this project can improve the quality of antibiotic stewardship program and is cost-effective.

## **Joy in work thorough flipped learning**

Call for Posters - Quality, Cost, Value

Lone Vinkel Hansen, Helle Lauridsen, Anne Marie Kodal  
North Zealand Hospital Denmark

### **Background**

The work was carried out in the Department of Anaesthesiology in North Zealand Hospital in Denmark. The department has several units, and one of them is an HDU. Patients in need for extra observation, or special respiratory assistance can be admitted. Therefore, the unit is not dedicated to only one speciality, but to all specialities in the hospital. The patients' medical situation is mostly very complex and the nurses in the unit need to have general knowledge and skills. The length of stay for a typical ½ patient is 2½ day.

New nurses in the unit found it difficult to act in an environment, where the demands for their knowledge and skills where changing rapidly, often from one hour to the next. They often felt professionally unsecure and as a result, many chose to leave the unit. Leaving the unit with an unacceptable staff turnover. The remaining and experienced staff lacked "joy in work", they spend a lot of energy introducing new nurses, just to see newcomers leave shortly after.

### **Methods**

The ward nurse, the leading nurse and an improvement advisor used the MFI, starting with a driver diagram to reveal the initiatives, which could contribute to increase "joy in work", and thereby reduce staff turnover.

Education where a core issue, but it was obvious, that the education needed to be re-thinked. In collaboration with the HR-unit key-staff were taught flipped learning. A clinical nurse specialist where allocated days for development of competence cards, mentoring, and each week ½ hours where assigned to teaching the staff in special clinical fields ex. Analysing arterial blod gas, sepsis. The team started in the beginning of 2018 setting a goal, that 4 key staff members had attended education in flipped learning. The purpose was to rethink teaching and education in the clinical setting. After the summerbreak the goal was that 50% of all staff had one ½ day session where they had the opportunity to make a deep dive in the literature concerning the ABCDE algoritme.

### **Outcome**

Month between staff turnover

Numbers of staff participating in flipped learning

Results of staff satisfaction measurement.

Usually we had at least one resignation each month, now its 7 month since a nurse resigned due to unsatisfactory work conditions

### **Conclusion**

Joy in Work is essential to reduce staff turnover. To establish a joyous working enviroment, it is necessary to re-think education in a clinical setting.

## **Missing electronic bloodsample requisitions reduced to zero as a result of a datadriven workshop**

Call for Posters - Quality, Cost, Value

Lotte Laasholdt, Lilli Soerensen  
Lillebaelt Hospital, Kolding, Denmark

### **Background**

Numbers of missing electronic requisitions in 2017 from the Outpatient Renal Clinic were 237 (3%).

The work was done at the Medical Department and the Department of Clinical Biochemistry and Immunology facilitated by The Department of Quality, Lillebaelt Hospital, Denmark. The focus was on interdisciplinary collaboration between the departments in relation to optimize patient care.

It is not mandatory for patients to book in advance and for patients that just show up for blood sampling the consequence of a missing requisition was waste of time 8 minutes (mean) and might in addition cause an unwelcome feeling. It is time-consuming for the secretary to find who is responsible for the missing requisition, and that could lead to a safety and quality issue. For patients using the electronic system to book a time for blood sampling it is not possible to succeed if the requisition is missing. They would have to call the clinic for help, which is time-consuming for both patient and staff.

### **Methods**

We held a data driven 5 day workshop (RPIW) involving one patient, 3 secretaries (one was Process owner), one doctor and one nurse. Data (time observations, standard work sheet) were collected by two facilitators from the Department of Quality prior to the workshop and the workshop group conferred with rest of the Clinic/Laboratory (Hometeam) to ensure quality and feasibility of the ideas. The ideas were tested and refined through dialogue and observations.

Prior to the workshop we had meetings with the staffs to ensure the level of information and their support. Pitfalls in the process in making a requisition were scrutinized. The ideas were tested with the staff and improved throughout the days using PDSAs, making implementation plans and standard work.

### **Outcome**

1. Visual guidelines: A phrase text with a check list was implemented in the ambulatory program in the e- patient record (EPR) for every patient to secure that the nurse was making the requisition for the Lab and a check list with standard work for the doctors and nurses when discharging patients from the inpatient ward to the Clinic, securing the requisitions.
2. Focus on documentation in the EPR of the ordered laboratory tests.
3. A weekly end of line inspection where the secretaries in the Clinic and the Laboratory make a data check and secure any missing requisitions.
4. Extended validity period for the requisitions from 10 days to 30 days making it easier for the secretary when the patient would like to change their appointment.

After the report-out day 5 the changes were implemented. The process owner was securing the new standards with help from the staff with focus on communication at daily huddles. Feedback was given to the staff not performing to the new agreements.

### **Conclusion**

Workshop results: Missed requisitions reduced to 0. A report-out at the Clinic was made 30, 60 and 90 days after the workshop. After 90 days 100% of the staff had implemented the new standards.

No waiting time for the patient due to missing requisitions from the Outpatient Renal Clinic. The patients could schedule their appointment for blood sampling via web booking without problems.

The Clinic had focus on feedback to the staff and special attention towards problems with new staff or any resistance.

The Clinic has benefitted from perseverance, focus, communication and implementation of new standard work. We have succeeded using a data driven workshop.

The changes secured the values of the hospital putting the patient at the heart of our attention.

## **Transferpoint**

Call for Posters - Quality, Cost, Value

M.J.O. Vroonland

Deventer Hospital, The Netherlands

### **Background**

- Aging of the population results in intensified home care for elderly patients.
- Emergency post are more frequently confronted with acute situations in which the elderly patient cannot stay at home any longer.
- In case patients are not in need of hospital care, nursing homes often do not have enough capacity to house all these acute patients.
- Physicians search 3 - 5 hours to find a solution for the patient in need of extra homecare.
- Patients are moved through the region in search for the right place for the best care.

Nowadays it only takes 2 calls for the GP and max 1 transfer for the patient.

How? Transferpoint is a unique collaboration network between primary care, hospital, (nursing) homecare and municipality. One dedicated team of trained nurses coordinate every transfer of all patients in the region.

### **Methods**

17 participating partners collaborated by sharing the same sense of urgency. Using existing processes they innovated by making explicit new rules of engagement:

- Every transfer is a shared responsibility of the whole collaboration.
- Simplify the process and make it useable for all members.
- All capacity is shared and real time available.
- There is one coordination center (Transferpoint) with full mandate to locate the patient at the right place for the best care.
- The physician can consult the Transferpoint to deliberate what kind of care is possible and if transfer is indicated.
- When transfer is needed, Transferpoint will organize and support the whole transfer together with the patient, physician and receiving organization.
- We always know where the patient is in the system.

### **Outcome**

Since October 2017 Transferpoint handled 1160 consultations.

Increase of Patient Experience

- Patient only moves 1 time
- Patient and family can choose where they want nursing home care
- Track'n'Trace the patient through the region
- Increase of Caregiver Experience
- GP: from 3-5 hours a patient to 2x 10 minutes a patient
- nursing home doctor receives a full assessment
- Transferpoint nurses are challenged to find the best place with the best care for the patient

Better outcomes

- No more capacity problems in the region which cannot be solved within 24h.
- Reduction high intensive nursing home care (-15%)
- Increase homecare (+40%)

Reducing costs

- Reduction unnecessary hospitalization (N = 36)
- Prevention of transfer by intensify homecare (N = 106)

### **Conclusion**

Shared decision making between professionals supported with one triage system, by sharing capacity, delegating responsibility and central coordination enables continuous care at the right time and the right place with the best professional for elderly patients in the region.



## **Quality Improvement and Waste Reduction at a Brazilian Public General Hospital. Implementation of a Clinical Governance System.**

Call for Posters - Quality, Cost, Value

Marco Aurélio Vitorino Cunha, Gustavo Augusto Sicca, Eduardo Bianchi Zamataro, Ethel Maris Schroder Torelly, Renata Martello  
Instituto de Responsabilidade Social Sírio Libanês - Brazil

### **Background**

The study was conducted in a public general hospital located in a high-poverty area in the city of São Paulo, São Paulo, Brazil. It has 342 beds and places an emphasis on the practice of general medicine. The hospital performs approximately 19,200 hospital discharges per year and receives 1,600 ambulances per month in its emergency department. At our hospital, poor clinical process design was leading to high costs, high in-hospital mortality and the overcrowding of the emergency department.

The potential exists to reduce 18-35% of deaths from treatable causes by adopting efficient practices. Many authors have identified unwarranted care variation as a major efficiency opportunity.

### **Methods**

We analysed the patient flow of general medicine patients on the institution and identified several problems involving clinical management and the coordination of care:

- Teams worked in silos, and ward coordinators rather than hospital guidelines determined patient admission on wards, thus leading to a delay in accessing the best recourses for patient conditions
- High unwarranted care variation
- Absence of quality-of-care data, leading to several initiatives with no focus
- “Pushed” systems

The strategy of change followed the steps below:

- Gathering of epidemiology hospital data
- Definition of high-volume hospital conditions
- Definition of key indicators to measure
- Sharing clinical and process results with teams, and holding a discussion on the changes that need to be made
- Training teams on data analyses and on process improvement
- Analysis of patient flow: movement of patient and resources based on guidelines and not on individuals' decisions
- Continuous data feedback

### **Outcome**

- 10,3% in hospital admissions increase: from 17,817 (2016) to 19,660 (2018)
- 2,6% inpatient decrease in the emergency room despite a greater number of hospital admissions: from 977 (2016) to 952 (2018)
- 17,9% in-hospital average annual mortality decrease from 5,64% (2016) to 4,63% (2018 through October)
- 19,4% intensive care unit SMR decrease from 1,03 (2017) to 0,83 (2018 through October)
- 3,9% decrease in the length of stay from 5,83 (2016-2017) to 5,6 (2018 through October)
- R\$ 5,5 million (1,5 million dollar) decrease in costs (2017 x 2018 predicted), R\$ 2,5 million (683 thousand dollars) directly related to clinical team.

### **Conclusion**

The implementation of the clinical governance system resulted in the reduction of costs, an increase in the quality of care provided to patients and efficiency, thus allowing the hospital to admit more patients in an area with very few hospital beds per habitant. Continuous data feedback to clinical leaders and the operational team is a very important motivation driver for processing improvement and sustaining results. Reducing unwarranted clinical variation through process redesign and data support can lead to significant quality improvement and cost reduction.

## **Back to basics: better care by listening to patient's story**

Call for Posters - Quality, Cost, Value

Mari Plukka, Carola Wisur-Hokkanen, Pia Haglund  
Vaasa Central Hospital, Finland

### **Background**

In Vaasa Central Hospital (VCH) patient safety work has been carried out relentlessly for 15 years. Social and Health Quality Service (SHQS) as a set of quality system and criteria has been in use in VCH from 2005. SHQS guides organizations management and development in order to achieve increased value for patient through high quality and safe care. Throughout the years a vast number of tools improving and securing patient safety have been created, implemented and also benchmarked in VCH.

Via Global Trigger Tool (GTT) we were able to detect quality deviations. In VCH the re-admission rate within 30 days was the most frequent trigger to activate. The implementation of serious patient harm investigation (SPHI) helped us to understand e.g. the root-causes of suicidal patients. One of the findings was that psychiatric patients' somatic diseases were missed thus leading to insufficient care as a whole. Putting GTT's and SPHI's findings together it became visible that in VCH there was a growing need to coordinate the care of patients who have complex needs but also find a way to cut back unnecessary re-admissions which is a symptom of inappropriate care and high costs. The care of these patient groups is often fragmented, and the patients may feel disappointed with available healthcare services. When situation escalates, patients seek help from emergency rooms where professionals do not have the possibilities to understand the complex situation.

### **Methods**

To response to this problem, we decided to create a new operating model to ensure the patient's good care. In the new approach, a nurse practitioner will take care of the coordination of the patient's care as case manager (CM). With case manager the patient gets one contact person to the hospital, and professional co-operation is more coordinated. Case Manager's work is to detect re-admission patients and coordinate care between different professional.

Aim of CM work is to ensure that the patient receives not only right medical care but also sufficient social care. CM operation is further streamlined by using ICT-systems in patient detection and effect evaluation. The new model was piloted for 4 months and found around 20 patients who would have benefit from CM intervention. NP was recruited and started CM role in the beginning of 2017. During CMs first operating year over 90 patients care was successfully coordinated. In our model the first priority is that patient wants help. That's why we always ask patients if case manager is allowed to coordinate their care. Case managers first task is to listen to patient's story and then ask three most important things which patient would like to have help with. The healthcare staffs were order to contact CM as soon as possible and to present CM work to the patients.

### **Outcome**

Preliminary results shows that interventions by CM can reduce readmissions improve their overall health situation as well as promote inter-professional teamwork.

Feedback from patient satisfaction survey was extremely positive. By looking at cost for 6 month before case manager contact and 6 month after case manager contact, costs were 11% lower.

Patients that get the best benefits are the ones with chronical pain. When they have regular contacts with case manager, they can cope in home environment.

We also found patients whose costs increased. CM was able to coordinate them to the treatment they needed, which explains why costs were increased right after case manager contact.

The greatest savings were achieved for patients who did not need hospital admission. The reason for this was CM could guide the patients to right care path and give healthcare guidance by phone.

### **Conclusion**

The most important lesson is to listen to the patient's needs and to try to find out the root causes of the readmissions. Inter-professional collaboration between professional and ICT- systems need to be improved.

## **Implementation of a Clinical Pathway on nutrition management in children admitted to Paediatric Intensive Care Units**

Call for Posters - Quality, Cost, Value

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Medical Direction, Bambino Gesù Children's Hospital, Rome, Italy

### **Background**

Bambino Gesù Children's Hospital (OPBG) is a 607 inpatient-bed academic hospital in Rome, Italy. In OPBG there are one pediatric cardiac surgery Intensive Care Unit and three multidisciplinary medical/surgical pediatric Intensive Care Units, with approximately 2,000 inpatients admissions per year. Critically ill children admitted to pediatric intensive care units (PICUs) cannot normally be fed by mouth, and may develop nutritional deficit which increases the risk of infections, prolonged mechanical ventilation, and delayed recovery. Guidelines for nutrition support therapy in PICUs published in 2017 recommend enteral nutrition (EN) as the preferred mode of nutrient delivery to critically ill child aged > 28 days. Parenteral nutrition (PN) supplementation should be considered in children who are unable to receive adequate EN; PN should not be started within 24 hours of PICU admission.

### **Methods**

This quality improvement project was conducted in all OPBG PICUs. In February 2018, a multidisciplinary group composed of paediatric nutrition experts, pharmacists, intensive-care physicians, nurses and epidemiologists conducted several working groups to develop the CP on nutrition management in children admitted to PICUs. CP requires to perform initial patient nutritional assessment; in the absence of contraindications, EN is recommended. PN is recommended when oral intake is expected to cover less than 60-80% of the nutritional requirement for > 10 days. CP was implemented in April 2018. The proportion of children who received PN within the first 24 hour of PICU admission was measured monthly from January to July 2018; trend analysis was conducted using the Cochrane-Armitage test. Moreover, we conducted a cost analysis by comparing PN and EN associated-costs in the pre-intervention period (January-March 2018) with those in the post-intervention period (April-June 2018).

### **Outcome**

We documented a statistically significant decrease in the proportion of children receiving PN in the first 24 hours of hospitalization in PICUs, from 9.6% in January 2018 to 5.2% in July 2018 ( $p$  for trend=0.003). Costs associated with PN decreased by 40% from January to June 2018, while EN nutrition expenditure increased over time, representing 37% of total expenditure in June versus 10% in January. In the period preceding CP implementation, the total expenditure for PN amounted to 123.008 euros with respect to 94.592 euros in the post-intervention period, with a saving of 28.416 euros/trimester.

### **Conclusion**

Changing in prescribing attitudes requires collaborative effort and a good motivation. Our results showed that CP has been effective in improving appropriateness of nutrition management in critically ill children admitted to PICUs. Moreover, a delayed start of parenteral nutrition in critically ill patients induced a reduction in nutrition-associated costs. In our setting, further analysis are needed to estimate the benefits of CP implementation in reducing incidence of infections, use of mechanical ventilation and duration of PICU hospitalization.

# **Improving Healthcare Access by Maximizing Efficiency at a Student-Run Free Eye Clinic**

Call for Posters - Quality, Cost, Value

Martin de la Presa, MD, Austin Wang, BS, Andrew Harrison, MD  
University of Minnesota, United States

## **Background**

The Phillips Neighborhood Eye Clinic (PNC) is a free clinic operated by University of Minnesota health professional students designed to address disparities in healthcare access. This clinic provides free eye exams and eyeglasses to the homeless and undocumented immigrants in the community. Volunteers include interpreters, social work students, medical students, residents and attending physicians. There is a great need for eye care services though there are many challenges in delivering efficient patient care that included error in patient information tracking, variability in clinic layout and limited exam equipment. To address this demand our aim was to maximize clinic efficiency by decreasing patient wait times and total clinic times.

## **Methods**

Data regarding arrival time, sign-in time, dilation time, and sign-out time was collected during clinic visits to assess the scope of the problem. This allowed us to determine where in the clinic flow that the greatest improvements in patient visit time could be made. Observations were made during each clinic to determine strengths and weaknesses in the system. Plan-Do-Study-Act (PDSA) cycles were used to evaluate the success of each intervention.

The first Intervention focused on clarifying roles and provided training for volunteers. The second intervention focused on improving clinic flow and patient tracking. The layout of the clinic was redesigned for improved clinic flow and the clinic note was updated to include pertinent information for improved patient and data tracking. The third intervention focused on improving clinic equipment and supplies. Critical equipment was identified that led to bottle-necks in clinic flow and were acquired to increase the efficiency of the clinic.

## **Outcome**

Data was collected at each clinic date over the course of the study period. During each interval the data was analysed to determine effectiveness. Multiple time points were recorded during each clinic visit. Analysis revealed that the total visit time per patient decreased from 70 minutes to 53 minutes,  $p < 0.05$ . The total wait time decreased from 27 minutes to 14 minutes,  $p < 0.05$ . These significant reductions in clinic time are from the initiation of the project to the last data collected. A paired t-test was used to determine the difference between the time points after an intervention at each clinic visit. This study is still in progress and we anticipate that the increased efficiency will translate to a greater patient experience in the clinic.

## **Conclusion**

This study has impacted the functioning of the clinic as now patients are able to be seen more efficiently with the shorter wait time and an overall shorter clinic visit time. This benefits patient care as more patients are now able to be seen on the same day. In implementing the changes we found that new forms to simplify the clinic flow required an investment of time up front by the technicians to become familiar. We have learned to factor in learning of new procedures in implementing changes. In the future we would give the new forms to those that would be using them ahead of time so that they can be familiar with them before they are used in clinic. In retrospect, we would also elicit feedback from patients at an earlier stage of the project. We learned that communication is key in implementing quality changes and that new protocols require a learning curve before the effects are realized.

## **Optimizing home healthcare resources to lower the cost.**

Call for Posters - Quality, Cost, Value

Mervat M. Binsaddiq, Wael A. Hariri  
Ministry of health, Saudi Arabia

### **Background**

The Saudi Arabia Ministry of Health (MOH) has spent annually 1.8 Billion Saudi Riyals (SR) on treating its eligible patients in private hospitals. Moreover, to serve MOH eligible patients -in light of the continuous increase in populations-, there was a concern about the diminishing bed capacity available for government-funded patients treated at private hospitals. In addition, the high cost acquired from treating patients with stable medical conditions in private hospitals was an issue that required attention. In response, an intervention was applied whereby, patients were referred to Home Healthcare (HHC) to obtain treatment at their home. This is expected to avail more available beds for a patient with acute illness to be treated, optimizing private hospitals beds utilization, and optimizing HHC resources usage.

### **Methods**

The process starts from sending the nominated long stay patients' list provided by Medical Eligibility and Coordination Status Inquiry department (MECSI) to the HHC office; The later assign a team to assess patients (in their private hospital) eligibility based on HHC criteria for referral. Thus, a list of eligible patients will be sent to the MSCSI to arrange their referral from private hospitals. The private hospital provides HHC office with the management plan for patients according to the policy and procedure. The HHC team communicate patients management plan with their designated consultant in the allocated governmental hospital for the follow-up. Simultaneously, the list of eligible patients will be sent to the purchasing department to allocate all medical supply and equipment needed at their home. Once patients are ready for referral according to the policy, the funding for them in privet hospital will terminate and the care will continue at their home.

### **Outcome**

The average cost for patients cares in a private hospital against the cost of home healthcare visits for them. By referring a total of 38 long-stay patients to HHC we reduce the expenses from 87 million SR to 3 million SR. The major source of this reduction was the cost of the bed services. Furthermore, patients satisfaction survey showed that 71% of the patients were satisfied and strongly satisfied with about 50% were strongly satisfied. Interestingly, only 13% were dissatisfied and no patients reported strongly dissatisfaction.

### **Conclusion**

The successful accomplishment of this project objectives has achieved the 2030 vision of the Saudi Arabia through referring private patients' to HHC in three ways. First, lowering the cost of treating MOH eligible patients in private hospitals. Second, introduce new optimal utilization approach for (HHC) resources by expanding services and increase productivity. Three, efficient utilization of available MOH beds in private hospitals to treat acute cases.

## **Utilizing the King Devick Test to demonstrate neurologic dysfunction in Obstructive Sleep Apnea patients**

Call for Posters - Quality, Cost, Value

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Yu-Hui Chang PhD, and James Parish MD, Mayo Clinic, USA

### **Background**

Mayo Clinic's mission is to inspire hope and contribute to health and well-being by providing the best care to every patient. We demonstrate value by solving serious and complex medical concerns by dedicating teams of experts who tailor their collective medical knowledge to each individual situation. Clinical evaluation of Obstructive Sleep Apnea (OSA) is reliant upon subjective, patient reports of excessive daytime sleepiness, snoring or witnessed apnea. This requires patient recognition or bed partner recall. Direct measurement of the impaired brain function caused by sleep deprivation and hypoxia could augment clinician's suspicion of disease. Our objective was to obtain King Devick Test (KDT) times for patients suspected of OSA. We hypothesized correlation between slower KDT times (i.e. worse function) and greater OSA severity. OSA patients who adhered to continuous positive airway pressure (CPAP) treatment might demonstrate improved brain function as measured by faster KDT times.

### **Methods**

Study dates January 30 to July 31, 2018. Subjects were referred for initial evaluation of Sleep Disordered Breathing concerns. OSA severities were defined by Apnea Hypopnea Index (AHI) results, with  $\geq 15$  considered at least moderate OSA. The KDT is an objective physical measure of brain function. We estimated correlation between KDT time and AHI, and compared mean KDT time between patients with and without moderate OSA. For the OSA subgroup, we evaluated for potential improvement in KDT after CPAP.

### **Outcome**

We enrolled 60 subjects. 35/60 subjects (58.3%) had OSA with an AHI  $\geq 15$ . Initial analyses noted no significant KDT time differences between subjects based on OSA severity. However, after excluding 3 subjects who had baseline neurologic illness, adjusted analyses demonstrated that mean KDT time was significantly prolonged for patients with moderate or greater OSA (AHI  $\geq 15$ ) as compared to those with mild or no sleep apnea (AHI  $<15$ ); 63.4 seconds versus 55.7 seconds,  $p=0.03$ , 95%CI (58.9-67.8). CPAP treated subjects demonstrated significantly improved KDT test times; 63.5 seconds mean pre-treatment vs. 55.6 post-treatment; -6.6 seconds mean difference,  $p=0.02$ , 95%CI (-12.0, -1.13).

### **Conclusion**

An novel, objective physical measure of neurologic function, the KDT, can demonstrate baseline abnormalities in OSA patients of moderate or greater severity. Significant neurologic improvement is achieved after patients are treated with CPAP, which can be objectively measured. Future studies may discover KDT time thresholds for various AHI diagnostic levels in OSA suspect patients, aiding clinicians' risk stratification and management decisions.

## **Visual acuity is the missing tool in the assessment of ophthalmic emergencies in Emergency Department! Phase 2**

Call for Posters - Quality, Cost, Value

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### **Background**

This project was conducted at Hamad General Hospital (HGH), Qatar, which is considered one of the largest tertiary care hospitals in the Middle East. HGH emergency department (ED) received over 1 million visits over the year 2016.

Visual acuity is an important part of visual complaints assessment, many observations was reported that it was missed in significant number of patients' medical records. We aim to improve the emergency physician's compliance to assess the visual acuity in patients presenting to ED with ophthalmic emergencies.

Assessment of problem and analysis of its causes:

Our collected data showed lack of proper documentation of visual acuity in patients with ophthalmic emergencies. Pareto analysis to a survey circulated among ED physicians, showed that the unavailability of Snellen charts in the ED clinical areas is the main cause of this problem.

### **Methods**

we collected data about patients presented with visual complaints to ED, Between June to August 2014. A total of 1245 cases presented with eye complaints, Male were 73.5 % (n=915) and female were 26.5% (n=330). With the age range of 16-40 years. Visual acuity was recorded only in 1.4% (n=17) of the cases.

we contacted the stakeholders to ensure the availability of Snellen charts in different clinical areas and we conducted multiple educational activities to health care providers in the department.

Snellen charts were introduced and fixed in all clinical areas. All staff were actively engaged in the improvement process through direct contact with daily designated doctors who were available in most of the clinical hours at ED. Continuous highlighting of the problem during daily meetings and teaching activities was rewarded with fruitful feedback from ED physicians and nurses.

### **Outcome**

Measurement of improvement:

The post-intervention data were measured using the same initial method at May and June 2015. In this cycle a total of 307 patients, male to female percent was 84%, 16% respectively with the age range of 16-40 years. Visual acuity had been recorded in on 55 %(n=169) of cases.

Effects of changes:

visual acuity is an important part of visual complaints assessment, we have dramatic improvement in assessing the visual acuity. However, further interventions, for example continuous education, is recommended to maintain this improvement over a long-term basis, this meets the nature of quality improvement projects which require a frequent reviewing to ensure delivering the maximal efficacy and outcome.

One of the main difficulties we have encountered during the process of improvement was finding the right chart type that can meet with the unique nature of HGH-ED, where there is a huge social, multilingual and cultural diversity.

## **Conclusion**

Lessons learnt:

Proper in field communication with ED staff helped us understand more about the difficulties and challenges they have to meet our goals. It was very helpful to track and continuously evaluate the progress of our project.

The patients' cultural and social diversity was one of the challenges that our team found during physician daily feedback, as not all our patients were able to read English letters on the charts, hence character charts deemed to more logical solution.

Messages for others:

We found the continuous teaching and having staff available during clinical ours to collect feedback and help in general and teaching instructions were extremely helpful. We suggest having such team during the assessment phase.



## **Quality Improvement of National SSI Audit: Evaluation of data submitted from Inverclyde Royal Hospital**

Call for Posters - Quality, Cost, Value

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Department of General Surgery, Inverclyde Royal Hospital, UK

### **Background**

This project took place in Inverclyde Royal Hospital. The team involved were a consultant surgeon and four surgical registrars. Our work focussed on patients who have undergone major general surgical operations, who are part of a national audit of post-operative surgical site infections (SSI).

### **Methods**

All Scottish hospitals submit data prospectively to the Infection Prevention and Control (IPC) team, to audit SSIs after major large bowel operations. Data covering multiple variables, considered risk factors for SSI, are collected for each patient. However, our team have identified discrepancies in the data, including incorrect variables and missing data. This affects patient care because inaccurate data may misrepresent the actual rate of SSI, misrepresent hospitals' efforts to reduce the risk of SSI, and mis-inform public policy informed by the data. The results of the national SSI audit could then lead to false conclusions, and thus inappropriate suggestions for improvement. Therefore, we planned a quality improvement project, to determine the accuracy of data submitted to the national audit of SSI between 01/07/2016 and 31/08/2018.

### **Outcome**

This is a Work In Progress, and as such we have not yet put in place any interventions. Inaccuracies and missing data were identified, as well as the observation that there were missing cases. We plan to inform the national SSI audit of these results, and capture the missing cases by cross-referencing theatre logbooks for major elective and emergency bowel operations. To improve data inaccuracies, we plan to hold study sessions for theatre medical and nursing staff as well as streamline the data selection process for SSI database cases. Additional interventions will include assignation of coding to procedures at the time they are carried out by medical staff. This may ensure better clinical adherence to SSI prevention protocols, and improve data collection simultaneously. This will be re-audited as below.

### **Conclusion**

We have reported our findings to the national SSI team, and have requested their response including how they will improve their data collection. We can re-audit their data collection after any intervention has been put in place, in one year's time, looking at data for 2019, and comparing with this evaluation from 2016-2018.

The main challenge was access to the data submitted to the national SSI audit. However, after concerns were raised as to the accuracy of the data, it was provided to our team for confidential evaluation for this quality improvement project.

## **Crew Resource Management implementation in a Brazilian ICU**

Call for Posters - Quality, Cost, Value

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### **Background**

Medical errors is the third cause of deaths in the USA. In Brazil, the problem is similar. Medical errors is amongst the 5 leading causes of death. The 3 more important root-causes of sentinel events are human factors, leadership and communication failure according to JCI database.

Crew resource Management is a workshop created by NASA in 1979 after plane accidents in order to improve soft skills and reduce errors.

There is already data supporting CRM training in Health Care to improve teamwork and reduce errors, mortality and costs.

Our work was the implementation of CRM concepts in Hospital Sirio Libanes ICU, a private hospital in Sao Paulo, Brazil.

### **Methods**

From may/17 to october/18 we did 25 training sessions with almost all staff members of our ICU to improve soft skills. 85% of the multidisciplinary team were trained in this period.

The team members were divided in groups of 20-30 people and each group did a 4h workshop.

During the workshop participants discussed 4 cases that had happened in our ICU. For each case they did a practical scenario followed by a debriefing and finally 2 facilitators gave them take-home messages in a 12-slides presentation reinforcing the main aspects of CRM concepts discussed. Situational awareness, leadership, communication, conflicts management, safety culture and decision making were the main aspects of CRM trained.

We analysed safety questionnaire and adverse events pre and post the training program.

After each workshop a self assessment questionnaire was also analysed.

Finally, estimated Return On Investment (ROI) was verified.

### **Outcome**

We noticed a drop on adverse events (AE) notifications after the training program.. Despite of this the proportion of AE without damage for the patient was higher after the training program, specially AE related to devices (catheters and tubes) and AE related to medications. Safety questionnaires showed an improvement of 20-25% in team engagement, team empowerment and team collaboration after the workshops.

Consequently ROI was important, around U\$1.500.000,00.

### **Conclusion**

CRM training had a big impact in reducing adverse events in our ICU. Moreover, improved teamwork and job satisfaction, both important to enhance reliability in the ICU. The workshops delivered with practical scenarios with small groups and teaching them with different models (realistic simulation, role-playing and case-discussions) were responsible for the good results.

Changing culture to bring reliability and reduce erros is not an easy work, specially in a hostile environment as ICU can be. Disruptive attitudes, punitive culture, work overload, burn out syndrome among staff members are common issues and have a bad impact in team performance. Coordinators have to be concern with these problems besides training soft skills in order to form high performance teams. Despite of these barriers we could improve teamwork after training the CRM concepts and reduce errors. Consequently, a ROI around U\$1.500.000,00 was expressive.

# **Utilizing team cooperation to shorten the Average Length of Stay in patients in General Surgery of Tw-DRGs**

Call for Posters - Quality, Cost, Value

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National Taiwan University Hospital Yunlin Branch /TAIWAN

## **Background**

Taiwan started the application of the Tw-DRGs system in 2010 as the basis for the payment of hospitalization medical expenses. Under the circumstances of limited medical resources, it is important for hospitals to improve the quality of medical care and to reduce costs. The Average Length of Stay is a comprehensive indicator to evaluate the medical quality, efficiency and benefits. In this hospital of case study in 2017, the average length of stay was 6.92 days, which was higher than the hospitals in the same category. Therefore, a cross-functional team (Department of Surgery, Department of Nursing, Center of Quality Management, and Information Technology Office) is set-up to properly make plan for the control of the length of stay, further, in order to provide a medical care of high quality and efficiency.

## **Methods**

1.The plan for the improvement:

(1) Establish a clinical pathway: Standardize the contents and procedure of the best treatments, and reduce the delays on medical care and the incorrect consumption on resources.

A.Determine the clinical pathway items: Acute appendicitis, Inguinal hernia, Laparoscopic cholecystectomy, Colorectal surgery, Anal fistula surgery, Hemorrhoidectomy.

B.Information system establishment: establish clinical pathway module.

C.Formulate a standard checklist for reviewing the status of discharged patient.

D.Evaluation of results.

E.Correct the clinical pathway.

(2) Implement the services of planned discharge:

A.Issue the prescription of discharge medical advice in advance.

B.Conduct the education and training: strengthen the medical team's awareness of the importance of discharge preparation services; and provide the patients a discharge planning in a timely manner.

C.Monitor the quality indicator.

(3) Establish a complete management system of infection control.

## **Outcome**

The average length of stay in patients in general surgery of Tw-DRGs decreased from 6.92 days to 5.6 days, a decrease of 1.32 days. The implementation was good. The utilizing team cooperation model is effective for shortening the average length of stay.

## **Conclusion**

The measures of shortening the average length of stay, speeding up the number of bed turnover rate and using the medical resources on patients with needs will maximize the functions of care resources and improve the efficiency of hospital operations.

## **Enhancing Quality in Community Acquired Pneumonia Care**

Call for Posters - Quality, Cost, Value

Peter Carpenter, Dr Jo Congleton, Ellie Wells, William P Gilks  
Kent Surrey Sussex Academic Health Science Network, England

### **Background**

Kent Surrey Sussex (KSS), in the south east of England, has a population of 4.2 million with 11 acute hospital trusts. KSS AHSN (Academic Health Science Network) Respiratory Programme ran a project focussed on improving care for patients admitted with community acquired pneumonia from 2010 to 2015.

Community acquired pneumonia (CAP) is a common reason for unplanned admissions with significant mortality. Around 10,000 patients per year are admitted with CAP in KSS, with a modal length of stay of 5 days, and a mortality rate of between 5 and 30%, depending on age and severity of the episode. It was recognized that care was often not in accordance with national guidelines. The UK 'North West Advancing Quality' project had shown it was possible to improve compliance in 5 'quality markers' over a 30 month period of quality improvement. The KSS AHSN CAP Enhancing Quality (EQ) project aimed to improve compliance with an agreed CAP care bundle, with the aim of improving patient outcome.

### **Methods**

KSS AHSN engaged with acute trusts, who appointed clinicians as pneumonia lead –PL (funded role). Meetings held with the PLs explained the rationale and listened to their concerns. Two multi-disciplinary events were run each year, taking a collaborative approach with teams able to express problems, share solutions and celebrate successes in a peer support network environment. Event feedback was used to shape the direction of the programme.

Trusts set systems in place to deliver the CAP care bundle. Key people in the trusts were the pneumonia leads and the quality teams. There was a continuous audit of practice against the bundle measures. Results were collated and fed back to teams, allowing tracking of progress.

The improvement process was by continuous audit and comparison to other trusts. Attendees were encouraged to circulate information within their organisations. This method sustained change and helped the care bundle delivery.

### **Outcome**

Using the software package (Data Clarity) KSS AHSN tracked compliance with the CAP Care Bundle elements. In 2014 the BTS published a CAP care bundle, collaborative members discussed the differences and refined the KSS Care Bundle. HES data was used to track outcome measures.

Over 66,000 patients were audited from July 2010 to November 2015.

Compliance with the 4 core CAP bundle elements improved over time. By 2015 the pooled regional compliance of the bundle elements which remained unchanged over the 5 years was:

56% CURB-65 calculated (a measure of CAP severity which guides treatment decisions)

93% Appropriate antibiotic prescribed

79% Antibiotic administered within 6 hours

80% Oxygen saturation assessed in 1 hour

Average length of stay fell from 9.74 days to 8.74 days.

Crude mortality fell from 22.2% to 18% ( $P < 0.0001$  for trend).

### **Conclusion**

Problems encountered: Collecting data was a very large amount of work for the teams. High level support at trust level was key, there was often requirement for overtime payment for data collection.

Sustainability: In 2015, with support from the Respiratory Collaborative, the decision was made to stop collecting data as results had plateaued in terms of delivering the CAP Care Bundle. However, it was agreed that the programme would continue to monitor CAP hospital mortality rates and report back at the ongoing Respiratory Collaborative events which now have a focus on the COPD discharge bundle. To date the downward trend for inpatient CAP mortality continues to date.

Lessons learnt:

Appointing local leads was key to effecting change

The amount of work involved in auditing the patient records was great

Use in house data software

By data sharing, data reporting and a collaborative approach it is possible to effect large scale changes in patient care associated with improved outcomes.

# **Report from the Initial Phase of a National Improvement Collaborative for Patients Living with Chronic Obstructive Pulmonary Disease (COPD) in Ireland**

Call for Posters - Quality, Cost, Value

Rachel MacDonell, John Brennan  
Royal College of Physicians of Ireland  
Timothy McDonnell  
National Clinical Programme for COPD, Ireland

## **Background**

In early 2018, a co-designed initiative between the Health Service Executive Clinical Strategy and Programmes (CSP), the National Clinical Programme for COPD (NCPCOPD) and Royal College of Physicians of Ireland (RCPI), was undertaken to improve acute COPD care in two Irish hospitals.

This initial project had three key aims that converged towards the overall aim of developing recommendations towards a national collaborative programme proposal:

1. to seek evidence through a literature review for improvement interventions in COPD care
2. to develop a 'change package' for implementation
3. to undertake a pilot in two hospital sites and make recommendations regarding feasibility of a national improvement collaborative.

In Ireland, COPD is a common illness that places a significant burden on healthcare services. Data suggests that there is also significant variation in care processes and outcomes between hospital sites.

## **Methods**

A rapid scoping exercise of the scientific literature was undertaken to inform the design of an integrated improvement approach for use in the Irish health system.

A 'change package' for COPD was developed to include direct or expedited access to respiratory specialist care, clinical presentation and discharge bundles and standardised clinical assessment.

Two hospitals were chosen as pilot sites ((A) large tertiary referral centre, and (B) smaller regional hospital). These pilot sites were supported through a collaborative improvement project over a 10 week period to gather site-specific data to further understand local patterns in COPD care and prioritise improvement areas within their own system. The consultant-led teams included additional frontline healthcare professionals caring for patients with COPD and were supported by QI faculty from RCPI.

## **Outcome**

Over the pilot collaborative, both sites reported different outcomes.

Pilot site A reported a significant change in culture around COPD care. One member of the team noted that "QI methodology has changed our team culture, enabling us to challenge traditional hierarchies and bring solutions", while another team member remarked that a significantly positive aspect of taking part in the project was "seeing things through the patient's eyes and acknowledging the complexity of the system for patients trying to negotiate it".

Though patient pathway redesign, Pilot Site B reduced their admission rate for acute exacerbations of COPD from 100% to 33%, and the time from patient registration to specialist respiratory review by 98%.

## **Conclusion**

Marrying site specific subject matter knowledge and quality improvement capability can be an effective way of generating momentum for change in chronic conditions such as COPD. This momentum provides an excellent opportunity to scale up.

The success of the pilot projects proved a catalyst for the Irish National COPD Improvement Collaborative, launched in September 2018.

## **Can daily and targeted exercise at work have an impact on the short-time sick leave for the employees at the mammography screening unit?**

Call for Posters - Quality, Cost, Value

Randi Gullien, Soorin Saba Bamdadsoofi, Anne Lill Bøgle, Jack Gunnar Andersen  
Oslo University Hospital, Norway

### **Background**

Department of Breast Diagnostics is a part of Division of Radiology and Nuclear Medicine (DRN) at Oslo University Hospital (OUH), Norway. The department consists of two units: a clinical and a mammography screening unit. The team involved and the intervention group in the study were employees at the screening unit. The quarterly level of short-term sick leave for the radiographers is higher and varies more during the year than for employees the division and for the hospital. Previous initiatives at the unit had no clear effects at the short-term sick-leave. The aim of the study was to investigate if implementing daily exercise had any effect on the unit short-term sick-leave and compared the quarterly short-term sick-leave for a unit with corresponding results for DRN and for OUH. The causes for short-term and long-term sick leave are confidential and therefore not a part of this study.

### **Methods**

Target implementing of maximum 30 minutes organized exercise during working hours in one of the two ordinary breaks were carried out. Two internal employees at the screening unit were exercise instructors and conducted the daily exercise; recorded daily number of employees at work; number participating exercise; number of days with organised exercise; type of exercise; causes for no activity. The instructors were familiar to how monotonous work can be a strain on the body so they created and printed targeted exercise program and alternated to conduct the exercise due to their different approaches. Plans were available in the exercise room and it was possible to perform exercise even though none of the exercise instructors were present. We informed the employees at the unit about the study before it started and we also presented the final results of the study after the study closed.

### **Outcome**

The short-term sick-leave result for the study period (1st quarter 2014) was 3.07% for the unit. A further reduction followed the next quarter (2nd quarter 2014) to 2.70%. The sick-leave results increased for the 3rd and 4th quarters in 2014. The quarterly results for 2014 varied less compared to other years. For the unit, the over-all lowest and highest level of sick-leave was 2.29% (2nd quarter 2013) and 6.15% (1st quarter 2016). The results for the unit compared to DRN and OUH shows that the unit have a higher level of short-term sick-leave for all quarters except for the 3rd quarter in 2016. In this quarter the unit had 2.59% sick-leave compared to 2.82% for DRN. The overall highest quarterly result had the unit in the 1st quarter in 2016 with 6.15% with 2.87% and 2.79% for DRN and OUH, correspondingly. The results show that unit, DRN and OUH all have pikes with higher levels of short-term sick-leave in the 1st quarters for all years, except the 1st quarter 2014 for the unit.

### **Conclusion**

Results show that expensive and extensive initiatives not necessarily are required to achieve small and positive effects from exercise at work and reduce the short-term sick-leave. The reduction of sick-leave in the study period and the low percentage sick-leave in the three following quarters for the unit might indicate a positive influence of organized exercise during working hours. The short-term sick-leave decreased for the unit in the study-period compared with DRN and OUH. It seems that targeted exercise indicates a decrease in the short-time sick-leave. Further studies are needed.

## **Improving TPN safety and efficiency through a custom electronic ordering solution**

Call for Posters - Quality, Cost, Value

Rod Tarrago, MD  
Seattle Children's Hospital

### **Background**

This project was performed in a free-standing, academic children's hospital by a multi-disciplinary group including physicians, pharmacists, dietitians, and information technology analysts. It focused on total parenteral nutrition (TPN) ordering for inpatient pediatric patients. TPN is a high-risk therapy often given to the most ill children. The complexity and potential for adverse events require that the system for formulating, ordering, filling and administering TPN be as safe as possible. We transitioned from a manual, paper-based process to a fully automated electronic system. As a specialty center, our children's hospital cares for the most complex pediatric patients in the region, and an average of 15,000 TPN's are ordered and compounded per year. Like many hospitals, our current electronic health record (EHR) did not provide a completely electronic ordering solution for TPN and we relied on a paper-based system. This required prescribers to manually calculate, write and fax paper TPN orders which were then transcribed into the compounding software, resulting in high risk for error and tremendous inefficiency. We mapped the multi-step process and gathered all stakeholders from areas involved in TPN ordering and delivery, determining the need for an improved process.

### **Methods**

Traditional information technology and electronic health record project can take months or years when using standard methods. In order to decrease the time to develop a proof of concept and implement, we used a Hackathon concept with agile methodology and frequent improvement sprints to implement the electronic tool. Our team included our chief medical information officer (CMIO), an information technology (IT) dietitian, a clinical pharmacist, two clinical dietitians, and several IT analysts. Over the course of three days, we designed simple code and an EHR interface to translate order data directly to the TPN compounder. Once the proof of concept was validated, we worked to improve and finalize the tool, continuously communicating with leadership and involving clinicians. Using these methods, we progressed from proof of concept to go-live in just 5 months. Our group met frequently to improve the design and validate the safety of the tool. Training of pharmacists and dietitians was accomplished by clinical colleagues, leveraging online videos and live learning in the EHR testing domain. The goal of the project was to reduce transcription errors, improve efficiency, and reduce waste. We used our internal pharmacy error tracking tool to determine effects on ordering process errors.

### **Outcome**

A TPN value stream map of the process prior to and after implementation determined the extent of workflow simplification, and total order data was used to determine yearly paper savings. We also surveyed front line nurses, dietitians and pharmacists to determine satisfaction with the new process. Following go-live, process-related errors declined dramatically, with a relative reduction of 89%. Transcription errors, which were recorded at a pre-implementation rate of 2.85% of TPN orders and included 15 cases reaching the patient in the previous six months, were entirely eliminated. Total errors reaching the patient, which were already at a low 0.19% of total errors, were reduced by 57%. Fifty percent of our TPN order process steps were removed by eliminating paper, printing, and transcription. In addition, we will save over 45,000 sheets of paper annually due to removal of paper order entry and faxing. Within the first week, overall usability and satisfaction among dietitians, pharmacists, and bedside nurses were rated highly compared to the old paper process.

### **Conclusion**

Rather than wait for our EHR vendor to implement a user-friendly solution, we used contemporary methods now common in other industries to rapidly design, build, test and implement a much more efficient, visible, and safe process. We used concepts shared with us by other pediatric institutions, and in turn created a product that we have shared with many other pediatric and adult health care systems. This experience shows the benefit of applying modern improvement methods used in other industries. In a



short period of time and with a small group of invested people, dramatic safety, quality, and efficiency improvements can be accomplished. We have now electronically ordered over 11,000 TPN's and have completed several Plan-Do-Check-Act cycles resulting in several usability improvements. We also hosted a webinar attended by users from around the world, and we have shared our code with multiple organizations. This project was a key goal of our Medication Safety Committee and the process is now our standard of care.

## **Dyspnea outpatient clinic**

Call for Posters - Quality, Cost, Value

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Northwest Clinics The Netherlands

### **Background**

The 'dyspnea outpatient clinic' is introduced in Northwest Clinics, a top clinical hospital located in the northwest of the Netherlands. It was initiated in the Heart-Lung Centre by a cardiologist, a pulmonologist, an analyst and a department manager. The pilot aims to optimize the diagnostic care pathway for patients with nonspecific dyspnea symptoms. Patients with dyspnea symptoms are referred by a general practitioner (GP) either to a cardiologist or a pulmonologist. However, based on the tools available to the GP, it is often difficult to determine whether dyspnea has a cardiac, pulmonary or multifactorial cause. This often results in patients being subsequently referred to a cardiologist and then a pulmonologist or vice versa. This leads to referral delay, duplicate diagnostic testing and is as such time consuming and most likely not cost-effective. Thus, an integrated care pathway in which a pulmonologist and a cardiologist both analyze the patient was designed.

### **Methods**

The pathway starts with screening of the referrals by a specialist. During the outpatient clinic, medical history taking is done by a trained analyst and questionnaires are conducted (CCQ, MRC, CVRM). Additionally, patients undergo cardiac and pulmonary function tests. These tests include: spirometry, diffusion test, ECG, echocardiography and blood pressure measurement. Tests already performed by the GP will be used for analysis. If necessary a bodybox test, a thorax X-ray and/or a reversibility test are performed. To optimize the process, a cardiopulmonary exercise test is also used. Subsequently, the analyst, cardiologist and pulmonologist discuss the case in a multidisciplinary consultation, assigning the patient to the appropriate specialism. The patient could start his treatment at best within a week. In the first six months of the pilot three patients a week were scheduled for the dyspnea outpatient clinic. The pilot was prolonged with incremental changes.

### **Outcome**

Patients receive their diagnosis earlier and can start treatment within a week (except when a CCTA is necessary), instead of following two separate pathways that can take up to several months. Moreover, patients have to travel less as the standard diagnostic tests are performed in one day. Also a survey was conducted to measure patient satisfaction during the implementation. Preliminary results showed a high patient satisfaction regarding the integrated care pathway and it was graded with an 8.2/10 (n=10). As implementation of the dyspnea outpatient clinic is still ongoing, specific user experiences for improvement are still being collected to adjust the system's functionality and user-friendliness.

### **Conclusion**

The 'dyspnea outpatient clinic reduces costs, prevents referral delay, duplicate diagnostic testing and provides an integrated diagnosis. The multidisciplinary consultation also increases the knowledge of dyspnea symptoms and the quality of care. If we had to redo this pilot we would assemble a larger team, allowing more time to be spent collecting data and allowing more patients to be scheduled at the dyspnea outpatient. To summarize, patients with nonspecific dyspnea symptoms need a holistic approach that addresses their symptoms beyond the boundaries of specialisms to improve their value of care.

## **A case for nurse-led services: Improving the Outpatient cardioversion service in a busy general district hospital**

Call for Posters - Quality, Cost, Value

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NHS England - West Hertfordshire Trust, Watford General Hospital

### **Background**

Atrial fibrillation (AF) is estimated to affect 1.4 million people in England and the worldwide prevalence is increasing. This arrhythmia carries a significant risk of morbidity, including ischaemic stroke, tachycardia-induced cardiomyopathy and debilitating symptoms. It negatively impacts quality of life (QOL) and survival. Rhythm control is an important strategy to improve symptoms, functional status and QOL in patients with AF. Direct current cardioversion (DCCV) is an effective means of restoring sinus rhythm and can improve symptoms and haemodynamic, as well as minimising time in persistent AF, thus improving the success rate of AF ablation. In NHS trusts, waiting lists for an ablation procedure can be in excess of six months; DCCV is an important strategy for acute rhythm control.

Our departmental referral system until 2016 included a cardioversion book, where all referred patient names were recorded. Unfortunately patients were lost to follow-up due to the limited nature of record keeping in the cardioversion book.

### **Methods**

Retrospective collection of data of all outpatient cardioversions (DCCV) from October 2017 to September 2018 and comparison of outcomes with data from first audit in September 2017 (data from January 2015-December 2016)

We recognised during our first review that 6% of patients were lost to follow up and were not re-offered cardioversion appointments after their first appointment was cancelled due to unreliable anti-coagulation usage. We disseminated the results during our arrhythmia governmental meeting and immediate action was taken.

We introduced electronic records, which replaced the cardioversion book and electronic letter templates, which resulted in more efficient record keeping and communication with the patient.

We also introduced a nurse led service. Arrhythmia nurses would pre-assess patients and book them for cardioversions or re-book in cases of unreliable anti-coagulation usage and book the follow up appointments in our cardiology clinics. Data on patient pre-assessment and attendance, heart rhythm at pre-assessment, cardioversions, cancellation reasons, anti-arrhythmic medication and anti-coagulation use are now recorded by arrhythmia nurses and can be used instantaneously for audit purposes.

At pre-assessment and on the day of cardioversion, the data is input into the electronic record, taking less than two minutes per patient and building up a prospective registry for future audits: Heart rhythm at pre-assessment, previous cardioversions, cancellation reasons, anti-arrhythmic medication and anti-coagulation use.

Data was analysed with a statistical program, Stata 15. Waiting times from referral to cardioversion were compared with a two-sided t-test and cardioversion success rates were compared with a logistic regression test.

We reviewed the cardioversion numbers per year, waiting times, cancellation rates, NOAC vs Warfarin usage, anti-arrhythmic agent usage and loss to follow-up in 2016.

### **Outcome**

A re-audit one year later showed that the number of cardioversions didn't vary between 2016 and 2017/18.

A total of 502 cardioversions were identified: 141 in 2015, 187 in 2016 and 174 in Oct'17 to Sep'18, which were undertaken in the cardiology department at Watford General Hospital, West Hertfordshire trust. Despite 39 cancellations in January and February due to a nation wide bed crisis we improved average waiting times significantly from 107 days to 75 days (p0.016)

Our success rate stayed similar with 85% in comparison to 80.4%.

The cancellation rate due to other reasons than the cath lab closure due to a nation wide bed crisis, was also significantly reduced with 19 in comparison to 29, which shows a possible correlation with an increased uptake of NOAC's rate (88% vs 66%) and reduction of Warfarin (11% vs 33%). No significant changes were recorded about the use of anti-arrhythmic agents. Electronic records, which were introduced in 2017 led to no loss to follow-up in comparison to 6% in the previous years.

## **Conclusion**

A prompt referral and uptake of cardioversions with short waiting times can improve the long term outcomes of patients in atrial fibrillation.

Our aim was to review the outpatient DCCV service in our district general hospital to identify potential safety concerns and sources of inefficiency. As part of a quality improvement project, we initiated an arrhythmia nurse-led cardioversion service and electronic record keeping which allows prospective data collection for future audits. We documented significant improvements in departmental work-flow, reduction in waiting times and patient care.

The introduction of the nurse led service led to a statistically significant improvement of waiting times despite no changes in the overall amount of cardioversions per year and a nation wide bed crisis which resulted in the closure of the cath-lab in Jan/Feb 2018 and a cancellation of 39 procedures.

Overall the nurse- led service resulted in significant safety, efficiency and quality improvement.

## **Development of an Online Quality Improvement Platform**

Call for Posters - Quality, Cost, Value

Sarah A Lawton, John J Edwards, Elizabeth Cottrell  
Keele University, United Kingdom

### **Background**

Keele University developed an Academic General Practice (AGP) concept to build capacity locally, both in clinical academia and general practice, using a research-active exemplar 'beacon' practice to implement, pilot and evaluate innovative and collaborative models of care. The AGP boasts strengths in its clinical informatic and implementation expertise which enable it to, produce and test easy-to-use quality improvement (QI) tools. Sharing these QI tools supports general practices (GPs) to efficiently deliver demonstrable high-quality, evidence-based care.

Clinical service delivery pressures, threaten QI activities. Whilst GPs have the essential resources to undertake QI activities, variability exists with in-practice expertise to deliver QI initiatives from scratch. Development of QI initiatives require identification and appraisal of the relevant evidence, translation of evidence into everyday care, and development of further electronic health record informatic tools.

### **Methods**

QI tools to support real-world GPs deliver demonstrable high-quality and evidence-based care have been established, using expertise from the AGP, Keele University partners and patients. An online Knowledge Exchange Platform (KEP) is being developed, to exchange knowledge and best-practice and to host the QI tools and practical support to help any GP deliver high-quality care. The contents of the KEP are accessible to all GPs and include; short 'how-to' micro-learning videos demonstrating ready-made QI clinical informatic templates, protocols, searches and reports for immediate download, use, revision and implementation; 'how-to' guides on the development of clinical informatic tools; links to the activities of a General Practitioner Evidence-Based Practice group; and feedback on use of the QI tools. Through provision of links to contacts in the AGP, the KEP will become an interactive platform. The initial KEP will be developed and launched by March 2019.

### **Outcome**

Through existing networks, the AGP will raise its profile, with the vision that this activity will build towards practice-level GP scholarship, complementing others' work to promote individual GP scholarship. We can measure engagement by obtaining metrics about page views and tool downloads. Estimates of the greatest impact will be sought from feedback from those who have used the content. We anticipate that the KEP and feedback on the QI tools will support growth in the delivery of high-quality care provision for all GPs, by providing accessible, easy to use resources, regardless of academic and/or clinical informatics expertise. This will be a conduit for clinicians to undertake clinical audit for their revalidation purposes and will facilitate QI in non-incentivised areas.

### **Conclusion**

The most significant anticipated challenges in the development of a KEP for QI, are ensuring engagement and sustainability. We plan to mitigate against both of these potential problems by engaging our existing GP networks to test the QI platform, its associated resources and by sharing the resulting impact. This impact can leverage wider dissemination through demonstration of value. We hope to accredit engagement in the KEP, by the creation of a 'Community of Practice', enabling GPs to illustrate their engagement, as a marker of practice quality.

Clinical, research and implementation experience provides evidence that the availability of validated QI tools, similar to those being proposed, shifts the level of primary care provided towards that of higher quality. Not all GPs have the time, capacity or expertise to develop such tools. This initiative will assist to address this and will provide a platform for sharing best-practice to enable the delivery of high quality care.

# **IMPROVING HEALTH OF HEALTH PROFESSIONALS TO ENSURE MORE CARE QUALITY: THE PROBLEM OF CHRONIC SHOULDER PAIN**

Call for Posters - Quality, Cost, Value

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Health Care Trust Bergamo Est, Seriate Italy

## **Background**

Relapsing shoulder pain is the third cause of absence from work for health workers.

It has been shown by publications how an approach based on shoulder biomechanics rebalancing exercises can reduce pain and improve the ability to use the upper limb in everyday activities.

In health care professionals, this condition of recurring pain and functional discomfort inevitably also affects the gestures linked to specific job duties, first of all the one related to hygiene operations on patients that represents an important relational and care moment.

## **Methods**

The aim of the study is to verify whether the education of operators suffering from recurrent shoulder pain, in absence of proven organic lesions, can contribute to pain reduction and manual performances improvement, and consequently to the quality of care even in the patient mobilization.

All company health professionals were asked to fill in a questionnaire, and then, in compliance with the specific inclusion and exclusion requirements, they were enrolled in the study. We observed the outcomes value at the base line (T0): Vas Scale, Dash Score and Constant Murley Scale.

Everyone enrolled was trained to perform six specific daily stretching and strengthening exercises, lasting about 25 minutes, to be carried out for four weeks, after which the outcome indicators were detected (T1).

Professionals were then asked to suspend the exercises, presenting themselves after a month for follow-up surveys (T2)

## **Outcome**

The data collected recorded the participation of 46 workers who completed the path up to the follow up. The detection of the outcome parameters showed a reduction in pain and an increase in upper limb functionality. More specifically, the pain at the base line had a value of 4 points, while at the end of the training it decreased to 1.1, dropping by 72.5%. In the Dash Score an improvement of 22.8% was recorded, with an initial value of 66.6 and a final one equal to 51.4. In the Constant Murley a base line of 48.9 was reached, rising to 62.3 at the end of the training, thus improving by 27.4%. Even after one month of suspension, the functional indicators remained constant or further improved compared to the base line; the pain parameter again showed an initial increase, reaching 1.3, while maintaining a percentage reduction of 67.5% compared to the base line. In the Dash Score an additional improvement of 24.9% was recorded, like the Constant Murley that increased by 31.3%.

## **Conclusion**

The assessments carried out have confirmed that a physical approach to rebalancing shoulder structures can have a positive effect on improvement in pain and on functional difficulty that could lead to significant organic lesions over time.

The good outcome of the intervention showed, from a cultural point of view, a strong awareness of the operators involved of how a short specific path of muscle rebalancing can be sufficient to improve a recurrent pain condition.

The pain control and functionality improvement represented a benefit for the operators as for the gestures required in carrying out their duties, hygiene manoeuvres or changes in posture in bedridden patients for instance.

This then resulted in an improved quality of care in our hospital.

## **Reducing Wait Time of Weight Management Interventions**

Call for Posters - Quality, Cost, Value

Soh Ying Hua, Jayalakshmy Aarthi Ananthanarayanan  
National Healthcare Group Polyclinics, Singapore

### **Background**

This project involves overweight patients seeking weight management interventions at a primary healthcare group in Singapore (National Healthcare Group Polyclinics, NHGP). These patients were offered weight management programme (Weight No More Programme, WNMP) through various sources of referral. Patients who accepted the programme will be on a wait list before enrolling in the next available session. The aim of this project is to reduce the wait time of patients on this list. Based on World Health's Organization (WHO) revised body mass index (BMI) risk categories for Asians, risk of cardiovascular disease and diabetes increases from BMI  $\geq 23.0$  kg/m<sup>2</sup>. Approximately 52.5% of the Singapore adult population are at increased risk. Due to the successful implementation health screening, huge numbers of eligible overweight patients were identified in NHGP and offered WNMP. The median wait time for patients to enrol into WNMP was 7 months.

### **Methods**

1. Small class size of 15 participants per run.
  - a. Enhanced WNMP to accommodate 30 participants each run.
  - b. Participants assigned to 2 groups of 15.
  - c. "Break out" sessions during the exercise and discussion time.
  - d. Retain 1 staff to 15 participants ratio without additional manpower resource.
2. Limited classrooms in the clinics and limited operating hours.
  - a. Engaged partners in the 2nd phase of the project
  - b. Enhanced WNMP adapted into a community based weight management programme, FitterLife.
  - c. The local public sports facilities provider, ActiveSG provided venues and fitness instructors.
  - d. More time slots for Fitterlife to be conducted.
3. Limited manpower resource to conduct enough runs of the programme to match the demand.
  - a. FitterLife was designed to use less expensive manpower resource.
  - b. National Healthcare Group's Population Health Office (NHG PHO) contributed to a pooled resource to deliver FitterLife.

### **Outcome**

The median wait time was reduced from 7 months (WNMP) to 4 months (Enhanced WNMP) and further reduced to 2 months (FitterLife). Median wait time was reduced by 70% in 1.5 years.

Patients can better access weight management programmes now. Multiple runs of the programme at various sites and timings allowed them to enrol into a suitable run of FitterLife without waiting for too long.

By collaborating with NHG PHO and ActiveSG, the pooled resource reduces manpower strain on any one organisation. The various organisations have the same aim of promoting health and collaboration makes it more cost-effective for the organizations to achieve their goals.

Government funding was secured to deliver FitterLife. The savings from the collaboration and the funding was passed on to the participants. Participants pay a minimal fee of \$20 SGD compared to \$68 SGD previously. The funding also ensures continuity and spread of the programme till 2021.

### **Conclusion**

Implementation of change requires willingness to try and an open mind to be creative and bold. Working with like-minded partners can help to scale interventions at a population level and prevent chronic diseases that drain public health resources.

## **Using the Delphi method to develop nursing-sensitive quality indicators in heart disease**

Call for Posters - Quality, Cost, Value

Somchit Wongsuvansiri, Dr. Teeraporn Sathira-Angkura  
Nursing Division, Ministry of Public Health, Thailand

### **Background**

Heart disease is a major global health problem causing of more than 50% and 25% of deaths in the developed and developing countries, respectively. It is predicted that, by 2020, 25 million of heart disease new cases will be diagnosed annually and will become the first ranking causes of death. In Thailand, heart disease is also the leading cause of death and is the targeted disease for health improving quality policy. However, there are few indicators related to nursing outcomes for patients with heart disease. Thus, the development of nursing-sensitive quality indicators has become a top priority in nursing management. The Nursing Division is responsible for improving the nursing quality. Therefore, the nursing-sensitive quality indicator has been developed using Donabedian's framework to monitor the patient clinical outcomes.

### **Methods**

This study focused on developing nursing-sensitive quality indicators. A purposive sampling technique is used to recruit 19 study samples. A sample of 5 head nurses and 5 experienced nurses, working in the heart units, with the researcher constructed 39 nursing-sensitive quality indicators. Then, a sample of 5 advanced practice nurses, 2 heart disease nursing instructors, and 2 medical doctors with at least 10 years of heart disease experience, examined the proposed 39 indicators for content validity. Finally, a series of 3-round Delphi technique was used to explore and extract indicators that can be used for the nursing-sensitive quality indicators.

### **Outcome**

Of the 39 indicators, 8 were identified as nursing-sensitive quality indicator. One indicator was "Structure" denoting conditions and performance on the heart service delivery system. Five indicators were "Process" addressing: 3 Procedures for acute myocardial infarction patient (STEMI): a) Doing electrocardiogram and ECG within 10 minutes; b) Giving thrombolytic treatment within 30 minutes; and c) Assessing for contraindications, precautions and follow-up during - after providing fibrinolytic agents, 1 procedure for acute myocardial infarction patient (NSTEMI): Risk assessment using GRACE Risk Score, and 1 procedure for patient receiving warfarin: Bleeding assessment using HAS-BLED Score. Two indicators were "Outcome" expressing change and response of the patient and their families: a) Knowledge and health literacy on self-caring and b) Satisfaction with cardiovascular nursing service deliveries.

### **Conclusion**

A set of 39 nursing-sensitive quality indicators were explored using the Delphi technique and 8 indicators were categorized as proper indicators fitting with Thai hospital practices and culture. The results of this study can not only be used as a basis for nursing management and monitoring of nursing quality, but also a guideline for developing of nursing knowledge and skills on caring patients with heart disease.



## **Keep me COLD**

Call for Posters - Quality, Cost, Value

Tan Chor Kien, Sasha Tan Jiayin, Cui Xiaomeng, Chua Weiyan, Wong Vern Tym  
Singapore General Hospital

### **Background**

Maintaining pharmaceutical cold chain is vital for patient safety. Exposure to inappropriate conditions during transportation and storage may affect medication stability, thus compromising its effectiveness and potentially, resulting in adverse consequences.

There were 32 incidences reported in 2017 where pharmaceutical cold chain was not maintained during patient ward transfers. These incidences arise particularly when medications were packed together with non-fridge items, which led to an oversight to place the item in the fridge. Consequently, the ward had to bear the medication cost due to incongruous storage condition.

Presently, there is no established workflow to maintain cold chain during patient ward transfers. To date, fridge items are transported using a plastic bag bundled with the remaining non-fridge items.

### **Methods**

The team analyzed the issue using the 5 Why diagram. Drug wastage could be caused by 1) Did not maintain cold chain, due to no proper workflow. 2) Did not keep in fridge. Firstly, it could be caused by lack of communication during handover. Secondly, fridge items were kept together with non-fridge items, because there is no appropriate carrier.

Based on the analysis, the team brainstormed to address the root causes. The team searched for available carriers in the market that can maintain cold chain.

Team chose from 3 options: reusable insulated bag/pouch, disposable insulated bag/pouch, blue cooler box. After weighting the pros and cons, the team chose the blue cooler box as the most suitable carrier. A new workflow to transport fridge items during patient ward transfer was implemented at pilot wards: Place ice pack & medication into cooler box- Transport medication with cooler box- Handover medication and bring back cooler box- Wipe cooler box and ice-pack with Microzid wipes.

### **Outcome**

Data collected from May 2017 to August 2018 within institution: prior to this implementation, the total cost for drug wastage during patient ward transfer amounted to \$3330.36 in the hospital. Since the introduction of this initiative, no drug wastage was reported resulting in zero cost incurred.

### **Conclusion**

Feedback received from the pilot wards was positive. This initiative was shared and implemented across all nursing departments.

With the implementation of the cooler box, the nurses were able to identify the fridge drug items accordingly during transfer of patients to receiving ward. The fridge drug item could be handed over in a well-maintained cold chain. Since implementation to date, nil incidence was reported. As a result, patient safety would not be compromised as drug efficacy was maintained in the cold chain process.

## **"A Well-nourished Hospital" The Donabedian Model approach to enhance patients' nutrition wellness in their hospital journey**

Call for Posters - Quality, Cost, Value

Terry HY TING, WONG Chi Yan, Cindy CY CHEUNG, Sherry NG, Sammei TAM  
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### **Background**

The hospital cost of a malnourished patient is 3-fold higher than a well-nourished patient, and an undernourished patient has a longer length of stay and poorer clinical outcomes than a patient without nutrition problems. The prevalence of hospital malnutrition in the acute hospital setting has been widely documented in the literature to be between 20% and 50%. Studies suggest that poor nutritional intake during the hospital stay is one of the primary reasons contributing to hospital malnutrition. A patient-reported outcome review of 60 malnourished inpatients was carried out by the Dietetics Department of the North District Hospital (NDH) from 2016 to 2017 to evaluate the dietary intake adequacy of our patients. The audit report revealed that the nutrition consumption of these 60 patients was far below their basic requirements. Only 10% of the patients had received adequate energy and protein intake (adequate intake implies > 75% of the estimated nutritional need), and this level of energy and protein intake were only meeting 50% of their dietary requirements. On the other hand, a service evaluation of 41 randomly selected malnourished patients on June 2016 identified that only 62% of oral nutrition supplement (ONS) prescribed by the dietitians were consumed due to patient preference, patient nutrition knowledge deficit and accessibility. Under the hospital accreditation policy on nutrition care, the hospital has to identify and proactively treat the patient with high malnutrition risk. A systemic approach with multidisciplinary inputs is recommended to enhance the quality of hospital nutrition care and to ensure patients' nutrition wellness during their hospital stays.

### **Methods**

NDH is one of the hospitals in the New Territories East Cluster (NTEC); a cluster-level strategy was developed to enhance the (1) structure, (2) process and (3) outcome of the nutrition care.

1. Structure level enhancement: A cluster-based nutrition sub-committee led by the Cluster Quality & Safety Director and Cluster Dietetics Manager was formed as the governing body of nutrition care. A Nutrition Support Team (NST) was commenced in 2017 to further enhance nutrition service quality.
2. Process level enhancement: A cluster-level "Policy on Nutrition Care" was established to advise on the governance structure, management strategies and processes to optimise nutrition for well-being of the patients. Other clinical guidelines were also developed to enhance safety and risk management of our clinical practice.
3. Outcome level enhancement: Annual outcome reports to evaluate service effectiveness, to develop continuous quality improvement measures and performance measures in nutrition care (audit), consumption of oral nutrition supplement and effectiveness of the nutrition intervention.

Intervention & Strategy for change:

A systemic approach with multidisciplinary inputs is applied to ensure patients' nutrition wellness.

Activities focused on admission, during hospital stay, and to the post-discharge care:

1. Admission: All patients admitted to NDH will be screened by the nurse within 48 hours. Patients with malnutrition risk will be referred to the dietitian for further assessment (timely, safety and equitable).
2. Hospital-stay: All patients with malnutrition risk will be seen by the dietitian (timely and safety). Surgical patients with complicated nutrition problems will be referred to the Nutrition Support Team (patient-centred, effectiveness and safety). Nurses are responsible to ensure that nutrition care can be adequately and timely delivered to the patients (effectiveness, timely and safety). The Catering Department to prepare an "alert meal tray" to ensure patients are receiving attention during their meal time (effectiveness, timely and safety). Patient Care Assistants to ensure the accuracy and accessibility of the hospital diet and ONS (effectiveness, efficiency, timely and safety).

3. Post-discharge: Old-age home malnourished patients will be referred to our Community Outreach Service Team for follow-up (effectiveness, efficiency, timely, patient-centred and safety). Residential malnourished patients will be given an outpatient appointment for follow-up care (effectiveness, efficiency, timely, and patient-centred).

### **Outcome**

Result (1): The energy and protein consumptions increased significantly after the intervention. The baseline daily energy intake was increased significantly to 1131 after the intervention. The baseline daily protein intake was increased significantly after intervention. Upon admission, only 10% of the patients consumed adequate levels of energy and protein (adequate intake implies oral intake is > 75% of the estimated requirement), the percentage of patients receiving adequate energy and protein intake increased significantly to 70%, respectively, after the malnutrition screening and the nutrition intervention (p-value < 0.01).

A. The energy and protein consumptions increased significantly from 53% to 83% and 50% to 85% respectively after the intervention. The baseline daily energy intake is  $730 \pm 265$  kcal and increased significantly to  $1131 \pm 311$  kcal with a p-value < 0.01 (95% CI -506.0 to -296.9) after the intervention.

B. The baseline daily protein intake is  $31 \pm 10.7$  g and increased significantly to  $49 \pm 13.9$  g after intervention with a p-value < 0.01 (95% CI -22.1 to -13.1).

C. The percentage of patient receiving adequate energy and protein intake increased significantly from 10% to 70% respectively after the malnutrition screening and the nutrition intervention (p-value < 0.01).

Result (2): Forty randomly selected malnourished patient ONS consumption records were compared to the baseline. The ONS consumption improved significantly after intervention (p value < 0.01).

D. The ONS consumption improved significantly from 62% to 95% after intervention (p value < 0.01).

Result (3): The 5-year overall average malnutrition compliance of the 2013–2015 annual audit (screened patient within 48 hr upon admission) is 93.2%, which indicated the screening coverage is a highly accessible and timely service.

Measurement of improvement:

E. The 5-year average malnutrition compliance of the 2013-15 annual nutrition audit is 93.2%.

### **Conclusion**

The most important impact of the whole nutrition enhancement project is the increased awareness of malnutrition among all hospital staff. Malnutrition risk screening is now one of the annual audits of the hospital performed by the Quality and Safety Department. The purpose of the whole project, to ensure patients are receiving adequate nutrition supply throughout their hospital journey, is achieved.

Management commitment, Multidisciplinary team approach and performance management are the key elements to ensure nutrition well-being of the malnourished patients. Change management, leadership, and staff engagement are the strategies for implementing the malnutrition risk screening at an acute hospital.

The NDH Nutrition Service was recognised by the following local and overseas third party testimonials: (1) The 4th Annual Congress of Gerontology, Hong Kong, Free Paper presenters (2018); (2) The 7th Asian Congress of Dietetics, Hong Kong, Poster presentation (2018); (3) Hospital Authority Convention, Hong Kong, Electronic presentation (2017 & 2018); (4) The Australian Council on Healthcare Standards, Marked Achievement, Hospital Nutrition Service (2014); and (5) Thirteen local mass reports (Newspaper) on the NDH Malnutrition Screening Service (2013).

## **Making Joy at Work a reality in Tower Hamlets Primary Care**

Call for Posters - Quality, Cost, Value

Virginia C Patania, Dr Tom Margham

EQUIP, Tower Hamlets Clinical Commissioning Group, United Kingdom

### **Background**

With workforce morale in general practice at its lowest ebb in the past decade, the focus of EQUIP is to understand and enable the components of joy in the workplace.

Enabling Quality Improvement in Practice (EQUIP) is an at-scale General Practice microsystem-based programme aimed at making Tower Hamlets the best place to work and receive care in the country – and in that order.

Using live operational data to promote a systems-based view of general practice, we hope to move away from a place of low staff morale, increased workload and uncertainty, to a place where staff can experience joy at work<sup>2</sup> and patients can enjoy a better experience of care.

Since our journey started in 2015, we have developed extensive experience in making mistakes, and in enabling success in general practice environments.

### **Methods**

EQUIP currently supports 31 GP surgeries (covering a population of 270,000) develop a culture of continuous quality improvement through a coaching support framework, enabled by

- QI Coaching for practice teams working on their own improvement projects
- Training and people development
- The use of live operational data
- Team culture support
- Collaborative learning systems

We started as a pilot programme with 5 practices in 2016 and launched with our remaining practices in April 2017.

### **Outcome**

Outcome measures

- Sustained positive shift in patient experience across EQUIP practices.
- Staff satisfaction tracking 22% higher than NHS average

Process Measures

- 34 practice projects achieving a score of 3.5 or more on the IHI standard assessment score.

Project themes included increased uptake of digital services, improved workflow, use of eConsults, referral processes, utilising skill-mix and many more.

- Recruitment and training of 26 Improvement Coaches.
- Training of over 300 primary care staff in Quality Improvement.
- Exposure of over 200 primary care staff to training and support in techniques to improve team culture, relationships and working with conflict.
- System improvements across the programme included reductions in Did Not Attend/No shows for General Practitioner (GP) and nurse appointments representing over 420 GP and 90 nurse appointments per week (This is equivalent to 'light green dollar' returns to the system of £18,048 per week)

### **Conclusion**

Challenges

- There are big challenges in introducing a new way of working and thinking, including gaining trust for practices to share data, getting senior sponsorship and buy-in and working with teams under huge amounts of pressure through the process of change.
- Practice teams struggle to find the time to undertake improvement work.
- Practice culture is both a good indicator of success and progress.
- Quantitatively capturing joy at work (not just staff satisfaction)

Enablers include:

- 'Live' operational data and data sharing across practices, supported by training and support in measurement for improvement.
- The presence of external Improvement Coaches in practices. Their role is critical to generating momentum in projects, spreading ideas between practices and identifying talented emerging leaders.
- Working purposively on creating the culture for improvement using organisational psychology support, team development and systemic coaching.

# Impact evaluation on Provider Payment Reform under New Rural Cooperative Medical Scheme in Huining County

Call for Posters - Quality, Cost, Value

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## Background

New Cooperative Medical Scheme (NCMS) is a voluntary policy organized, guided and supported by the government which aims to offer universal health insurance for 850 million Chinese rural residents, reduce the risk of catastrophic health spending and to increase the underutilized health care services. There is evidence showing that NCMS has substantially improved health care access and utilization. However, cost containment remains a huge challenge, which have been particularly acute in poorer rural areas, such as North-west. Huining County employed provider payment reform (PPR) in 2012, shifting from the traditional Fee-for-Service to diagnostic group based payment as part of the China Rural Health Development Project co-financed by World Bank and the UK Department for International Development launched at the end of 2008. There was limited literature scientifically evaluating the impact of PPR and explicitly explore the whole picture of how PPR was implemented in rural China.

## Methods

The arrangement of the reform was different for various levels of hospitals. "Quota payment based on diagnostic group" was implemented at THCs and "per-diem payment based on diagnostic group" was implemented at CLHs, respectively. Using a mixed-method research design, to conduct quantitative analysis, we collected 68,757 inpatient claim records span the year from 2010 to 2013. An interrupted time series design was used and segmented regression analysis was employed to evaluate the change of both level and trend before and after provider payment reform. Inpatient healthcare expenditure (as measured by average expenditure per admission and out-of-pocket payment) was measured. For qualitative research, local person coordinated with key stakeholder in-depth interview. A report was present to local health bureau for further improvement health insurance compensation plan for local health institution and residents.

## Outcome

There was an increase trend of CNY 22.81 month-to-month before PPR began in January 2012. Right after the policy, there was an insignificant increase in AEXP ( $\beta=83.6$ ,  $p>0.05$ ). A decrease trend by CNY 22.30 per month after the reform compared to pre-policy period was detected. At THCs, there was a significant increase of CNY 8.3. At CLH, after adjust for autocorrelation, only the increasing trend of pre-policy in AEXP was significant. OOP showed an increase trend of CNY 10.23 per month. Right after the policy, the change in level was not significant. But after the intervention, there was a CNY 11.77 decrease per month compared the pre-policy trend. At THCs, OOP dropped by CNY 8.04 per month as comparing to pre-policy period. At CLHs, the pre-policy slop of 12.35 increased monthly. After accounting for autocorrelation, both level and trend after the reform was not significant. Although the after policy trend was still increasing but slowed down.

## Conclusion

PPR was implemented as planned in Huining County. Local stakeholders identified power, training and communication as facilitators for policy implementation. During the policy implementation process, reduced medical examination and reduced medicine usage was perceived to be the most obviously positive behavior contribute to the reform. However, due to relatively low payment rate and the pressure of cost containment requirement, some unintended consequences were also mentioned by the respondents, such as up-coding, readmission, risk selection or cherry picking and cases decomposition. The reform introduced financial incentives to the hospitals but failed to practice among physicians due to

the highly subsidized salary system. Provider payment in rural China can be an effective strategy for inpatient cost containment and efficiency improvement. Supportive policy context/environment is the prerequisites for policy formulation as well as the whole policy implementation process.

## **The traditional checklist is invalid for assessment of inhalation techniques with metered dose inhaler**

Call for Posters - Quality, Cost, Value

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### **Background**

Inhalation therapy is the cornerstone in the management of asthma and chronic obstructive pulmonary disorder (COPD) while the treatment effect depends on the correct inhalation techniques for optimum delivery of drug to the airways. A checklist is a common method to evaluate whether an inhaler device is being used properly: the observer carries out this method subjectively, but it is difficult to observe if actuation of the metered dose inhaler (MDI) is coordinated with inhalation due to subtle movements. Aerosol Inhalation Monitor (AIM) is an instrument that quantifies the actuation and inhalation step. Therefore, the aim of this study is to investigate the consistency between the checklist and AIM. Furthermore, the results could be used as a reference to improve the quality of patient education.

### **Methods**

This was a prospective, cross-sectional study conducted in a tertiary care teaching hospital in Taiwan. Independent experienced experts evaluated the whole process with the checklist which was adapted from the National Asthma Education and Prevention Programs of America (NAEPP) step criteria. When the participants performed the actuation and inhalation step, they pressed down the MDI placebo canister, which was fixed to a single-use disposable MDI inhaler simulator, and the disposable MDI inhaler simulator was connected to AIM. AIM measured and recorded the breath flow rate, inhalation time and the breath holding time.

The Phi coefficient was calculated to analyze the consistency between the checklist and AIM. If absolute Phi coefficient is between 0.7 and 1.0, it indicates a strong association. If absolute Phi coefficient is between 0.3 and 0.7, it indicates a weak association. If Phi coefficient is between -0.3 to +0.3, there is little or no association.

### **Outcome**

From February 2018 to March 2018, a total of 51 pharmacists were enrolled as participants. One important step is the coordination of actuation and inhalation with metered dose inhaler. There were 72.6% and 33.3% participants evaluated as having correct techniques by checklist and AIM respectively (Phi coefficient=-0.03). The recommended inhale techniques for MDI are that the breath flow is slow and the inhalation time is over 3 seconds. In the inhalation step, 70.6% and 21.6% of the participants performed correctly as evaluated by checklist and AIM respectively (Phi coefficient=0.259). Moreover, only 9.8% of the participants assessed by AIM were seen to have correct canister activation along with adequate flow rate, inhalation and breath-holding time.

### **Conclusion**

The study results showed there was negligible to weak correlation between the two different methods for assessing some specific steps in using MDI. Actuation and inhalation coordination is crucial especially for using an MDI. Assessment by checklist overestimates the coordination. It is hard to distinguish between a good and bad coordination by visual observation only and AIM only assesses actuation and inhalation steps instead of every step for MDI using. AIM can be added on as an objective tool to assess and quantify specific steps during using an MDI; moreover, it can also help medical practitioners use inhalers more correctly and then improve the quality of patient education.



## **The sustainability Assessment of the Quality Improvement in Morocco Primary Health Care facilities.**

Call for Posters - Quality, Cost, Value

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### **Background**

The use of 'Continuous Quality Improvement' has grown significantly in all the countries of the world in this time. Measuring quality has become the cornerstone in improving the quality of care, a positive Relationship is established between measuring and improving quality. The Moroccan Ministry of Health 'MOH' has introduced a quality improvement program in 1990s', a set of quality steps have been tested. In 2007 the 'MOH' has introduced a new approach called the "Quality Contest". the objectives are to analyse the implementation and sustainability of a quality improvement approach called "Quality Contest", and to understand the effects of the quality management practices in two Moroccan Primary Healthcare Facilities 'PHCF'

### **Methods**

The data collection was made through a two audits in two different editions to the 'PHCE'. The Audit is made by binomial and it lasted for one day with a pre-established program. The tool used is the evaluation guide and the score guide prepared by the 'National Quality Contest'. This guide is composed of six dimensions the Customer satisfaction (D1); the Accessibility/ Availability/ Continuity (D2); the Rationalization of the resources (D3); the Safety and Reactivity (D4); the Leadership and Continuous improvement (D5); and the Community Partnership/participation (D6). Every dimension was subdivided into various aspects, every aspect was divided then into several questions which were formulated according to the stages of management of the wheel of Deming: plan, execute, estimate, and adapt. Each question is scored on a scale the 0 To 4.

### **Outcome**

On note that the global performance the 'PHCE A' are regressed (69 to 65%), and the global performance of the 'PHCE B' are increased (39% to 73%). The mean difference shows a significant difference between the two 'PHCE'. ('PHCE A' '4, 4' and 'PHCE B' '41'). The 'PHCE A' showed a decrease between the different areas while the 'PHCE B' showed an important increase between the different areas of quality.

### **Conclusion**

The 'Quality improvement approaches' 'QIA' is an effective tools for the introduction of change in the health care facilities, however, institutions find 'QIA' more challenging. For improving, the primary health care is necessarily to pass by the performance measure, search for appropriate evaluation tools however, the staffs, who, work in the primary health care centers suffer from an important lack for the tools to improve the health care quality.

## Managing cardiac patients in a Subacute Ambulatory Cardiac Unit

Call for Posters - Safety

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### Background

Stavanger University Hospital has 7.800 employees, caring for a population of 370.000. In 2017 the department of Cardiology had 60 beds and 6.000 inpatient admissions per year. 25% of patients were admitted for conditions such as chest pain, arrhythmia, syncope, and heart failure.

Overcrowding challenges patient safety and causes delays in diagnosis and treatment, thereby increasing length of stay and staff workload. We needed to convert diagnosis and treatment of subacute cardiac patients from inpatient to safe acute ambulatory management.

In 2017, monthly bed occupancy rate at the cardiology ward varied from 103 - 125%, with 16% -18% of patient days spent in the corridor (hallway) beds. In a pilot we prospectively studied cardiac patients admitted over a 14-day period and found that, by use of formal risk stratification, potentially 18% could either avoid admittance or have shortened inpatient stay, provided that a SACU (Subacute Ambulatory Cardiac Unit) could manage them.

### Methods

We:

- established a SACU (Subacute Ambulatory Cardiac Unit), located within the cardiac ward, which we equipped and staffed with nurses, doctors, and secretaries
- created evidence-based, condition specific assessment and care pathways (algorithms) for safe identification and management of subacute cardiac patients
- established Agreements with nursing staff and other diagnostics/ specialist services in the hospital (such as radiology, anesthesia, blood-sampling lab)
- designed a patient involvement and information brochure
- reduced the number of inpatient cardiac beds by 5 (60 -> 55)

Strategy for change:

September 2017: Project approval

July-Dec 2017: Involvement of staff, risk and vulnerability analysis with regard to treatment efficiency and efficacy

January 22, 2018: Opening of SACU. Reduction of 5 beds on the cardiac ward (from 60 to 55)

September 2018: Project evaluation #1

December 2018: Project evaluation #2

### Outcome

In the period February – December 2018 the SACU treated 2300 patients. There was no 30-day mortality or any serious cardiac events, and no unplanned readmissions.

Sept 2017:

Bed occupancy rate: 102%

No. of patients admitted to cardiac ward (average pr week): 84.5

Average LOS cardiac ward (in days): 3.3

Percent of patients discharged before 13:00 hour: 5.1%

SACU consultations (average pr week): -

Sept 2018:

Bed occupancy rate: 98%

No. of patients admitted to cardiac ward (average pr week): 84

Average LOS cardiac ward (in days): 2.9

Percent of patients discharged before 13:00 hour: 11.4%

SACU consultations (average pr week): 48

December 2018:

Bed occupancy rate: 105%

No. of patients admitted to cardiac ward (average pr week): 83.5

Average LOS cardiac ward (in days): 3.3

Percent of patients discharged before 13:00 hour: 14%

SACU consultations (average pr week): 53

LOS – Length of Stay; SACU – Subacute Ambulatory Cardiac Unit

### **Conclusion**

In spite of a 12.5% reduction of inpatient beds, we maintained inpatient care on the cardiac wards (a reduction of 0.01%), had a reduction of LOS (Length of Stay) from 3.3 to 2.9 days (14%), and about 1400 saved patientdays.

There is a potential for further improvement of our ambulatory care pathways by empowering staff working in the ED, the cardiology wards, and other departments in the hospital.

It is feasible and safe to change well-selected patients' care from inpatient to ambulatory, provided detailed planning, and provided that use of evidence-based clinical pathways for risk stratification of subacute cardiac patients are in place.

# **Improving WHO Compliance: A Paperless Checklist With Migrated Leadership**

Call for Posters - Safety

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University Hospitals Plymouth NHS Trust, UK

Vlad Valeanu, Lawrie Kidd, Timothy Cominos

North Bristol NHS Trust, UK

## **Background**

The WHO surgical safety checklist improves quality, reduces errors and saves lives. There are clear national and local standards that the WHO checklist should be performed 100% of the time when surgery takes place. Currently the local anaesthetic day case plastic surgery "minor ops" theatres in our hospital are not reaching 100%. Anecdotally, there continues to be a significant degree of distraction amongst team members during the WHO checklist. Unsurprisingly, it has been demonstrated that improved attention during the checklist reduces errors.

## **Methods**

WHO checklist data was monitored using online theatre system and was validated by Senior House Officers in attendance in theatre. A proforma was completed with variables for every case observed including a scale of inattention for team members being present and listening to the checks without other distractions. The results of this were presented at the clinical governance meeting. A wall mounted chart was then put in place and the checklist amended to alternate the responsibility for completing the various sections. 6 weeks after the changes were introduced the process was repeated.

## **Outcome**

Sign in was performed 100% of the time pre- and post-intervention. Time Out performed improved from 54% to 98% ( $p < 0.001$ ) following shift to surgeon reading checklist. Time Out shifted predominantly from occurring after draping the patient pre-intervention to before scrubbing following intervention. Whole team attention did not improve for Time Out (63% vs 53%) but there was modest improvement for Sign Out (29% vs 53%  $p = 0.038$ ). Levels of inattention showed slight improvement in both Time Out and Sign Out from average of moderate to mild inattention. Surgeons were consistently the least attentive team member in all aspects of the checklist. Sign Out taking place after wound closure showed deterioration post intervention (71% vs 49%  $p = 0.08$ ). The frequency of a debrief at the end of the list showed non-statistical but clinically significant improvement 71% to 91% ( $p = 0.52$ ).

## **Conclusion**

Frequency of Time Out improved massively by shifting the responsibility over to the surgeon, largely as this ensured the case could not start without a verbal time out. Although whole team attention levels did not improve, team members had a milder degree of inattention post intervention. Better team engagement may explain improved debrief frequency. Sign Out took place more frequently before wound closure post-intervention, possibly to compensate for the extra time required for Time Out. The "minor ops" theatres are a challenging environment due to the high turnover of patients and need for efficiency and often multi-tasking. This creates room for error however and this audit highlights where deficiencies still need to be addressed.

# **Factors influencing the uptake of medication risk communications by healthcare professionals in clinical practice**

Call for Posters - Safety

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## **Background**

In pharmacovigilance, risk communication involves risk messages that aim to prevent patient harm through communication with healthcare providers, patients and the public. Healthcare providers play an important role in translating these communications in their clinical practice. While the intended impact of these actions are sometimes suboptimal, evidence from previous systematic reviews suggest that these messages also yield unintended effects, such as stopping medications while not required, and spill-over effects to the untargeted populations. These actions could jeopardise patient safety. Focusing on healthcare providers as receivers of risk communications, this systematic review aimed to assess the literature for factors that could influence uptake of such communications.

## **Methods**

The search strategy included search terms reflecting healthcare professionals combined with different alternative terms of medication risk communications. It also included the following databases: Allied and Complementary Data Medicine, Embase, Embase Classic, Global Health, Health Management Information Consortium, International Pharmaceutical Abstracts, Health and Psychological Instruments, PsycEXTRA, PsycInfo, Maternity and Infant Care Database, PubMed, Scopus, Web of science, CINHALL PLUS and OpenGrey. The reference of the relevant articles and the included papers were searched. Papers were selected after removing duplicates, screening titles, abstracts and full texts. The results of the included papers were narratively synthesised in multiple steps including: tabulation and thematic analysis, concept mapping to explore relationships within and across studies. A critical reflection was conducted to highlight the limitations of the synthesis process.

## **Outcome**

A total of 11,098 citations were identified from the databases searched. Only 34 articles met the inclusion criteria after removing the duplicates and completing the screening process (n=23) and sourcing relevant articles from references included in selected papers (n=11). The majority of these studies (n=22; 64.7%) were conducted in the United States of America (USA). The risk communication which featured the most was that issued by the USA Food and Drug Administration regarding an association between suicidality and the use of antidepressant medications in children and adolescents. Four themes were generated from the analysis undertaken, three of which are mainly internal to healthcare providers: knowledge and perceptions; sources of medication safety information; attitudes and concerns. External factors affecting the uptake of regulatory recommendations were demonstrated in the fourth theme: the influence of patients and institutions.

## **Conclusion**

Knowing the factors that contributes to healthcare providers' non adherence to medications risk communications provides an opportunity for tailoring the interventions for addressing this problem to its specific causes and hoped to avoid wasted efforts and costs in unsuitable interventions. For example, this review highlighted the need for targeting institutional policies due their influence on healthcare providers.

Message to others: Check the guidelines for the databases that will be used in search strategy, and test and refine the search terms search terms to identify how databases are translating the terms and to detect if the terms were problematic or too general.

## **Improving the quality of paediatric ward safety huddles using a validated observation tool**

Call for Posters - Safety

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### **Background**

As part of the national S.A.F.E (Situational Awareness for Everyone) Health Foundation/RCPCH programme, the Royal Free paediatric ward successfully implemented ward safety huddles in 2014. The main aim of these huddles is to encourage open communication of the current safety concerns on the ward and allow early identification of deterioration. The safety huddle structure had not been reviewed since initial testing and implementation in 2014.

We used the huddle observation tool (HOT) created following a previous quality improvement study (Edbrooke-Childs et. al, 2017) to objectively measure the quality of the safety huddles. Observations showed that the quality of the safety huddle varies according to staff present, workload, etc. and at times could be more efficient and effective.

### **Methods**

Two interventions were tested and implemented in the second PDSA cycle. A poster outlining the structure of the huddle was created to help guide the huddle lead, and all attendees, in identifying ward and patient risk factors. This was displayed in the huddle room. We suggested that the ward risk factors be discussed before addressing patient risk factors to help the staff be more aware of the general situation on the ward which may impact on patient prioritisation. The template was also created with the aim of ensuring huddles had defined closure.

The other intervention was a nurse bleep initiative which involved messaging the nurses on their hand-held devices to alert them of the start of the huddle. The matron informed the nurses of this initiative in the hope that it would increase the attendance of bedside nurses to the huddle and improve punctuality. Paediatric consultants further encouraged staff to utilise the following tools during huddles to increase uptake.

### **Outcome**

The data collected from 12 morning and 6 evening huddles across the 3 PDSA cycles was compiled. Each huddle domain was ranked on a 5-point scale according to the huddle observation tool. The domains included: structure, environment, collaborative culture and risk management. Improvements were noted in all domains apart from the environment domain. The high ratings for collaborative culture reflect the strong culture of teamwork and mutual respect within the team. The increase in structure and risk management ratings was mostly attributed to the fact that each aspect of the patient's safety was covered with a detailed checklist. We anticipate that the safety on the ward has thus been improved; although the number of safety incidents on the ward was not recorded for this project. The ratings for environment remained low due to disruption of the huddles by latecomers, technical difficulties with the computer screen and interruptions from staff outside the paediatric team.

### **Conclusion**

According to HOT, the changes have improved the structure of the huddle, allowed better identification of safety risks and their management, and improved collaborative culture. When implementing changes, having the support of lead members of the team is important. A specifically assigned staff member as a champion for the SAFE project is helpful. Instead of a short introduction about the initiatives given at the start of one of the huddles, organising a meeting with the nurses in the initial stages of the PDSA cycle to introduce the changes might have been more useful in getting them onboard, however shift patterns and time pressures prevented this.

## **Developing Fall Prevention Bundles in a Department of Neurology**

Call for Posters - Safety

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### **Background**

The setting of the project is acute ward and rehabilitation ward of the Department of Neurology at the mid-size North Zealand Hospital in the capitol region of Denmark. Since January 2010 the Hospital has been working with the campaign "patient safe hospital" arising from the Danish Society for Patient Safety and Institute for Healthcare Improvement. The aim of the campaign was to reduce overall mortality by 15% and harm by 30% through the developing and implementation of care bundles (1).

Fall during hospital stay are common, often resulting in injury and an increased mortality risk and elevated cost (2). The Department of Neurology wanted to increase patient safety by preventing falls and reducing fall-related injuries. Systematic reporting and analysis of falls incidents gave us knowledge about how many, why, when and which patients were at risk of falls. This knowledge was valuable in further work to prevent falls and reduce fall-related injuries in the Department of Neurology.

### **Methods**

In 2018 we did not see a reduction in the number of falls and fall-related injuries. The interdisciplinary fall prevent group assessed the progression of the project and assessed the need for changes of the Fall Prevent Bundles.

Reasons for lack of progress:

- Prevention of falls is difficult and complex
- In 2017 our hospital implemented a new electronic platform
- Different perception of falls and fall injuries
- Inadequate use of tools to identify patients in risk of falls
- Inadequate use of fall prevention care planning
- Inadequate staff orientation and supervision
- Lack of research on fall prevention targeted neurological patients

Our work so far:

- Exposed common definition of fall and classification of fall injuries
- Developing, testing and implementation the changed fall prevention bundles
- Developing, testing and implementation of fall prevention care plan

### **Outcome**

Our work in progress:

- The staff should be trained in risk of fall, fall injuries and fall prevention
- The entire staff must know the target of process and outcome indicator
- Testing and implementation of a standardized tool to identify patients in risk of falling
- Systematic reporting and analyses of fall incidents
- Continuously data collecting with results plotted on run charts
- Use of visual symbols for patients in risk of fall to increase awareness

The interdisciplinary fall prevent group met regularly to follow up on results. Based on data the group planned the need for change, continued implementation and maintenance of Fall Prevention Bundles. Data were collected continuous and the result plotted on run charts.

Outcome measure: Days since last fall.

Outcome measure: Days since last fall with injury.

Process measure: % patient with use of tool to identify patients in risk of fall.

Process measure: % patient with fall prevention care planning (in progress).

### **Conclusion**

- When implementing a new electronic platform new working procedure and changes to the Fall Prevention Bundles are required.
- There is a need for a standardized tool to support the staff's assessment, which should be incorporate in the electronic platform.
- The goal for improvement is known, and process and result data are posted in the staff room.
- Through the entire improvement project, leadership is needed to provide support.



## **The role of managers in safety culture development in healthcare facilities: results from a multicentric exploratory mixed-method study**

Call for Posters - Safety

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### **Background**

Safety culture is recognised as an important leverage for patient safety improvement in healthcare facilities. Despite the major influence of managers on the development of safety culture, managers' perceptions and representations of their role in the development of safety culture remain little explored. Patient safety climate surveys regularly show that "management support for patient safety" is one of the least developed dimensions of safety culture.

In this context, an exploratory study was conducted from May 2014 to March 2015 in seven voluntary healthcare facilities located in southwestern France. Five (two public and three private) were acute healthcare facilities, and two (one public and one private) were mental health facilities. The aim of our study was to explore: i) managers' perceptions and representations of their role in the development of safety culture, and, ii) managers' activities related to the development of safety culture.

### **Methods**

In each facility, semi-directed interviews were conducted with managers (four top managers, two middle managers when there were any, and two frontline managers) and with three caregivers (physicians, nurses, nurse assistants). Interviews were supplemented by on-site observation of two managers. A thematic content analysis of the semi-structured interviews was realized by two sociologists, and the observed managerial activities were categorized. The quantitative part of the study consists of an evaluation of patient safety climate with the French version of the Hospital Survey on Patient Safety Culture. The sample of participants were all physicians and immediate supervisors of the healthcare professional of each facility, and a 20% sample of all health care professional selected by randomisation. Feedbacks were provided to each hospital in a specific syntheses report containing the main results and suggested recommendations.

### **Outcome**

Sixty-five participants (44 managers and 21 caregivers) took part to the qualitative study. Participants had a positive perception of the level of safety in their facility. The support of frontline management was particularly appreciated, the one of top managers was identified as an area for improvement. Six main categories of managerial activities related to safety were both observed among managers and regularly reported by participants. Caregivers' expectations and these expectations as perceived by managers partially overlapped. Managers expressed more expectations than caregivers did, but not perceived some of those expressed by caregivers. Depending on the healthcare facility, a sample of 15 to 71 healthcare professionals has completed the patient safety climate questionnaire, with a participation rate ranging from 20% to 94%. In the seven hospital, patient safety climate was poorly developed, including "management support for patient safety".

### **Conclusion**

Our observational study provides new knowledge on the role of managers in the development of safety culture. By their actions and their engagement, frontline, middle and top managers have a key role in the development of safety culture within their healthcare facility. Our study has highlighted the categories of actions fostering safety in which managers could engage. Our study has also pointed the gap between caregivers' expectations and these expectations, as perceived by managers. We did not plan to measure an immediate change; each healthcare facility has received a report that synthesises its main results and suggests context-specific recommendations to enhance safety culture. These results were used to help

define a national strategy to improve the management support to safety, as the development of safety walkarounds.

This work was supported by the Ministère des Solidarités et de la Santé (French Ministry of Social Affairs and Health) [grant number PREPS-2012-004-0096].

## **Reduce routine Surgery cancellation rate**

Call for Posters - Safety

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### **Background**

The study is based on a teaching hospital that is the university-affiliated hospital of National Taiwan University Hospital Yunlin Branch. The operating room is a unit that requires high cost and superior professionalism. It is vital for its managers to effectively utilize a wide range of resources, in order to promote its efficiency and increase service volume. The Hospital has become aware of the fact that routine surgeries are often rescheduled or cancelled due to various reasons, even after patients are sent to the operating room. This results in the idling of the operating room. In addition to receiving complaints from patients and their family members, this also has an impact on the existing surgical schedule and the harmonious atmosphere among the team. Statistics show that among 15,254 surgeries performed in 2017, the cancellation rate was 6.29%. This is higher than that of hospitals and medical centers of similar scale, and requires vigorous improvement.

### **Methods**

The study was implemented in a cross-functional team manner. Existing surgical procedures are reviewed and surgery cancellation cases are collected to conduct case-by-case analysis. After the issues are identified and confirmed, improvements are conducted through PDCA.

1. Develop anesthesia evaluation criteria, improve consensus among medical teams, establish pre-anesthesia assessment clinics, and improve visitation rate,
2. By incorporating images of the operating room and pre-surgery visit data, interviews can be conducted with multimedia support to enhance patient's understanding of the purpose of the visit and their satisfaction level.
3. Revise the pre-surgery checklist to improve the accuracy of pre-surgery preparation conducted by ward nurses.
4. Conduct comprehensive in-service education to improve the medical team's awareness of various pre-surgical assessment and preparation.

### **Outcome**

The improvement period ended in November 2018. Specific results include:

1. Surgery cancellation rate decreased from 6.29% to 4.97%
2. Visitation rate increased from 15% to 55.7%
3. The operating room utilization rate increased from 84.6% to 86.3%

### **Conclusion**

Surgery is severe source of stress for patients and surgery is an important process for disease treatment. A successful and safe surgery requires mutual cooperation among the medical team. Through cross-departmental cooperation, this Study examined the underlying cancellation reasons of routine surgeries. By identifying countermeasures, surgical resources can be utilized effectively to create a all-win situation for patients, medical staff and the hospital to achieve improvement goals.

# **Use of barcode system in monitoring of the timely administration of chemotherapy to improve medication safety in oncology patients**

Call for Posters - Safety

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## **Background**

Most of the chemotherapy drugs compared to general medications have lower drug stability after dispensing, thus whether the chemotherapy administration completed before the time, was associated with medication-use safety.

In an analysis of the oncology cases in 2016, there were observed over 30% of cases in the chemotherapy without administration in time in our hospital. Therefore, we performed a project of quality control circle (QCC) aiming at “the rate of the timely administration” of 100% for all cancer patients received intravenous chemotherapy.

## **Methods**

Two stage surveys were conducted to clarify possible causes of the problem. First, we retrospectively reviewed medical records for assessment of the rate of timely administration in all cases. Second, a questionnaire survey was performed for oncology healthcare givers to understand the potential difficulties of the problem in daily practice.

According to the results of fishbone analysis, four interventions were planned to overcome the problem, including building an electronic chemotherapy monitoring platform, automatically displaying the time of chemotherapy administration, changing the order of drug deliveries, and healthcare givers training.

Our team used QCC method to conduct the project step by step from January 2017 to February 2018, and illustrated the schedule by Gantt chart. Moreover, we were meeting regularly every 2 to 4 weeks, and confirmed the progress with each step of the project.

## **Outcome**

All cancer patients received intravenous chemotherapy from July to November 2017 were included in the project. In primary outcome, compared to the survey in 2016, “the rate of the timely administration” was improved from 66.7% in 2016 to 100% of post-intervention. Moreover, the secondary outcomes in “the average waiting time of drug delivery” was lowered from 16.2 minutes of pre-intervention to 13.1 minutes of post-intervention, and in “the average time between drugs dispensing to administration completed” was also decreased by 118 minutes.

## **Conclusion**

Implementation of electronic monitoring platform and automatic alerts not only strength the chemotherapy safety, but indirectly lower the waiting time of the treatment process for cancer patients.

## **The Upside-Down Hospital Co-Production of Safety 3.0 with Patients and Families**

Call for Posters - Safety

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### **Background**

Patients commonly suffer adverse events while in hospital [1]. The fact that patients are often neither allowed to read documented warning signs in their own records nor able to record their symptoms and concerns in a way that is notable for health care professionals is likely to be a contributing factor. We aimed to develop and test tools for patients to support their own safety in hospital.

### **Methods**

We used the BASE – lab co-production model (Goodman & Parkinson) to bring together key stakeholder groups: Business & funders (B), Artist & Designers (A), Scientists of relevant specialties (S), and End-users (E) – in the case of healthcare application these are healthcare staff, patients, carers.

We deployed the Double Diamond model to discover & define problems and develop & deliver solutions. Modular redundancy requires safety critical components of systems to be provided in a minimum of triplicates. Based on our work of modular redundancy in healthcare (VITAL II study) we explored how patients and/or carers might become part of redundant safety architecture in hospital. This replaces essentially linear communication processes with networks of communication.

We hosted an Innovation Lab at Pontio Innovation in Bangor in 2018 with a multi-disciplinary team with backgrounds in business, IT, SMEs, design, psychology, Health Service Research, doctors, nurses, patients and education.

### **Outcome**

Discover: We analysed a sample serious adverse events for information flow on the side of clinicians, patients and their families. Information judged to be safety critical information by clinicians was often not available to patients and their families and while patients and families often held safety critical information that was not accessible to providers.

Define: Models of care that allow actionable information to be held by all those in the team (including families) would follow principles of modular redundancy. This requires to make safety critical information accessible and actionable for patients and their friends or family.

Develop: We co-designed examples for participatory monitoring and escalation of risk in hospital.

Deliver: A selection of prototypes for recognition and communication of clinical deterioration by patients were created and are currently undergoing clinical testing.

### **Conclusion**

Safety as a redundant network that utilises information on normal and abnormal states provided by patients and their carers is a novel concept that might be described as Safety 3.0.

Application of patient supported safety is a de-facto reality for care in the community but requires prospective studies to define impact in hospital environments.

## **Beyond the Yellow Socks: Using an Instructional Video to Prevent Postoperative Falls**

Call for Posters - Safety

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MedStar Georgetown University Hospital, USA

### **Background**

Many patients experience a fall during the postoperative period. An educational video on fall prevention may be effective in decreasing postoperative fall risk for surgical patients.

### **Methods**

Patients in Phase II of the recovery room at MedStar Georgetown University Hospital (MGUH) were asked to complete a demographic and medical history questionnaire that included previous falls and attitudes about responding to falls. Patients were either shown an instructional video about fall prevention or were not. A follow-up phone call was made 30 days later to assess incidence of new fall events and any changes in confidence in responding to falls.

### **Outcome**

231 patients successfully completed the study. No variables in the study were influenced with statistical significance by the instructional video.

### **Conclusion**

An instructional video aimed at fall prevention did not have a significant effect on the incidence of postoperative falls. The majority of patients found the information helpful. An instructional video may serve as an important part of a multimodal approach to patient education at the point of discharge after surgery, but more robust investigation is necessary.

## **Environmental contamination by Methicillin-resistant Staphylococcus aureus in an antenatal ward causing clinical outbreak in a general hospital in Sri Lanka**

Call for Posters - Safety

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### **Background**

Methicillin-resistant Staphylococcus aureus (MRSA) refers to a group of gram-positive bacteria that have developed multiple drug resistance to beta-lactam antibiotics. They are genetically distinct from other strains of Staphylococcus aureus. MRSA is responsible for several difficult-to-treat infections in humans. An upsurge of MRSA infections was detected in the post-natal ward of a General Hospital in the Eastern Province of Sri Lanka from January to February 2018. This event was studied by the Consultant Microbiologist and the Infection Control Team and it was decided to treat the upsurge as an outbreak. MRSA was isolated from 12 mothers and newborns in the obstetric ward during this period. 4 High Vaginal Swabs of near term or term mothers taken upon admission with complaints of dribbling, 4 Umbilical Swabs of neonates, 3 Eye Swabs of neonates and 1 LSCS Scar Swab of a mother were among the detected positive cultures.

### **Methods**

Following identification of the outbreak of MRSA, the infection control unit, under the guidance of the Consultant Microbiologist, proceeded to carry out environmental screening of the postnatal ward by obtaining screening swabs from the inner surface of the speculum drum, Cheetle forceps and holders, unused Mackintosh's (waterproof cover used on beds), and curtains around the examination bed of the postnatal ward. All surfaces that were swabbed tested positive for MRSA, resulting in positive identification of environmental contamination of MRSA.

Educational programs were immediately carried out for the ward staff by the Infection Control Team headed by the Consultant Microbiologist regarding the situation and the necessary precautions to be taken, and remedial measures were undertaken promptly.

### **Outcome**

Advice was given to wards staff about preparation and proper usage of disinfectants, specifically 1% TCL. In addition, the Individual Speculum packaging system was introduced, with the use of individual piece of Mackintosh and sterile G.S. towel for each mother. Education of mothers about maintenance of sound personal hygiene was done along with the education of staff and patients about proper hand hygiene. Furthermore, education regarding environmental hygiene was given to all concerned.

Repeat swabs were then taken from previously tested areas following thorough cleaning of the postnatal examination room and ward. Repeat environmental screening in 2 weeks revealed no MRSA contamination, and reasonable control of the outbreak was achieved.

All in-patient mothers and newborns that developed fever or other symptoms were investigated, and random screening of healthy mothers was done for MRSA in the next 3 months. No further cases emerged within this time.

### **Conclusion**

Staff education played a large role in the maintenance of consistent efforts to adhere to newly instated protocol in infection control methods. The Infection Control closely monitored the ward and its staff in regards to this matter, and found that the changes advised were carried out accurately and efficiently. No significant setbacks were encountered during the implementation of the said changes. Furthermore, education of patients and their families regarding personal hygiene is also thought to have contributed to the successful control gained over the outbreak.

The results of the study revealed the possibility of transmission of infection through environmental contamination, suggesting the need for strict infection control practices and monitoring in the ward setting.

## **Failure in aged care: What measures can we use to predict it?**

Call for Posters - Safety

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Joseph Ibrahim  
Monash University, Australia

### **Background**

Older people should not be 'harmed' in aged care. The care provided should be safe, of high quality, and best practice. Older people should also experience a good quality of life when living in a residential aged care facility. The recent review of Hospital and Quality Assurance in Victoria Australia, highlighted the need to strengthen systems for oversight, accountability and performance. The Oakden Report (a review of the failures in an Older Persons Mental Health Service in South Australia) further highlighted the limitations of aged care accreditation in ensuring safe, high-quality care for older people living in the aged care setting. This project was undertaken by the Australian Centre for Evidence Based Aged Care (ACEBAC) at La Trobe University and was commissioned by the Victorian Department of Health and Human Services. The research explored what constitutes 'failure' in aged care services and involved the development a suite of performance measures to potentially predict possible failure before it happens.

### **Methods**

This project involved a comprehensive review of both research and grey literature and extensive consultation with key stakeholders in order to assess possible contributors to, (and extent of,) system failures (i.e., unsafe or poor quality care). Consultations (semi-structured interviews and focus groups) were undertaken with 304 stakeholders (health service chief executive officers (CEOs)/executive, board members, and quality managers; residential aged care nursing staff, residents, and families; industry experts, representatives of peak bodies and government departments) in metropolitan, rural and regional areas of Victoria, Australia. A draft set of performance measures was developed on the basis of the combined findings from the literature review and consultations. The draft set of measures was subsequently ranked by 80 participants in an industry workshop against set criteria (i.e. feasibility of data collection, within provider control; readiness etc), with ten measures shortlisted for future piloting.

### **Outcome**

The performance measures cover the domains of high quality and safe care; strong governance, leadership and culture; timely access to care; health; social inclusion (individual, facility and community); rights; personal care and re-enablement; and dementia management. The performance measures extend beyond clinical care and provide a means for addressing potential failures in other areas of resident need. The following draft set of ten performance measures are currently under consideration for future piloting:

- Use of evidence-based guidelines for specified clinical and aged care practices
- Open disclosure, just and transparent culture (in day-to-day communication)
- Capacity to manage periods of high demand (internal and external)
- End-of-life care
- Comprehensive review/assessment of residents
- Medication safety (especially with high risk drugs)
- Resident engagement
- Dignity of risk (respecting rights of older people)
- Accommodation fit for purpose
- Responsive individualised behaviour management.

### **Conclusion**

The range of performance measures developed represents the different aspects of care of the older person living in aged care, promoting a holistic approach to the needs and preferences of residents. The suite should reinforce what constitutes effective, safe and high quality practice in aged care and



strengthen the concept that aged care should be a place in which older people 'thrive'. In undertaking this project we had to re-conceptualise what residential aged care should be; that is not just a place where people go before they die or where they go because it is perceived that they are no longer 'safe' in their own home. To develop the draft suite of performance measures we also had to develop a framework that incorporated all that is important to meet the needs of older people living in a residential aged care facility.

It is envisaged that there will be a piloting of these performance measures in Victoria's Public Sector Residential Aged Care Services and resource materials to guide the collection of the measures will be developed.

## **Why, how and when to speak up**

Call for Posters - Safety

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Copenhagen Academy for Medical Education and Simulation (CAMES)

### **Background**

Psychological safety in the organization is important for the team members ability to Speak up in situations that can influence patient safety. There are several barriers to speak up. However, to improve the safe care of patients, team members should be able to speak up in situations where a team member is about to commit an error, where a decision might be wrong, or where the potential to improve care is not used. It is essential that this is done in a respectful manner for the involved person to see this intervention as helpful. Using questions to understand the frames of the involved team member is important.

### **Methods**

Training of speak-up can involve making the barriers more noticeable and providing participants with the knowledge about their existence. In a second step, participants can reflect about how the known barriers are relevant for themselves and in which situations. In a third step they plan possible responses that work with or around the barriers. In step four they can try these responses in role play situations, where they get feedback and reflect on their implementation - possibly doing several rounds of practices and feedback. In a final step, facilitators can reflect with participants about how to implement the learning in their actual work environment.

### **Outcome**

Experiences with speak-up training workshops were positive in regards to the reactions of participants.

### **Conclusion**

Speak up and psychological safety are important topics and increasingly recognized as factor for safety and quality of care. Teaching speak up is a complex endeavor that is not achieved with one-time trainings. Yet, interactive concepts that help participants gain self insights and combine those with hands-on training and feedback seem promising to make progress.

## **Staff satisfaction with the introduction of peri-operative guidelines for the management of diabetes mellitus in the peri-operative period**

Call for Posters - Safety

Dr Amna Zeeshan, Professor Catherine Mchugh, Patricia Harte, Mary Fitzpatrick  
Sligo University Hospital Ireland

### **Background**

Diabetes lead to increased morbidity and length of hospital stay, thereby increasing in-patient cost and mortality.the mortality rate in diabetics undergoing operative procedures are 50 % higher than non-diabetic population .

Nursing staff and junior doctors report confusion in dealing safely with diabetics patients in perioperative period.

in Sligo University Hospital we introduced written guidelines to manage diabetes Mellitus in peri-operative period in 2016 based on the NHS guidelines.These Guidelines was devised jointly by the department of Anesthetics ,pharmacy and department of diabetes and was approved by SUH Drugs and therapeutics committee.The guidelines are available in all the wards and are for insertion in the individual patient case notes

### **Methods**

This is a paper based, hand delivered, questionnaire based survey was distributed to health care professionals this include all surgical ward nurses,ICU nurses,general operation theater and orthopedics theater nurses,surgical junior doctors and anesthetics.

The questionnaire include staff grade,area of work,number of years of experience,staffs were asked about awareness,frequency and ease of use of these guidelines and self reported confidence level in managing patients with diabetes mellitus in peri-operative period were evaluated .

data was evaluated using SPSS version 23.

### **Outcome**

There were 87 respondents: 40 (56%) surgical ward nurses, 24(28%) theater nurses, 8(9%) ICU nurses and 7 surgical junior doctors and 8 anesthetics

92% of respondents feel more confident, 43.7% participant feel very confident to manage the peri-operative diabetic patients, and 96% feel the guidelines helps to manage patients with diabetes in peri-operative period more safely. 64.4% are using the guidelines every time, 59.8% reported less frequent cancellations of surgery for hyperglycemia since the introduction of guidelines.

5.7% contact the diabetes nurses every time which is improved from 18.4% and 86% reported that the incidence of insulin errors has been reduced, and 78 % reported a reduction in the incidence of perioperative hypoglycemia.

However 16.1% reported increased length of time involved in getting patients ready for surgery, and 31% suggest no change in the length of time. 36% think guidelines have reduced the overall length of stay.

### **Conclusion**

use of a written guideline document improves staff confidence in managing patients with diabetes in the perioperative periods, less cancellations of surgery, less insulin errors, and less use of the diabetes nurse time but it can take slightly longer to get patients ready for theater.

# **Improving the Use of the Malnutrition Universal Screening Tool (MUST) Score in Northampton General Hospital**

Call for Posters - Safety

Dr Buraq Abdul-Aema, Dr Sandeep Bajwa, Sid Beech  
Northampton General Hospital, UK

## **Background**

Northampton General Hospital NHS Trust (NGH) is a district general hospital that provides general acute services to 380000 people. This project focused on patients in the gastrointestinal ward and is led by a Trust Grade Doctor. The Malnutrition Universal Screening Tool (MUST) score is used to assess the patient's nutritional status and identify those who are at high risk of malnutrition. The term malnutrition here refers to undernutrition. Malnutrition is often undetected and untreated and leads to adverse consequences. In the acute setting, patients at risk of malnutrition often have an extended length of stay in hospital, and are more likely to be discharged to a healthcare setting other than their home. It is important that a MUST score assessment is completed within 24 hours of admission and each week thereafter. This permits early and effective referral to the dietitian when required. Baseline data showed completion of MUST score assessment on the ward was only 25% of patients.

## **Methods**

PDSA Cycle 1: Teaching

Lectures were given to the doctors, nurses and health care assistants to introduce MUST score and its importance. The referral criteria for dietitians were defined.

PDSA Cycle 2: Guide Card

Guidance produced by the British Association for Parenteral and Enteral Nutrition (BAPEN) and guidance specific to NGH was attached to the weighing scales demonstrating the process to complete a MUST score.

PDSA Cycle 3: Awareness Campaigns

We conducted two campaigns to improve the percentage of patients who had a weekly weigh-in. These campaigns included trust-wide screensavers on computers and laminated cards on the wards.

PDSA Cycle 4: Whiteboards

We asked the nurses and HCAs to record the MUST score on the whiteboards in the ward. This enables us to refer patients to the dietitian during the board rounds.

Planned PDSA cycle: Score Champions

We propose allocating a MUST score champion to track the compliance and highlight the patients without MUST score assessment.

## **Outcome**

Outcome measure – the percentage of patients with a completed MUST score assessment increased from 25% to 91% through 3 PDSA cycles.

Balancing measure – the percentage of clinically appropriate patients who have been referred to the dietitian improved from 50% to 82% from baseline to PDSA 3.

## **Conclusion**

Completion of a MUST score assessment for all patients is essential to high quality care and reduces the risk of infection, length of stay and mortality. Through teaching and awareness campaigns, we have seen a rapid increase in the completion rate (25% to 91%). Through better completion and documentation of the MUST score for our patients, we have seen an increase in the percentage of malnourished patients referred to the dietitian (50% to 82%).

Our message for others is that small-scale incremental change can have very significant returns, improving the quality of care provided. Effective communication amongst colleagues is tantamount to overcome challenges and obstacles to change. Finally, without the support of the wider team on the ward, we would not have seen this significant impact.

For us, the next step is to spread this project to other wards and departments across the hospital, whilst continuing to monitor the impact locally.

## **#Shareforcare: Reducing (HAPUs) Health Acquired Pressure Ulcers across Aneurin Bevan University Health Board (ABUHB)**

Call for Posters - Safety

Dr Doris Behrens, Rachel Fletcher, Liz Waters  
Aneurin Bevan University Health Board, Wales, UK

### **Background**

ABUHB provides Primary, Secondary, Community and Mental Health Services for 630K people in South-East Wales. Aneurin Bevan Continuous Improvement (ABCI) is ABUHB's embedded Improvement & Innovation Centre and supports ABUHB employees to deliver excellent and patient centred care. The ABCi team facilitated the 'Reducing the Pressure' Improvement Collaborative which aimed to reduce Health Acquired Pressure Ulcers (HAPU) incidences on all collaborative wards by 50%

### **Methods**

The 'Reducing the Pressure' Collaborative was based on Breakthrough Series methodology. A driver diagram outlined changes including full compliance with risk and skin assessment and pressure area care (SKIN bundle). Initially work was carried out by frontline & senior nursing staff across 6 acute wards within Royal Gwent Hospital, Newport. This work has since spread to 6 more wards and is expanding to other sites within ABUHB. These wards included the Emergency Department, Medical Assessment Unit, Intensive Care Unit, Trauma & Orthopaedics, Gastroenterology and more recently Respiratory, Vascular Surgery, Endocrinology and Care of the Elderly. Teams carried over 30 sets of PDSA cycles including the use of visual triggers such as time clocks and risk stickers for patient notes.

### **Outcome**

Each ward team was provided with bespoke data tool for instantaneous learning which displayed compliance and harm events in real time. Using P-charts for compliance and C-charts for collecting the HAPU incidences.

The collaborative achieved a 50% reduction in pressure ulcers. This equated to the prevention of 162 HAPUs over 19 months, 810 days reduction of bed demand and £864k cost savings. Savings were ploughed back into sustaining improvements in practice through the purchase of hybrid mattresses to support pressure ulcer prevention.

### **Conclusion**

There has been an impact of this work beyond reducing the number of debilitating pressure ulcers. The teams have developed their skills in quality improvement and are taking lead role in coaching and teaching further teams who are joining the collaborative and the morale of the teams has increased. Key learning includes; create positive working relationships, build QI skills as soon as possible, enable staff to take ownership of their services and finally Teamwork makes the dream work!

## **Falls: Time to Change?**

Call for Posters - Safety

Dr Eilidh Mackenzie, Dr Lisa McNeil  
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### **Background**

Forth Valley Royal Hospital (FVRH) is a district general hospital in central Scotland. Initial quality improvement work focused on the ageing and health department. This has been expanded to cover general medical wards and therefore adult patients of all ages.

Falls are the commonest cause of death by injury in the over 65s and are associated with increased morbidity, escalated care needs and costs.

The Prevention and Management of Falls in the Community: A Framework for Action for Scotland aims to support a more uniform approach to falls assessment, management and prevention.

In FVRH, there was no standardised structure for post-falls review, and length of time to clinical review could be variable. Prior analysis of falls reports in ageing and health wards revealed that post-fall examination was variable in quality and the average time to review was 2 hours 23 minutes.

The project aim was to ensure consistency in post-falls clinical review and improve time of first assessment.

### **Methods**

A post-fall triage tool was produced for use by nursing and medical staff, which combined prompts for initial investigations and neurological observations. To improve time to first review, a falls triage trigger was developed, to highlight those patients who required urgent medical review.

One general medical ward and two ageing and health wards were selected for analysis over an 8-week period.

Educational sessions were done with medical and nursing staff during the process to implement the change and provide opportunity for feedback.

Patients who had fallen were identified using the Incident Reporting system and their notes reviewed.

Data was collected pre and post-implementation of the falls triage tool. Outcomes measured were (1) completion of post-falls review document, (2) length of time to review and (3) any injuries due to the fall.

### **Outcome**

A total of 45 patients fell during the analysis period (15 in the general medical ward).

Data from earlier this year showed completion of the post-falls review document was very good at 92%.

Following implementation of the triage tool and education sessions, documentation was similar in the ageing and health wards at 87% but only 50% in the general medical ward.

Time to review improved dramatically from an average of 2 hours 23 minutes prior to the test of change, to 55 minutes on the ageing and health wards and 65 minutes on the general medical ward.

Across the wards, there were only 3 falls with harm during the test of change and they all had a clinical review within 45 minutes.

### **Conclusion**

Following implementation of the change, the time to review following a fall significantly decreased.

Completion of documentation was maintained in the ageing and health wards; however there is scope for improvement in the general medical ward.

A structured approach to complex medical reviews, such as the patient who has fallen, empowers medical and nursing staff to implement a comprehensive and holistic assessment, with the result that the patient receives the necessary care in a timely manner.

Change to processes are never easy, but involvement of staff of all levels at an early stage can make this transition smoother.

# **Introducing Standardised Communication Tool ISBAR to Improve Ward Nurses Handover in a Private Hospital**

Call for Posters - Safety

Dr Eman A. ElFaraj

NOOR SPECIALIST HOSPITAL, KINGDOM OF BAHRAIN

## **Background**

Change project is in a 25-bedded private specialist hospital in Bahrain, providing healthcare services to the residents of Bahrain and the Gulf region. The hospital is equipped with three operation theaters, patients ward, outpatient clinics, a physiotherapy department and a pharmacy. Radiology and laboratory services are outsourced. Major general and laparoscopic surgical procedures, orthopaedic, ENT and gynaecological operations are performed here.

Ward nurses were involved. They are 16 in number, and share the same nationality and language. Ward nurses team consists of nursing supervisor, senior and junior nurses who cover three shifts of eight hours each. Ward nurses' Inter-shift handover does not follow any standardisation. Outgoing nurses 'literally' narrate each patient condition from memory, using patient records as a reference. The incoming nurses write their notes in accordance to what they hear, understand or manage to grasp from outgoing nurses' handover.

Here, transmission of information might differ from one nurse to another as per their personal experience and background. On several occasions, patient vital information has been missed such as a change in medication dose, removal of a drain or a catheter, a new referral or an investigation, which might lead to a critical medical incident. Aim is to improve ward nurses communication by introducing standardised communication tool ISBAR.

SWOT analysis, (Strengths, Weaknesses, Opportunities and Threats), has outlined improper nurses communication during inter-shift handover, inadequate nurses training, and insufficient personal development.

Force Field analysis identified the driving and restraining forces that might have its implications on the project. Nurses resistance to change, lack of commitment, work overload and time constraints would lead to a defective inter-shift handover.

## **Methods**

Using Senior & Swales, (2010), organizational change model, five stages; (1a): Diagnose current situation, (1b): Develop a vision for change, (2) Gain commitment for the vision, (3) Develop an action plan, (4) Implement the change, and (5) Assess and reinforce the change.

Regular meetings with stakeholders (junior and senior nurses), to gain their commitment to the project and accept the change, while keeping them informed all the time, and getting them involved right from the start.

A powerpoint presentation illustrated the current problem to the medical director and nursing staff, explaining the problem in details and using the figures shown above.

Introductory ISBAR tool lecture to all nurses, followed by assigning the nurses who passed the MLQ to start implementing the standardised inter-shift handover using ISBAR, so other nurses can follow their example.

Nurses' surveys & interviews, continuous communication, post implementation test results are among feedback opportunities.

## **Outcome**

Standardised nursing inter shift handover forms a dynamic nurses station as staff will communicate with each other more openly, creating ground for feedback and questions. Understanding and collaboration among nurses would enhance job satisfaction and eventually leads to improvement in job performance. Medical incidents will be reduced leading to reduced patient stay at the hospital, reduced patient complications and reduced legal obligations. ISBAR will act as a reminder, hence valuable patient data will not be lost or forgotten, but will be kept even for those staff who were off duty to review later on.

Impact of the change project on patients

All these results combined would eventually lead to patient safety and patient centered care that any healthcare provider aspires for in their practice. Medical errors will also be reduced leading to reduced patient stay at the hospital, reduced patient complications and reduced legal obligations.

Impact of the change project on the practice

Standardised nursing inter shift handover will help in the formation of a more dynamic nurses station due to the learning of new activity, as nurses will be communicating with each other more openly, creating ground for feedback and questions. There is also more understanding and collaboration among staff that would enhance job satisfaction and eventually leads to improvement in job performance among nurses.

## **Conclusion**

Healthcare is a system that governs patient health with policies, procedures and guidelines that assure systems of patient safety. If standardisation is not followed in daily patient care, critical information might be lost which will affect patient healthcare outcomes. Hence, in this change project, the use of ISBAR will standardise nurses communication during handover, ensuring patient safety and quality of patient care.

Nurses high turn over is one of the anticipated challenges to project success and has its toll on the remaining staff motivation, and would lead to low staff enthusiasm.

It is not very practical to hold training and educational sessions very often just for one or two staff.

Nursing supervisor might lose interest in doing so.

Other possible limitation of the project would be lack of ISBAR inter shift handover monitoring of junior nurses by senior nurses, or the nurse supervisor overlooking the whole team.

A project of this kind will need more time to get better results, as staff will get more accustomed to the new policy and procedure. Frontline nursing staff should be involved right from the start of the change project to keep them aligned and in view of what is going on. Education and training should be part of the nurses working daily activities, hence a nurses training program is to be initiated and activated for further development and high level of performance.



## **Where have all the needles gone? Improving availability of key phlebotomy supplies on medical wards**

Call for Posters - Safety

Dr Felicity Montgomery, Dr Sungeen Hill, Dr Sheeraz Iqbal  
BHR Hospitals NHS Trust, England

### **Background**

Junior doctors in KGH struggle to locate equipment for tasks including blood tests, blood cultures, blood gases and intravenous cannulation. Trolleys are located on all medical wards with the intention of standardizing access to equipment. However, these are often poorly stocked causing frustration and significant, avoidable delay to patient care. This poses a safety risk in the acute setting, when it is crucial that completion of tasks for the management of medical emergencies is efficient and timely.

Quality Improvement cycles were conducted over a three month observation and implementation period in six medical wards within King George Hospital (KGH), a District General Hospital in NE London.

Participating staff included: junior doctors, nurses, healthcare assistants and ward clerks.

### **Methods**

Seventeen junior doctors (F1 to CT2 level) completed questionnaires regarding perceived availability of equipment, any inconvenience caused, and suggestions for improvement.

A standardised trolley checklist was established to document the full stock of inventory required for an average 8 hour shift. All medical wards were of a same size (28 beds).

The content of the trolleys on six medical wards was audited over ten days during a one month period.

Following baseline auditing, the checklist was implemented on one ward (Ward A), by placing a copy onto the trolley and recruiting staff to check the content and re-stock according to the list.

The checklist was reviewed and compared to the actual trolley contents at nine o'clock the following morning on ten days during the one month period.

This was then repeated on a second ward (Ward B).

Following implementation, ward managers were interviewed regarding the process and any barriers to implementation were fed back by staff.

### **Outcome**

Only 5% of junior doctors felt they were able to find everything they need in the trolleys, with 94% feeling delayed or inconvenienced by this most of the time.

Suggestions included asking ward staff to regularly check and re-stock the trolley.

In the baseline audit, the average stock level of trolleys was 63%. The lowest amount of stock recorded on any one day was just 37.5% of total inventory.

The average stock according to the checklist completed by staff was 85.4% and 91% on Wards A and B respectively. When reviewed by the audit team, the average stocks were 83.9% and 80% respectively.

Prior to implementation, the average stock on Ward A was 52.5%, and 66.9% on Ward B of the full inventory. The improvement cycle demonstrated a 31.4% increase in stock level on Ward A, and a 13% improvement on Ward B.

### **Conclusion**

Discrepancies between checklist data and actual trolley stock were noted, possibly due to misinterpretation of the checklist, or use of equipment between completion and re-audit. The checklist was edited to decrease variability in interpretation.

Staff reported issues of little time to check and restock the trolley, and difficulty accessing or locating new stock. A decrease in consistent use of the checklist was also noted after auditing.

However, regular monitoring and checklist implementation improved trolley stock level on two medical wards, therefore improving timely access to key procedural equipment.

To consistently achieve this, staff compliance, a clearly-worded checklist and wider access to equipment for re-stocking are needed. This requires recruitment of ward management to select appropriate staff, encourage continuity and ensure practical access to relevant stores.

Regular review of the checklist would be required to ensure on-going use.

## **Audit on Chemical Sedation of Medical Patients with Delirium**

Call for Posters - Safety

Dr Hannah Stacey, Dr Lauren Steel, Dr Varghese Thyparambil  
Broomfield Hospital, Mid Essex Hospital Services NHS Trust, UK

### **Background**

Broomfield Hospital, Mid Essex Hospital Services NHS Trust

District General Hospital serving a population of 371,000

Team involved: Medical Registrars (Dr Stacey and Dr Steel), Elderly Care Medicine Consultant and Clinical Lead for Delirium (Dr Thyparambil), Clinical Lead for Safeguarding (Clive Gibson)

Patient group: Medical inpatients with delirium who have a prescription for chemical sedation

There have been concerns about patients with delirium receiving incorrect chemical sedation. A recent serious incident regarding a patient who received over-sedation for delirium prompted us to involve Dr Thyparambil and Clive Gibson with an agenda for change. Our aim was to determine whether prescriptions of chemical sedation for medical patients with delirium adhered to hospital guidelines.

### **Methods**

Aim: To determine whether prescriptions of chemical sedation for medical patients with delirium adhered to guidelines. Our priority was to detect the risk of patients receiving over-sedation as a result of incorrect prescriptions.

Method: Retrospective audit completed over the time period March-May 2018.

Inclusion criteria: adult medical patients who had a prescription of chemical sedation for delirium.

Sample size: 30 patients, 40 drug prescriptions.

Results: Less than a quarter of prescriptions were compliant with guidelines. This was often because the frequency of the medication was incorrect. Nearly a third of prescriptions could have led to patients receiving over-sedation.

### **Outcome**

Proposed intervention

Staff education: presentation at medical grand round, audit meeting, departmental meetings and hospital induction.

Delirium education should be delivered on a regular basis.

Access to delirium pathway guidelines: easy access via intranet, guidelines laminated and displayed on the walls of the wards.

Drug stickers to put in drug charts, which specify the correct dose and frequency of sedation.

Strategy for change

Implementation of the proposed changes over the next 6 months.

Involvement of Medicine for Elderly Consultants and Clinical Lead for Safeguarding to further assist in delirium education.

Obtaining feedback from junior doctors in the form of questionnaires, about whether they feel competent at managing a patient with delirium and prescribing chemical sedation safely.

A re-audit in one year will assess whether there has been an improvement in the care of medical patients with delirium.

### **Conclusion**

Our audit demonstrated that prescriptions of chemical sedation for medical inpatients with delirium were poor. The primary concern is that patients could have received over-sedation. Our population is ageing, and elderly patients in particular are at risk of delirium whilst in hospital. These patients can be challenging to manage, particularly for junior doctors and nurses. We hope that by presenting our results and delivering widespread education about management of delirium, we can improve the care of this cohort of patients. We also aim to disseminate our results outside of the Mid-Essex Hospitals Trust in order to emphasise the importance of safe management of inpatients with delirium within the NHS.

## **The 'Red Hat' Pathway: Reducing avoidable Neonatal Unit admissions for hypoglycaemia**

Call for Posters - Safety

Dr J McGrath, Dr J Gough (prev Simmonds), Dr N Stephenson, Dr G Fox, Dr Gosia Radomska  
Evelina London Children's Hospital UK

### **Background**

Location:

Evelina London Children's Hospital Neonatal Unit

Aim:

To reduce the number of avoidable Neonatal Unit (NNU) admissions for hypoglycaemia in accordance with national initiatives to reduce term admissions into neonatal units.

### **Methods**

Using a PDSA cycle, we performed a retrospective audit of NNU admissions of babies at risk of hypoglycaemia. Data were collected using the UK Maternity and Neonatal Patient Data Management System (BadgerNet).

Those at risk were defined as infants of diabetic mothers, infants born 34-37 weeks gestation, growth restricted infants or infants with birth weight less than 2nd centile.

In addition to an existing guideline, we implemented the use of a red knitted hat for babies identified at increased risk of hypoglycaemia. Parent and staff information leaflets and posters were produced and staff update sessions were provided in order to highlight the new pathway before it was rolled out on 1st August 2017.

A retrospective re-audit of NNU admissions was performed 11 months after implementation of the pathway and data pre- and post-pathway introduction were analysed using Chi-square or Fisher's exact test.

### **Outcome**

Following the introduction of the 'red hat' pathway, the number of babies admitted to the NNU with hypoglycaemia reduced from 15 per 1000 to 6.5 per 1000 live births.

There was an increase in the number of babies documented as being at risk of hypoglycaemia between the two study periods.

Of those identified as being at risk of hypoglycaemia, a significantly lower proportion were admitted after the pathway introduction (RR for admission 0.346; 95% CI 0.218-0.548;  $P < 0.0001$ ).

Babies admitted with hypoglycaemia were significantly less likely to be hypothermic after the pathway introduction (RR for hypothermia RR 0.418; 95% CI 0.212-0.822  $P = 0.0164$ ).

### **Conclusion**

Introduction of the 'red hat' pathway significantly reduced NNU admissions for babies at risk of hypoglycaemia. Those admitted were less likely to be hypothermic.

## **SA-ICS : Community Delirium TIME Pathway**

Call for Posters - Safety

Dr Lorna Dunlop ( Clinical Lead), Evelyn Boyle ( Team Leader)  
South Ayrshire Intermediate Care Service ; Scotland-UK  
Dr Ajay V Macharouthu (Consultant Liaison Psychiatry)  
Psychiatry for the Elderly - NHS A&A; Scotland - UK

### **Background**

The SA-ICT is a rapid response multi-disciplinary rehabilitation team supported by an ANP and a full-time GP with special interest in complex care. Patients over 16y are seen in the community when there is a need for transitional assessment, treatment & care either due to loss of function, discharge from hospital or to prevent admission.

Delirium is one of the more prevalent conditions causing death & or delaying hospital discharge. 20% patients die within 4 weeks of diagnosis. A delay in diagnosis increases this mortality rate by 11% .

Managing delirium in a hospital environment is significantly resource intensive and this environment may aggravate the condition delaying resolution, discharge or leading to care home admission. The TIME Bundle had been developed for the hospital setting to improve treatment and survival and we aimed to devise a community equivalent.

### **Methods**

All senior MDT staff are trained to carry out a comprehensive geriatric assessment ( CGA) including 4AT and deal with any red flags. However to deliver the TIME bundle we required a second level rapid response to the 4AT : Referral response from the ICT admin team from any GP referral, then rehab nurse response and lab response.

Equipment purchase ; Bladder scanner ; Glucometer ; Smart phones – access to apps, email : laptops  
Community Delirium Pathway developed to include a “ High Risk Trigger “ safety bundle assessment within 2h of referral. This ensures patient safety from a medical and functional perspective with all other measures being completed within 24h.

Paper forms & tools were modified or confirmed for community use including Delirium Care Plan and Patient Information leaflets

Educational sessions for all staff.

PDSA improvement cycles x3 were delivered for the final pathway

### **Outcome**

Final Patient Outcomes: x9 patients April-June 2018

- Death prevented : 3/9 cases admitted as emergency  
Hb50 (requiring urgent transfusion)  
Urosepsis (requiring mental health section for admission for treatment)  
Hypoxia (76%) – gradual functional loss - ?aspiration pneumonitis
- Treatment improved – often multi-factorial causes  
6/9 cases treated at home

Improved patient experience at home ( managed risks)

- Own home, family, neighbours
- Continuity of care – carers, nurses, rehab team
- Telecare – alarm, falls alert, pop-in visits

Rural area access to services requires more direct communication and action with individuals

ICS ANP & GP stock of antibiotics for immediate use

ICS rehab immediate provision of security equipment - eg keysafe, medication dosset box

Anxiety of team upskilling to deliver required continuous senior support

Development of a competency framework for the Community Delirium TIME pathway.

### **Conclusion**

Delirium is a diagnosis for urgent referral and other terms should be avoided eg acute confusion, sleepy

The complexity of care with a Community Delirium TIME pathway requires a rapid response and intensive case management with a specialist 7 day MDT approach

Clinical Nurse management support for competency framework development would have been helpful and will be developed further

Adding the pathway to Clinical Knowledge Publisher ( NHS Scotland) with links to guidance, tools and documents is in progress and will be shared across Scotland

Support and input from the Local Delirium Group was essential

## **The Right Information to the Right People at the Right Time: Improving the Daily Medical Handover**

### Call for Posters - Safety

Dr Lydia Simpson, Dr Jennifer Boyd  
NHS Fife, UK

#### **Background**

The project was conducted in the maternity unit in NHS Fife by a Consultant and a Senior Registrar in O&G. The work focussed on the multidisciplinary team involved in the O&G daily medical handover. Handovers are recognised as an essential part of patient care: vital to ensure continuity of care and avoid clinical errors. This is particularly pertinent in O&G due to the rapid turnover of patients and frequency of emergencies. The Royal College of Obstetricians and Gynaecologists' Good Practice paper 'Improving Patient Handover' states "it is important to optimise communication of critical information as an essential component of risk management and patient safety" and highlights the need for regular reviews of the handover process. Our unit's handover needed improvement as it varied day-to-day in structure and content with a consequent lack of uniformity and reliability. A patient safety risk was identified that key clinical information may be missed if handover was not improved.

#### **Methods**

The strategy plan for this project comprised an initial assessment, the proposed strategy for change and a provisional timeline. The problem was assessed by obtaining the multidisciplinary team's views on the existing handover process. This included trainees and Consultants in O&G and Anaesthetics, midwives and obstetric theatre staff. Opinions were obtained over a three-month period via brain storming sessions, informal discussions and an online survey. After analysis, the written handover document was updated and reviewed at the Consultants' meeting. The new document states the structure of the handover, specifies the information to be given and who should provide it. The presentation of the revised handover document occurred via multidisciplinary meetings and emails to staff. Opportunities for feedback were given throughout the process. The following week the new handover document was launched. A repeat survey was performed after eight months to re-assess staff opinions.

#### **Outcome**

After implementation, initial feedback was mainly positive although some reluctance to change was identified. Further results show the new structure was initially adhered to however old practices have re-emerged and the new structure is not consistently followed. However, overall there has been a modest improvement in the numerical rating scores of the quality and effectiveness of the handover, which in turn we anticipate will improve patient safety.

Positive changes identified: introductions performed every time, patients of concern discussed first, "Watchers Board" for patients of concern created, formal handover structure created, handover order adhered to consistently, every clinical area represented at handover and gynaecology handover improved. Areas for further improvement include: large individual variation persists, new structure often not adhered to, lack of consensus exists among clinical staff regarding best person to perform handover and handover too long.

#### **Conclusion**

Change and improvement in clinical handover is possible. A formal written structure for clinical handover can improve consistency. However, any process of change brings challenges and relies on staff adhering to the change that has been initiated. The main barriers to change we identified were a lack of consensus amongst clinical staff that led to a resistance to implement the proposed changes and a general resistance to change from "the way we do it": changing a workplace culture is difficult. The lesson we learned is that thorough preparation work is required to ensure the staff members who are needed to implement the changes agree to do so. This should be achieved by more thorough initial assessment of opinion and acknowledgement of these results and through better explanation of the rationale for the proposed change. Our next steps are to reassess our priorities for handover improvement, identify changes to be made and ensure better engagement of all staff prior to implementation.

## **Evolving the morbidity and mortality process to improve clinical governance and patient safety.**

Call for Posters - Safety

Dr Robert Hart, Dr Michael Macmillan  
Queen Elizabeth University Hospital

### **Background**

Clinical governance is the management process which ensures that a high standard of clinical care is maintained by thorough review of adverse events and promoting a culture of excellence. We believe morbidity and mortality (M&M) reviews, if properly conducted, can be a powerful tool to support clinical governance. In order to be effective, M&M reviews should focus on leadership, risk management, quality improvement, education and ensure timely dissemination of information.

Furthermore, M&M reviews allow the opportunity to have shared professional dialogue regarding the management of critical incidents. The subsequent analysis, reflection and education following an MM review should target the ergonomics of our healthcare system and promote change that can have a positive impact on patient safety.

### **Methods**

In October 2016 our department introduced an electronic portal (M&M Datix) which facilitates the submission and triage of M&M cases, in addition to a structured dissemination of information and learning points. The storage of patient sensitive data in this manner has been managed by our IT and Clinical Risk teams and the appropriate approvals have been granted by our Research/Development and Information Governance departments. In this report, we will document the M&M caseload since the launch of M&M Datix in order to highlight the abundance, demographics and pattern of clinical risk that exists in our department. Furthermore, we hope to demonstrate how this has driven targeted quality improvement work.

### **Outcome**

There were 81 M&M submissions since the launch of MM Datix. Of these 81 cases there were, 18 mortality reviews, 24 morbidity reviews, 34 educational cases and 5 “learning from excellence” reports. General surgery, ENT and orthopaedics had the highest caseload with 17, 15 and 23 cases respectively. The majority of these reports were emergency cases. Submissions were generated by 47 consultants and 33 trainees. Only half of our submissions have been presented at our departmental MM meetings. We identified bone cement implantation syndrome, “can’t intubate/can’t oxygenate”, front of neck access (FONA), anaphylaxis, intrathecal drug error, major haemorrhage and immunosuppression-induced bronchospasm as recurring themes.

### **Conclusion**

M&M Datix has allowed the quantification and communication of clinical risk that exists in our department which has facilitated targeted QI work. Anaphylaxis, renal transplantation anaesthesia, airway management, front of neck access teaching and intrathecal drug delivery are all projects which have been generated following these M&M reviews.

Furthermore, by reviewing our caseload, we note the high prevalence of emergency cases, reflecting the importance of maintaining vigilance when delivering emergency anaesthesia. M&M Datix also demonstrates significant trainee engagement in our M&M reviews and an increasing appetite for submitting learning from excellence and educational cases.

We believe that M&M PALS has been instrumental in systematising our M&M reviews, promoting a blame-free culture in which prospective self submissions are encouraged and targeting departmental QI work. By evolving our M&M reviews in this manner we continue to achieve high quality clinical governance.

## **A three year journey from imminent collapse to thriving OOH Service**

Call for Posters - Safety

Dr Shawkat Hasan, Dr Debbie Murray, Lisa Prudom  
NHS Tayside, Scotland, UK.

### **Background**

The Out Of Hours service in Tayside provides care to approximately 400,000 residents spread over 3,800 square miles. It operates from three main sites in Dundee, Perth and Arbroath. It also supports several minor injury units in Perthshire and Angus as well as catering for some patients from North Fife. The service faced significant challenges in 2015 with a decreasing medical workforce, poor staff morale and high sickness absence. This reflected the national scenario of a GP shortage<sup>1</sup> as well as poor staffing of OOH units nationwide<sup>2</sup>. As a result the service was filling 68% of available GP shifts some months, although on some shifts this could be as low as 30%. It was clear that change was essential.

### **Methods**

Pay rates reviewed & increased to appropriate levels  
Graded pay rate to reflect intensity of workload as well as antisocial times  
1:1 Induction session for all new OOH GPs with a Clinical Lead  
New Induction booklet to help with Adastra system and FAQs  
Move to a predominantly salaried GP model with core spine of shifts covered by salaried GPs  
Improve team working & communication between GPs on shift by reviewing appt structure  
Dedicated OOH CPD program & Acute Care Teaching Days  
Monthly SEA Meetings facilitated by a salaried GP & supported by Clinical Lead  
Annual Job Planning of all salaried GPs within the service  
Short 3 hour evening shifts to act as “taster shifts” for new GPs  
Dedicated Paediatric weekend shifts for GPs interested in paediatric care  
Close working with LMC, RCGP Faculty Board, AHPs, Acute hospital services, Paediatrics, Ambulance service.  
New OOH Promotional leaflet and OOH Website  
Full Appraisal support including MSF, PSQ & CPD advice  
Recruitment & Retention strategy

### **Outcome**

70% salaried service.  
May 2018 – less than 2% vacancy rate  
Stable & growing team of GPs (36 in 2015 to 54 now)  
Waiting list for salaried GPs  
Very positive feedback from GPSTs and Ed Supervisors  
Currently supporting neighbouring OOH Service  
Improving patient satisfaction scores

### **Conclusion**

The impact of the 3 year improvement programme has been significant and impressive. The success of the service has been acknowledged both locally and nationally. This was only possible due to the dedication and hard work of the newly appointed Clinical Director and Clinical Leads together with the Service Lead and Manager who brought the rest of the team along with them on this journey. The broad experience and energy that this team brought to the project allowed major obstacles such as pay, recruitment and morale to be overcome. A drive to continually improve the service has allowed the team to continue to move this project forward despite significant recruitment and financial hurdles. Their aim is to give all those working in the Tayside GP Out of Hours Service the best experience and support possible to make it a fulfilling job and career. In return, the patients who use and access this service also get an excellent service.



## **Management of temporal bone fractures at a major trauma centre**

Call for Posters - Safety

Dr William HS Spiller, Dr William Tracey, Mr Neil Summerfield, Mr Alex Bowen, Miss Emma Stapleton, Prof Simon K Lloyd, Mr Simon R Freeman  
Salford Royal NHS Foundation Trust, UK

### **Background**

This quality improvement project at a major trauma centre was prompted by a case of delayed referral of a complete facial nerve palsy secondary to a temporal bone fracture. At the departmental governance meeting this case was discussed as part of mortality and morbidity reporting, emphasising the importance of establishing robust mechanisms for assessment and prompt referral of traumatic facial nerve palsy. A retrospective audit of all emergency neurosurgical admissions over a 2-month identified 19 temporal bone fractures, in which formal assessment of facial nerve function was documented on the first possible day (arrival if conscious, or extubation) in only 31% of patients.

### **Methods**

We developed a pathway for the acute management of temporal bone fractures, aimed at non-ENT teams and ENT junior doctors. The opinions of junior doctors and advanced nurse practitioners in the ENT and neurosurgical teams - likely to be those using the pathway most often - were assessed via survey, and the proposed pathway was presented at the local divisional governance meeting. Feedback from these sources was used to improve the pathway via an iterative process. Teaching sessions were arranged for ENT and neurosurgical junior doctors and advanced nurse practitioners. The pathway was presented at meetings involving ENT, emergency medicine, intensive care and neurosurgical teams.

### **Outcome**

A prospective reaudit was carried out over a 2-month period, using the same criteria as the initial audit. This identified 16 patients with temporal bone fractures. Assessment of facial nerve function on the first possible day improved from 31% to 67% of patients. There was 1 case of traumatic facial nerve palsy which was referred on the same day and managed appropriately. Arrangement of routine follow-up with audiology improved slightly from 38% to 48% of patients. The project was expanded to review all neurosurgical admissions over a 12-month period which showed similar trends. This project demonstrates that a relatively simple intervention can improve the management of these complex patients.

### **Conclusion**

Patients with temporal bone fractures present complex problems for management. They have usually suffered high-energy impacts, and frequently have multiple injuries requiring the involvement of multiple teams over the course of their admission. They will frequently be intubated initially, delaying assessment of neurological function. It is important to ensure that secondary effects of trauma are appropriately managed once life-threatening injuries have been stabilised. All relevant teams should be involved in the process of creating management pathways.

## **Manpower and Its Distribution of Thai Advanced Practice Nurses for Patient Safety**

Call for Posters - Safety

Dr. Teeraporn Sathira-Angkura, Patcharee Kladjomphong, Sophis Suwankesawongs  
Nursing Division, Ministry of Public Health, Thailand

### **Background**

Patient Safety is one of the major goals for health manpower management. Advanced Practice Nurses (APNs) have been designated to take care of patients with complex disease. It is to give them more safety and fewer complications. The appropriate ratio of APNs to Registered Nurses is a very important factor in patient safety. In Thailand, APNs provide care at every level of hospitals including the community, general, or central hospitals. In order to plan the nursing manpower in Thailand and set up the nursing service policy, the Nursing Division of the Ministry of Public Health needs more information about the manpower. The objectives of this study were to study the nursing manpower as a whole, its working roles and the distribution of Thai APNs in the community, general and central hospitals of the Ministry of Public Health.

### **Methods**

The data was collected through questionnaires and in-depth interviews. The questionnaires were sent to the population of this descriptive research, 1,285 APNs working in community, general and central hospitals under the Ministry of Public Health. Twelve chief nurse officers of each regional level of Thailand were interviewed. The questionnaires and in-depth interview forms were developed by the researchers. They were mainly asked about their works as APNs which was then verified by 5 experts. The data were analyzed using content analysis, frequency, and percentage.

### **Outcome**

65.36 % of the APNs responded to the questionnaires. 53.57% of which were working in the community hospitals, 25.47% and 20.96% from general and central hospitals, respectively. The ratios of Advanced Practice Nurses (APN) to Registered Nurses at general, community and central hospitals were 1:96, 1:62 and 1:61, respectively. About the working roles of APNs, they work as APNs for 55.40 %, while 44.60% work as administrative nurses. Among all the 6 working roles of the APN at the hospitals; namely direct care, consultant, educator, researcher and leader, the roles of APNs were at a moderate level, while nurse case manager roles were at a high level.

### **Conclusion**

The ratio of Advanced Practice Nurses (APN) to Registered Nurses at every level of hospitals in Thailand is lower than the standard for providing care. The percentage of APNs working as administrative nurses is very high (44.60%). Since the APNs help improves good patient safety outcomes in the health care system, the Ministry of Public Health has to come up with a more tangible and concrete plan in producing more APNs. The Ministry also has to set up the policy for distribution of different fields of APNs in the nursing system and create the career path to support the APNs who continue working within their six major roles.

## **Trauma Efficiency**

Call for Posters - Safety

Duncan Renton

Forth Valley Royal Hospital Scotland

### **Background**

Trauma and Orthopaedic department in Forth Valley Royal Hospital. Numerous conversations being required for the planning of 1st and 2nd trauma patients for the next day's operative list, with numerous parties involved. Caused delays in theatre start time with the knock on effect of delayed operations for trauma patients. It also meant that the first operation of that day was often not an optimised patient with a simple procedure (usually a hip).

### **Methods**

Standard operating procedures (SOP's) for organisation of next days list were devised. A series of simple conversations all run through a single person – the trauma co-ordinator – ensured that the planning for next days list ran smoothly. These conversations only happened once each day, and once complete all parties should have been aware and prepared for the next days operating list. All staff involved were emailed the proposed SOP's.

Checklists were produced for each stage of the SOP's. These checklists were disseminated amongst the trauma co-ordinators. Each day each SOP was either marked complete or a reason for non completion was recorded on the checklist.

Information was also pulled from the NEXUS theatre system. Including time to anaesthetic room, type of operation, date of operation, patients CHI number and operating Consultant. Information was used to compare theatre start times with successful completion of SOP's.

### **Outcome**

Streamlined organisation of next days list. SOP's completed successfully majority of the time with minimal disruption. Anticipated benefits were prompter theatre start time, and more appropriate case done first on the list with knock on effect of more operations completed. Process highlighted that proposed orders as a result of the SOP's may often be changed at the next days morning trauma meeting which may contribute to late starts and inappropriate 1st patients.

### **Conclusion**

When undertaking complex organisation such as trauma lists - a robust set of SOP's and single point of contact (trauma co-ordinator) works well to streamline the process. If starting again – data for proposed list change at morning trauma meeting would be collected.

## **Cardiac Arrest Bleep Holders: Compliance with in-date resuscitation certification**

Call for Posters - Safety

Ellen Geary, Dr Nigel Salter, Suzanne Earls  
St Vincent's University Hospital, Ireland

### **Background**

St Vincent's University Hospital is a tertiary referral teaching hospital with an in-patient capacity of 626 beds serving a catchment population in excess of 350,000 in south Dublin. It has a 24/7 Emergency Department seeing in excess of 65,000 patients annually. An in-date Advanced Cardiac Life Support (ACLS) certificate is considered a mandatory requirement for all doctors who are required to be part of the cardiac arrest team. Despite this the NCHD (junior doctor) group have consistently represented the weakest healthcare professional category. A rolling quarterly audit was undertaken of cardiac arrest team member's compliance with resuscitation training certification to try identify gaps and create a 'Quality improvement Programme' to address these. In June 2017 the baseline audit figures were that within the cardiac arrest team 37% had up to date Basic Life Support (BLS) training and 34% had up to date ACLS

### **Methods**

- Finance: A hospital finance programme was initiated whereby junior doctors would no longer be required to pay for resuscitation training.
- A voice for NCHDs: An online survey of the 306 outgoing NCHDs was circulated to establish why individuals might not, despite the above interventions have undertaken the course/s or have not submitted their certificates. Our survey indicated that a high percentage of NCHDs were not aware of the hospital's programme re financing for mandatory Resuscitation training. In addition, one of the most frequently cited reasons for not completing training was "not being able to get time off".
- Junior doctor turnover: HR engagement and national strategies for centralisation of certificate submission (NERS) were explored.
- Access: Number of course dates was optimised, and weekend courses were introduced.
- Specialty Specific: ACLS experienced provider courses were introduced to address speciality specific and senior physician needs.

### **Outcome**

By January 2018 the percentage of cardiac arrest bleep holders with in-date ACLS training increased from 34% (June 2017) to 55% (June 2018). With the changeover of junior doctors (July 2018) these figures dipped again to 43% compliance. Despite a modest improvement in training compliance from 2017-2018 with the introduction of a number of quality improvement interventions, there remains an overall poor compliance in mandatory ACLS training by doctors carrying the cardiac arrest bleep in St Vincent's Hospital. There are no national figures collated on such training in Ireland for us to compare to and we have identified no other public hospitals in Ireland who had similar such reports. We feel that this is a national rather than an institutional problem. It must be acknowledged that gathering this data and analysing it is a significant step forward organisationally. As such the Resuscitation Committee believes that this represents a significant patient safety concern for our hospital.

### **Conclusion**

It is the recommendation of the Resuscitation Committee to the Hospital's Senior management Team that NCHDs who's expected duties include being on the cardiac arrest team on-call must submit an in-date ACLS certificate on commencement of employment or alternatively register and complete an ACLS course within 3 months of employment commencement. The Resuscitation Committee would suggest to the Senior Management Team that there needs to be a defined responsible individual for policing such mandatory training if a significant and sustained improvement in these training compliance figures is expected. In addition, there should be consideration for a system to incentivise NCHDs to complete their mandatory training. It is the observation of the Resuscitation Committee that this problem will recur annually with this cohort of NCHDs unless it is adequately addressed at their employment commencement and in the terms of their employment by the organisation.

# **Patient satisfaction and safety are preserved in an ambulatory care unit for subacute cardiology**

Call for Posters - Safety

Erlend G. Singaas, Mette W. Hansen, Tor H. Melberg  
Dep. of Cardiology, Stavanger University Hospital, Norway  
Aase L. Kalberg, Erna Harboe  
Dep. of Medicine, Stavanger University Hospital, Norway

## **Background**

The Department of Cardiology (DC) at Stavanger University Hospital, Norway, has 6000 inpatient admissions yearly. The average bed occupancy rate is >100%, which threatens the patient safety. Many patients admitted acutely have low risk for adverse events, but need further assessment within short time. Since the outpatient clinic can't provide timely care, patients have traditionally been admitted for inpatient evaluation.

Reducing the chronic overcrowding of the ward is a major objective. In order to relieve this situation, a subacute ambulatory cardiac unit (SACU) was opened in 2018. It provides follow-up within days for patients presenting to the Emergency Department (ED) or other units in the hospital. Several diagnostic tests and cardioversions i.e., are available at the SACU.

The aim of the present work was to ensure the patient safety when patients are transferred from inpatient to ambulatory care. Furthermore, we explored how patients react psychologically in this setting.

## **Methods**

A risk and vulnerability analysis concluded with acceptable risk. Algorithms were developed to identify patients eligible for safe transfer from in-hospital care to the SACU. The staff has been thoroughly informed about the SACU and the patient selection. Patients receive oral and written information when referred to the SACU. If they experience any problem while waiting for appointments, they contact the SACU or the ward directly. Patients are readmitted if safety is considered to be at risk.

The SACU project team have met repeatedly, to address problems as they develop.

A patient representative participated on several occasions in SACU project team meetings.

Following the opening of the SACU, patients were asked at their first visit to complete a questionnaire regarding patient satisfaction, which also included the Hospital Anxiety and Depression Score (HADS).

This was repeated after 30 days.

Adverse events (30 days in-hospital mortality) rates have been monitored.

## **Outcome**

193 patients completed the first survey. They were referred due to chest pain (53,9%), atrial fibrillation (25,4%), syncope (6,2%), dyspnea (4,7%) and miscellaneous (9,8%), mostly after initial evaluation at the ward (37,3%) or the ED (35,8%). 66.3% were men.

At the first visit 79% were very satisfied, 11.8% satisfied and 2.5% unsatisfied with the overall follow-up. The mean HADS anxiety score was 12,25 (+/- 4.6 95%CI), HADS depression 8.6 (+/- 3.2) and HADS total 20,9 (+/-5.2).

119 patients completed the second questionnaire. HADS scores did not change significantly at 30 days. 63% were very satisfied, 23.5% satisfied and 5.1% unsatisfied with the follow-up. The mean score for overall satisfaction (1: very satisfied, 6: very unsatisfied) was 1.4 (+/- 1.8 95%CI) at the first visit and 1.7 (+/- 2.3) at 30 days,  $p = 0.02$ .

During 2018 (>2000 patients), no event of readmission and 30 days in-hospital death was seen between the referral to the SACU, and the first visit at the unit.

## **Conclusion**

Patients with symptoms suggestive of cardiac disease can be transferred from in-hospital stays to an ambulatory care unit, without compromising patient safety or satisfaction. It is important to carefully recruit these patients, to ensure patient safety. Symptoms of anxiety are frequent among the patients selected for ambulatory evaluation, even though the risk of adverse events is low.

## **Reducing central venous line associated bloodstream infections in pediatric intensive care units in two public hospitals in Brazil through an improvement model**

Call for Posters - Safety

ETHEL MARIS Schröder Torelly

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Hospital Municipal Menino Jesus - Brasil

### **Background**

Recently, we understand that we need to improve central line associated bloodstream infection (CLABSI) rates in patients of two public hospitals Pediatric Intensive Care Units (PICUs) that are under the management of the Instituto de Responsabilidade Social Sirio Libanês (IRSSL): the Hospital Municipal Menino Jesus (HMJ) and the Hospital Geral do Grajaú (HGG). Both of them have 20 and 09 PICU beds, respectively, and are reference hospitals to care for pediatric patients in São Paulo despite the second being a general hospital. Even with the healthcare team's efforts to reduce current infections rates it could still be improved. The leading team of both hospitals understand that a continuous improvement process in multiprofessional perspective can help to improve the results. Infections related to devices in ICUs impacts on the patients suffering and length of stay and increased costs.

### **Methods**

Based on the IHI Improvement Model, we decided to implement the insertion and maintenance central line bundles. This bundles checklist were configured according to the specific needs raised by discussions with the involved PICUs multiprofessional team. Small test (PDSA) for each change was realized. We created a team that were made up of healthcare professionals and infection control personnel and a project sponsor in each hospital. We aligned communication forms through weekly meetings and e-mail and Whats App groups for daily exchange of information. We started working with brainstorming to answer the question: what is missing for us to reduce rates of central line associated infection in the PICU? We organized the information obtained in an Affinity and a Cause-Effect Diagram and initiated the discussion of the available scientific evidence at the main institutions: IHI, CDC and ANVISA (Brazil's Health Care Ministry).

### **Outcome**

The improvements were followed by results and process measurements. We aimed to reach 50% reduction in CLABSI rate per 1000 central line-day until June 2017. Baseline data were collected since January 2016. Bundles use started between October/November 2016. Results of Central Line-Associated Primary Bloodstream Infection (CLABSI) Rate per 1000 Central Line-Days reduced from 5,92/1000 central line days to zero (median) infections at HGG and also reached 8 months without CLABSI. HMJ reduced 58%, from 8,6 to 3,62/1000 central line days (median). Also, we achieved >95% adherence to insertion and maintenance of central line bundles and >95% adherence to hand hygiene. We founded an incremental cost by around \$ 10.000 per CVC infection. Families were involved through the patient and families council or in counseling groups. Families have been oriented about his own and the health care team hand hygiene importance and were involved on care.

### **Conclusion**

The benefits of this work until now was the reduction of patient suffering and this has been the main message all the time for the team. A specific look of the processes by the multidisciplinary team helps the improvements. The methodology to test changes on a small scale makes the team understand what is important. Search different and better ways to achieve the goals and realize changes can lead to recognition of the problems that until now were unperceived. The empowerment of the ICU team was fundamental for the generation of earnings for themselves. The participation of the hospital head manager and of the sponsor to the Project was fundamental to provide emotional and materials

resources. We hope that the opportunity to discuss and customize the process for our institution can improve team adherence to new changes.

## **Formula for Success in the Prevention of Central Line Associated Blood Stream Infection (CLABSI)**

Call for Posters - Safety

Fadwa Mansour Abu Mostafa, MSC(ID), Khaled Alnafee, MHA, Byron Wells, RN, Mohammed Hijazi, MD  
Saudi Arabia - King Faisal Specialist Hospital and Research Centre (Gen.Org.) , Riyadh

### **Background**

King Faisal Specialist Hospital & Research Centre (Gen.Org.) is widely regarded as one of the leading tertiary healthcare facilities in the Gulf region, where quality-driven specialized medical care is delivered to people in Saudi Arabia. The Hospital's programs, sections, and services have been accredited by a number of prestigious international organizations including the Joint Commission International (JCI) accreditation as an Academic Medical Center.

At the beginning of 2018, King Faisal Specialist Hospital & Research Centre (Gen . Org.), Riyadh Branch has identified high priority areas to improve the delivered patients' care. Under the Safety priority, the hospital initiated Zero Harm CLABSI High-Level Quality Aim Project. The project's aim was to reduce CLABSI events from (144) in 2017, to less than (115) by 31st of December 2018 in all inpatient units. The project's foresight is to reach Zero CLABSI in the upcoming years.

### **Methods**

A multidisciplinary team was formulated with representatives from Infection Control and Hospital Epidemiology, Nursing, Medical, Quality Management, Laboratory, Radiology and Health Information Departments. The team members collected their proposed improvement ideas in a drivers diagram and assigned sub-teams to work on their implementation.

The team was able to standardize the hospital policy for insertion, maintenance and removal of Vascular Access Devices (VAD), build the vascular lines bundles in the hospital information system and implement physicians' lines insertion training by simulation. In addition, the team launched a hand hygiene campaign and engaged the patients in CLABSI prevention through educating and empowering them to be involved in their care process. Timely Root Cause Analysis meetings for CLABSI events were conducted to understand the contributing factors and implement preventive measures to avoid the occurrence of more events.

### **Outcome**

The project achieved its aim. Reduction of 33 CLABSI events (22.92% decrease in events) was reported by the end of December 2018 compared to the year 2017. The estimated financial saving was around \$1,650,000 and the decrease in the Length of stay was around 330 days. The most important achievement was saving 33 patients from suffering the CLABSI complications.

The project team developed scorecards with both outcome and process indicators. The continuous monitor of the indicators in addition to performing the Root Case Analysis for identified cases will assist the team to sustain the improvement and ensure timely actions for potential contributing factors to CLABSI events.

### **Conclusion**

The interventions implemented as part of this project had an impact on reducing other infections besides CLABSI. In the year 2018, several units achieved sustainable improvement of zero CLABSI for months and other units reduced their level of CLABSI events by 50%. The project team will continue to work with the units that report CLABSI events to achieve the targeted zero CLABSI.

Leadership involvement and support, Teamwork, and engagement of the front line staff were important to achieve sustainable improvement in this project.



## **An assessment of safety climate in Kuwaiti public hospitals**

Call for Posters - Safety

Gheed Alsalem

Ministry of Health, Kuwait

Jillian Morrison

Institute of Health and Wellbeing, University of Glasgow

Paul Bowie

NHS Education for Scotland

### **Background**

Patient safety in healthcare organisations received global attention following the Institute of Medicine's release of its hallmark report "To Err Is Human: Building a Safer Health System", where it was estimated that 44,000–98,000 patients die annually in US hospitals as a result of errors in care. Similar rates of error and avoidable harm have been reported in different research studies in many modern health systems across the world. The use of safety climate questionnaires is one of the most popular methods for assessing safety culture. These questionnaires are thought to help in measuring healthcare workers' perceptions of the prevailing safety culture or "safety climate" in their organisations. Since no surveys of safety climate have been conducted at public hospitals in the state of Kuwait, nor are valid or reliable survey instruments available, this study aimed to investigate patient safety climate in public hospitals in Kuwait.

### **Methods**

A multi-method, triangulated approach including both quantitative and qualitative methods was adopted for the study. There were four phases of the research: A systematic review of published literature on safety climate tools used in acute hospital settings was carried out using seven electronic databases, with manual searches of bibliographies of included papers and key journals. A suitable tool was identified. A cross-sectional survey of 1,511 healthcare staff in three public hospitals was conducted for two purposes: Firstly, to assess the psychometric properties of the identified tool and develop an optimum model for assessing safety climate in Kuwaiti hospitals. Secondly, to provide an assessment of the current state of safety climate in Kuwaiti hospitals. Finally, interviews with key personnel were conducted to extend the examination of the survey findings and provide a rounded picture of the current state of safety climate in Kuwaiti public hospitals.

### **Outcome**

General evaluation of the prevailing safety climate in acute hospital settings showed the dimensions "Teamwork within units" (84%), "organisational learning" (82%), "supervisor/manager expectations and actions promoting safety" (77%) and "management support for patient safety" (74%) as strongly positive areas for the three hospitals. "Non-punitive response to error" (34%), "communication openness" (47%) and "frequency of event reporting" (50%) were identified as areas in need of improvement. Building on the survey findings, interviews with key stakeholders added rich insight into hospital employees' perceptions on safety and allowed exploration of emerging issues in more detail. The research findings informed the design of a preliminary framework that aims to extend the examination of the construct of safety climate beyond the domains and items that typically inform safety climate theory to include system wide factors which potentially influence the prevailing safety culture/climate.

### **Conclusion**

This is the first validation study of a standardised safety climate measure in a Kuwaiti healthcare setting. The study constructed an optimal model for assessing patient safety climate in Kuwaiti hospitals. It highlighted important patient safety and staff wellbeing concerns to inform organisational and national learning, and provided a baseline for measuring patient safety climate in Kuwaiti hospitals. Our project raises the critical importance of appropriate validation of safety climate questionnaires before extending their usage in different healthcare contexts. It provided new knowledge about areas of strength and weakness in safety climate with the potential to drive local improvements in Kuwaiti public hospitals. It is recommended that future investigations of patient safety culture and climate combine both quantitative

and qualitative approaches and adopt a system wide approach to inform safety climate theory and questionnaire development.

## **VTE assessment and prophylaxis audit in medical patient: the importance of coupling assessment and prescribing**

Call for Posters - Safety

Hannah Preston, Iain Swann, Ann Lockman, Yuan Ye Beh, Fiona McGrehan, Simon Dummer, A Veiraiah  
NHS Lothian

### **Background**

Hospital venous thromboembolism (VTE) accounts for 25-50% of all VTE events, almost a ¼ are in acutely ill hospitalised medical patients. NICE recommend a formal assessment and a decision regarding prescribing and the use of this prophylaxis is under-utilised. This poses an unnecessary iatrogenic risk to patients who are already sick.

Aims- Clarify the current rates of VTE assessment and appropriate prescribing, Improve rates of appropriate prescribing, Create a sustainable tool to maintain success

### **Methods**

This project was carried out in the department of Acute and General Medicine, Royal Infirmary of Edinburgh. All patients who had been assessed and clerked were included. Prescription charts were examined for rates of prescribing effectively. An intervention of a VTE assessment and prescribing form was created and implemented. Simple and easy to follow, fitting with local guidelines. It followed an algorithm format and was Printed in yellow for stand-out appeal. It was placed inside prescription chart to help increase compliance.

Data was re-collated after this. Qualitative data was collected from 15 junior and registrar doctors.

### **Outcome**

With form- average low molecular weight heparin (LMWH) prescribing is 98.6% correct.

Without form- average LMWH prescribing correctly is 71.2% , with significant variation.

The number of contraindications that have been documented has increased since the form has been introduced

No error of commission (ie. getting LMWH when they shouldn't) with the form being used, 1 error when no form was used

Overall our experience looking through these notes, is that there has been a lot more omissions of prophylaxis in cases when the form has not been utilised.

Junior doctors prefer the form to more senior doctors, helping to facilitate their decision making.

### **Conclusion**

Simplicity and time efficiency is key to success in a busy environment.

A simple tool can effectively improve VTE assessment and appropriate prescribing.

Improved patient safety that requires little cost involvement is easily achievable.

## **Sitting patients out of bed in hospital for lunch**

Call for Posters - Safety

Helen Parker, Naomi Patrick, Clare Wilcox, Katrina Titterington, Rosie Enfield, Ellen Kennedy, Kelly Nicholls

The Royal Bournemouth Hospital, United Kingdom

### **Background**

A multi-disciplinary team consisting of Physiotherapists, Occupational Therapists, a Speech and Language Therapist and a nurse at the Royal Bournemouth Hospital in Dorset undertook a quality improvement project in line with the work of Brian Dolan on #EndPJPParalysis. As a therapy team we are well aware of the growing ageing population, with particular demands felt in the South of England. With this in mind we were keen to be involved with national drivers to keep people as active and independent as possible during their hospital stay. Research indicates that bed rest can lead to various negative outcomes such as muscle wastage and swallowing problems. A baseline audit was completed over a week on all Older Persons Medicine (OPM) wards to identify the number of patients sitting out of bed for lunch (with a list of established acceptable exceptions). Observational audit showed that at 12.15pm, only approximately 50% of eligible patients were sitting out across all OPM wards.

### **Methods**

Implementation took place over a two month period and was aimed at educating staff, relatives and patients on the importance of sitting patients out of bed and the negative consequences of not. We engaged ward sisters through relevant meetings and publicised information across the hospital through the use of newsletters and bulletins. A huddle board was used to educate staff, relatives and patients and a 'chair' icon was used across all streams of Implementation as a way of branding the project.

We reviewed therapy time and the use of assistants on the wards to improve multi-disciplinary team working, thereby promoting a collaborative approach.

Staff surveys and patient surveys were also completed throughout the process. One patient said "It's harder to swallow when I'm in bed".

### **Outcome**

The number of patients sitting out of bed for lunch increased to an average of 61%, with one ward achieving an average of 86% of patients sitting out of bed for lunch.

There was a general marked improvement in staff knowledge of why sitting out of bed in hospital is beneficial and the reasons why bed rest might be acceptable. Positive responses to the benefits of patients sitting out of bed significantly outweighed any negative responses found post implementation on the staff surveys.

### **Conclusion**

This work requires a cultural shift in the way hospital care is delivered and the setting of patient and relative expectations about such hospital care will take time to embed within the model of service delivery. We found it difficult to secure participation from a wider network of staff and we are aware that this would have been beneficial to the running of the project. The more integrated therapy teams can become with ward staff, the more we hope the notion of a 24 hour approach will develop. In the future we will look at other barriers preventing patients from sitting out of bed, including access to equipment and extended manual handling training. We will continue to promote the project through training sessions and initiatives such as 'movement volunteers' and ward champion roles.

The Future: Patients to be sitting out of bed for all meal times, working towards a 24 hour rehab approach across all inpatient wards

## **Are competency assessments alone sufficient to reduce transfusion errors**

Call for Posters - Safety

Hema Mistry, Shruthi Narayan, Courtney Spinks

Serious Hazards of Transfusion, UK

Peter Baker

2Liverpool Clinical Laboratories, Royal Liverpool University Hospital, Liverpool, UK

Rashmi Rook

3UK Transfusion Laboratory Collaborative, UK

### **Background**

Errors constitute >80% of SHOT reports, most of which are preventable with improved practices.

Laboratory errors in transfusion practice continue to put patients at risk. British Society for Haematology (BSH) compatibility guidelines and UK Transfusion Laboratory Collaborative (UKTLC) standards require all staff working in a blood transfusion laboratory to undergo formal assessment and actively complete an annual programme of relevant practical and knowledge-based competency assessment developed for laboratory staff involved in blood transfusion.

### **Methods**

To review if laboratory errors resulting in a wrong component transfused (WCT) are more likely to occur with staff working in blood transfusion who do not have up-to-date competency assessments compared with laboratory staff that do. Retrospective review of laboratory-related WCT incident reports made to the UK national haemovigilance scheme, Serious Hazards of Transfusion (SHOT), from January 2010 to December 2017 was undertaken to determine whether laboratory staff had up-to-date competency assessments or not.

### **Outcome**

There were 264/374 (71%) laboratory-related WCT during this period that involved laboratory staff with up-to-date competency assessment while 28/374 (7%) did not have up-to-date competency assessments, the data was not stated in 82/374 (22%).

These errors contributed to 12 ABO-incompatible red cell transfusions, in 10 of these, laboratory staff had an up-to-date competency assessment for the procedure where an error was made, 0 did not, 2 were unknown.

### **Conclusion**

This confirms that laboratory staff make errors despite having up-to-date competency assessments. Competency-based learning enables staff to achieve a high level of competence in an efficient manner, helps record acquisition of the skills, knowledge, safety and other procedures and clarifies standards for performance appraisals. It is limited in developing the higher-level knowledge and skills in problem-solving, decision-making and critical thinking. Many incidents describe that interruptions/distractions occurred during critical stages in the transfusion process. It is recommended all training should embed human factors into the culture and processes and the way staff are trained. Such non-technical skills training should cover all elements that could affect critical decision-making when working under pressure with constant interruptions. Non-technical skills complement the technical skills making staff more efficient and effective and are invaluable in ensuring transfusion safety.

## **For prevention of serious adverse effects caused by cholinesterase inhibitors.**

Call for Posters - Safety

Hitoshi Yanaihara, Satoru Utsunomiya, Naoto Okada, Mayumi Ijuuin  
Saitama Medical University

### **Background**

Since cholinesterase inhibitors have caused serious side effects of cholinergic crisis before now, warnings have been raised, such as revisions to the package insert. However, as PMDA (Pharmaceuticals and Medical Devices Agency in Japan) reports side effects like annual reports including dementia treatment drugs, we believe that there are circumstances in which side effects are not sufficiently understood. We will clarify the usage of cholinesterase inhibitor and make future plan for appropriate use. We focused on choline esterase inhibitors and collected the status of occurrence of adverse reactions and the serum cholinesterase level of patients in our hospital with a history of prescription.

### **Methods**

Prescription was issued from the drug department prescription data history in December 2014 to February 2017 in the hospital and outpatient prescriptions. From 14 medical departments, 99 patients were extracted with the prescription of Distigmine.

### **Outcome**

Serum choline esterase was checked only in 10 % of the patient. However, Adverse event was observed in 11.1% which lead the cessation of prescription.

### **Conclusion**

There is a possibility that serious side effects caused by cholinesterase inhibitors may occur to some extent, but perception of the fact is getting low as the change of generations of medical workers. Furthermore, it is often difficult to assess the symptoms related to adverse effect because of patients' condition. We informed the whole hospital through our periodical issue. However, drugs that have a choline sterase inhibitory action is varied such as for the treatment of dementia. Therefore, it is necessary to give continuous reminders to these drugs.

# **Burnout syndrome of medical staffs and the correlation with patient safety: a survey at Cu Chi general hospital in Ho Chi Minh city, Vietnam**

Call for Posters - Safety

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## **Background**

Cu Chi General Hospital, located in Cu Chi district - the outskirts of the north west of Ho Chi Minh city, attracts a huge number of patients everyday - 3000 examinations per day. Most of the patients are local people, patients from Tay Ninh province and Cambodia, thus it helps reducing strain on the upper-level hospitals.

Burnout is deemed to be a major modifiable factor in improving the working conditions but it has not been widely studied in Vietnam. Despite patient safety has been a major focus of Vietnam health care system in recent years, increasingly medical errors are affecting patients and they remain as a cause for morbidity and mortality. Scientific evidences have revealed that burnout can lead to medical errors. This study was aimed at an investigation and comparison of the prevalence of burnout, medical errors among different medical professions within a hospital setting. Another aim was to explore the associated factors that contribute to burnout and medical errors, patient outcome across doctors and nurses. We hope these findings can provide insights for hospital's administrators to take action, inform strategies to reduce burnout and medical errors.

## **Methods**

A cross-sectional study was conducted on 393 medical staffs, who were selected randomly from 9 internal departments, including: 99 physicians and 294 nurses had at least one work experience year and agreed to participate in our study.

The survey included 43 questions about a wide range of variables including demographic information, work characteristics, burnout, medical errors and patient outcomes. Burnout was assessed by Maslach Burnout Inventory test (MBI) with high level of reliability and validity. The MBI consisted of 22 items, which measured 3 components of burnout, namely, emotional exhaustion (EE), depersonalization (DP), and personal accomplishment (PA). Each item could be answered on a 7-point Likert scale ranging from "never" (=0) to "daily" (=6).

Descriptive statistics was reflected through frequency and percentage of quantitative variables related to demographic factors, levels each components of burnout, patient outcomes; and average variance of standard qualitative variables related to points each component of burnout. General linear models were used to investigate associations between demographic factors, medical errors in the last 12 months and components of the burnout syndrome. Linear regression was used to evaluate the association of reporting a recent perceived medical error in the last 12 months with each component of burnout. Multivariable analysis was used to remove all interference factors; variables with  $p < 0.2$  were incorporated into the model.

## **Outcome**

The result shows 16.7% high depersonalization, 15% low personal accomplishment and 15% major medical errors in the last 12 months among nurses. In addition, 14.1% of doctors reported high depersonalization, 15% low personal accomplishment and 23% major medical errors. Gender, level of education and as well as work situations such as position, work hours and night shifts were significantly associated with each of the 3 components of the MBI. Three components of burnout were associated with medication errors and infection among nurses.

Low personal accomplishment is related to major medical errors reported by nurses on multivariate analysis adjusting for other factors. Each point increase in personal accomplishment (scale range, 0–48) was associated with an 1.4% decrease in the likelihood of reporting an error.

This study indicated that the nurses experienced higher levels of EE and DP but lower levels of reduced PA than the doctors. The results suggested that work characteristics such as experience, hours working per shift, number of night shift per week, work relationships had been found to be significantly associated with high burnout.

After controlling the nurse characteristics, our study confirmed that reduced PA increased the number of medical errors reported. The result also demonstrated an association between burnout and safety patient. Specifically, reduced PA related to medication errors and infection. This results support previously literature proposing the relationship between burnout and patient safety.

## **Conclusion**

To hospital's administrator: The findings provide insights for hospital's administrators urgently need to inform strategies to create favorable work environments support practice in order to reduce burnout and advance patient safety. Burnout and medical errors should be taken into account and carefully researched by hospital administrators. Risk factors and appropriate solutions should be clearly defined, as to elevate general health of the medical staff and patient safety. Arranging scientific working time for employees, improving communication environment in the hospital were suggested to the hospital. In addition, the above results help hospital managers to find highly effective access strategies to minimize negative attitudes and improve personal performance. In particular, this indirectly reduces reporting and behavior leading to medical errors, improving the quality of patients' safety when meddling on nursing. To future's researches: The study results suggest that working time and communication have a significant relation to all three aspects of burnout. We propose to clarify the relationship between burnout and the workplace environment of doctors and nurses in post-studies. On the other hand, the results indicate that we should conduct studies for particular object and particular department in order to help hospital managers make appropriate strategies to improve the effectiveness of preventive solutions.



# **Improvement of the quality of care and patient safety by using blood leakage detector device in hemodialysis**

Call for Posters - Safety

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## **Background**

The study of the American Association of Nephrology Care (ANNA) in 2012 pointed out that the failure to detect a needle leakage in the dialysis process will cause infection or even lead to death, particularly for high-risk patient (incitement, dementia, Vascular abnormalities, etc.....). The main reason is that the dialysis flow rate is 400-500 mL/min, so that the serious blood leakage will reduce the blood volume of adults by more than 40% in a few minutes. This problem led to deteriorate in the relationship between nurse and patients, and increase the problem of litigation of nurse and hospitals. In the US, due to the accident of serious blood leakage, the hemodialysis center compensated 4.47 million dollars for accidental death in 2002.

## **Methods**

About the changes to practice. We trained nurse for use of the blood leak detection device, and explain to the patient about questionnaire and implementations. Each patient should use the leakage detection device for 28-day, and then evaluate the benefit.

The 7 nurse and the director of the dialysis room were trained for usage of blood leak detection device. According to the nursing records and clinical experience, 11 patients with high blood leakage risk (easy to leak, agitation and abnormal blood vessels, etc.) were picked out. One nurse is responsible for one patient. Each time period for the dialysis is performed 4-5 patient. Each patient performed 12 times in total for 28 days. Our study used the "likert 5-point scale" to collect the subjective feelings of patients and nurse before and after using the product, and studied the subjective feelings of 11 patients.

## **Outcome**

According to the "Wilcoxon symbol level test", the patient felt safe, relaxed and relieved, and even expected the device before and after using the device ( $P < 0.05$ ). The satisfaction of the nurse was increased before and after using the device ( $P < 0.05$ ). The operation of the device was not complicated, and it did not burden the operation and installation. There are several benefits as follows.

1. Make the patient feel safe and relaxed, and the nurse feels at ease and reduces medical disputes.
2. It can effectively monitor the blood leakage and improve the relationship between nurse and patient.
3. Ensure patient safety, nurse alertness, improve the quality of dialysis care, and reduce the severity of blood leakage.
4. Optimize the convenience of the device and the time required for installation.

## **Conclusion**

The problem of needle blood leakage in dialysis is needed to be solved. This study from the patient screening to the implementation of the leakage detector device can automatically detect the occurrence of blood leakage for patients with high blood leakage risk. Reduce the risk of needle blood leakage, so that the nursing staff and patients psychologically feel relieved. Reduce the risk of medical dispute, and greatly improve the quality of medical care and safety.

In the future, we will study the IOT and AI technology to predict the needle dislodgement and unplanned extubation. We want to create the system to reduce the possibility of needle dislodgement and unplanned extubation and to prevent the potential blood or liquid leakage from all of the intravenous injection site.

## **Development of National safety and quality healthcare standard for hospitals: A Russian pilot study**

### **Call for Posters - Safety**

Igor Ivanov, Oleg Shvabskii, Ildar Minulin, Aleksandra Shcheblykina  
FSBI "Center for Monitoring and Clinical and Economic Expert Evaluation" of Roszdravnadzor

#### **Background**

Russian legislation in healthcare provides for three levels of quality and safety control of medical care: state control, institutional control, and internal control. The main form of quality control in medical facilities is the internal system of quality and safety control of medical care, which is the Russian legislation's requirement for licensing of the medical care. It is also legislated that the chief executive of a medical facility determines the procedure for the internal quality and safety control of medical care in a medical facility, and it became a problem associated with the absence of the unified approach to the management of the quality and safety control of medical care in Russia. To solve it, our Center developed the Practical Guidelines on the internal system of quality and safety control of medical care in medical facilities. The Guidelines were developed with due consideration of the requirements of international standards such as JCI, NSQHS (Australia) and others.

#### **Methods**

The study contains the evaluation of conformity of medical facilities to the requirements of the Guidelines. We used the results of audits of 50 medical facilities among which there were district, city and regional facilities from 20 regions of Russia. Multidisciplinary work groups of experts carried out the audits by the unified procedure based on the Guidelines. The methodology of the study implies the calculation of the total value of conformity of the medical care in accordance with sections. A checklist containing 10 sections was developed basing on the Guidelines, such as Patient Identification, Epidemiologic safety, Managing clinical responsibility, Surgical safety, Blood management and others. Each section represented a separate field of quality and safety of medical care assurance and included a list of criteria combined into groups. The assessment system determines the conformity or non-conformity to one or another criterion.

#### **Outcome**

The results of audits showed, that there are essential structural and complex problems in medical care quality and safety management. Moreover, the absence of unified standards of organizing a system providing a high level of quality and safety of medical care makes it difficult to manage the system of healthcare at large. Our practice shows that it is possible to implement in Russian medical facilities a complex system of medical care quality and safety management which includes the requirements of current world standards, is based on conducting audits on a regular basis, and uses comprehensive and process approaches and risk management and patient-oriented principles. The Guidelines could be the prototype of the national safety and quality healthcare standard for hospitals in Russia.

#### **Conclusion**

Thus, if we summarize and analyze the results of external audits of medical care quality and safety in accordance with the Guidelines, we may highlight that there are essential structural and complex problems in medical care quality and safety management, which are impossible to solve within one certain medical facility. Moreover, the absence of unified standards of organizing a system providing a high level of quality and safety of medical care makes it difficult to manage the system of healthcare at large.

Our practice shows that it is possible to implement in Russian medical facilities a complex system of medical care quality and safety management which includes the requirements of current world standards, is based on conducting audits on a regular basis, and uses comprehensive and process approaches and risk management and patient-oriented principles.

## **Every baby born in the right place: towards a whole systems approach to maternity and neonatal escalations**

Call for Posters - Safety

Inna Walker, Fiona Lawson, Emma Northover, Peter Wilson, Simon Fraser

University Hospital Southampton NHS Foundation Trust and University of Southampton, United Kingdom

### **Background**

Efficient management of hospital bed capacity goes hand in hand with patient safety. Appropriate maternity and neonatal care in the right facility can make a lifelong difference to the mother and newborn baby.

Hospitals use escalation alerts to indicate pressures on bed availability and staffing, and procedures to guide remedial actions. Such efforts can be, by their nature, reactive and short-termist.

Systems thinking, as used in public health or emergency care delivery, can help counteract this tendency, but there is little evidence of its successful implementation in healthcare trusts or application to maternity and neonatal care.

This work was carried out at Princess Anne Hospital (part of University Hospital Southampton NHS Foundation Trust), which acts as a provider of both standard and specialist care, and a tertiary centre for fetal medicine, and neonatal surgery and cardiology.

### **Methods**

Mixed methods were used in an empirical investigation of factors influencing capacity and escalations, and potential solutions.

- Interview and focus group participants: midwives, neonatal nurses, operational coordinators, clinicians, service and data managers, local maternity system and operational delivery network leads
- Quantitative data: reasons for alerts, cot occupancy, refusals to in-utero or neonatal transfers from other providers, nursing staffing deficit and high cost agency use, skill mix on shifts, and other

A total of 32 members of staff provided views on factors and issues affecting capacity and escalations. Quantitative data from multiple sources were analysed, revealing trends and associations (for example, periods of both correlation with nursing staffing deficit and lack thereof, Fig. 1). Main categories of factors identified were summarised in a systems map (Fig. 2). Successes and areas for improvement in processes and practices were presented to both teams.

### **Outcome**

What this means in practice: examples of activities prioritised or introduced as a result of adopting a whole systems approach.

- Communication within and between teams: local – initiating weekly joint neonatal/child health meetings to plan patient flow; regional – introduction of tabulated summaries of facilities at each centre, to aid transfer decisions
- Midwifery and nursing staffing: ‘grow your own’ – continuous development of highly reputable preceptorship and Qualified in Speciality (QIS) training programme; ‘golden hello’ – introduction of a financial incentive for new QIS recruits.
- Data informing practice: creating a data collection system for joint maternity/neonatal/gynaecology huddles; a review of transfer refusal data and income implications leading to greater flexibility in decisions affecting patient flow.

### **Conclusion**

A whole systems view helps inform prioritisation and encourages focus on service improvement. To attain the goal of the right care for every mother and every baby, proactive management of maternity and neonatal capacity should complement reactive escalation plans aimed at restoring patient flow.

# **Analysis of the effect of designation of a Senior Doctor with accreditation in General Internal Medicine on management of Outlier-medical patients on a Cardiology ward: a 2-cycle audit**

Call for Posters - Safety

IQBAL KHAN

ST THOMAS' HOSPITAL (LONDON, UK)

Prashant Bamania, Iheukwumere Duru, Aiden Mellan, ED LEATHAM

ROYAL SURREY COUNTY HOSPITAL (UK)

## **Background**

Marrow Ward at RSCH is a Specialist Cardiology Ward where patients with acute cardiac conditions necessitating hospital admission are managed by a Consultant Cardiologist and their team of junior-doctors on a daily basis.

Recently there has been an increase in the number of patients on the the ward on a day-to-day basis with non-cardiac acute illness, which falls under the jurisdiction of other medical specialities. These patients referred to as 'Outliers' can remain on Marrow ward for several days or even weeks until a bed on the appropriate Speciality ward becomes available. Whilst awaiting transfer to a Speciality ward, the care of these patients is currently assigned to a Consultant Cardiologist who is not accredited in General Internal Medicine (GIM). These patients may not be reviewed by a Consultant Physician accredited in GIM whilst they are on Marrow Ward.

Published evidence has shown that adverse outcomes, including longer length of stay and increased mortality [1, 2, 3], are higher for Outlier medical patients placed on wards not specifically designated to provide the type of care they require.

Thus the current system on Marrow Ward may be sub-optimal for management of Outlier Medical patients.

## **Methods**

Retrospective data on the number of patients with Acute Cardiac Illness and the number of Outlier Medical patients was collected from 18 consecutive weekdays on Marrow Ward. The proportion of patients in each group being managed by a Consultant Cardiologist (not accredited in GIM) or a Consultant Physician (with appropriate accreditation in GIM) was analysed.

We also analysed the proportion of patients admitted to hospital due to primary acute cardiac illness such as myocardial infarction compared with the proportion of patients with secondary acute cardiac illness due to a different primary illness. For example, acute atrial arrhythmia driven by sepsis.

We found that 100% of patients with primary or secondary acute cardiac illness were managed by a Consultant Cardiologist, which was appropriate. However, 0% of Outlier Medical patients were managed by a Consultant Physician. In fact, 100% of Outlier Medical patients were managed by a Consultant Cardiologist (not accredited in GIM) over our 18 day period of data collection. The overall patient death rate on Marrow Ward over this 18 day period was 0.97%.

## **Outcome**

A meeting, which coincided with our initial 18 day period of data collection, was held between Consultant Cardiologists, Physicians and the Hospital Managers. Concerns regarding the care of 100% of outlier patients on Marrow Ward by Consultant Cardiologists not accredited in GIM were raised. Change to the system was initiated. A Consultant Physician with appropriate accreditation in GIM was introduced on Marrow Ward to manage Outlier Medical patients. Patient with secondary acute cardiac illness remained under the care of Consultant Cardiologists.

Following this, we prospectively re-collected data for a further 20 consecutive weekdays to compare the proportion of patients in the Cardiac and Outlier groups being managed by a Consultant Cardiologist or a Consultant Physician.

The most significant changes we observed following the introduction of a separate Consultant Physician to manage Outlier Medical patients on Marrow Ward were as follows:

1) Significant decline in the proportion of Outlier patients populating Marrow Ward from 40% before to 21%- this suggests that Outlier patients went to appropriate specialty wards sooner during their hospital stay.

2) 96% of Outlier patients were managed by a Consultant Physician with appropriate accreditation in GIM (as compared with 0% prior to the change in system). This was the most significant change observed following the change in system.

Other changes were as follows:

3) No change in the the proportion of patients with primary or secondary acute cardiac illness being managed by a Consultant Cardiologist after the introduction of the Consultant Physician. This remained at 100%.

4) Decline in death rate from 0.97 to 0.86% on Merrow Ward following introduction of a Consultant Physician with accreditation in GIM to manage Outlier Medical patients on Merrow Ward.

## **Conclusion**

This audit highlighted a more widespread issue throughout UK Hospitals of patients being placed on wards not specifically designated to provide the type of care they require [1]. This phenomenon of 'Outlier' patients has been associated with poorer outcomes [2,3].

Furthermore, the management of these patients by Speciality Consultants who are not accredited in GIM is potentially at odds with the GMC good practice guideline stating 'doctors must recognise and work within the limits of their competence [1]'.

Auditing and highlighting this issue to hospital managers may be the first step in reducing the proportion of Outlier Medical patients on inappropriate speciality Medical Wards. Designation of senior doctors with accreditation in GIM to manage medical Outliers may improve outcomes and reduce mortality rate, as observed on Merrow Ward.

For future work, it may be useful to analyse differences in additional outcomes such as number of patient/relative complaints before and after such changes to the system.

Abbreviations:

1. RSCH- Royal Surrey County Hospital
2. GIM- General Internal Medicine

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## **"Getting Better at getting better" Using our quality system to learn and improve hospitalwide**

Call for Posters - Safety

Jacqueline de Vos, Michiel Vervoort  
The Netherlands

### **Background**

The Albert Schweitzer Hospital is a large 550-beds teaching hospital, with 2 clinical locations, 1 outpatient location and 3500 employees, located in the South-West of the Netherlands. The ASH uses the accreditation program NIAZ as a tool to improve safety and quality of healthcare hospital wide since 2007.

In 2016 the implementation of international program Qmentum started, a new quality system which focusses even more on the patient perspective.

Our quality system continuously helps us to make clear what we are already doing well, what can be improved and how we can learn from this. The question is if, after several successful accreditations, another accreditation round really would add value and how we used the implementation of Qmentum in order to "get better at getting better".

In order to optimize basic care and thereby provide safe responsible care to all patients, every day, the improvement program "getting better" was initiated.

### **Methods**

Our quality system helped us to come up with 9 improvement themes, by:

1. Introducing self-assessments on all patient-related and supporting processes to measure compliance on the standards.
2. Mapping the safety culture with the Safety Attitudes Questionnaire (SAQ)
3. Testing results against practice and patient perspective by tracers and workshops
4. Comparing the results with outcomes from other quality evaluations

Measuring the compliance gives us insight into the awareness, familiarity with the basic principles of safe care and progression of the improvement themes.

Improvement projects are registered and followed up by the improvement dashboard. Monitoring the progress is done by the NIAZ Qmentum steering committee (organization level) and dual management (unit and department level)

Getting better" poster, game and campaign supports the implementation

### **Outcome**

A culture of continuous improvement, compliance with basic principles of good care is an ongoing process. The baseline measurement showed that employees take quality and safety seriously, but that there were also improvement points.

Within the program, hospital-wide work is being done to improve themes of safe basic care, medication safety, infection prevention, transfer, medical technology, patient safety (climate), teams, preparation of emergency situations, and (creating an culture of continuous) improvement.

Results:

The main effects of the implemented change and accreditation process were the improvement of the (healthcare) processes and basic principles of safe care.

Enhancing thus the over-all performance of the system by engaging healthcare professionals at all levels by (personal) leadership & management and multidisciplinary teamwork "by learning together".

The over-all performance of the system is monitored by the improvement dashboard and steering committee.

### **Conclusion**

The getting better program makes changes in order to improve the performance of the healthcare in the Albert Schweitzer hospital (ASH). Implementation of standards & the Getting Better program by engaged leaders, delivered by empowered teams leads to safer responsible care and a culture of continuous improvement which is a part of everyone's daily job.

## **Sustainable and Reliable Simulation Based Education- A National Approach**

Call for Posters - Safety

Jean Ker, Andrea Baker, Graeme Brown, Lynn Hardie, Lyndsay Kenny, Karen Willey, Rowan W Parks  
NHS Education for Scotland, UK

### **Background**

Clinical skills are the 'touchpoint' of the health service and are therefore key to the delivery of person-centred care. The launch of the Scottish Clinical Skills Strategy in 2007 recognised the use of simulation in high reliability organisations. There was however variable access to standards of simulation based education for different health care practitioners particularly for those delivering quality healthcare in remote and rural areas. A strategic change to the delivery of simulation based education has taken place over the past 10 years informed by both Government policy on delivering remote and rural health care (2007) and a Training Needs Analysis of the remote and rural workforce carried out in 2008 prioritised technical and non technical skills for pre-hospital care as part of the national Clinical Skills Managed Education Network.

### **Methods**

A pilot 6 month phase 1 addressed the issues of feasibility of setting up the system of support for the MSU. Phase 2 involved development and dissemination of programmes and venues between 2010- 2014 and phase 3 sustainability and improvement from 2014-18. Between 2009-2015 we appointed three regional champions responsible for disseminating best practice developing on line resources and holding workshops on faculty development.

Quantitative data collected included numbers of NHS attendees, faculty programmes and a review the programmes delivered. Qualitative data include self reports on learning and stories of changes in behaviour.

### **Outcome**

The impact of the CSMEN MSU delivery programme is that we have trained over 1000 HCPs and 100 faculty on our national programme. We have been funded to commission a further MSU which is eco friendly with improved features and facilities.

In terms of faculty development we now have a nationally agreed framework and database of those trained in simulation based education.

### **Conclusion**

The lessons learned include need to get NHS middle management buy in to release staff for training and faculty and faculty development is the rate limiting step to further expansion.

It is feasible to successfully implement and sustain a national simulation based education system to enhance clinical skills practice using continuous improvement at micro, meso and macro level involvement of SBE in the system.

## **For Everything There is a First Time' A South Glasgow Initiative to Improve Mental Health Care in a General Hospital**

Call for Posters - Safety

Jennifer Armour

NHS Greater Glasgow and Clyde Scotland, UK

### **Background**

Mental health presentations to acute general hospitals in Scotland have doubled in the past seventeen years, and staff often feel they are working beyond their expertise, with concern about appropriate patient care. In The Queen Elizabeth University Hospital in south Glasgow, a Mental Health Practice Development Nurse (MHPDN) role was introduced, providing a new resource to access support, information, advice and education related to:

- mental health problems
- co morbid mental/physical issues
- clinically related distress

Aim - to increase relevant knowledge, skills and confidence of staff, with the ultimate aim of establishing more effective, relationship based and informed care.

### **Methods**

Visible and accessible support has been vital, by attendance at the daily hospital huddle, and regularly visiting wards/departments. Information requests, immediate support for critical events, and education sessions both formal and ad hoc occur regularly, with the aim of contributing to a better understanding of patient distress and encouraging a more therapeutic and ultimately effective relationship. In addition to the daily operational aspect of the role, there is also input around policy and strategy development which has ensured a clear link between frontline and senior management functions

This innovative role which is the first of its kind in Scotland, has been working towards crossing the traditional boundaries between mental and physical health care. It represents a response to our changing hospital population, and incorporates those with multiple morbidities who are often the most complex and disadvantaged.

### **Outcome**

Having now reached the end of year 2, the service has established a high profile within the hospital. Quarterly reports/audits indicate regular contact requesting support, reduced usage and increased review of bank RMN staff, and nurses feeling better equipped to instigate relevant changes to patient care. Joint care plans between patient, ward and PDN have been implemented, resulting in an improved skill set and knowledge base for all staff involved, impacting positively on patient care and safety.

Ad hoc education with on going support has recognised the concept of the workplace as a vital learning source, with staff being empowered to realise

that they often possess a level of unconscious competence. Recognising and building on this with PDN input has been instrumental in improving confidence and overall care.

### **Conclusion**

The MHPDN role has had a positive impact on staff and ultimately patient care. Strong professional relationships have been established across the hospital wards, and with other agencies involved in care of clinically distressed patients. Positive recognition has been achieved via a number of awards, and the transfer of the role from a temporary secondment to a now substantive post. The main challenges surround the fact that the service operates as a sole member of staff in one of Europe's biggest hospitals. This, alongside the increase in admissions related to mental health problems and clinically related distress would indicate that a more effective service could be delivered with increased staffing. This would allow the service to operate with a greater emphasis on pro active work.

Organisations striving for parity across physical and mental health care must consider how to equip their workforce, and there is little doubt that they would benefit from adopting a similar service.



## **Evaluating Sepsis Improvement Programmes- The Suspicion of Sepsis Dashboard**

Call for Posters - Safety

Kenny Ajayi, Julia Wilkins

Imperial College Health Partners, London, UK

Dr Matthew Inada-Kim

Royal Hampshire County Hospital Hampshire Hospitals NHS Foundation Trust, UK

Catherine Cheema

Patient Safety Measurement Unit, South Central and West Commissioning Support Unit, UK

### **Background**

The Suspicion of Sepsis (SOS) Insights Dashboard was developed through a partnership between Imperial College Health Partners' (ICHP) Patient Safety Collaborative, Oxford Academic Health Science Network and the National Health Service (NHS) Improvements' Patient Safety Measurement Unit (PSMU) in England. Quality Improvement in sepsis care lies on the availability of accurate, reliable and consistent data on scale, frequency and outcomes. However, until recently, due to a combination of factors: changing definition of the condition; differences in coding practices between and among clinicians and coders and the absence of a gold standard diagnostic test; data on sepsis has been inaccurate and prone to fluctuation.

### **Methods**

The administration of data on sepsis outcomes traditionally relied on a few designated sepsis International Classification of Disease (ICD10) codes-A40 and A41. By using an innovative, validated and more expansive set of ICD10 codes covering patients admitted in emergency with bacterial infections, defined as the SOS category, the dashboard has provided accurate and reliable local, regional and national data on sepsis outcomes in England. The SOS codes, previously published, were validated by clinicians across various specialties. Employing cutting edge visualisation, the dashboard presents the data on mortality, survival, length of stay, readmission, and Intensive Care Unit occupancy by disease categories, at hospital, regional and national level via a publicly accessible website. The dashboard was trialed across 13 hospitals in England prior to launch in September 2018. Patient input was obtained in the development process.

### **Outcome**

The SOS Dashboard has been shown over a three year period (February 2015-February 2018) to be a consistent, accurate and reliable measure of outcomes in comparison to the fluctuating A40 and A41 ICD 10 codes. The data from the SOS category also mirrors the overall number of emergency admissions. The SOS data is now being used by clinicians across England as a basis for establishing baseline information for quality improvement projects. The poster presentation at the IHI Glasgow Quality Forum will present some lessons learnt from implementation by early adopters. The potential benefit to patient care lies in a more accurate evaluation of the impact of sepsis care improvement initiatives. One region in England has already used the data to demonstrate the effect of a regional system wide intervention which would have been almost impossible to articulate before the launch of the dashboard.

### **Conclusion**

The innovative SOS Insights Dashboard is providing clinicians and improvement practitioners with reliable, consistent and accurate publicly accessible data on sepsis frequency, scale and outcomes on which to base and accurately evaluate quality improvement interventions. The dashboard also provides a depth of analysis and visualisation which was previously unavailable, thereby empowering clinicians to better understand their own outcomes and to design more intelligent and nuanced quality improvement interventions.

A number of challenges emerged during the development process: engaging clinicians to adopt a different approach to sepsis data; the risk of misinterpretation and sensationalism from making national outcome data accessible publicly and online; and the magnitude of the task of raising awareness of the innovative tool across an entire nation were a few of the issues the development team encountered.

## **Patient safety: Raising frontline staff awareness through social gamification**

Call for Posters - Safety

Kevin Mollet, Kris Ramault, Jeroen Verhaeghe, Ines Van Giel, Valerie De Smet  
AZ Damiaan Belgium

### **Background**

AZ Damiaan Oostende is a future minded hospital. Our hospital is committed to a quality health care, which is able to adapt to the rapid changes specific to this sector. Care provision can be ensured in a continuous and appropriate way for the people of Ostend and the region. This care is aimed both at infants, children, adolescents, adults and elderly. AZ Damiaan has approximately 1500 medical and non-medical employees.

Despite many safety initiatives that were taken for their prevention, errors in healthcare continue to occur. The way to improve safety is to learn about causes of error and to overcome them together.

As today games are embedded in society. They have been used to educate for a long time. AZ Damiaan is convinced of the important role game-based learning could play in a health care setting.

Therefore our hospital tries to increase frontline staff knowledge and engagement through social gamification.

### **Methods**

Each year a creative team of AZ Damiaan develops a game to engage frontline staff in generating, learning, and adhering to best practices. It combines smart incentives, gamified learning and just-in-time tutorials. We try to make patient safety fun. Through our patient safety games we make our employees collaborate, communicate, interact and work as a team.

To date our hospital has developed four games. The games are meant to be played by teams and not only offer points and rewards but also to improve skills, goals and objectives set by our hospital. The games are played during the National Patient Safety Week.

Building a glasshouse (2014) was our first game. A patient room was rebuilt in a container made of glass. In the room 50 risks were visible. Employees had to find as much risks as possible.

In 2015 we organised a resuscitation marathon where five teams were to resuscitate a CPR doll during 24 hours. Passers-by were informed and received a free resuscitation course.

An escape room was developed in 2017. On the basis of brain teasers and tasks teams had to find their way through the course (100m<sup>2</sup>). The fastest team to escape would win.

In 2018 a virtual reality movie was made. During the movie several risks were shown. The goal was to find as much risks as possible, the more efficient teams worked together the more risks they could find.

### **Outcome**

Each year we can rely on approximately 500 voluntary participants. Although the games are accessible to all our employees and nursing schools in the community, only a limited number of people can participate. It is therefore necessary to register. The games are positive received which stimulates us to continue using gamification to increase engagement and motivation in the future.

Gamification seems to be a powerful tool to motivate staff. During the games, our employees had fun and were excited whilst actually implementing procedures and guidelines. Teams were working efficiently together towards a common goal. Although it is important to increase knowledge we hope that in the end the games also improved team performance and resulted in a better team collaboration.

### **Conclusion**

Az Damiaan has a high regard for quality and patient safety. To ensure and reinforce running projects, each year, during national patient safety week, we organize a special event.

To ensure quality and patient safety, we must work together. Through gamification we encourage cooperation between colleagues, building bridges between different services.

The game element ensures that the concept catches on. The media attention ensures that patients are also sensitized.

The presentation of the games is important, but keeping focus on the message and the goal is far more important. Therefore try to keep it simple. Define a realistic budget to avoid excessive costs.

## **Second victimhood: How staff can be supported after an adverse clinical event**

Call for Posters - Safety

Laura Hailes

East Midlands Patient Safety Collaborative, hosted by the Academic Health Science Network. England, United Kingdom

### **Background**

Following a high-profile patient safety incident at University Hospitals Leicester (UHL) Children's Hospital the East Midlands Patient Safety Collaborative (EMPSC) funded the University of Leicester (UoL) to develop a programme to support staff that have been involved in patient safety incidents sometimes known as 'second victims'. Second victims can exhibit a variety of physical and psychosocial symptoms and distress on both a personal and professional level (Mants, 2015).

A serious incident at UHL resulted in an avoidable child death and had resulted in far reaching consequences for both the family and staff involved. This incident acted as the catalyst to better understanding the experiences of staff involved in incidents and how best to support them.

### **Methods**

Semi-structured interviews were undertaken with 21 members of nursing and medical staff in UHL and Nottingham University Hospitals (NUH) who were directly involved in an adverse event. Four dominant themes emerged; Heightened Emotionality, Organisational Support and its Absence, Victimization and Blame, and Patient Safety and Culture. Accounts suggested ongoing and elevated levels of distress and vigilance to threat in respondents. These results were used to inform the development of the peer support programme. An internal communication plan was put in place to disseminate information throughout the Trust on how to become a peer supporter.

The second victim support programme was adapted from the Scott Model (2010).

### **Outcome**

Interview participants said it had helped them normalise the situation, feel supported and remain in work where they otherwise would have taken time off. They felt comfortable accessing colleagues and would recommend the service to others.

"She even contacted me I remember at home, you know, asking how I'm doing. And that was really good. ...and I think we should have more supporters like her." (Nurse)

"She made me realise that everyone makes mistakes, because we're all human. And to hear from her that she's also experienced something like this as well was really reassuring." (Nurse)

### **Conclusion**

Lessons learnt:

1. Healthcare professionals are susceptible and vulnerable to errors and these can have detrimental consequences at both the individual and organisation.
2. Programmes need to be widely communicated and carefully messaged, both to recruit peer supporters and also raise awareness of the programme and reduce the stigma of accessing support.
3. Peer Supporters need ongoing support to discuss any issues they are having or difficult cases and how to deal with these.

Findings demonstrated that staff do need support after being involved in a patient safety incident.

If staff are supported then there can be positive development and growth from the incident both at an individual and organisational level.

Implementing a peer support programme where staff are trained in psychological first aid techniques is valued by staff helps them normalise the situation, feel supported and remain in work.

## **The development of the Quality Improvement Scorecard at Northampton General Hospital NHS Trust**

### **Call for Posters - Safety**

Liz Smillie, Sid Beech, Jane Bradley  
Northampton General Hospital NHS Trust, United Kingdom

#### **Background**

Northampton General Hospital (NGH) is a medium sized district general hospital in the East Midlands. NGH report a range of metrics, at a number of meetings. In many cases metrics were reported using three months of data and rated as Red, Amber or Green (RAG) against a target. This does not enable easy identification of trends or spot issues before they arise.

The Quality Improvement (QI) Team were asked to develop a QI Scorecard to standardise reporting and monitor key metrics for the monthly sub-board quality meeting. The team used this opportunity to review the presentation of metrics and introduce run charts and Statistical Process Control (SPC) charts. The vision was that using these charts to show data over a longer period of time, would help to paint a picture with the data to expose problems and spots trends. Improvements or deterioration in metrics would be easily visualised, particularly with SPC charts, which detect special cause variation when a change in the data occurs.

#### **Methods**

The QI Scorecard is developed and refined on a regular basis. At first, basic SPC's showed 12 months of data and were colour coded red, amber and green, to show 3 standard deviations from the mean. This introduced SPC charts slowly keeping the familiarity of RAG rating.

Over time the SPC charts have been refined and metrics reviewed. Metrics reflect areas of concern or that require improvement or monitoring. The charts now contain data over a much longer period of time and are no longer colour coded. The Scorecard has input from a variety of staff; identifying metrics, providing data and narrative. This brings together work from teams across the Trust. The Scorecard is publically available on the Trust's QI webpage and it is important that the charts can be interpreted by anyone. Teaching on run charts and SPC charts has been included in our QI training, open to all staff. This introduces SPC charts, special cause variation and to use the charts to view data in a more meaningful way.

#### **Outcome**

The number of metrics reported within the Quality Improvement Scorecard has consistently increased from 25 in the first version (May 2016) to 42 in the most recent version (March 2019). Prior to reporting for the 2018/19 financial year all metrics were reviewed and refined to ensure the scorecard remains relevant and to focus on five particular workstreams for improvement. Where possible metrics within the Quality Improvement Scorecard are reported using Statistical Process Control charts. This is not always possible with new metrics, where there is not enough data. However, on average 44% of the metrics are reported on SPC chart.

#### **Conclusion**

The QI Scorecard has been presented at the Trust's sub board assurance meeting every month for the more than 2 years. During this time it has gone through a transformation from a ten page word document, reporting metrics on basic charts, to a dynamic 20 page power point report, containing meaningful charts including many SPC charts. The scorecard is reviewed regularly to ensure metrics are meaningful and reflect improvements taking place and identifies areas for improvement. The scorecard has introduced a standardised method of presenting data and facilitated monitoring Quality Priorities more consistently.

Teaching multi-disciplinary staff to understand and use run charts and SPC charts leads to a better understanding of data across the Trust and can facilitate improvements to be achieved. With the importance of data interpretation to inform decisions it is key that more data is displayed this way and that more staff have an understanding of these charts.

## **To improve compliance with WHSCT venous thromboembolism risk assessment and prophylaxis to >95% within 6 months**

Call for Posters - Safety

Lorna Morrow, Maureen McKenna, Ronan O'Hare

South West Acute Hospital, Western Health and Social Care Trust, Northern Ireland

### **Background**

There are thousands of preventable deaths annually in the NHS from hospital-acquired venous thromboembolism (VTE). This project aims to ensure compliance with WHSCT QI VTE targets of >95% VTE risk assessments completed within 24 hours of a patient's admission and >95% appropriate VTE prophylaxis being prescribed within Critical Care South West Acute Hospital. VTE audits in January and February 2015 demonstrated 20% compliance with VTE risk assessment completion and 100% compliance with appropriate VTE prophylaxis prescribed. March 2015 the figures were 0% and 100% respectively. This is below the WHSCT target for VTE risk assessment, and above that for appropriate VTE prophylaxis, showing that patients were being treated appropriately.

### **Methods**

Aim:

To increase compliance with VTE risk assessment completion and appropriate prophylaxis being prescribed for patients to >95% within a 6 month period by August 2018 within Critical Care SWAH.

Key Drivers:

Patient safety, WHSCT patient safety QIP VTE target, NICE guidance, buy-in from entire anaesthetic team.

Methodologies:

- 2015 to 2017: HSC PIL (staff and patients), VTE risk assessment added to CIS (electronic prescribing system), VTE training materials emailed, education sessions.
- No VTE audit data collected from March 2015 until November 2016 when it became the pharmacist's responsibility to collate monthly.
- November 2016: enoxaparin standard order added to CIS.
- January 2017: 'forcing function' incorporated within CIS during a patient's admission for WHSCT VTE risk assessment.

### **Outcome**

- From January 2017 to present date compliance is 100% as this is a mandatory requirement of a patient's record within the CIS system. There is no VTE audit evidence, however a retrospective review of CIS data has shown this to be true.
- Medical staff cannot bypass the VTE risk assessment when completing a patient's admission.
- From February 2018 monthly VTE audit results collated to August 2018 show 100% compliance with VTE risk assessment within 24 hours of admission, and 100% compliance with appropriate VTE prophylaxis being prescribed for each patient.
- These results were achieved consistently each month during the audit.

### **Conclusion**

- November 2016 to February 2018: no VTE audit results collected from due to maternity leave and long term sickness within our team. Therefore no documented evidence on the WHSCT VTE dashboard showing our compliance had improved to 100%. This project was immediately resumed when staff returned to work.
- Good communication between team members is essential, as it was difficult to maintain 'buy-in' from anaesthetists- our consultant changes daily and they do not have any other doctor in the unit to help them complete all daily tasks.
- Disseminating information via email provided the most flexible method of communicating with all anaesthetic team members.
- As a result of poor compliance and the importance of this documentation, we felt that introducing a "forcing function" was the best approach to increase compliance to 100%.

## **THE IMPORTANCE OF PATIENT SAFETY CULTURE SURVEY: CASE OF PHUONG CHAU INTERNATIONAL HOSPITAL**

Call for Posters - Safety

Luan Nguyen Thanh (M.Sc)

University of Medicine and Pharmacy at Ho Chi Minh City, Vietnam

Dat Trinh Tien, Ho Nguyen Thi Ngoc

Phuong Chau International Hospital, Vietnam

### **Background**

Phuong Chau International Hospital is a general hospital located in the center of Mekong Delta. With over 15 specialties, our hospital offers a wide range of clinical services, especially in Obstetrics and Gynecology, Pediatrics and Neonatology. Currently, Phuong Chau is planning and preparing for getting the JCI accreditation in 2020.

Patient's safety has been being a central issue of Vietnam health sector in recent year, deriving from increasingly incidents and errors affecting patients with multiple levels, from not affected to severely influenced, even death. Therefore, ensuring patient's safety is the first target that the health facilities should perform in the medical examination and treatment. One of the solutions is to build a good culture where medical staff are aware that their work affects the patient's safety, where the health facility is built on a comprehensively safe health care system.

### **Methods**

A cross-sectional study was conducted on 160 medical staffs, including: physician, nurse, midwife and technician who meet the requirements. The survey used the HSOPSC questionnaire created by AHRQ in 2004 which was translated into Vietnamese; the translated version was used by HCMC Department of Health.

Descriptive statistics was reflected through frequency and percentage of quantitative variables related to information and evaluation; and average variance of standard qualitative variables related to patient safety points. The descriptive statistics collected opinions from medical staff on patient safety culture; used frequency by calculating percentage per question within each dimension; the general positive percentage of each dimension equalled the average positive percentage of questions within such dimension. The correlation and differences between general patient safety culture points with the characteristics was identified through relevant investigations.

### **Outcome**

The results showed the percentage of poor assessment about patient safety grade is the highest, which occupied at 52.6%, the next assessment is the medium grade (39.8%). Only 3.1% of total number of staffs assessed good grade.

Within dimensions surveyed, the administrator detected 2 elements affecting strongly to decrease point of patient safety culture were "Lack of Staffing" and "Adverse events easily occur when handoffs and transitions". These will be the matters need to be studied and found solutions.

According to the perspective and viewpoints of health care workers, HSOPSC is really a useful tool that helps managers identify the weak dimensions in the organization that affect the patient safety

### **Conclusion**

The survey helped hospital's administrator realize the considerable dimensions which had low point of safety culture. Nevertheless, it also helps to determine the influence of relevant variables on patient safety culture at hospital currently. These will be a precious opportunity for administrator to have the appropriate solutions in order to improve and enhance the patient safety culture.

## **For whom is the discharge letter- a cross-sectional survey among physicians in and outside the hospital**

Call for Posters - Safety

Magdalena Hoffmann, Lydia Jantscher, Gerald Sendlhofer  
University Hospital Graz, Austria, Medical University of Graz, Austria  
Christine Maria Schwarz, Gudrun Pregartner, Maximilian Weinrauch, Lars-Peter Kamolz, Gernot Brunner  
Medical University of Graz, Austria

### **Background**

To ensure a safe patient discharge from hospital to home or to another health care facility, the discharge letter represents one of the most important information instruments. This essential information should be delivered to the patient and to his or her relatives and general practitioner to ensure a continued supply of the patient on the day of discharge. Many studies showed, that numerous discharge letters are not transmitted to the patients on time, that the letter sometimes has a poor quality in content and often include medical jargon which the patient and their relatives cannot easily understand. Therefore, many risks for patient's safety exist. This study investigated the question for whom the discharge letter is and contributes to the promotion of health literacy.

### **Methods**

An online survey (Likert scale, 1= totally agree to 4= totally disagree) was conducted that involved medical doctors at a university hospital (group A) and medical doctors outside the hospital (group B). The survey was distributed in spring and summer 2018 over a period of 3 months. Analysis of the survey was performed in EvaSys (Electric Paper Evaluationssysteme GmbH, Germany, version 7.1) in a descriptive manner.

### **Outcome**

In total, 600 physicians participated.

#### **Group (A)**

The discharge letter is considered as a communication tool among physicians (97.9%) and patients (77.7%). Furthermore, there is a high level of agreement that understandable information leads to fewer arising questions of the patients (65.1%). Interestingly, there is a minor need for technical abbreviations (23%). In contrast, behavioural recommendations for the patient would be very important (95.4%). The discharge letter should be improved from the point of view of respondents (80.1%).

#### **Group (B)**

The discharge letter is considered as a communication tool among physicians (97.6%) and patients (73.1%). Furthermore, there is a high level of agreement that understandable information leads to fewer questions of the patients (75.6%). There is a minor need for technical abbreviations (25%). Also, behavioural recommendations would be very important (92.8%). The discharge letter should be improved from the point of view of respondents (80.1%).

### **Conclusion**

Based on these results, a new project on patient-friendly discharge letters will be developed with the support of the 'Gesundheitsfonds Steiermark'. The survey will be extended to the federal state of Styria. Based on the literature and on the results of this survey, patient-friendly discharge letters will be prepared and tested in a clinical trial.

## **Improving Safety & Quality in different Operative Units: the “Villa Serena’s Model”**

Call for Posters - Safety

Manuela Nocciolini, Massimo Marinelli  
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### **Background**

“Villa Serena” is an Italian hospital that has developed a standardized and repeatable model to constantly and continuously increase the overall level of quality of care and safety of patients.

The problem that we aimed to improve with this work was the absence of a standardized model of quality implementation, which was reproducible over time and in different contexts characterized by both levels of non-homogeneous safety culture and behavioural differences on issues of quality and safety of care. We assessed the problem with interviews with Health Professionals and direct observation. The absence of a standardized model entail:

- difficulty in defining projects and strategies to improve quality across different Operative Units (OU);
- difficulty in evaluating the overall effectiveness of safety interventions within the structure.

This difficulty was an obstacle to the strong commitment by the Management in improving continuously and constantly the quality of the structure.

### **Methods**

The Model consists of 3 steps:

1 Training of the OUs staff on Clinical Risk and Safety of Care through the organization of, at least, 8 training courses per year.

2 Creation of a Structured System of Clinical Audits for each Unit by the Quality Team and identification of an Audit Responsible.

Each Unit must carry out, at least, 2 Audits per year about:

- 2 medical complications,
- 2 clinical risk topics,
- the 2 most frequent pathologies
- the quality of the medical record.

The Audit Responsible constitutes the Auditor group, selects the evaluation indicators of Audits and evaluates them;

3 Implementation of improvement actions.

The innovation of this model is the proactive role of Health Professionals. They are not controlled by Quality Team and they define the quality standard and the safety objectives to achieve. The Quality Team and the Management supports the Audit Responsible with training and tools. There is a substantial inversion of the roles compared to the standard.

### **Outcome**

The Model is characterized by a global, constant and concrete increase in quality and safety of care. In order to measure the effectiveness of the model, we decided to evaluate annually, for three years, the total number of the Hospital indicators and the total percentage of satisfaction of them. The result from the survey is as follows: the number of indicators is 1210 in 2016, 2005 in 2017 and 2122 in 2018; the percentage of satisfaction is 87% in 2016, 89% in 2017 and 92% in 2018. As the number of indicators increases, also the percentage of satisfaction raises. This is a sign of the increasing level of quality.

The Management has not identified a deadline in the application of the model. Moreover, after observing the performances of the Model, the Management decided to review the indicators every three years and, eventually, to replace those that are considered satisfied.

### **Conclusion**

The impact of the “Villa Serena’s model” has been remarkable throughout the whole hospital. Despite the different starting level of the Units, 3 years after the application of the model, the global percentages are decidedly satisfactory. This shows that whatever the level of culture of quality and safety of care of a Unit is, it will be possible to create and implement a System in which Health Professionals:

- are the main actors



- promote improvement actions.

This will allow patients to receive a level and quality of care always high and aimed at the continuous improvement.

The quality and safety of care management within an Hospital is not static, fixed and easily definable. This work shows that it is possible to:

- standardize a repeatable model
- define it by step.

The first results show that the Model is effective.

The steps of the "Villa Serena's model" seem to be a solid basis for the construction of new systems for quality and safety of care.

## **Management and Prevention of suicidal behavior at Bambino Gesù Children's Hospital**

Call for Posters - Safety

Marcello De Santis, Davide Della Lena, Francesco Paolucci, Sabrina Egman

Bambino Gesù Children's Hospital, Nursing Quality and Clinical Risk Management – Rome, Italy

Natalia Bianchi

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Bambino Gesù Children's Hospital, Medical Direction – Rome, Italy

### **Background**

Self-directed violence is relatively frequent in Child and Adolescent Neuropsychiatry wards. People with mental illness admitted to a psychiatric care setting have a higher suicide risk than the general population. Approximately 5-9% of total completed suicides occur during acute hospitalization to an inpatient mental health ward, especially in the first week of hospitalization.

In Lazio Region there are no specific centers to assist neuropsychiatric pediatric patients. Bambino Gesù Children's Hospital (OPBG) had a pediatric neuropsychiatric unit with 8 beds and 284 admissions in 2017. In 2014 there were two cases of attempted suicide in the Neuropsychiatry Unit (NU) for which root cause analysis was conducted; therefore, suicide prevention was included as a priority area in OPBG program of continuous improvement of the quality of assistance in 2016.

The aim of this experience is to describe the actions undertaken to prevent suicide in neuropsychiatric patients admitted to OPBG.

### **Methods**

In April 2016, a multidisciplinary group developed a protocol aimed to intercept and prevent the risk of suicide in patients admitted to OPBG. The Columbia Suicide Severity Rating Scale (C-SSRS) was used to screen patients with one of the following conditions (current suicidal ideation, actual or history of suicide attempt, actual or history of self-injurious behaviors, depressed mental state, aggressiveness) at the admission or during hospitalization.

Patients were categorized as low risk (score = 0), medium risk (score 1-3) or high risk (score 4-6).

Patients were re-evaluated with the C-SSRS after 72 hours from admission and 48 hours before the discharge (low risk) or at each change of medical shift (medium risk). High-risk patients were guarded 1:1 by a Healthcare Assistant. Protocol implementation was monitored analyzing clinical documentation and adverse events reports. Moreover, in 2017, the NU was restructured following international guidelines on suicide risk prevention.

### **Outcome**

Between April 2016 and September 2018, 488 patients were hospitalized with a positive screening score for suicide attempt. Eighty-one (n=81) patient had a score equal to 0; 106 patients had a score between 1 and 3 and 301 patients had a score between 4 and 6.

There were no episodes of suicide attempt within the OPBG during the same period.

### **Conclusion**

Our results showed that a multidisciplinary approach was useful to identify actions to contain suicide risk. In this specific case, the improvement actions identified and undertaken by the OPBG had a positive impact on the prevention of suicidal behaviors.

# **Resuscitation and Escalation Decisions at the Acute Care Unit in Cheltenham General Hospital**

Call for Posters - Safety

Maria Monica Haydock, Stephan Birkner  
Gloucestershire Hospitals NHS Foundation Trust, England

## **Background**

The project was carried out at the Acute Care Unit of Cheltenham General Hospital in England, UK, which is part of the Gloucestershire Hospital NHS Foundation Trust. This unit assesses patients with acute medical problems coming either from the Emergency department or through GP referrals.

There has been an increase in arrest calls wherein cardiopulmonary resuscitation (CPR) was performed within the trust, the highest of which was in 2004 (n=244) and 2016 (n=223). The Unwell/Deteriorating Patient (UP) form was created to determine which patients admitted in the trust are well enough to receive CPR.

The overall aim of the project was to contribute to the reduction of inappropriate CPR given to patients who undergo cardiorespiratory arrest by following the 2012 National Confidential enquiry into Patient Outcome and Death (NCEPOD) report recommendation that a treatment escalation and resuscitation plan must be completed within 12 hours of medical admission.

## **Methods**

The intervention involved 3 teaching sessions for the junior doctors in ACU. Acute medicine consultants were also in attendance. These were delivered during the ACU Wednesday lunchtime teaching, morning handover, and at the F1/F2 ACU induction. A powerpoint presentation was delivered during these teaching sessions - focusing on the 're-introduction' of the UP form and highlighting the results of the previous and current projects.

The intervention was carried out in a period of 2 months and data was collected again to measure the improvement. Results were also compared to two previous cycles.

Effects of the intervention were measured using a proforma - focusing on whether a plan has been established, the timeframe of the decision making, what level of escalation has been established, who made the decision, whether the UP form was fully completed, whether a discussion was made with the patient or the next of kin, and whether documentation was completed if a plan was not established.

## **Outcome**

After local teaching interventions, there was a 6.5% increase in the establishment of resuscitation and escalation plans during the admission process. The establishment of these plans were completed within 12 hours of admission. Over 50% of decisions were made by junior doctors followed by a review by the consultant during the post-take ward round.

However, there was a decline in discussions made with patients and their next of kin regarding resuscitation and escalation decisions made by the medical team perhaps due to time of admissions (i.e. out-of-hours), availability of next of kin, availability of appropriate time and space for informed and meaningful discussions. In patients without an established plan, there was a failure in documentation of reasons why plans were not discussed with the patients or their next of kin.

## **Conclusion**

An intervention as simple as teaching can improve outcomes - in this case, an increase in the establishment of resuscitation and escalation plans at the Acute Care Unit.

However, implementation of changes is challenging as there is a rapid turnover of the admitting (on-call) medical team. Although teaching was delivered to permanent ACU staff, changes should have also been communicated to staff from other medical specialties who rotate in ACU for medical admission shifts.

It may also be that discussion of treatment escalation and resuscitation plans is inappropriate during the admission process and may have to be discussed after the recommended 12-hour period.

It would be useful to gain an insight of the barriers to meeting this standard. This can be facilitated by creating a survey and disseminating it to doctors involved in the medical take (i.e. consultants and junior doctors).

## **Medication-Related Litigation in Ireland: A Six Year Review**

Call for Posters - Safety

Mark McCullagh

State Claims Agency, Ireland

Dubhfeasa Slattery

State Claims Agency, Ireland (December 2014 – June 2017)

### **Background**

The State Claims Agency (SCA) provides indemnity cover for publicly funded healthcare organisations in Ireland and manages clinical negligence claims taken against these organisations and their staff. The SCA hosts the National Incident Management System (NIMS), a web based incident and claims management solution.

The aims of this study were to identify those medications most frequently associated with clinical litigation in Ireland and to quantify the cost of such litigation. Secondary aims were to identify where in the medication-use process claims are most likely to arise, the medication incident types involved and the primary injury alleged.

### **Methods**

A report was generated on NIMS where the Sub Hazard type was 'medication' and the claim finalised date was between 1st January 2011 and 31st December 2016 (inclusive). Relevant data, including file numbers, were extracted from NIMS. The physical case files associated with the claims were obtained and underwent detailed manual analysis. Additional data, not available on NIMS, was extracted from the case files to build a detailed picture of the circumstances surrounding the incident and subsequent claim.

### **Outcome**

The search identified 79 relevant claims of which 48 closed with a payment to the plaintiff. The results are based on these 48 claims which involved a total of 54 medications.

The most common medication groups identified were general anaesthetics (n=7), opioids (n=6), penicillins, antithrombotics and local anaesthetics (all n=5). The errors which led to the claims occurred exclusively at the administration (58%) and prescribing (42%) stages of the medication-use process. The medication incident type most frequently encountered was wrong dose / strength (n=17), followed by wrong drug (n=7), adverse drug reaction (n=6), drug contraindicated (n=6) and omitted / delayed dose (n=4).

The most commonly pleaded primary injuries included allergic reaction including anaphylaxis (n=9), deterioration (n=9), post-traumatic stress disorder (n=8), anxiety / trauma (n=5) and 'other' (n=4). The average total cost of these claims was €151,916, including average damages of €81,395.

### **Conclusion**

This study links, for the first time in an Irish context, data on medication incidents, actual harm to patients and litigation costs. Thus it presents a comprehensive picture of the consequences of medication error. The findings should assist healthcare organisations in Ireland and beyond to target error prevention strategies at specific medication groups and the more vulnerable stages of the medication-use process, potentially improving patient safety whilst reducing litigation associated costs.

## **LEADERSHIP AND TEAM EFFECTIVENESS IN AVIATION, NUCLEAR INDUSTRY AND HEALTHCARE : PRACTICAL LESSONS TO ENHANCE SAFETY**

Call for Posters - Safety

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Zanovello, Gianluigi

AVIATION CAPTAIN PILOT, CRM and NTS SAFETY LEADER, COACH, ITALY

Chiarelli, Riccardo

NUCLEAR ENGINEER GLOBAL SAFETY LEADER, LEADERSHIP and SAFETY CULTURE COACH, UK

### **Background**

Aviation, the nuclear industry and healthcare seem very different. But all are high risk industries that require excellence in leadership and team effectiveness to achieve the maximum level of safety.

What makes airplanes the safest transportation mean? What makes nuclear power plants one of the safest and most reliable source of energy? What the healthcare industry can learn and apply from them? How Crew Resource Management (CRM) and Non Technical Skills (NTS) can make the real difference?

### **Methods**

1. Learn practical tools to reduce human errors achieving high human performance to enhance safety
2. Understand the relation between safety culture, leadership and team effectiveness (human factors, non technical skills, crew resource management)
3. Enhance safety performance in their daily job by practising the tools learned during the session

### **Outcome**

The “WHO Patients for Patient Safety Program” aims to incorporate the patient, family and community voice into all levels of health care through engagement and empowerment , advocating and facilitating:

- Patients taking ownership of their care;
- Bringing the voices of patients and people to the forefront of healthcare;
- Patient, family and community partnerships with health professionals (health-care providers, policy-makers, researchers);

### **Conclusion**

Therefore, we will design our presentation with the objective to build a healthy safety culture and an effective learning system for safety and quality improvement together with patient, families, caregivers. This objective has been achieved in aviation and the nuclear industry through CRM (Company Resource Management) or Safety Management System (SMS) by building a Culture of Safety requiring transparency, visibility and control: the visibility of safety data from all areas, and the control to take action on safety events with the objective to prevent recurrence.

## **The adoption of a French experimental Root Cause Analysis (RCA) protocol dedicated to Surgical Site Infections: preliminary results from an Italian hospital**

Call for Posters - Safety

Moretti Francesca, Capasso Mario, Tardivo Stefano

University of Verona, Italy

Quérroué Marine

University of Bordeaux, France

Venier Anne-Gaelle, Parneix Pierre

CPIAS Nouvelle-Aquitaine, CHU Bordeaux, France

### **Background**

The study was conducted by the Risk Management Unit of the Hospital University Trust of Verona (1,384 hospital beds, 47.000 admissions/year) to test an experimental Root Cause Analysis (RCA) protocol (based on Orion® methodology) on a case of orthopaedic Surgical Site Infection (SSI). This protocol was developed by a French regional Healthcare Associated Infections (HAIs) control center (CPIAS Nouvelle-Aquitaine of Bordeaux) by adapting the Orion methodology to the analysis of HAIs. It aims to identify, through a systemic retrospective approach, proximal and latent failures leading to HAIs and define corrective actions.

### **Methods**

The RCA (Orion® method) implemented in this study entails a specific standardized electronic sheet providing a list of proximal failures (94 items, 13 subgroups) and latent failures (89 items, 7 main categories) potentially associated with SSI. The analysis aims to identifying both preventive actions (before the onset of SSI) and attenuation actions (after the onset of SSI). The impact of each identified latent failure is established by assigning a specific score that help prioritize corrective actions. The process includes the development of a monitoring report.

The analysed case refers to an obese (BMI=31), 79-old patient who undergone a total knee replacement. To perform the analysis a multidisciplinary team representing all relevant involved disciplines was organized and all clinical documentation and related available procedures were collected by the team leader.

### **Outcome**

The analysis focused both on pre-operative stage (inadequate patient shower) and intra-operative stage (several risks factors and comorbidity such as Parkinson Disease and obesity that led to an ASA score of 3 and a longer duration of surgery). No deviations from standards related to antibiotic prophylaxis, asepsis during surgery and post-operative management were identified. The attenuation phase identified no infection management gaps. Results evidenced a sub-optimal preoperative body washing of patients with functional impairments and an unsatisfactory risk infection assessment. The procedure related to the preoperative body washing was updated with a specific paragraph dedicated to patients with functional impairments. Data collection for risk infection assessment was modified accordingly. All changes were shared with the staff during a dedicated meeting.

### **Conclusion**

The instrument has shown the advantages of using a standardized risk management approach to the SSI area. The experimental stage will be followed by the routine implementation of the instrument by developing and adopting a specific procedure for the analysis of orthopaedic SSI cases through the RCA (Orion method). The protocol will be progressively extended to the whole surgery setting. A multicentric Italian project may lead to an extensive validation of the instrument, overcoming actual regional differences in implementation of SSI preventive standards and promoting diffuse learning on this critical patient safety issue.

## **Factors contributing to patient safety culture in Saudi Arabia: A systematic review**

Call for Posters - Safety

Mr Abdulmajeed Al Balawi

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Dr Lisa Kidd

Reader in Supported Self-Management (Nursing) University of Glasgow, Scotland

Dr Eileen Cowey

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### **Background**

Patient safety, concerned with the prevention of harm to patients, has become a fundamental component of the global healthcare system. The evidence regarding the status of the patient safety culture in Arab countries in general shows that it is at a sub-optimal level due to a punitive approach to errors and deficits in the openness of communications. Although Saudi Arabia was included, it was not a specific focus of the paper and there is a diversity in the healthcare systems between Arab countries. Moreover, there is a lack of evidence regarding the associated factors that contribute to patient safety culture, and those that could increase the prevalence of medical errors. Therefore, it is crucial to identify the factors contributing to the patient safety culture in Saudi Arabia. The aim of this systematic review was to explore the factors contributing to the patient safety culture in Saudi Arabia.

### **Methods**

A systematic search was carried out in May 2018 using five electronic databases – using Medical Subject Headings (MeSH) and keywords. The grey literature was searched and a manual screening of the reference lists of the included studies was conducted. We included studies conducted in Saudi Arabia that were concerned with the measurement or assessment of factors influencing or contributing to patient safety culture in the healthcare sectors. Studies were included if they were conducted in a hospital setting or in primary healthcare, if the participants were healthcare professionals, patients or family members, and they were published in the English language. Two independent reviewers verified that the studies met the inclusion criteria, assessed the quality of studies and extracted their relevant characteristics. The Yorkshire Contributory Factors Framework (YCFF) was used to code and categorise the contributory factors.

### **Outcome**

Initial searches identified an overall number of 423 records. After screening by titles and abstracts, 21 full texts were evaluated and a final 14 papers were selected for inclusion. The factors identified in this review were categorised based in the YCFF domains, including situational factors, local working conditions, latent organisational factors and general factors. The findings of this review show that ineffective leadership, a blame culture, workload/ inadequate staffing and poor communication are the main factors that most substantially hinder a positive patient safety culture in Saudi Arabia. On the other hand, 'strength' factors contributing to the patient safety culture identified in this review included supportive culture of the organisational learning/continuous improvement, good teamwork within units and support from hospital management for patient safety.

### **Conclusion**

This review identified several key factors that contribute to patient safety culture in Saudi Arabia where these can be categorised into strength and weakness factors. The review highlighted that only healthcare professionals' perspectives have been included in surveys of patient safety culture in Saudi Arabia to date. Thereby, patient perspectives and feedback are required, as these are considered globally an integral part of the hospital's quality improvement process. Policy makers in the Saudi healthcare system should pay attention to the factors that may help to support the implementation of a positive patient safety culture, especially establishing a blame-free culture, improving communications and leadership capacity, learning from errors and involving patient perspectives in safety initiatives. This review shows that further research is required to understand in depth the barriers and facilitators to the implementation of a positive patient safety culture in Saudi Arabia.

## **Reinforcing Improvement Activities for Sustainability of Chemotherapeutic Medication Preparation Nursing Compliance**

Call for Posters - Safety

Nahla Badr  
ASUSH, Egypt

### **Background**

This study conducted at ASUSH Egypt, as an accreditation preparation takes place based on the Egyptian Ministry of Health (MOH) directions and Ministry of Planning recommendations. Improvement of nursing staff compliance with chemotherapy medication preparation practice was of priority among improvement projects as it targets high risk patients and different critical aspects in patient safety, infection prevention and control, handling of hazardous materials, and targeting one of the International Patient Safety Goal (IPSG.5) which is Hand Hygiene; in order to improve preparation process by 60% within 6-month period. Reinforcement through close monitoring and giving feedback to the multidisciplinary team to edit further improvements.

### **Methods**

We used qualitative method through observation of compliance of laminar flow nursing staff preparing chemo-therapeutics based on a checklist developed on 6 main dimensions (antiseptic hand-wash, wearing personal protective equipment, medication arrangement to enter laminar flow, medication preparation, labeling admixed preparation, and preparation storage) with flexibility to the preparation situations. A multidisciplinary team was formed from (Laminar Flow Nursing, Infection control, and Quality Department), that observed and modified the process in a way to minimize any in-compliance through FMEA, and using feedback mechanisms during and at the end of each PDSA cycle. This kind of low variation processes need robust improvement, punctually set communication plan allowing effective feedback mechanism through using front-line staff as team members. Monitoring process through percentage compliance to modify training material and target the in-compliance cause through creative solutions.

### **Outcome**

Improving overall compliance rate by 61%, as a product of improvement by (40% of antiseptic handwash, 67% PPE wearing, 86% medication entering laminar flow, 30% chemotherapeutic parenteral admixture, 100% Compliance with Labelling the Admixed Solution).

### **Conclusion**

Close monitoring allow improvement to be impeded in the project especially if the low variation processes that needs robust improvement. Fragmenting compliance into main domains allows the process to be more controlled and allows giving feedback to the process modification owner to take actions for further improvement.



## **How do frontline staff report, discuss and learn from incidents? The case of two hospitals in Japan**

Call for Posters - Safety

Naonori Kodate  
University College Dublin, Ireland  
Akiyo Yumoto  
Chiba University, Japan  
Yoshiko Sugiyama  
Paramount Bed Co. Ltd., Japan  
Nana Kawakami  
Chiba University, Japan  
Kenichiro Taneda, National Institute of Public Health, Japan

### **Background**

Incident reporting systems are now well established in many countries as an integral means to avoid preventable adverse events and improve the quality of health care. Japan is no exception, with its reporting systems established at national and local levels. Nationally, the Council of Quality Health manages the Web-based reporting system and collects approximately 3,000 adverse events and 30,000 cases in total annually. The Council conducts the analysis and disseminates monthly alerts.

While the number of reported incidents and near-misses increased, hospital staff and the regulator do not know how effectively lessons are communicated and learnt. In particular, little is known about how hospital staff discuss incidents, decide on solutions and then communicate and coordinate their actions with other teams and units within the organisation. Additionally, little information is available about the role of incident data in increasing patient safety.

The 3-year study is focused on how organisations, teams and individual frontline staff currently learn from incident data and engage with their reporting system. This study has been conducted in two Japanese hospitals by a group of patient safety researchers, working closely with the hospitals' safety managers.

### **Methods**

The two hospitals are located in Greater Tokyo. One of the hospitals is a privately-run, JCI-accredited acute care hospital with approx. 500 beds, while the other hospital is a publicly-run, mental health hospital with 200 beds. We secured support from Medical Directors and Chief Safety Managers (qualified nurses) in the hospitals concerned. Working closely with the Safety Managers on both sites, we identified senior staff with key roles in patient safety, and frontline staff with no specific safety-related duties. In total, we conducted 61 interviews and observed 46 incident review meetings between January and December 2017.

One of the researchers previously conducted a study in UK hospitals, based on which indicators of analytic process effectiveness were devised (Anderson & Kodate, 2015). The same indicators were applied to the incident review meetings in this current study, and the research team sought to understand how practitioners utilise incident data to improve safety and quality in their organisations. A final report with findings and recommendations will be prepared and provided to the participating hospitals later in the year.

### **Outcome**

Preliminary findings suggest that the majority of the participants feel confident that incident reporting systems are contributing to safer care in their hospitals. While incident reporting is rather positively perceived as a source of learning, the safety managers are faced with the constant challenge of responding to reports. Although the receipt of more reports is generally welcomed as a sign of a blame-free culture, a hospital has no systematic way of knowing whether it has become safer as a result. One cause of this conundrum may be that hospitals and staff members are not adequately supported and equipped to analyse and communicate the incident data.

Observations from incident review meetings suggest that these meetings function more as a forum for information exchange, rather than for analysis of causes or discussions regarding actions and safety measures. Frontline staff may not feel well-informed of the results of incidents, or actions that were

taken afterwards. One of the recommendations will be a further exploration of feedback mechanisms for frontline staff.

### **Conclusion**

Overall, the great engagement in this project from both hospitals, and the staff's positive attitude towards incident reporting reflect a willingness to improve learning. While the limitations of learning from incident reporting systems have been highlighted by recent studies, there is great scope for improvements, and listening to frontline staff's views would be beneficial. As for the involvement of patients, the study identified various channels within the two hospitals where their voices can be reflected in safety management. Furthermore, the study indicates that the systems approach has not yet been fully embraced in the participating hospitals. Although this is a qualitative, non-intervention study, and effects of change were not measured, it is hoped that the results illuminating both strengths and weaknesses in the present incident reporting systems will lead to discussions among both senior and frontline staff. This research is funded by the Japan Society for the Promotion of Science (KAKENHI 10101-11-2201-A-0001), and there is no conflict of interest.

## **Improving teamwork for patient safety : the experience of a French maternity ward**

Call for Posters - Safety

Paille C, Esbelin J, Kerforn C, Sionneau L, Lannes M  
Nantes University Hospital - France  
Abbey H  
QualiREL Santé - France

### **Background**

This work was conducted in the birth room of Nantes University Hospital (France) since 2016, as part of a pilot project launched by the French Authority of Health (HAS) (Programme for the Continuous Improvement of Teamwork (PACTE)).

In our hospital, the birth room involves several departments (gynaecology/obstetrics, operating room, anaesthesia) and a large size and multi-professional team (midwives, obstetricians, nursing assistants for the obstetrics part; anaesthetists; operating room nurses and nurses' assistants). The safety and quality management is well-established. However the frequent management of emergency situations increases the risk of failure in communication between professionals.

The aim was to improve interprofessional coordination and teamwork in order to optimize the time required to perform unscheduled caesarean sections during labour delivery.

### **Methods**

The project was conducted following the PACTE methodology, by a project group (obstetrician in charge of the unit, midwife and nurse managers, medical facilitators).

During the first step (1st sem. of 2016), an initial assessment of the time required to perform unscheduled C-sections was carried out as well as two surveys among the professionals involved (Patient safety culture & Job satisfaction) and 2 CRM sessions to analyse communication practices. Then 3 improvement topics were selected: redefining the colour codes of C-sections depending on the emergency's level, improving both interprofessional communication on a daily basis & coordination when performing emergency C-sections.

During the 2nd step (Sept.2016-June 2017), a multi-professional working group was composed for each axis, in order to develop improvement plans. The unscheduled C-section management process was also analysed, so as to redefine, for each step, the tasks and communication between professionals.

### **Outcome**

The tools were implemented from Sept. 2017 to Feb. 2018.

Each professional was given a leaflet about accurate communication at each step of unscheduled C-section. Several others improvement actions were implemented (new care procedures, color professional badges, communication board, warning magnets...).

According to the PACTE methodology, the assessment phase began in April 2018. The re-evaluation of the time required to perform unscheduled C-sections showed a real improvement in time compliance for red C-sections (increase from 40% to 90%). The improvement in team functioning and teamwork is already perceived by the professionals, as shown by the first results of the surveys conducted among professionals at the end of 2018 (Patient safety culture & Satisfaction).

These progress need to be confirmed on further evaluations, including the follow-up of maternal and neonatal morbidity. Patient experience will be taken into account through the applied tracer methodology.

### **Conclusion**

Most professionals recognize the interest of the project and its usefulness for improving patient safety and care quality.

In our opinion, the implementation of CRM sessions constitutes the main step of the project, enabling professionals to become aware of teamwork and their own practices and skills. To be useful, these sessions should involve all of them from the beginning of the project. Their lack of availability is a real critical point throughout the project.

By now, the major challenge remains to sustain this collective improvement dynamic despite the high turnover of the team involved in the project. The acculturation of all professionals must be continued through CRM sessions and in-situ (on-site) simulation sessions integrating non-technical skills.

# **Improving the efficiency and safety of chemotherapy by introduction of an electronic patient record and prescribing system, using QI methodology.**

Call for Posters - Safety

Paula Scullin, Olivia Devlin, Anne Lyttle, Caroline Forde  
Belfast Trust, Northern Ireland

## **Background**

Improving the quality, safety and efficiency of chemotherapy prescribing was prioritised by the adult oncology service in the Northern Ireland Cancer Centre (NICC) Belfast Health and Social Care Trust (BHSCT). This resulted from review of adverse incidents, M&M cases and patient feedback regarding long periods spent waiting for outpatient chemotherapy. The Manual for Cancer Services: Chemotherapy Measures (MCS) provides clear guidance on the essential criteria that should be assessed and documented for patients during chemotherapy.

At the beginning of this project prescribers were hand writing a free text entry into the medical chart and then electronically generating a chemotherapy prescription which had to be printed, signed and delivered to pharmacy, either using a pneumatic Shute or physically by hand. A baseline data review in December 2015 highlighted that the written records of chemotherapy assessment were suboptimal with a median completion rate of 63%.

## **Methods**

This project aimed to ensure prescribers' clinical assessments documented at least 95% of the key parameters outlined in MCS guidance. The project also aimed to improve the efficiency of chemotherapy delivery through introduction of an electronic prescribing system.

A multi-professional quality improvement team was established for project delivery. Each phase of the project incorporated small tests of change and Plan-Do-Study-Act cycles to produce the optimum version of the chemotherapy assessment questionnaire and electronic prescribing system. These were initially refined through a small number of Belfast Trust clinics before being introduced throughout all Oncology clinics. Phase one focused on the introduction of a paper proforma into medical notes, replacing 'freehand' annotations (12/2015–08/2016).

Phase two and three of the project (05/2017–12/2017) focused on introducing electronic proformas as part of a new electronic patient record (EPR) and prescribing system (ARIA MO).

## **Outcome**

From 10/2017 proforma use and documentation completeness was assessed, by weekly sampling of patients from the Belfast Trust (BHSCT) and the Southern Trust (SHSCT). 100% of assessments 10-12/2017 in both Trusts were documented using the electronic proforma. Quality of assessments improved in BHSCT from 62% complete (12/2015) to >95% with the paper proforma (07/2016) and then consistently 100% with the electronic proforma (10/2017). In SHSCT, assessments improved from 70% complete (05/2017) to consistently 100% (from 10/2017). Crucially performance status documentation improved from 88% (BHSCT) and 70% (SHSCT) to 100% at both sites using the electronic version.

Two groups of chemotherapy patients were also reviewed in the BHSCT (5/2017–9/2018) looking at the median time from prescribing their treatment electronically until it was logged by Pharmacy compared with the old approach. This improved from 19 to 15 minutes for Paclitaxel and from 35 to 17 minutes for Cisplatin per patient.

## **Conclusion**

Staff have viewed this project positively; with 94% agreeing the proformas promote safety and 91% reporting electronic assessments reduce pharmacy queries, reporting more efficient dispensing and positive effects on time to and capacity for chemotherapy delivery and patient satisfaction. This was a lengthy project which required ongoing enthusiasm from the core team, especially during periods of resistance from other staff to implement the project. This involved a change in practise and a move away from a culture of written prescriptions and paper documentation. Continued staff education sessions and ongoing feedback allowed this project to be implemented successfully.

Work continues to improve the usability of the proformas and make further reductions in the time from prescription to patient administration. Ultimately, this project continues to strive to ensure our patients consistently have high quality, appropriate and safe chemotherapy treatment delivered with minimal delay.

## **Improving early diagnosis of meningitis and meningococcal disease**

Call for Posters - Safety

Perle Darsø, Helle Søgaard Frappart, Nichlas Lindegaard Hovmand, Thomas Lars Benfield, Jacob Anhøj  
Capital Region of Denmark

### **Background**

AIM: Reducing death due to meningitis and meningococcal disease by avoiding delayed diagnosis.

BACKGROUND: Within a year from 2016 to 2017 three young men tragically died from meningococcal disease in the Capital Region of Denmark. Their early symptoms were misinterpreted. Their deaths highlighted issues of late diagnosis and made us question whether we could improve our handling of patients with meningococcal disease and meningitis due to other bacteria.

The Capital Region of Denmark services 1.8 million people. It consists of seven hospitals and an emergency medical service including an out-of-hours medical helpline. It has 39,000 employees.

### **Methods**

We used an aggregated root cause analysis to identify system issues and subsequently to establish action plans aiming towards improvement. Knowledge for the analysis was gathered from incident reports, experience of patients and family and expert knowledge. The analysis identified 7 problem areas:

1. Inadequate involvement of patients and family members
2. Barriers and challenges with test sampling
3. Inadequate knowledge of signs and symptoms
4. Fixation and insufficient team work
5. Early discharge of patients with unconfirmed diagnosis
6. Inadequate safety netting for discharged patients
7. Not including vaccination against meningococcal disease in the national vaccination program

The intervention was designed to address and improve the identified problem areas. Eleven action plans were established in September 2017. The objective was to avoid delayed diagnosis of meningitis and meningococcal disease and shorten time to administration of antimicrobials.

### **Outcome**

We have developed an indicator that measures door-to-needle time (antimicrobials). The time is determined by auditing all cases of meningitis and meningococcal disease.

During the period from January 2016 until January 2019 there were 190 cases of meningitis and meningococcal disease. 2016 was defined as baseline. In 2016 the mean time to antibiotics was 10.1 hours and the median was 3.5 hours, with considerable range in the antibiotic time between individual patients (0-77 hours).

The results show a significant decrease and stabilization in door-to-needle time in the period May 2017 to February 2018 compared with 2016. In this period the mean time to antibiotics was 2.2 hours and the median was 1.0 hour. This is prior to the action plans being implemented and may be due to the massive attention the cases received in the health community and in the media. In February 2018 door-to-needle time returned to baseline levels.

### **Conclusion**

The implementation of the 11 action plans began in 2018 and will continue throughout 2019 and 2020. We will keep monitoring the top-level indicator as implementation of the actions progresses.

WHAT HAVE WE LEARNED?

- Complex problems require interventions that work on many levels and involve many people. Change may take time.
- Working with aggregated data helps focus on system issues.
- Leadership support is vital.
- Involvement of clinical experts is essential.
- Involving family members can be difficult, but it is meaningful and valuable.
- It is powerful when you create a sense of shared mission. This is more likely to happen when patients, leadership, patient safety officers and clinicians co-create solutions.

## **A radical paradigm shift is needed to improve patient safety**

Call for Posters - Safety

Peter Spurgeon, Steven Cross, Rose Jarvis  
United Kingdom

### **Background**

This work was done by a team based at the Academy of Medical Royal Colleges funded by Health Education England. The aim was to develop an overarching patient safety educational syllabus for all NHS staff. Initial research suggested that no single competence-based framework provided the training content that could be applied at a range of levels and meet the fundamental requirement of radically changing the current reactive approach to patient safety.

### **Methods**

The work builds on previous work in the NHS on patient safety, academic courses in patient safety, the national programme Safer Clinical Systems, and direct experience in managing safety in NHS trusts. The development of the syllabus was guided by an expert advisory group including representatives from academia, the General Medical Council, medical royal colleges, NHS Improvement, and NHS England, including consultation with devolved nations.

Unlike existing curricula, this is the first syllabus in patient safety that includes methods for the proactive management of risk to patients. It moves safety from reactive systems, where we are continually looking backwards at harm, to proactive systems to prevent harm occurring in the first place.

### **Outcome**

The syllabus is designed to be a proactive, systems-based approach to safety that seeks to prevent harm before it occurs. Four key themes underpin the syllabus: human factors, systems expertise, risk expertise and safe culture.

It provides content and navigation to support all patient safety activities including incident investigation, creating a safety culture, using a comprehensive human factors approach, proactive management of risk, and managing human error. The central focus is on how to create safe clinical systems. The syllabus includes capabilities that clinicians can develop and apply at all levels of their work.

### **Conclusion**

It is time to think differently about patient safety if we are to change the persistent levels of harm inflicted on patients. The syllabus will be relevant to patient safety education at all levels and in all professions. Consultations are underway with NHS Improvement to include the syllabus within the infrastructure of the Long-term patient safety strategy being launched in early 2019.



## **Functional Resonance Analysis Method; Safety II in practice.**

Call for Posters - Safety

R.Ruit, MsC, M.Vervoort, MsC, Dr. R. So, MD

Dept. of Quality, Safety & Innovation Albert Schweitzer hospital

Dr. R. Smit

Hospital Pharmacist Albert Schweitzer hospital

### **Background**

The Albert Schweitzer Hospital (ASH) is a large 550-beds teaching hospital, with 2 clinical locations, 1 outpatient location and 3500 employees, located in Dordrecht, the Netherlands. Our care is mostly high complex. Our outcome depends on many uncertain factors, including the human factor. Patient safety is one of the important strategic themes in our hospital. We want to move forward to Safety II (in addition to Safety I): a new and refreshing vision on safety. The challenge for safety improvement is to understand the human adjustments, beginning by understanding how performance usually goes right. We have to change our way of thinking from 'human factor as a risk' to 'human factor as an important value'. We have to learn from things that went wrong as from things that went well. How do you make such a transition?

### **Methods**

Our strategy starts with the ambition that we want to move from ensuring that 'as few things as possible go wrong' to 'as many things as possible go right'. Together with four Dutch hospitals, we attended a pilot from Medirisk and the Center for Kvalitet (Region Syddanmark). Danish Hospitals successfully used the 'FRAM-method'. The pilot gave us the opportunity to learn from the Danish experiences and implement the FRAM-method. We were able to implement the FRAM-method in our hospital starting by the process of recognition and management of the deteriorating patient. We analyzed the process by talking with all involved professionals about 'work as done' and comparing the outcomes with 'work as imaged' (defined in protocols). By looking at the functions in the process, and defining six aspects per function (Input, time, controle, output, resource and precondition), we visualized the process.

### **Outcome**

Two FRAMS: 'work as imagined' and 'work as done' (we want to show this on the poster). There's a difference between the two FRAMS, which made clear why the process works good most of the time and where the risks are.

In the following weeks, we will complete the FRAM and share our analyses with the professionals and learn together about the outcome.

### **Conclusion**

Lessons learnt:

- No blaming, but talking about daily practice.
- Don't wait for an incident to work on improvement.
- Dialogue with professionals about possible/ future risks.
- Think about solutions with professionals.
- Focus on human factors as an important value.
- The model is the outcome of the analyses.

Move forward to Safety II, in addition to safety I!

## **Comparison between microbial contamination in mobile phones and ID badges during check-in and check-out among King Hamad University Hospital**

Call for Posters - Safety

Raneem Alshaikh, Fatmah Alabdulwahed, Noora Althawadi  
King Hamad University Hospital, Bahrain

### **Background**

Identify if personal belongings are source of infection

### **Methods**

Swab collection, sent for culture. Plus using biocontamination device to measure degree of growth.

### **Outcome**

This was an observational study to check for degree of contamination

### **Conclusion**

Personal belongings can work as a reservoir for many pathogenic organisms, thus usage of these items should be limited in hospitals.

## **Clinical Decision Support and other tools in reduction of harm from Opioid medications on eMAR**

Call for Posters - Safety

Richard Neff, MD, Catherine Harpst, CNS, Kathleen White, PhD Pharmacy, Julie Crowder, IT code writer, Alejandra Figueroa, Research Data Analyst Manager and Cathy Haven, RN IT Specialist

Northern Arizona Healthcare, United States of America

### **Background**

Remote, regional Health System in Northern Arizona with a service area covering an area larger than Scotland. Two hospitals, one a state Level I Trauma Center and regional referral center and the second a community hospital. No significant Provider training (Residency) programs. Greater than 40% of our patients being indigenous, predominantly from the Hopi and Navajo tribes.

Team: Chief Medical Officer, System Quality Director, Pharmacy IT Manager, IT Coder, RN IT Specialist.

Focus is on mostly safety of Inpatient ordering, administration of Narcotic medications.

Secondary focuses on Outpatient ordering and facilitation of checking of the national Controlled substances Prescription Monitoring Program (CSPMP).

### **Methods**

With strong involvement in the Physicians and Providers along with Pharmacy and the IT code build, we gained buy-in and support for this approach and implementation (which took several years).

Several changes to our EHR and process were implemented, including:

-Clinical Decision Support consisting of:

-Linked Components, blocking one method for adding multiple PRN Opioids to eMAR.

-Hard Stop allowing only one PRN Opioid on the eMAR by route (with exceptions).

-Additional order sentence clarifications to increase Order Specificity.

-Naloxone rule that adds low-dose and full dose Naloxone orders whenever Opioid is ordered.

-Addition of link to website within EHR to check individual patient's records in the national Controlled substances Prescription Monitoring Program.

-Evidence-based Opiate Administration and follow-up (Pasero).

-Order sentences for Prescriptions written to match requirements for Morphine Mg Equivalent restrictions to match 75% of ordered prescriptions.

### **Outcome**

-34% decrease in #'s of Opioid medications on the EHR per 1,000 patient days

-Increased order specificity

-Increase utilization of Naloxone - unclear whether this was due to increased availability, increased community use and needed rescue (Rapid Response team activations remained flat). Naloxone use appears to be on a downward trend, though still early to tell.

### **Conclusion**

Succeeded at significantly reducing # of PRN Opioids on eMAR, though multiple implementations undertaken concurrently cloud picture of actual clinical and safety impact. Addition of multi-modal pain control methods, addition of Naloxone rule which adds Naloxone to every eMAR with an Opioid prescription and overall reaction to Opioid crisis also clouds true impact from rule build.

Clear success in gaining buy-in from Physicians and Providers by frequent discussions and presentations clearly were helpful in gaining acceptance.

Further work needed to assess full long-term impact and trends and will be helpful in discerning true impact of changes.

## **Psychiatric illness doubles the risk of preventable harm in first line health care**

Call for Posters - Safety

Rita Fernholm, Martin J Holzmann, Caroline Wachtler, Robert Szulkin, Axel C Carlsson, Karin Pukk Härenstam  
Karolinska Institutet, Sweden

### **Background**

Patient safety issues in primary health care and in the emergency department have not been as thoroughly explored as patient safety issues in the hospital setting. Knowledge is particularly sparse regarding which patients have a higher risk of harm.

The objective was to evaluate patients with reports of safety incidents and thus determine which patient-related factors (psychiatric illness, income, education and foreign background) were associated with an increased risk of harm.

### **Methods**

A case-control study.

The setting was primary health care and emergency departments in Sweden.

In total, 4536 patients (cases) and 44,949 controls were included in the study. Cases included patients with reported preventable harm in primary health care and emergency departments from January 1st 2011 until December 31st 2016.

### **Outcome**

Psychiatric disease nearly doubled the risk of reports of preventable harm (odds ratio, 1.96;  $p < 0.001$ ).

Adjustment for income or education did not change the result (odds ratio, 1.94;  $p < 0.001$ ). In emergency care, the subgroup of patients with psychiatric diagnoses related to alcohol and drug intake had an even higher risk of harm (OR, 2.92;  $p < 0.001$ ).

The preventable harm was mostly somatic harm, of which 46% was involving diagnostic errors of somatic disease.

The factors income, education level, and foreign background had only modest effect on the risk of being a reported case of preventable harm. That might reflect the fact that Sweden is a land of smaller inequality in terms of income and education than many other countries, making differences in risk more difficult to study.

### **Conclusion**

We found that patients with a psychiatric diagnosis have a doubled risk of preventable harm in first line of care, compared with controls from the general population. This finding may be associated with the fast-paced nature of primary care which exposes this already vulnerable group to the risk of errors of omission. The reasons for this may be related to difficulties of communication, different expressions of symptoms, low compliance to medication, non-robust routines for follow-up of cancelled appointments and no-shows in the group of patients with psychiatric disease.

Co-produced quality improvement efforts aiming at creating better preconditions for patients with psychiatric illnesses in primary care need to be developed.

## **Trigger Tools for measuring Adverse Drug Events in a Neuropsychiatry Setting**

Call for Posters - Safety

Sangeeta Sharma, Kaveri Kapoor, Suman Kushwaha  
Institute of Human Behaviour & Allied Sciences, Delhi, INDIA

### **Background**

Adverse drug events present the greatest risk of harm to patients in hospitals. Traditional efforts to detect adverse drug events (ADEs) focusing on voluntary reporting and tracking of errors has not yielded good results due to under-reporting. Patients receiving neuropsychiatry treatment are more vulnerable to unintended harm due to adverse drug reactions. Trigger tools provide an easy-to-use method for accurately identifying ADEs (harm from medications) and measuring the rate of ADEs over time by auditing a small sample of patient notes regularly. Present study was conducted with the objective to develop trigger tools specific for neuropsychiatry setting by modifying ADE triggers developed by Institute for Healthcare Improvement (IHI) 2008 version 2 for mental health settings, evaluate adverse drug events (ADEs) using these triggers and assess their utility in improving patient safety.

### **Methods**

This prospective study was carried out in a neuropsychiatry hospital, Institute of Human Behaviour & Allied Sciences in Delhi, India. A pharmacologist examined case notes of 1327 in-patients in neurology IPD over a period of one year from Jun 2017-May 2018 with a length of stay (LOS) greater than 24 hours but less than 70 days. Three patients records with stay longer than 70 days were excluded. Initial length of patient record review was limited to 20 minutes for each record. Once a trigger was identified the notes were reviewed in more detail to identify whether causative harm occurred or not. If harm occurred, severity was rated as per severity ratings using NCC MERP Index.

### **Outcome**

Case records of 1324 patients were studied - 798 male (60%) & 526 (40%) females; average age 39.60 +20.05 years. Average LOS (ALOS) was 9.85 (range 1-62 days). 144 (10.88%) patients experienced ADE with 166 ADEs as some patients experienced more than one ADE. Average ADE per patient was 1.15. A total of 854 triggers were identified in 296 (22.36%) patients (ranging from 1-12 triggers per patient). An average number of triggers present was 3.2 per patient.

Though 51% triggers were found in ICU alone but more ADEs 134 (80%) occurred in IPD. Adverse event rate per 1000 patient days was 12.74. ADEs prolonged hospital stay as ALOS in patients who experienced ADEs was longer 14.29 (13.95-17.33) days compared to 9.32 days in patients without any ADEs.

Antitubercular drugs, atorvastatin, antiepileptic drugs were most commonly involved in ADEs. Highest number of ADEs and triggers with greatest harm occurred in patients with neuroinfections. CVA patients suffered temporary harm (E & F).

### **Conclusion**

Modified trigger tool identified ADEs specifically encountered in neuropsychiatry practice in all patients except in 2 patients where unexpected death occurred without any triggers. Neuropsychiatry module though identified some ADEs - altered behaviour, altered sensorium, NMS etc. but triggers such as dizziness, headache, vertigo, ataxia though are specific to AEDs may overlap with some neurological illnesses. In neurology setting laxatives are more often used prophylactically (stroke). Death a highest harm category cannot be taken as an event in a neurology setting as deaths is common due to an underlying disease process. ADEs not only prolonged hospital stay but also resulted in greater harm and longer the stay more triggers were identified. Higher the number of triggers ( $\geq 5$  per patient), the trigger nature (cardiac arrest/shock), and the presenting illness (CVA, neuroinfections, status epilepticus, multiple comorbidities & extreme age) correlated with greater harm (death).

## **Improving patient education process at nuclear medicine department of 57357 hospital**

Call for Posters - Safety

Sara Sabry Ibrahim Mahmoud

Children cancer hospital Egypt CCHE 57357/Egypt

### **Background**

The project is a safety improvement of 57357 children cancer hospital Egypt which is a 320 beds, non-profit hospital providing the most advanced treatment to cancer diseased children. Lack of patient and family education about instructions for dealing with patients injected with radioactive material at nuclear medicine department will affect safety of patients, their families and their surrounding community. The percentage of educated patient 3.9% collected by questionnaire

### **Methods**

Posting the instructions according to policy and approved by the head of department using papers in the patient waiting area and in the working area to remind the workers (1-30/9/2018)

Announcing the instructions verbally in the room of injecting the radioactive material by the nurses and technicians of the department (6/9/2018)

### **Outcome**

After implementing the changes, the percentage of educated patient became 92%. Safety of patient, patient family and surrounding environment were increased. The role of the staff was very effective. The leader support was effective.

### **Conclusion**

The few number of posters was a problem but we solved it after meeting with the leaders and the team. Safety of patient, patient family and surrounding environment is very important -Support from leaders can affect the work positively -Working with an active team is an amazing issue -Sometimes the improvement might not go as planned and you might need to add additional solutions.-Brainstorming with the team members generate numerous ideas. It is great to touch the positive effect of your work on others(as I met one of the patient who took the questionnaire before and after).

## **Tackling the third global patient safety challenge on medication safety**

Call for Posters - Safety

Sheena Patel, Meenal Patel, Peta Longstaff

Chelsea and Westminster Hospital NHS Foundation Trust, United Kingdom

### **Background**

Medication errors and unsafe medication practices have been recognised as a leading global cause of avoidable harm in healthcare systems. The estimated cost associated with medication errors is \$42 billion annually. Medication errors are due to weak medication systems and/or human factors can result in severe harm/disability and mortality. Medication risks occur during various stages e.g. prescribing, transcribing, dispensing, administration and monitoring practices. The third global patient safety challenge, supported by World Health Organisation, on medication safety is to reduce severe, avoidable medication related harm by 50% in the next 5 years.

Medication safety initiatives were introduced at a London Teaching Hospital across two hospital sites to increase medication safety awareness and stewardship, tackle under-reporting of medication-related incidents, promoting an open safety culture and embedding medication safety in education programmes.

### **Methods**

- Interventions implemented over 1 year across two hospital sites
- Introduction of a medication safety group focussing on reducing 'medication without harm'
- Introduction of medication safety bulletins to increase awareness of medication safety issues
- Optimising incident system to support feedback on investigations
- Exploring challenges and reasons for under-reporting of incidents
- Introduction of 'safe prescribing' education in annual inductions to support safe prescribing measures and medicine management issues
- Development of a medication safety top tips pocket guide for clinical staff on medicines advice, high risk medicines, resources etc.
- Clear guidance on a critical list of omitted and delayed medicines list to prevent avoidable harm
- Introduction of a medication safety awareness week to promote an open safety culture
- Representation on medication safety group to ensure appropriate divisional representation from all healthcare professional groups and junior doctors

### **Outcome**

- Increased staff feedback on medicines management issues and awareness on medication safety
- Increased reporting of medication-related incidents with decreased incidents of harm
- Local action plan addressing global recommendations
- Embedding medication safety culture
- A well represented medication safety group, with assurance on implementation of patient safety alerts
- Positive feedback on monthly medication safety bulletins with a focal theme
- Grand round presentations on lessons learnt following patient safety or medication-related incidents
- Junior medical staff training programmes embedded with safe prescribing education
- Improvement in hospital safety metrics for reporting of medication-related incidents and reduction in medication-related incidents with harm
- Quality priorities on 'medication without harm' e.g. medication huddles post ward round to discuss medication issues, protected time for prescribing, changes to the discharge process to improve transfer of care

### **Conclusion**

The lessons learnt:

- Understanding the challenges for under-reporting for medication-related incidents
- Ongoing medication safety stewardship and champions

- Engage, encourage and empower multidisciplinary staff with medication safety

Messages for others:

- Medication safety group driving the medication safety agenda to strive for excellence
- Multidisciplinary engagement to reduce severe, avoidable harm from medications
- Shared learning from incidents for increased awareness and reporting with a positive safety culture



# **Eliminating patient misidentification using step-by-step problem-solving procedures to improve patient safety**

Call for Posters - Safety

Tatsuya Fukami, Yoshimasa Nagao  
Nagoya University Hospital, Japan

## **Background**

Adverse events and no-harm medical procedures are major concerns for everyone working in healthcare.

## **Methods**

We surveyed incident reports submitted in our institution in 2016 and 2017. All incidents related to patient misidentification were selected, and relevant information was collected from the original electronic incident reports. We then conducted an eight-step problem-solving process with the aim of reducing patient misclassification and improving patient safety.

## **Outcome**

Step 1: the number of misidentification-related incident reports and the percentage of these reports in the total incident reports increased each year. Step 2: the most frequent misidentification type was sample collection tubes, followed by drug administration and hospital meals. Step 3: we set a target of an 10% decrease in patient misidentification cases classified as adverse events compared with the previous year, and established this as a hospital priority. Step 4: we found that discrepancies in patient identification procedures were the most important causes of misidentification. Step 5: we standardized the patient identification process to achieve an 10% reduction in misidentification. Step 6: we disseminated instructional videos to all staff members. Step 7: we confirmed there was an 18% reduction in adverse events patient misidentification compared with the previous year. Step 8: we intend to make additional effort to decrease misidentification of patients by a further 10%.

## **Conclusion**

Adverse events patient misidentification can be reduced by a patient identification policy using a step-by-step problem-solving method. Continued seamless efforts to eliminate patient misidentification are mandatory for this activity.

## **Improving Peritoneal Dialysis Catheter Success – Design for Measuring and Monitoring Patient Safety**

Call for Posters - Safety

Tiffany Blair, Dr. Rod Stryker, Dr. Nicolette Sinclair, Dr. Paul Babyn  
College of Medicine, University of Saskatchewan, Canada

### **Background**

Peritoneal dialysis (PD) is a home-based modality for patients with kidney disease. PD catheter failure rates are associated with a significant patient and family burden, and overall increase in health system cost. PD failure rates are improving (2016 50.0%, 2017 32.4%, 2018 19.2%) through a focus on measuring and monitoring patient safety. Participation in the Vincent Framework Collaborative provided real time data, stimulated gap analysis for process improvement, and promoted a culture of safety.

### **Methods**

A prospective cohort study design will be utilized, for adult end stage renal disease patients enrolled in the Kidney Health PD Program (n=80 patients/year, 3 year recruitment period). SPSS software will be used for data analysis. Outcome assessments will be performed at 3 month intervals (18 month study period), including case reviews to identify complications, primary and secondary PD failure, and patient outcomes to compare IR and surgical PD catheter insertions from chart review and data extraction from the Kidney Health medical record. Potential causes for PD drop out and transfer to hemodialysis will be assessed (modality related, system related, patient related). Descriptive analysis will compare demographic, gender, procedural, patient characteristics, treatment therapies and quality of care for patients receiving PD catheter insertion.

### **Outcome**

Using the measuring and monitoring patient safety framework as a mapping tool, the PD catheter insertion initiative will formalize referral and criteria for PD insertion for IR and Surgery, expansion of IR services to enhance a non-invasive solution to PD insertion, procedural and patient outcomes (complications, primary and secondary failure, patient safety indicators). As a component of quality and safety management, clinical effectiveness ensures patients are informed and involved in their care plan and that they receive the right care at the right time by the right clinician with the right skills in the right way. An interdisciplinary Clinical Improvement Team (CIT) has been created to increase the uptake of PD, and to monitor the quality and safety of care. Patient and family involvement is represented at the Patient Family Advisory Council and through engagement with those living with PD.

### **Conclusion**

There are several layers where the measuring and monitoring patient safety framework will assist the CIT in measuring and monitoring safety. The following themes will be at the centre of the framework, and the five dimension questions employed to create a real time understanding of their complexities. The framework will serve to translate real time data so it is useful to take action, gap analysis for process improvement, identifying strengths and weaknesses, and promoting a culture of safety and continuous improvement: PD patient flow (from selection criteria, referral, procedure, training, home, continuum of care); PD catheter failure rate; mapping of PD patient safety indicators (determine core data set); cultural appropriateness (staff level).

## **How knowledge from patient safety incidents can be disseminated from a government level – trying new ways**

Call for Posters - Safety

Torsten Larsen, Lena Graversen  
Danish Patient Safety Authority

### **Background**

Each year, close to 200.000 patient safety incidents are reported to the Danish Patient Safety Database. Traditionally, the Danish Patient Safety Authority has distributed information about serious patient safety incidents and how to avoid them in the form of patient safety alerts and topical reports aimed at the healthcare system in general. The dissemination of knowledge from a government level all the way to frontline healthcare staff poses a challenge.

### **Methods**

Various new initiatives to disseminate knowledge from patient safety incidents

### **Outcome**

The idea is to continuously try new initiatives as any set way is bound to grow stale.

### **Conclusion**

In acknowledgement of this fact, the Danish Patient Safety Authority is exploring new ways to disseminate knowledge to frontline healthcare staff in addition to the traditional channels of information. The aim is to tailor information to specific groups in the Danish healthcare system, e.g. nurses or healthcare assistants. Different groups of health professionals obtain their knowledge from a multitude of sources. This must be taken into consideration if knowledge is to be disseminated successfully.

## **Investigating the moderating role of burnout between age and working characteristics with patient safety and employee satisfaction among nurses and physicians**

Call for Posters - Safety

Viktor Dombrádi, Gábor Bányai, Klára Boruzs, Klára Bíró

University of Debrecen, Hungary

Veronika Mészáros

Károli Gáspár University of the Reformed Church, Hungary

Szilvia Ádám

Semmelweis University, Hungary

### **Background**

The high workload due to staff shortage, increasing age and high prevalence of burnout among healthcare professionals may adversely impact employee satisfaction and patient safety. Despite many studies among healthcare professionals in Hungary on these topics, little is known about how burnout and demographic parameters influence patient safety. We assessed socio-demographic, occupational and health characteristics of Hungarian healthcare workers using data from the literature and previous surveys. The two major problems identified within the Hungarian healthcare system are the aging of healthcare workers and the particularly high prevalence of burnout.

### **Methods**

A questionnaire-based survey was conducted in 2017 among the healthcare workers within the University of Debrecen – Clinical Centre. Besides socio-demographic parameters, working hours and work experience, patient safety was measured with the Agency for Healthcare Research and Quality (AHRQ) Hospital Survey on Patient Safety Culture, employee satisfaction with the NHS Staff Survey, and burnout with the shortened Hungarian version of the Oldenburg Burnout Inventory (OLBI). Participants had 2 weeks to complete the questionnaire. For statistical analyses ANOVA was used to investigate how gender, age, working hours and work experience might influence perceived patient safety and employee satisfaction. With ANCOVA we also explored how the two aspects of burnout – exhaustion and disengagement – could affect the relation of demographic parameters, patient safety, and employee satisfaction.

### **Outcome**

Age is significantly related with the number of reported errors, attitude towards work, and overall satisfaction with the workplace. However, the effect becomes smaller, when the two aspects of the burnout are included as covariants. In overall satisfaction, exhaustion has the most important role, while in the number of reported errors and attitude towards work, disengagement. Work experience within the hospital has a significant relationship with the attitude towards work and overall satisfaction with the workplace. With the integration of burnout elements overall satisfaction is in tightest relationship with exhaustion and attitude towards work is in tightest relationship with disengagement. Finally, working hours is in connection with the number of reported errors, overall perceived patient safety, attitude towards work, and overall satisfaction with the workplace. These relations also change with the integration of the two burnout dimensions.

### **Conclusion**

Burnout has a strong moderating effect on the relationship of demographic variables (age, working hours, and working experience) and various aspects of perceived patient safety as well as employee satisfaction. In the most relationships disengagement has prominent role, but the overall satisfaction is mainly moderated by exhaustion. Overall, the working parameters are important, but burnout parameters have a stronger connection with patient safety. In line with data from the international literature, the current study confirms that burnout acts as an important moderator of the relationships among age, working hours, working experience and perceived patient safety as well as employee satisfaction. The research was funded by the GINOP-2.3.2-15-2016-00005 project which is co-financed by the European Union under the European Regional Development Fund.

## **Balancing top-down and bottom-up approaches to implementation and spread of patient safety and quality improvement in a hospital-wide safety transformation**

Call for Posters - Safety

Wing-Si Luk, Cheryl Chui, Gillian Gravely, Brenda Perkins-Meingast, Ivanka Hanley, Elisa Chimonides, Laura Williams, Kerseri Scane, Emily Musing  
University Health Network, Canada

### **Background**

University Health Network (UHN) is Canada's largest research hospital located in Toronto comprised of 4 hospitals and an education institute. In 2016, University Health Network (UHN) launched an ambitious High Reliability transformation initiative to reduce preventable harm in partnership with the Hospital for Sick Children, under the shared brand of Caring Safely. Caring Safely represents UHN's commitment to reduce preventable harm to zero for each other, our patients and their caregivers. In 2016, when Caring Safely was initiated, a patient was harmed at UHN every 5 days and preventable causes contributed to a patient's death every 19 days. The total impact of preventable harm from six hospital-acquired conditions was 4,245 bed days and \$6.4 million.

### **Methods**

Caring Safely is a structured program that utilizes evidence-based safety practices based on high reliability principles to enhance safety culture and to embed reliability in processes and workflow. This required broad changes focused on safety culture, prevention of 6 priority Hospital Acquired Conditions, learning from safety events and engaging patients and caregivers throughout our work. A central team provided organization-wide education, resources and infrastructure to identify standardized, evidence-based harm prevention strategies and a model to implement and spread it. Unit managers were given unit-specific data about their safety issues so they could tailor the implementation of the UHN prevention strategies to address the unique gaps in their area. This combination of corporate resources and point-of-care experts has created organization-wide quality improvement capacity and local ownership.

### **Outcome**

While Caring Safely is still in its early days at UHN, after 1 year of full implementation, we have seen positive results:

- 77% (or 11,000+) staff and physicians trained in safety behaviours and error prevention tools
- 84% (or 600+) leaders trained in high reliability leadership methods
- 86% of all units have implemented huddles
- 239 avoided cases of C. difficile, Falls, Central Line Infections and Surgical Site Infections = \$2.4M in avoided costs
- Patient partners are members of all corporate Quality Committees

### **Conclusion**

The key factors that will sustain these changes:

- Continued championship by senior leadership to keep Caring Safely a priority
- Reinforcing high reliability behaviours and error prevention strategies at all levels of the organization
- Local ownership of prevention practices
- Higher engagement with physicians
- Ongoing commitment to data collection for quality improvement

Patient Safety science recommends organization-wide safety culture change as a foundation. Quality improvement science focuses on testing incremental changes at the local level using PDSA cycles. UHN has developed a concurrent organization-wide (top-down) and program/unit-specific (bottom-up) approach to create an integrated, synchronized approach to UHN's HRO transformation.

## **The Virtual On-Call**

Call for Posters - Safety

Zahra Jaffry, Hannah Wright, Ee Lyn Chan, Alessia Leone, Amelia Hughes, Leila Frodsham, Cheng Ong  
Guy's and St Thomas' NHS Trust, UK

### **Background**

National surveys report 69.99% of newly qualified doctors (F1s) felt they had been adequately prepared for the job, areas of low confidence being dealing with emergencies, decision making, prescribing, prioritisation and stress management. Medical education is the greatest influencer of preparedness with early clinical experience playing a vital role.

### **Methods**

A simulation based intervention, the Virtual On-Call (VOC), was designed and run for final year medical students at King's College London. Faculty, assuming the roles of doctors would start by handing over three patients. Patient notes could be found on the wards containing the handover information, patient background and investigation results. They were expected to document their assessment, management plan and write up a drug chart. Throughout the session, participants would be bleeped about a further three patients and would be able to bleep a senior, pharmacy or radiology. This would end with a debrief.

### **Outcome**

Following the VOC, 22/30 participants (73.33%) gave a rating greater than 5/10 when asked to score their preparedness for F1, an increase from 7/30 (23.33%) before the course and higher than the national average. 97% of students found the course useful.

### **Conclusion**

This intervention, allowing practice in a safe environment for both participants and patients, will now form part of the Transition to Foundation Module at King's which also includes workshops on managing acutely ill patients, prescribing and prioritisation. It is hoped that the details of this work, will inform set-up in other institutions or contribute to the development of existing programmes.

## **Learning from Deaths: a National Mixed-Methods Analysis**

Call for Posters - Safety

Zain Chaudhry, Lucia Magee, Judith Hendley  
NHS Improvement, UK

### **Background**

The Learning from Deaths (LfD) policy was introduced in March 2017 by the National Quality Board, following a call from the Care Quality Commission to improve the learning derived from patient deaths across the system. Following the first year of provider reporting, the NHS Improvement National Patient Safety Team conducted a mixed-methods analysis to characterise the processes employed and learning derived thus far.

### **Methods**

A team of 3 independent NHS Improvement National Patient Safety Team members randomly selected 80 quality accounts (QAs) from a list of all NHS England acute and community and mental health (CMHT) providers. Quantitative information was extracted on: number of deaths reported, proportion of deaths subjected to case record review or investigation, and number of deaths that were judged to be potentially avoidable following review. Further qualitative analysis enabled identification of common learning themes reported by providers with identification of subsequent actions taken and impact.

### **Outcome**

89% of trusts (207/233) had published a QA for 2017/18. 1 in 9 trusts did not include a section on deaths due to problems in care. Five (5) did not publish information about the number of deaths in their care and 10 did not report the number of deaths subject to case record review.

The mean proportion of deaths subjected to review per acute trust was 37% and the median was 29%. For CMHTs the mean was 35% and the median 18%. Trusts used varying methodology to review deaths. 56% (45/80) trusts reported that they had not identified any deaths due to problems in care.

Learning included: recognition of deterioration and providing good end of life care, and timely detection of sepsis. Good communication between clinicians, to patients and across providers was a recurring theme. Specific issues included fluid & electrolyte management and hospital acquired infection.

Actions taken in response to the learning included: launching new improvement initiatives and revising policy and guidelines.

### **Conclusion**

The LfD process emerged from a need to review deaths where there have been concerns over quality of care. Our review identified that much learning has been derived from cases where there were no such concerns. We noted wide variation in the content of LfD sections and the methods of review. This highlights a need for better central clarification of what constitutes a case record review, highlighting tools like the RCP Structured Judgement Review.

Much of the learning has not been widely reported previously and highlights areas that can inform new or existing policy or improvement initiatives.

56% of trusts reported that they had not identified any deaths likely due to problems in the care provided, however the literature estimates that around 0.5-4% of deaths reviewed are attributable to care provided. This presents an area for future work.

Future work to address remaining challenges in the policy will help to drive continuous cycles of quality improvement at a system level.

## **Engaging medical students through lecture-series events on leadership**

Call for Posters - Students

Akiko Fukui

St George's, University of London, UK

Zeinab Ruhomaulu, Karen Borges, Michela Martinuzzi, Mahdi Alshaf, Tanuja Dave

King's College London, UK

### **Background**

Understanding the healthcare systems and political and organisational environments in healthcare is a crucial part of developing clinical leadership skills and competencies. Some leadership competencies are already incorporated into several medical schools' curricula but limited and varied across medical schools.

Medical students have limited exposure to teaching on the political and organisational environment of the NHS, and by introducing structured lecture series, we aimed to explore medical students' awareness of the system in which they will be working in the near future.

Our objectives were to assess (1) the impact of these lecture series on medical student's perceptions of leadership, (2) whether medical students' awareness of healthcare systems and political environments change, and (3) whether the series improve their understanding of how inter-professional collaboration is needed in the reform of health systems.

### **Methods**

A lecture series over three evenings have been hosted at King's College London. Speakers included doctors who each offered expertise in a particular aspect of medical leadership, including management, public health, politics, system transformation, and digital health. The series invited participants from all degree backgrounds.

Participants were sent four questionnaires, one at the beginning of the three-part lecture series and one after each event. Responses were collected using Google Form and analysed using Microsoft Excel. The full study analysis is ongoing, and the full results will be published in due course.

### **Outcome**

Over 150 participants attended over the three lecture evenings and 57 participants attended and completed the feedback forms for all three evening. Medical students accounted for 60% (n=34) of the cohort. Of the all the medical students, 32% (n=11) of participants reported they received formal training on "Leadership" previously to the events.

Over the three events, medical and non-medical participants reported their awareness on the political environment of the NHS (+19.9%) and the organisational structures of the NHS (+13.7%) improved. The participants also identified "Leadership" (72.8%), "Public Health" (61.0%) and "Management" (58.8%) as the most important topics that should be compulsory components of healthcare education.

With respect to the mode of teaching, lectures remain the most popular way of teaching on the leadership topics (34.5%) while participants also favoured problem-based seminars (28.1%), SSC (28.1%), and placement (16.4%).

### **Conclusion**

Lecture series comprising of talks by doctors with diverse expertise are an effective way of informing medical and healthcare students about the leadership needed in today's healthcare. This study demonstrates that students are already aware of the increasing importance of system-thinking and broad knowledge in areas such as health policy, management, and digital health. Encouraging and supporting events such as these at medical schools helps prepare future healthcare professionals for an increasingly complex environment, and creates a platform for students to exchange ideas and generate innovative solutions for evolving healthcare challenges.



## **Improving students' satisfaction and attendance in clinical placement**

Call for Posters - Students

Asma Naqi, Neeraja Kuruba

Norfolk and Norwich University Hospital NHS Trust Foundation, United Kingdom

### **Background**

At NNUH we deliver a four week secondary care placement for Obstetrics and Gynaecology. The structure and timetable of this placement aims to cover all key areas in O&G. Students are provided with three named contacts to report any cancellation, over-crowding or absenteeism; so that an alternative arrangement can be made. Despite a well planned and thoughtfully structured secondary care placement timetable, end-of-module feedback from year four medical students included a few comments regarding clinic attendance. They expressed dissatisfaction relating to missing opportunities in attending the scheduled outpatient clinics.

Aims and Objectives:

- Identify the factors contributing to missed clinics
- Improve students' attendance in the outpatient clinics during their secondary care placement
- Improve student satisfaction with regards to their outpatient clinic attendance

### **Methods**

#### **Methodology and Data Collection**

The study was conducted on a cohort comprising of 24 students in secondary care placement at the NNUH. A mixed methodology approach was adopted to meet the aims and objectives of our project. Data was gathered by observation, email records and direct reports to the named contacts. At the start of every week, all clinics on the timetable were checked for any anticipated closure or cancellation. No more than two medical students were assigned to clinics in order to avoid overcrowding. During the week, we observed clinic attendance and noted any reported absentees. At the end of the week, an email was sent out reminding students that if they have missed any clinics they should contact us for an alternative arrangement.

A record of this observation was maintained in the form of observation notes and an excel sheet.

### **Outcome**

The data was analysed at the end of the placement. Certain elective activities were cancelled due to adverse weather; however, all students were provided with alternatives. Four students who were absent from the clinic did not notify us. However, all four of them responded to the end-of-week emails requesting an alternative arrangement. Two students reported inability to attend a clinic because of overcrowding. This was due to a specialty trainee assigned to that clinic. These two students were provided with alternative opportunities clinic

End-of-module feedback reflected high levels of satisfaction with the secondary care placement. There were no comments regarding missed outpatient clinics.

The end of module feedback confirmed an objective improvement in students' attendance as well as satisfaction. An action plan was devised for future placements.

### **Conclusion**

Two main causes of missed clinics were identified:

- Students not reporting their absence
- Overcrowding in the clinic due to the presence of a specialist trainee

Data analysis revealed an objective improvement in the overall attendance of medical students in all areas of clinical placement. End-of-module feedback confirmed significant improvement in satisfaction levels among the students

#### **Recommendations & Control plan**

This is a reproducible and generalisable activity. This can be implemented in all departments by any person responsible for student teaching. A combined effort from the students, educators and the administrative team would result in an improved quality of services

## **Improving the Rates of Neuromuscular Blockade Monitoring Throughout All Stages of Anaesthesia**

### **Call for Posters - Students**

Daria Saraeva  
United Kingdom

#### **Background**

This improvement project took place in the anaesthetics department in Ninewells Hospital, Dundee. We wanted to address the gap between guidelines and current practice regarding neuromuscular monitoring. The 2015 AAGBI guidelines mandate neuromuscular monitoring during induction, maintenance and termination of anaesthesia. Monitoring at induction enhances intubation, while monitoring during termination prevents problems such as residual paralysis which may go on to cause further issues, for example, aspiration pneumonia. Evidence suggests that monitoring rates are low, with one survey showing that only a third of UK doctors routinely monitor neuromuscular blockade. The aim was to achieve monitoring at all stages of anaesthesia, in at least 95% of patients receiving neuromuscular blocking drugs. Process measures were percentages of patients being monitored in total, and from induction. Outcome measures were postoperative complications, in this case, incidence of residual paralysis.

#### **Methods**

Baseline data showed that 96% of patients given neuromuscular blocking drugs were monitored, however, only 55% were monitored from induction. Feedback from the department revealed availability of equipment and staff attitudes as the main barriers. Over the first week, to improve availability, we ensured that working monitors were now kept in every anaesthetic room alongside other routine monitors such as BP cuffs. This should encourage use at induction. Anaesthetic nurses were involved in moving the monitors from theatres into anaesthetic rooms, as they are often the ones asked to retrieve them. Another intervention, aiming to reinforce guidelines and act as a prompt, was the production of posters stating that every patient given NMBD must be monitored from induction onward. During the second week these posters were placed on drug cabinets in anaesthetics rooms, again with the help of nursing staff. Post-intervention data was collected on monitoring and incidence of residual paralysis.

#### **Outcome**

Data collected following the interventions showed that neuromuscular monitoring was used in 100% of patients at some stage during anaesthesia, most commonly at termination. Unfortunately, monitoring from induction was only 67% at 2 weeks post-intervention, and down to 30% 4 months later. However, patient outcomes were great: 97% had a TOF ratio  $>0.9$  indicating full recovery, i.e. no residual paralysis. This was an interesting situation in which guidelines were not strictly adhered to, and the project aim was not met, yet patients had the desired outcomes. The project had an impact within the local context as it generated discussion in the department around the importance of monitoring. Once it was identified that the current interventions were unsuccessful in achieving the aim, staff became further involved in giving feedback on perceived barriers and facilitators.

#### **Conclusion**

This project played an important part in assessing current practice and patient outcomes. Although the aim was not met it is important to celebrate the fact that the department achieved high levels of patient safety, with only 3% incidence of residual paralysis, so  $>95\%$  reversal rate! The project also facilitated discussion around staff attitudes. It is necessary to understand beliefs about consequences - staff are aware that monitoring at maintenance and termination plays a direct role in patient safety, however, the role of monitoring at induction is less clear. Real staff involvement is needed to make a sustainable improvement. Simply reinstating guidelines will not prompt change, people need to truly believe that a change in practice will lead to improved outcomes. In this case, the department may find it useful to hold a 'grand rounds' style discussion on the benefits, both for the clinician and the patient, of monitoring throughout induction.

# **Improving Recognition of End of Life in a Care Home in Dundee**

Call for Posters - Students

Eve Stobie

University of Dundee, Scotland

Hilary Provan

NHS Tayside, Scotland

## **Background**

The number of people who die in Scotland each year is 54,000 and the proportion of those dying with dementia is continually increasing. Figures show that the percentage of people who die in hospital is falling, whilst the percentage who die within a care home is on the rise (GOV UK)

It can be very difficult to identify when a person is reaching end of life, but there are many benefits to earlier identification, including ability to coordinate end of life care and prevent unwanted hospital admissions. People living with dementia who also have an identified palliative care need, often do not receive appropriate care until just before death.

My project took place in Craigie House, a care home in Dundee. It is a residential home with 19 residents. During the project, I worked alongside the care home manager and 3 members of the senior care team to implement tools to aid identification of the final stages of life for residents.

## **Methods**

A staff focus group was held to discuss their views on palliative care and explore previous cases where a resident's approach to end of life was managed well and others where there could be room for improvement. I created a cause and effect diagram to highlight some of the factors which may influence problems which occur when residents are facing end of life care, and a driver diagram to establish some of the key areas for change. I followed the steps within IHI Improvement Practicum, using PDSA cycles to implement 2 tests of change over the course of 5 weeks. The first was implementation of tools within the care home which aim to improve the identification of residents approaching end of life - these were known as the FAST tool and the PPP tool. Once implemented I attempted to scale up the use of the tools within the care home to include all residents. The second test of change explored the inclusion of regular review of the completed tools within routine practice in the home.

## **Outcome**

Both PPP and FAST tools were implemented into the care home. By the end of the project, 53% of residents had a completed FAST tool but only 6% had a completed PPP. I had hoped that the tools would be completed for a higher proportion of the residents. There were a number of factors which hindered the successful implementation of the tools. As a result, the tools were not able to be incorporated into review for residents within the time frame of the project.

The barriers to successful completion were explored through a reflection using behaviour change theory, human factors, theoretical domains framework and balanced accounting framework of an intervention and its consequences. The findings of this analysis aided the rest of the team in continuation with the project following the end of the practicum. Issues were addressed, allowing the tools to be successfully implemented for all residents within the care home. Incorporation into review is an ongoing process.

## **Conclusion**

This project has provided a valuable insight into some of the facilitators and barriers to improvement work within a complex care home setting. The tools received positive feedback when initially tested within the care home in terms of relatability and usefulness.

The main problems encountered during the project involved a lack of resources for staff, particularly time, to be able to complete the tools. Despite enthusiasm from staff and repeated visits to the home from the improvement team, the tools were not being completed. An interview with one of the staff members identified that one of the biggest pressures of her role was the ever increasing volume of paperwork. It became clear that in order to establish the tools within practice, there needed to be an appropriate period of time dedicated towards their completion. This insight highlighted the importance of environmental factors when trying to elicit change.

## **Drug-related errors: identifying quality improvement priorities through staff perceptions of risk**

Call for Posters - Students

Gemma Buxton, Sean Henry, Florence Judge-Clayden, Emily Lancaster, Zheng Yi Lau, Fay Pu, Dominika Sadczuk, Daniel Sandler, Adam Stanley  
University of Edinburgh, United Kingdom  
Sonia Joseph  
NHS Lothian

### **Background**

Prescribing errors are both common and potentially serious in the inpatient hospital environment. Despite efforts to reduce their occurrence, they remain a key priority for patient safety. Reporting systems such as Datix are known to under-describe the issue, due to staff use of the systems. The aim was to collect qualitative data from healthcare professionals on acute care wards to gain a deeper understanding of perceived risk factors and protective factors for drug-related errors. This data formed the initial stages of a quality improvement (QI) project, aiming to provide recommendations for priority areas of focus for patient safety projects around drug-related errors and suggestions for potential interventions to be trialled. The project was carried out in a tertiary paediatric university teaching hospital in the United Kingdom. The project was conducted by 1st year medical students, to develop their experience of QI methodology, supported by a trainee and a consultant.

### **Methods**

Structured interviews were conducted with 38 medical professionals across 3 wards. This included foundation doctors, nurses, student nurses and pharmacists. Cause and effect fishbone diagrams were produced from interview data to identify key themes of perceived risk factors and protective factors for drug-related errors. The frequency of each key theme in the interviews were displayed using a Pareto chart to identify possible priority areas for future investigation. To assess the extent of the issue, a baseline frequency of the most commonly perceived risk (interruptions) was then quantified through observation of twelve drug rounds. The team's proposal was to develop a pre-drug round checklist which could be used before commencing each drug round, with the aim of reducing the number of interruptions. This would be populated from the suggested factors that staff perceived as reducing errors and interruptions, plus any additional suggestions following a review of relevant literature.

### **Outcome**

A draft checklist will be disseminated around each staff team, with opportunity for feedback and suggestions. A revised version will then be trialled on the three wards previously studied. Feedback would again be sought from staff. Measurement of improvement would be by repeat observation of the ward rounds and quantifying the frequency of interruptions in drug rounds subsequent to the introduction of the checklist. This would be compared with the original frequency of interruptions recorded. These results are not yet available as the intervention is yet to occur. Further analysis would be required to assess the impact to patient care, the scale of which may require a larger cohort than originally used in this study. The difficulty of not having a definitive way of identifying all drug errors as a true baseline is inherent to the problem. Proposed measurable benefits would be to look at staff experience of completing ward rounds uninterrupted and patient perceptions of safety.

### **Conclusion**

Greater conclusions may be drawn once the interventions have occurred. Starting the project with structured interviews with staff enabled a useful cause and effect diagram to help understand the situation on the ward and inform potential future interventions. Personal lessons within the group carrying out the project included challenges in capturing large amounts of data within a busy ward environment with flexible routines. Sharing findings and implementing change has some challenges when carrying out studies within a set period of study time, a challenge which continues when working as a junior doctor and rotating every 4 months. If the study was to be repeated, the recommendation would be to gather the initial cause and effect data potentially in brief group settings, rather than individual

interviews. This could be followed by more focussed observations, enabling more time on the wards gathering less detailed data. This may enable earlier intervention.

## **Medical Students' Reasons to Not Speak-Up about safety**

Call for Posters - Students

Jesper Dybdal Kayser, Doris Østergaard, Peter Dieckmann  
Copenhagen Academy for Medical Education and Simulation (CAMES)  
Michaela Kolbe  
Simulation Center, University Hospital Zurich  
Annette Kjær Ersbøll  
University of Southern Denmark, National Institute of Public Health

### **Background**

Speak-up (the raising of concerns, or the contribution of improvement ideas) is of high relevance for patient safety, especially across the boundaries of profession, expertise, in case of incomplete knowledge, or pressure. Errors might go undetected, negative consequences of errors might not be mitigated, improvements might not reach the patient. However, there are many barriers for speaking up - or reasons for remaining silent: the relationship between the acting person, insecurity about the issue at hand, the culture in the workplace, and the personal characteristics of the acting person. Therefore, the study investigated, which of the known reasons for silence, medical students saw as relevant in different written case examples.

### **Methods**

The intervention was to investigate, which reasons for silence, medical students saw as relevant in different described situations. Investigating those reasons will help to design better education and support speak-up in clinical practice. Odds ratios were calculated for the different reasons for silence, showing differences in response patterns according to the type and difficulty (hard vs. easy) of the situation. Our primary aim was to investigate the relationship between described situation and perceived barriers. We assumed a relationship between the described situations and the response patterns of participants.

### **Outcome**

The results show that our assumption is confirmed: perceived barriers for speak-up vary with the situation in which they are encountered. In situation 1, constructed around the speak-up barrier "not an environmental norm" the items "status difference", "fear of damaging relationship", "lack of experience in procedure", "poor relationship with recipient", "not an environmental norm to speak-up", and "absence of a speak-up instruction" were significantly more relevant in the hard version than in the easy version.

### **Conclusion**

Our study showed, how many different aspects are related to speak-up in medical students. An understanding for those is essential to help them speak-up and to change speak-up culture in the long run. By officially "legalizing" speak-up, healthcare professionals can help younger colleagues to contribute to the care of patients and to help make the culture change necessary to improve patient safety further.

# **Happiness of Doctors in the NHS to aid career choice and help staff - a survey by a High School Student**

## **Call for Posters - Students**

Meghan Ray  
The Glasgow Academy. Glasgow. Scotland.  
Dr Iain Keith  
NHS Greater Glasgow & Clyde. Scotland

### **Background**

Royal Alexandra Hospital Paisley, a District General Hospital, NHS Greater Glasgow & Clyde in Scotland.  
Team : Meghan Ray ( S5- High School Student in The Glasgow Academy ) and Dr Iain Keith ( Consultant Physician in Acute Medicine, Royal Alexandra Hospital Paisley)

Client Group : Doctors working at the Royal Alexandra Hospital (RAH), Paisley.

The Problem : There is a large proportion of burnout and depression in the medical workforce. High School students often do work experience in hospitals and GP surgeries to understand the nature of the job of the doctors and to make informed career choice. I did my work experience at the RAH in Paisley and performed a survey to look at the happiness of the doctors working there. The main objective for this survey was to check whether Medicine is still a happy career option for High School Students of this generation and also to inform the staff.

### **Methods**

We surveyed lifestyle factors of working doctors in this NHS secondary care hospital. We looked at their happiness, if they had thought of leaving the profession and particularly if they would recommend this job to a High School Student. We gave a paper questionnaire template to all grades of doctors in RAH during a two week work experience placement of the High School Student.

There were 63 respondents to the questionnaire from doctors of all grades. Male to Female ratio was approximately half (n = 32: 31). Two fifth were under the age of 30 years (42 % n= 27) and more than two third (70% n= 44) were below the age of 40 years. More than two third (68% n=43) were from the Medical Specialities and the remainder were from Surgical, Anaesthetics, Gynaecology, Paediatrics and Radiology. This was due to the larger portion of the High School student spending the work experience tenure with the supervising Consultant in General Medicine.

### **Outcome**

Most doctors ( 82.5% n= 52 ) were very happy and more or less happy in their work. Only 4.7% (n=3) were unhappy at work while 12.6% ( n=8) were unsure.

Only 14 percent of the doctors (n=9) would not recommend their profession to a school student. Only one in this group was unhappy.

Half (49.2% n= 31) never thought of quitting their profession. One in three (40% n=22) have sometimes thought but 14% (n=9) regularly think about quitting.

Majority (63.4% n=40) sleep for 6-8 hours a day and one in three (n= 21) sleep 4-6 hours a day. About two thirds have no fixed breaks and take no breaks during work day.

Only 7.9% (n=5) doctors do not exercise at all and 92% ( n= 58) listen to music.

Following the survey - 1) An information and awareness strategy and presentation on staff wellbeing and burnout was given to the local teams in educational and wider hospital meetings. 2) A test of one area looking at "how was your shift" using a red yellow green system with aim to spread.

### **Conclusion**

This was a first survey of this kind done by a High School student in NHS Scotland looking at the happiness of doctors working in NHS and complement the strategy for change in RAH. Feedback will be taken in future via suggest boxes and also through online staff surveys in the hospital.

Measurement for improvement will be through the use of "happiness run chart" on the test ward and repeat of the questionnaire.

Problems encountered during the process of change were disbelief of the data and perceived pressures on the health care system.

Our Messages for others are :

1. Medicine is still a fulfilling profession to which young High School students may look forward to though a small proportion of doctors are dissatisfied.
2. If the dissatisfaction amongst doctors are not resolved through a holistic system wide approach it will cause further stress, burnout and a wider service issue.
3. A happier workforce will cause less errors, be more productive and will have a reduced sickness rate.



## **Living Through the In-Between: Growth in Health Professionals Following the Experience of a Patient Safety Incident**

Call for Posters - Work in Progress

Abigail Hain, RN, MScN, Pilar Camargo Plazas, PhD, Kim Sears, PhD  
Queen's University, Canada

### **Background**

Patient safety incidents, or failures in the processes of care severely affect patients and families. These failures also deeply affect the caregivers involved. As a result of their involvement in these types of incidents healthcare providers are often silenced by shame and question their ability to continue practice.

### **Methods**

This inquiry aims to illuminate meanings from the clinical life world of health professionals involved in a serious patient safety incident. The approach to the study aims to explore the under-reported growth experience for clinicians that may emerge from being involved in a serious patient safety incident. Growth is defined as developing beyond the previous level of adaptation, psychological functioning or life awareness. The methodology of hermeneutic-phenomenology will be employed. The study will be guided by the philosophy of Emmanuel Levinas and post traumatic growth theory.

### **Outcome**

This study is in progress. Data collection will begin in April 2019. To date little focus has been placed on the transformative outcomes for healthcare professionals in these instances.

### **Conclusion**

A novel focus on the adaptive and transformative aspects of healthcare error/system failure in clinical practice may offer meaningful understanding of the paradoxes of healthcare error, as well as the untapped positive potentials for system and cultural change. When managed with skillful compassion, a patient safety incident has the potential to offer healthcare providers the chance to learn something essential about themselves, promote self-forgiveness and to leverage powerful peer-led activism in proactive health system improvement.

## **Seen and not heard: A QI project to enhance young people's voices in their own care**

Call for Posters - Work in Progress

Amy Taylor, Akudo Okereafor, Gayle Hann  
North Middlesex University Hospital, UK  
Emma Parish  
Homerton Hospital, UK  
Nicola Davey  
Quality Improvement Clinic, UK

### **Background**

This QI work targets young people aged 12-16 years old who present to one of London's busiest emergency departments. North Middlesex Hospital sees 500 patients pass through the emergency department each day, most of whom are from Enfield and Haringey, two of the most deprived areas in England.

Young people don't always share their problems if spoken to with their parents or carers present. Doctors miss key opportunities to identify and address bullying, eating disorders, self-harm, sexual abuse and gang involvement.

### **Methods**

By creating a fishbone diagram and process mapping I formulated a list of possible interventions which included: signposting to resources, teaching sessions on effective communication with young people, creating a clerking proforma with appropriate prompts, and information leaflets for young people and carers.

I have completed two PDSA cycles thus far. Both aimed to raise awareness of good practice and signpost useful resources. I disseminated the information to all of the paediatric doctors at the North Middlesex Hospital via email and group Whatsapp message.

The PDSA cycles currently being planned are: implementation of a new clerking booklet for patients aged >10 years old, posters aimed at young people and their parents/carers normalising the process of speaking to a doctor alone and detailing the advantages to the young person, and creation of a dedicated space to speak to young people alone.

### **Outcome**

I am using run chart data to identify change in the outcome measure namely the proportion of young people given the opportunity to speak to a doctor alone. I have demonstrated an increase in the number of young people given the opportunity to speak to a doctor alone after each of my first two interventions but have not yet managed to sustain this change.

By completion of the project I anticipate not only an increase in the number of young people given the opportunity to speak to a doctor alone but also an increase in referrals to other services including child and adult mental health services, youth work and sexual health. Clinicians and young people will become more aware of ancillary services leading to increased access and utilisation ultimately facilitating a reduction in bullying, eating disorders, self-harm, sexual abuse and gang involvement.

### **Conclusion**

Whilst defining my aim I debated which group of doctors to target. Although emergency department doctors are hugely important in addressing the identified problem they are outside my sphere of influence. I therefore decided to begin within my own paediatric department. I do hope to spread the interventions into the emergency department once I have demonstrated a sustained change within the paediatric department.

Shift work and workload have impacted on how I have implemented and disseminated change within our large, busy paediatric department. I have delivered regular short reminders and updates via email and WhatsApp and plan to continue doing so.

I hope to increase awareness of how valuable speaking to young people alone can be. It promotes independence and autonomy and serves as an opportunity to identify significant psychosocial stressors impacting on health and wellbeing.

## **Decreasing the volume of potentially unnecessary venepuncture in an inpatient setting**

Call for Posters - Work in Progress

Anna Smith  
NHS Scotland

### **Background**

The study was carried out by the Phlebotomy Manager working in the Royal Alexandra Hospital, NHS GGC and looked at service provision to over 22 acute medical and surgical inpatient wards. The focus was on improving inpatient experience of venepuncture since frequency of venepuncture was being highlighted by inpatients on a daily basis, raising questions around the necessity for repetition.

A large number of hospital inpatients during their admission have potentially unnecessary venepuncture due to duplication of tests, additional procedures, IT system failures and lack of staff communication.

These unnecessary venepunctures could result in poor patient experience, unnecessary costs, increase in needlestick injury and infection to both patient and staff, and a potential increase in hospital length of stay.

### **Methods**

To gain insight to the patient experience of venepuncture as an inpatient, a questionnaire based on the 'What Matters to You' principles was tested and adapted accordingly. However, the response to the questionnaire suggested that from the patient experience perspective, excessive venepuncture was not of concern.

Therefore, in order to better gauge the number of duplicated tests, the laboratory was approached and historic testing data was requested. Analysis of this blood sample data for 2 random wards within a month time frame provided tests received and resulted from 2 wards within a month time frame.

Extracted data identified 69 of the total 409 patients had potentially unnecessary venepuncture, representing 17% of the initial cohort.

In addition to this, equipment cost and cost of analysis cost were also calculated.

No input from phlebotomy staff was required at this stage as a baseline was being established.

### **Outcome**

For there to be a resulting improvement in care, the computer system used to request blood sample collection needs modified to alert staff of repeat sampling or additional testing required; this could be achieved through detailing financial benefits of this change to senior management.

Improvements to multidisciplinary communication would reduce the volume of unnecessary venepuncture by highlighting necessity of other procedures such as cannulation. This in turn could reduce the number of needlestick injuries and decrease infection due to venepuncture. This communication improvement could be achieved through meetings with multidisciplinary staff, feedback through monthly data analysis, and formation of relevant user group.

Once process for change implemented, it would be anticipated that duplicated blood results would decrease significantly. Using data obtained, the cost of unnecessary venepuncture suggested a potential 19.6% overspend on venous blood testing.

### **Conclusion**

Anyone can initiate change and highlight areas of practice where change could benefit their workplace. Small changes can have potentially large benefits; in this instance, as well as improving the inpatient hospital stay experience, there is potentially a large cost benefit to sites. Implementation of change can however be challenging as it requires buy-in from associated parties.

Other potential areas where unnecessary venepuncture takes place should be investigated more thoroughly to determine frequency and to enable formulation on an action plan to address this aspect. Challenges encountered include lack of audit and lack of communication, with the impact of change resulting in redirection of resources to areas with greater need, improved patient experience, decreased cost, decrease in infection and needlestick injury.

## **Evaluating and Improving the Use of High Flow Nasal Oxygen Therapy**

Call for Posters - Work in Progress

Anne McKay, Nicola Lee, Ruth McCartney, Emily Turner, Coralie Turner, Russell Allan, Christopher Wright  
Queen Elizabeth University Hospital Glasgow, United Kingdom

### **Background**

This work is being undertaken in the Respiratory Unit and the Medical High Dependency Unit (MHDU) in a large university teaching hospital. High flow nasal oxygen (HFNO) therapy is a newer method of providing higher concentrations of inspired oxygen in Type 1 respiratory failure (T1RF). The aims of the project are to ensure that high flow nasal oxygen HFNO therapy is prescribed effectively and safely in patients with T1RF and that this treatment is delivered in an appropriate care setting. Previously, there was no standard protocol for the prescription of HFNO, leading to inconsistent use by staff unfamiliar with this treatment. Also, once patients require the highest settings of HFNO, it is difficult to transfer them safely between wards using other methods of non-invasive oxygen delivery. Improved advanced care planning was needed to decide on the level of ceiling of care for each patient before commencing HFNO, and to avoid unnecessary transfer of patients to Critical Care beds.

### **Methods**

To assess HFNO use, data was initially collected from 20 consecutive patients started on HFNO over a two week period in November 2017. HFNO was most frequently commenced in MHDU (50%). Mode starting settings were FiO<sub>2</sub> 0.6, flow 60 L/min (6/20 patients). Prior to commencing HFNO, target oxygen saturations (SpO<sub>2</sub>) were documented in 55% of cases. A ceiling of care was documented in 85%; Do Not Resuscitate (DNACPR) forms were completed for 50% of patients.

A four page booklet was then devised to document the prescription of HFNO and provide a standard protocol for its use. The following information was included:

Page 1: Patient details, level of ceiling of care, resuscitation status, target SpO<sub>2</sub>, the prescription of HFNO and its initial settings

Page 2: Flow diagram with guidance on HFNO use, list of its contraindications

Page 3: Protocol for HFNO initiation (start settings FiO<sub>2</sub> 0.98, flow 60 L/min) and a weaning protocol

Page 4: Chart to record HFNO settings and routine observations

### **Outcome**

Prescription forms were distributed to the wards from 1st October 2018 and then HFNO use reviewed. During the first month of the proforma booklet being available, 17 patients were treated with HFNO therapy. Of these patients, 10 (59%) were in Respiratory wards. The proforma was only used in 8 patients (47%), 7 of which were on Respiratory wards. In every patient in whom a prescription form was used, the recommended starting settings for HFNO were applied and a clear decision about escalation of care documented; DNACPR forms were completed in 88% of these patients. Target oxygen saturations were stated in 75% of patients when the protocol was used. The forms were only completed in 1 of 9 MHDU patients. Although patient numbers were low, the use of a standardised proforma for HFNO prescription has improved documentation of target oxygen saturations levels, and decision making over escalation of levels of care and DNACPR.

### **Conclusion**

Respiratory wards have found the proforma most helpful. The current format may be best suited to use on these wards rather than MHDU. However, in all wards verbal feedback from nursing and medical staff has been very positive regarding the help the protocols give in clinical decisions around commencing and altering HFNO therapy; this will be assessed more formally in future months. It has taken longer than anticipated to establish the use of the forms because of the large size and staff numbers of our hospital. Overall, early indications suggest that it is worthwhile developing a standardised approach to HFNO treatment in our hospital. This should lead to improved safety in oxygen prescription and consistency of care for acutely unwell respiratory patients.

## **Improving Acute Hospital Care for People with Dementia and Older People: A Western General Hospital wide initiative**

Call for Posters - Work in Progress

Avril Brown  
NHS Lothian Scotland

### **Background**

This project is centred on continuous improvement through partnership with patients, carers and staff in hospital and focuses on the care and experiences of people with dementia and older people. Data collected from the WGH (2017) indicates people with dementia will on average, have a greater length of stay compared to those who do not have a dementia. There is a requirement to ensure that their stay reflects the recommended 10 Dementia Care Actions in Hospital and the 16 Older People in Acute Hospital Standards.

### **Methods**

Quantitative and qualitative data were used. A baseline of information in the project was established. Feedback has also been used in conjunction with data. This flexible approach reflects a more humanistic element to the process of improvement. We have audited the environment, reviewed our education, raised the profile of our dementia champions, introduced therapeutic interventions and talked to people with dementia, carers and staff to find out what they need and want. We have a monthly focus group with regular attendance from people with dementia and carers. This group is instrumental in taking forward new ideas and keeping the project very much alive. The findings and feedback are shared through various channels such as the hospital huddle, hospital magazine and local events.

### **Outcome**

Results to date show an increase in staff confidence and knowledge regarding dementia care and we would expect that this ambitious project will lead to better outcomes for people with dementia and older people. A better overall hospital experience can lead to shorter lengths of stay and less risk of readmission. Better environments, education and activities can reduce the risk of falls, poor nutrition and social exclusion all of which can be costly to lives as well as the financial implications.

### **Conclusion**

The key to the success of this project is facilitation and while it is acknowledged that improvement projects need to have an exit point, transformation takes time to embed and be sustainable within a service. It requires continually testing and reviewing through a QI approach. The key to the sustainability of this project is also through continual engagement of staff, carers and patients through leadership, education, involvement and communication.

## **Developing the web-based search system of results of analysing Hospital-Based Cancer registries**

Call for Posters - Work in Progress

Ayako Okuyama, Takahiro Higashi  
National Cancer Center, Japan

### **Background**

In Japan, the Designated Cancer Care Hospitals conduct Hospital-Based Cancer Registries under Cancer Registration Act. National Cancer Center has collected these data and published the Cancer Registry Report of the Nationwide Designated Cancer Care Hospitals since 2007. The purpose of this report is to provide the information for hospitals to capture current situation of cancer treatment and to give opportunity for improving their quality of cancer care. Current report is published only as PDF, so hospital staff cannot capture their situation.

### **Methods**

We developed the web-based search system for finding results of analysing Hospital-Based Cancer registries data. In addition, we held workshop for cancer registrars to summarise these data and to capture current situation of cancer treatments in the hospital and to assess patients' needs. We assessed page view of our website. Also, we conducted questionnaire for asking participants of the workshop whether they understand results of data analysis (lecture) and whether they can capture current situation (practice).

### **Outcome**

More than 15,000 people accessed our website during three months after developed the search system. In total, 86 cancer registrars were participated in one of five workshops in 2018. Overall, 78 participants (91%) answered that work shop was good. 41 participants (48%) reported that they could capture current situation of cancer treatments in their hospitals. Remaining 45 participants answered that they could not capture their situation because of lack of time.

### **Conclusion**

Many people visited in our website. Participants of the workshops reported positively our web-based search system. However, some were confused how to summarise these results and to interpret them. It will be more helpful for them to show results including graph. Moreover, we continue to educate them to appropriately interpret these results and use for quality improvements in each hospital. In order to capture the situation of their hospital, comparing treatment with other hospital can be helpful. We developed the web-based search system. Developing the system is not enough for quality improvement. We need to train users how to interpret these results, and how to discuss them with other staff for improving quality of cancer treatments.

## **Medication Safety Practices in Selected Healthcare Facilities in Kaduna State: a mixed method study**

Call for Posters - Work in Progress

Basira Kankia Lawal

Kaduna State University, Nigeria

Dr. S Mohammed, Prof. B. B Maiha, Prof. A. A Aliyu

Ahmadu Bello University, Nigeria

### **Background**

This project is being carried out in four (two tertiary and two secondary) healthcare facilities located in Kaduna State, Nigeria. Kaduna state is the third most populous state in Nigeria with an estimated population of 8.6 million people. There are 1, 692 healthcare facilities; 40.2% being of the private sector; 3.2% secondary healthcare; 0.3% tertiary healthcare facilities.

Medication errors occur frequently and have significant clinical and financial consequences which could be preventable. Understanding the patient safety culture and medication safety practices in health care organisations is important in preventing medication errors and improving patient safety.

The aim of the study is to explore medication safety practices in healthcare facilities in Kaduna State.

### **Methods**

The study adopted a mixed method approach and is divided into three phases. Phase 1 is a quantitative phase and involves an assessment of core medication safety practices in the study sites together with an assessment of patient safety culture through the use of the Hospital Survey on Patient Safety Culture developed by US Agency for Health Care Research and Quality (AHRQ).

Phase 2 involves semi structured interviews with health care providers and focus group discussions with patients to explore their perspectives on medication safety and to explore their experiences concerning medication safety respectively.

Phase 3 will be an intervention study and will utilise the WHO Patient Safety Curriculum Guide: Multi professional edition as the intervention tool.

### **Outcome**

Preliminary results have shown absence of some core medication safety practices. None of the facilities has an active medication safety committee, a list of look-alike sound-alike (LASA) medications, and a list of error prone abbreviations. Only one of the facilities has implemented a unit dose dispensing system and involves pharmacists in medication reconciliation.

Phase 2 is expected to draw out information regarding medication safety and error reporting that will eventually be utilised in making recommendations for improvements.

The educational intervention is expected to provide attitudinal and knowledge improvements concerning patient safety.

### **Conclusion**

This is still work in progress but so far, the study sites have shown immense interest in the study and the study findings will offer substantial opportunity for improvements. The study has also opened up an area of patient safety culture, where not much research has been conducted in Nigeria. There is need to promote this into practice to achieve quality in healthcare.

## **Working Together**

Call for Posters - Work in Progress

Carol McCullough

SHSCT Service User, N.Ireland

### **Background**

People unhappy about the care they receive are often directed to the Complaints Department. However, learning opportunities may be lost because people who do not want to make a complaint avoid the process. The stress, delays and bureaucratic complaints process can also negatively impact on the well-being of patients and other vulnerable groups- physically and psychologically. It can lead to a feeling of exclusion and frustration; language becomes more antagonistic. Complaints have a demoralising impact on all staff that intensifies anxiety and guilt for those involved in clinical errors. Complaints by their very nature infer blame and can generate a defensive culture. The process becomes reactive rather than proactive.

As a service user, I wanted to explore ways to encourage choice and promote alternative approaches to raising awareness of problems experienced in care where patients, families and staff can work safely in partnership to find resolution and improve services.

### **Methods**

I used the 5 Step Model for Improvement that is taught through the OCN NI Level 3 Service User Award programme to develop my knowledge and skills of QI tools, techniques and methodologies. I was able to understand and evidence the problem. I developed a driver diagram to clarify my vision, aims and objectives.

Qualitative and quantitative data was gathered by asking service users/ carers and staff focus groups for feedback on the complaints process, and alternatives, by completing a short questionnaire and responding to additional questions on post-it notes. Analysis of data was circulated by e-mail to key stakeholders; including team members for dissemination to focus groups.

Based on analysis of data and using Plan-Do-Study-Act (PDSA) for continuous improvement a poster was designed as a tool to promote better communication and working in partnership. We shall use PDSA to evaluate the poster's impact.

### **Outcome**

This is an ongoing project with the initial work being carried out over approximately eight months.

There have been several clear learning outcomes taken from this process:

- Improved communication, use of information and earlier intervention could reduce the incidence of complaints.
- More Personal and Public Involvement is required to better resolve concerns and problems.
- In the time available it was decided to design a poster based on prevalent findings using a continuous model of improvement and teamwork.
- The poster which will be used as a tool in future work has been used in an event for non-acute care and is already being displayed some areas of the Trust.

We are also now hoping to build on the work of the course with the creation of a co-design group to look at the more human side of complaints and the impact on service users and staff.

### **Conclusion**

When considering the progression of a work plan, time factors really need to be considered. Challenges in organising meetings due to stakeholder's availability and avoiding a blame culture were key issues. Using a model for planning, teamwork, analysis and continuous improvement is essential for quality improvement. It helps to set out a road map for success and also helps to mitigate these challenges. Involving the stakeholders from an early stage and throughout the process of the project really does help to keep momentum going. It is something that I could recommend to anyone else undertaking a project of their own. It can help to create a growth culture for enhanced communication and working in partnership.



## **Service users' experience of MymHealth**

Call for Posters - Work in Progress

Catherine Matheson-Monnet, Cindy Brooks, Anastasios Argyropoulos, Richard Guerrero-Luduenia  
United Kingdom

### **Background**

Health related web platforms/apps have great potential to improve public health and COPD, heart disease and diabetes are key priorities for the NHS (NHS England, 2014), but little is known about effective user adoption (Whitehead and Seaton, 2016). MymHealth [myCOPD, myHeart, myDiabetes] is an integrated online education, self-management, symptom reporting and rehabilitation app available on the Apple and Google play app store. myCOPD is endorsed by NHS England (2017). A randomised clinical trial found that online supported Pulmonary Rehabilitation [PR] was non-inferior to face-to-face group sessions in improving 6-minute walk test distances and CAT test scores and could also correct inhaler usage errors without clinical intervention (Bourne et al, 2017).

### **Methods**

Dorset Clinical Commissioning Group undertook a Proof of Concept pilot roll out of MymHealth to identify enabling factors/drivers and restricting factors/barriers to embedding it in routine practice and derive learning points to facilitate future implementations of mobile health services. Working groups for each of the three apps coordinated the implementation. The Normalisation Process Theory [NPT] framework (May and Finch, 2009) underpinned a mixed methods evaluative approach [non-participant observation of working group meetings (n=19) and focus groups with clinicians (n=7); survey (n=14) and interviews with clinicians (n=9) who distributed MymHealth; survey (n=8) and interviews with patients (n=3). The clinician sample was representative and included two thirds of clinicians who had distributed MymHealth. The patient sample was small and less representative, including approximately 10-15% of the 'active' patients who used MymHealth daily or several times a week.

### **Outcome**

Clinicians valued what MymHealth was trying to achieve, but not the effect of MymHealth on their routine practice. Patients agreed MymHealth had helped them manage their condition and valued the effect on their daily/weekly routine practice and would recommend it to family and friends. Out of 606 apps issued by clinicians, only an estimated 12.5% of registered patients were accessing the apps daily or several times a week. Working groups agreed that MymHealth had great potential to be a good self-management tool, complementary to existing provision. Time pressure, no backfill for additional staff time, and IT/Wi-Fi limited the promotion and signing up of patients and remote monitoring of their patterns of engagement. The roll out worked best when it was more cost effective than existing resources for patients. Barriers of inappropriate content and errors on the platforms/apps that delayed the rollout became opportunities for working group members to help co-design the content.

### **Conclusion**

The evaluation adds to the relatively limited body of knowledge on implementation of mHealth web platforms/apps in a real-world setting and provides a real world perspective on the challenges faced when rolling out an online technology to facilitate patient self-management. Key insights were gained about how working groups, clinicians and patients engaged with MymHealth and the drivers and barriers that impacted on the implementation, the interplay of which showed the complex dynamics of implementation. Sustainability would require continuous engagement from patients and 'buy in' from more clinicians as well as persistence in order to allow a cultural shift towards better integrated working and the 'normalisation' of MymHealth. Pro-active thinking through aims and their required operational processes would help anticipate potential barriers and consider how to overcome or mitigate these barriers as well as help clarify expectations.

## **Quality Improvement in General Practice in Myanmar**

Call for Posters - Work in Progress

Cecily Borgstein, Sateesh Ganguli

Improving Global Health, Health Education England

Anne Smalldridge, Sonny Aung

Royal College of General Practitioners, England

### **Background**

Private-for-profit clinics run by General Practitioners (GPs) provide most primary healthcare in Myanmar. However, general practice has often been poorly recognised as a discipline; there are no post-graduate training requirements, accreditation, monitoring systems or quality assurance. As a result, there are wide geographic, ethnic and socio-economic disparities in the standard and provision of primary care.

In 2017 the Royal College of General Practitioners (RCGP) were asked by the Ministry of Health and Sport in Myanmar to work with the Myanmar Medical Association (MMA) and General Practitioners Society (GPS) to develop a strategy for Quality Improvement (QI) in General Practice.

A pilot study was carried out to identify learning needs and quality indicators. Then a year long QI Project was run by the RCGP alongside Improving Global Health (IGH) Fellows from Health Education England (HEE).

### **Methods**

Five visits to Myanmar were carried out in 2018 with QI workshops and practice visits being carried out in three key areas of Myanmar.

The visits included teaching on QI tools and skills such as audit, significant event analysis, group facilitation, case discussions, consultation skills and professional development. The same three areas were visited throughout the year to ensure the development of knowledge within the cohorts.

Two practice visits were carried at 46 practices; and information was gathered on the quality indicators and any changes or improvements made between visits. In the final visit of 2018, a Training of the Trainers workshop was carried out. This along with the development of Quality Circles ensured the sustainability of the project.

### **Outcome**

The positive impact of the project was recorded within all quality indicators.

For example:

- Significant improvements in hand hygiene
- An increase in record keeping
- Engagement in Personal Development Portfolios and regular logging of Continuing Professional Development (CPD)
- Active involvement in Quality Circles
- Appropriate sharps collections
- Surveys showed that teaching on CDP was useful and actively shared with other GPs

### **Conclusion**

An increase in confidence in using QI tools in their practice was reported by all GPs thus evidencing the success of this project and its perpetuation.

This was also shown through the engagement of the GPs in the Training of Trainers workshops.

Additionally, making quality data available to all GPs early and informing interventions promoted change and subsequent data collection showing improvement motivates and encourages commitment.

The equitable and long-term partnerships developed were vital to this project. These partnerships underpinned the QI Training and were key to its success and sustainability.

## **Invasive Procedures and Patient Safety: Moving beyond the "see one, do one, teach one" model of learning**

Call for Posters - Work in Progress

Ciaran Megoran, Philippa Wilson, Peter Walker, Caroline Curtin  
Barking, Havering and Redbridge University Hospitals Trust, United Kingdom

### **Background**

In this on-going project we are looking at how the use of simulated procedure manikins could improve the confidence of junior doctors performing common invasive procedures, and thereby improve the quality and safety of these procedures. This is taking place at a large district general hospital in East London.

At medical school and during foundation training there is no clear requirement to be taught practical procedures beyond the scope of basic procedures, such as venepuncture and cannulation on a manikin arm. However, it can often be the role of the junior doctor to perform invasive procedures that aren't taught, such as lumbar punctures. This is the case within our trust. This results in patients being used as part of the out-dated "see one, do one, teach one" model of learning, with potentially harmful procedures being attempted for the first time on a real patient.

### **Methods**

We assessed the feedback received from junior doctors and Health Education England visits to decide that further teaching was required to ensure procedures were performed safely and to a higher standard. With the help of the foundation program directors we were able to incorporate the intervention as mandatory training for the Foundation Year One (FY1) doctors.

In our intervention, we arrange for FY1 doctors placed at our District General Hospital to be taught the following procedures over the course of two afternoons: Lumbar Puncture (LP), Central Venous Catheter (CVC), abdominal paracentesis, chest drain insertion, and nasogastric (NG) tube insertion and review. High quality simulation manikins are used to allow each candidate to practice, using the hospitals standard equipment. Specialist doctors deliver the teaching and at each station the FY1s are taught the indications, consenting process, side effects, post procedure care and complications, and the practical procedure itself.

### **Outcome**

We are collecting data before and after the teaching. This includes asking if they have been taught the procedure previously, and also about their confidence in performing the procedure before and after the teaching. From 25 candidates, we found 76% had never been taught paracentesis, 64% had never been taught chest drain insertion, 92% had never been taught CVC, 60% had never been taught LP, and 36% had never been taught NG insertion. Confidence in performing the procedures before and after the teaching has increased ( $p < 0.05$ ).

This is an on-going project. We are currently working alongside the specialists and FY1s to ensure that all are trained using the simulation manikins. We are then going to review, using questionnaires and specialty team feedback, about the confidence and ability of the FY1s to perform these interventions in real clinical scenarios, and the details around the interventions performed, such as number of attempts and success rate.

### **Conclusion**

Although we are still performing our intervention, we are showing an improvement in the confidence of junior doctors to safely perform procedures that are often required of a hospital-based doctor. Whilst we are receiving informal feedback that the intervention is leading to better capacity to perform safe patient procedures, we are unable to state with certainty that this is the case at this stage.

Due to the heightened awareness around patient safety, the "see one, do one, teach one" methodology of education is being moved away from. We feel that this hasn't yet happened in the teaching of more advanced practical skills. With the ability to now use higher fidelity simulation equipment, we hope that junior doctors will be able to practice these potentially dangerous procedures from the safety of the education centre.

# **Empowering Patients to Become Involved in Their Own Lithium Monitoring – A Quality Improvement Project**

Call for Posters - Work in Progress

Cinzia Giuntoli, Matt Roberts, Fahd Cheema, Navesh Puri  
NHS Greater Glasgow and Clyde, Scotland

## **Background**

Lithium is an effective and commonly prescribed mood-stabilising medication with a narrow therapeutic index. In order to reach a balance between efficacy and toxicity, close monitoring of blood levels, renal and thyroid function is required. Previous Studies have shown that monitoring is sub-optimal in the UK. 10 years ago, The National Patient Safety Agency (NPSA) developed patient record books, information leaflets and alert cards to facilitate adherence to monitoring guidelines. Despite evidence that the NPSA tools improved Lithium monitoring, high costs of printing has meant that the record books and information leaflets are not readily available locally. We aimed to assess how well Lithium monitoring is performed in our patient population and then pilot a tool to enhance patient awareness of monitoring requirements and encourage patient involvement in the monitoring process. In doing so; we hoped to increase adherence to guidelines and ultimately improve patient safety.

## **Methods**

All outpatients on Lithium were identified using clinic letters across two Community Mental Health Teams. Electronic records of clinic notes, letters and lab tests were reviewed and standards of monitoring were compared to Local NHS GGC guidelines over a 6 month period between January and June 2018. A bespoke “Lithium pack” was then developed and sent to all identified patients in December 2018. This pack was designed as a streamlined version of the previously recommended NPSA materials and included the following – a standardised letter outlining the contents and purpose of the pack; a Lithium Alert Card; a concise patient information sheet and a novel compact record keeping tool entitled “My Lithium Record Book”. This record provided reminders of the frequency of each test and allowed patients to keep track of their recent results. Following distribution of these packs, re-audit of all patients on Lithium was carried out over a 3 month period between December 2018 and March 2019.

## **Outcome**

52 patients on Lithium therapy were identified during the initial audit cycle. Compliance with NHS GGC Lithium monitoring guidelines was seen to be inadequate. We were able to successfully distribute our Lithium Packs to 100% of patients. At the 2nd cycle, a total of 49 patients were included. Following intervention, improvements were seen for measurement of 3 monthly Lithium levels (increased from 38% to 78% of patients) and 6 monthly renal and thyroid function (increased from 59% to 80% and 55% to 69% respectively). A slightly higher proportion of patients met targets for 3 monthly outpatient reviews (increased from 30% to 49%) but little changes were seen in terms of regular weight and side effect monitoring (increased from 7% to 12% and 30% to 31% respectively).

## **Conclusion**

We have shown improvements in adherence to Lithium monitoring guidelines by using a targeted, patient-centred approach. We have demonstrated that it is possible to improve concordance by distributing information regarding the monitoring of Lithium and its associated risks. Our results indicate that this strategy was most effective in terms of improving compliance with blood monitoring. There was little improvement in the monitoring of side effects and weight; therefore alternative interventions are likely to be needed to enhance monitoring of these parameters. Our devised intervention was low cost and can be easily replicated in the future by other clinical teams. This strategy could also potentially be applied to other medications with monitoring requirements. Overall, our project has shown that involving mental health patients in their own physical health monitoring by using low cost, targeted tools can result in rapid positive outcomes and improved patient safety.

## **Learning from Deaths and Serious Incidents - Why are we not sharing the learning?**

Call for Posters - Work in Progress

Claire Cox, Peter Carpenter, Tony Kelly, Jacqui Parfitt  
Kent Surrey and Sussex Academic Health Science Network U.K

### **Background**

Claire Cox is a critical care outreach nurse by background, currently working as a Darzi Fellow with Kent Surrey and Sussex Academic Health Science Network, alongside the Patient Safety Collaborative. The Darzi Fellowship is a Clinical Leadership programme which started as a London-wide programme run by NHS London Leadership Academy, it has since incorporated Kent Sussex and Surrey. The Darzi Fellowship was started in 2009 in response to Lord Darzi's review which called for stronger clinical leadership and management roles.

The project brief was 'Why are we not sharing the learning from deaths and serious incidents across sector with in Kent Surrey and Sussex?' An assumption was made by the sponsor, that we were learning but not sharing. In this yearlong project, a deeper understanding on what barriers are to learn from these incidents and to make recommendations for improvement.

The NHS conducts patient safety investigations after things go wrong in-patient care to learn from these events and to inform changes to prevent them happening again (NHS England 2018). A similar principle applies from learning from deaths (National Quality Board 2017), however they are viewed separately by policy makers.

In 2000, the Department of Health stated that a service working well should expect that:

- Serious failures of standards of care are uncommon.
- Serious failures of a similar kind do not recur on a future occasion.
- Incidents where services have failed in one part of the country are not repeated elsewhere.
- Systems are in place which reduce to a minimum the likelihood of serious failure in standards of care happening.
- Attention is also paid to monitoring and reducing levels of less serious incidents

Nearly 20 years on the NHS still has a mountain to climb to ensure that patients/citizens receive harm free care.

A conservative estimate of 150 people die from avoidable death in UK hospitals every week (Hogan et al 2015)

If a jumbo jet packed full of holiday makers fell from the sky every 2 weeks for a whole year, immediate action would be taken before then. So why has this fact become the norm for healthcare?

### **Methods**

There were two stages.

Step 1- A 4-month scoping period as was assigned to gather data using semi structured interviews. Gathering data on; role, processes used, understanding of guidance, barriers to learning across sector and barriers to learning within an organisation. An inductive approach was used to understand the problem, starting with the citizen, the clinician, medical directors, safety leads, investigators, CEO's, Clinical Commissioning Groups (CCGS's) and regulators, across sector.

Repeat visits were required to gain the trust of interviewees to gain a genuine sense of 'work as done, rather than work as imagined.'

Step 2 - 'Get the system in the room'

Self-invitation of the event was encouraged by using social media to create a social movement using the #daretoshare and via the KSSAHSN deteriorating patient network, improvers network and current COP's. Delegates were asked to undertake four activities, which were designed to help them better understand the barriers to learning, as identified in the scoping period.

They then formed small project groups to identify pragmatic, practical solutions to local barriers/issues. Their anecdotal feedback pointed to a range of local issues along the lines of; lack of standardisation in the way investigation are carried out, lack of robust training in conducting investigations and lack of feedback, good and bad to frontline staff across. There was an appetite for citizens and staff to work together, but no mechanism to do so.

## **Outcome**

More than 100 people attended the event, with a good representation from across disciplines and sectors.

Investigators, regulators and Clinical Commissioning groups (CCG's) had a differing view to what learning means to the clinicians and senior staff. Investigators, CCG's and regulators believed learning was predominantly process driven, whereas the clinicians and senior staff believed that learning was experiential and a change in behaviour from personal experience. This language disconnect could be one of the barriers to organisational learning as well as cross sector learning.

Recommendations were made following the event.

- Involving clinicians to work with the investigation team to uncover good and poor practices and find innovative solutions to reduce risk.
- Involving patients, families and citizens, not only with the investigation process, but finding innovative solutions to reduce the risk of it recurring.
- Ensure standardised, competency-based training to anyone conducting a clinical investigation.
- Involve the investigation team on the 'shop floor'
- Improve the relationship between 'citizens and families' and the 'Trust'.
- Improve the relationships between CCG's and regulators with the 'Trust'.
- Reconsider the way we measure safety, are we measuring the right things?
- Use a standard approach to investigations, nationally.
- Consider a new model of care to allow governance of large hospital Trusts to be shared to allow improved access to information.

## **Conclusion**

There was a sense of wanting to improve the way we share learning from deaths and serious incidents across Kent Surrey and Sussex from people who attended the day. Fantastic change ideas will be implemented, however, to ensure that our health system is among the safest in the world a dynamic shift in the way the process of reporting, investigation, regulation is conducted is required. Clinicians are the care givers, citizens are central, by not involving them with in the investigation and be part of the solution is short-sighted.

There is an assumption made by clinicians and citizens that investigators are trained experts in investigations and ensuring changes are made in order for reducing the risk of future harm, as highlighted by the investigators, this is not the case.

Assumptions held by each tribe are part of the barrier for not sharing information or giving up power, however the current processes and system we have for embedding and sharing learning from deaths and serious incidents are not robust. There are pockets of good practice but getting these ideas/solutions shared will only compound unwarranted variation. At present, there are no current standardised mechanisms for closed loop feedback to front line staff thus leading repeated serious incidents and avoidable deaths.

## **Steps to improve medication safety and efficiency in a small rural Irish hospital.**

Call for Posters - Work in Progress

Cora Hayes

Bantry General Hospital, Ireland

### **Background**

A journey of continuous improvement has begun in Bantry General Hospital to address the safety and efficiency of medication administration. The journey commenced within one unit which incorporates a Medical Assessment Unit and 10 inpatient beds. At baseline small, floor level medication storage cupboards at distal ends of the unit and sub-optimal processes for ordering and supply of medicines from pharmacy contributed to poor inventory control and numerous supply-related interruptions while administering medications. Medication administration rounds took place periodically using a drug trolley stocked by nursing staff. This project was undertaken to improve medication administration safety and efficiency via enhanced inventory control and ward design.

### **Methods**

In November 2017, data collected by nurses using check sheets over a period of four weeks revealed that the median duration of a morning medication round for 10 patients was 95 minutes, that one third of patients received medications late and that there were issues with medication availability.

In February 2018, ward medication stock was amalgamated in a new storage cupboard and medications were stored in their own compartments alphabetically. Set stock lists and levels were established based on historical usage. New streamlined processes for ordering stock were established as well as clarifying a process for ordering 'non-stock' items. A map of the medication cupboard contents within the cupboard allowed for easy location of medicines.

In Autumn 2018 a business case was submitted to install bedside medication lockers at each patient bedside and in December 2018, bedside these were installed for each patient to store the medications required for the duration of their stay.

### **Outcome**

New storage solutions and simpler processes for ordering medications using stock lists resulted in a reduction in median duration of morning medication round from 95 minutes to 72.5 minutes. The percentage of patients receiving medications late reduced from 31.4% to 13.8%. The number of medications unavailable on trolley reduced by 47% and on ward by 68%. This also resulted in improved staff experience who reported the new process as 'efficient', 'organised' and 'easy'.

The installation of bedside medication lockers meant that the drug trolley was relegated from use. This yielded further improvements with the latest data collected showing 2.5% of patients receiving medications late. A survey of nurses working on the unit revealed that no nurse wanted to return to using a drug trolley and that the medication lockers made their working day easier. Furthermore, they would recommend them to their colleagues on other units in the hospital.

### **Conclusion**

Incremental changes on our journey of improvement have yielded improvements for patients, nurses and the organisation. Nurses spend a large proportion of their time preparing and administering medications. This project has made significant gains in simplifying the medication administration process, protecting both nurses and patients from some unnecessary interruptions and reducing the time taken to safely administer medications.

## **The Yangon General Hospital Gestational Diabetes Clinic: A quality-improvement project.**

Call for Posters - Work in Progress

David Luther

Thames Valley and Wessex Leadership Academy, United Kingdom

Nandar Lin, Zar Chi Pyone, Moe Wint Aung

Yangon General Hospital, Myanmar

### **Background**

The Gestational Diabetes Clinic of the Yangon General Hospital opened in January 2018. It is the first specialist gestational diabetes (GDM) clinic in Myanmar. In August 2018 we performed an audit of the clinic's activities and found there to be a lack of standardised diagnostic criteria among the three referring hospitals, long delays between diagnosis of GDM and presentation at the clinic, poor levels of patient education, and few patients presenting for post-partum screening for type 2 diabetes (T2DM). Consequently, the pre-existing system was prolonging women's exposure to untreated GDM through missed diagnosis or delayed intervention, limiting the effectiveness of lifestyle and medical interventions, and missing the opportunity to screen for T2DM in women who had previously had GDM. We conducted a six-month quality-improvement project to improve these aspects of care.

### **Methods**

We used multiple PDSA cycles and mapped change using run charts. To standardise diagnostic criteria and reduce delays between diagnosis and presentation, we created a 'Testing for GDM' guideline and accompanying posters describing referral to the GDM Clinic. We also negotiated a change to laboratory practices - changing the day of the week on which the diagnostic 'Oral Glucose Tolerance Test' is performed. To improve patient education and uptake of post-partum screening, we delivered weekly patient education talks and redesigned our clinic proforma to include clinician prompts. We also created a clinic Facebook page and a series of five animations and two patient-story videos. These changes were all made between August and December 2018. Our patient education changes were informed by a series of semi-structured patient interviews.

### **Outcome**

Our guideline reduced variation in methods of performing the OGTT (three to one) and interpreting the result (three to two). The guideline, accompanying posters and change to laboratory practices reduced delays from OGTT result to presentation at the GDM clinic by 1.2 weeks per patient (from 3.6 weeks to 2.4 weeks, 2-tailed t test,  $p = 0.006$ ). Patient education measures resulted in an improvement in patient understanding in a pre-post trial with a 10-question true/false quiz (2-tailed t test,  $p = 0.002$ ). Uptake of 6-week post-partum screening also improved. 70 patients attended during the project period. This resulted in the diagnosis of type-2 diabetes and initiation of treatment in 11 patients, and diagnoses of pre-diabetes in 15 patients. We project that more than 150 women will attend for post-partum screening in 2019. Without screening, 50% of women with GDM develop T2DM within 5 years; our work will allow for initiation of treatment before irreversible complications develop.

### **Conclusion**

Our changes will reduce the burden of disease of GDM by reducing time from testing to intervention, and by enhancing patient compliance with intervention through the introduction of patient education resources. Our changes will also reduce the burden of disease of T2DM by improving the take-up of post-partum screening by women who have had GDM. Early diagnosis will allow early intervention and prevent subsequent diabetic complications. Our education resources have been shared with diabetes centres across Myanmar. They can both improve patient understanding, and provide an example of how digital technology can be used for patient education. Making understandable translations of medical concepts in Myanmar language for patients with low levels of education was a significant challenge, as was encouraging meaningful patient feedback in a society with a paternalistic medical system and dis-empowered patients.



## **Comparison of Rapid VMAT to Standard VMAT for Palliative Radiotherapy in Lung Cancer Patients**

Call for Posters - Work in Progress

David Mak

University of British Columbia, Faculty of Medicine, Canada

Kerry James, Ian Fraser, Robynn Ferris, Michael McKenzie, Steven Thomas, Mitchell Liu, Shilo Lefresne  
BC Cancer Agency, Canada

### **Background**

Advanced lung cancer patients often present with debilitating symptoms such as pain, dyspnea, and hemoptysis which may require urgent palliative radiotherapy. Basic radiotherapy techniques can allow for same-day radiotherapy planning and treatment, but this approach can be associated with normal tissues (ex. lung, esophagus) receiving moderate doses of radiation that can lead to acute side effects (ex. cough, esophagitis) and impact quality of life. Volumetric Modulated Arc Therapy (VMAT) is able to conform radiation to tumors and limit toxicity to normal tissue but is resource intensive (7-10 day turn-around). While there is growing preference for VMAT, the turn-around time is often unacceptable for symptomatic, palliative patients, and the increased workload is straining resources.

This project was conducted at the Radiotherapy Department at the BC Cancer, Vancouver Centre, in Canada. The team included radiation oncologists, physicists and radiation therapists.

### **Methods**

A committee of radiation oncologist (ROs), radiation therapists (RTs), and physicists was established. Ten sample VMAT cases were re-planned with less stringent techniques and reviewed for acceptability by four ROs within one week. Guidelines for patient eligibility and simplified planning techniques for the new 'Rapid VMAT' process were developed and distributed to the department for consensus. Over a 3-month period, 13 patients were treated with Rapid VMAT after being peer-reviewed for safety and quality. Subsequently, 15 Rapid VMAT plans were flagged for a prospective study to compare dosimetry and workload to the standard process. A supervised medical student contoured structures omitted in the Rapid VMAT technique, and a second radiotherapy plan was created according to standard VMAT guidelines. Time spent planning both the rapid and standard VMAT plans were recorded. Dosimetric differences and quantitative representations of workload were compared using descriptive statistics.

### **Outcome**

Rapid VMAT produced plans of similar quality to standard VMAT. There were no significant differences in tumour coverage or dose to the spine, lung, or esophagus. Dose to the heart was higher in rapid VMAT ( $35.2 \pm 1.2$  vs  $34.6 \pm 1.2$  Gy,  $p < 0.05$ ), but this is not clinically significant. All plans were ready for treatment within 48 hours.

There were longer planning times recorded for Rapid VMAT (Median 56.5 vs. 30.5 min,  $p = 0.069$ ), but this was confounded by several variables. For example, RTs often plan multiple cases simultaneously and planning software speed varies due to case complexity and number of active users. RO planning time was similar (Median 5.5 vs 4.0 min,  $p = 0.142$ ). Physicist workload was not routinely documented, precluding analysis. Due to the discrepancy in RT time and missing physicists' data, subjective opinions were gathered with an anonymous survey. All members (4 ROs, 5 RTs, 4 Physicists) described quicker planning times, with 70% citing improved workflow and patient care.

### **Conclusion**

Rapid VMAT has allowed lung cancer patients to receive highly conformal palliative radiotherapy in a timely manner. Anecdotally, workload in developing these palliative plans has decreased. Occasionally, unnecessary complex planning and extensive quality assurance can negatively impact the delivery of timely care. With a cautious team-based approach, simplification of processes can be relatively easy to achieve and often happily received by staff.

Objectively comparing the workload of Rapid and Standard VMAT planning was more difficult than anticipated due to competing demands in the department and difficulty in controlling confounding variables that can impact workload in daily clinical practice. In the future, metrics to assess workload should be defined a priori and administrative support for the project should be established.

## **Unlocking Potential for Improvement - A Patient Safety Collaborative in Prison Healthcare**

Call for Posters - Work in Progress

Dawn Wigley, Jillian Galloway, David Morrison, Rachel Bennison, Alison Davie  
NHS Tayside, Scotland  
Fraser Munro  
Scottish Prison Service, Scotland

### **Background**

Everyone has a right of equal access to healthcare, whether they are in prison or not. Patients coming through prison healthcare frequently present with extreme or complex health needs impacting not only on their health, but social care needs. As the prison population changes, so do the healthcare needs of prisoners, bringing new healthcare challenges and increased age-related conditions, often difficult to treat in a secure environment. In addition to this is a rising complexity across the prisoner population including substance misuse, mental health, co-morbidities and long term conditions.

The approach to drive change focuses within healthcare settings of two prison establishments in Tayside, Scotland; HMP Perth and HMP Castle Huntly. This collaborative approach between NHS Tayside and the Scottish Prison Service aims to provide safe and effective care to this unique patient population whilst promoting and fostering partnership working.

### **Methods**

The Institute for Healthcare Improvement Breakthrough Series Collaborative Model has been utilised and the Prison Healthcare Patient Safety Collaborative was launched in August 2017.

This improvement programme focuses on key priority workstreams including; medicines safety, identification of and response to the deteriorating patient and communication at transitions, all important aspects of prison healthcare. Supported by subject matter experts and the patient safety team, it provides multidisciplinary teams with the support and structure to build capacity and capability in improvement science, engaging in learning and action periods, aiding staff to make real system level change to lead to improvements.

Within HMP Castle Estate, two prisoner/patients have been involved in the multidisciplinary team communication workstream, providing insight from a service user point of view, also acting as key links between service users and healthcare/SPS staff.

### **Outcome**

Final outcomes of the collaborative are not yet available at the time of this abstract submission, although it is anticipated that improvements will be demonstrable on completion of the collaborative, including a reduction in medicines administration times and increase in patient satisfaction. Importantly, there is evidence of the improvement science theory being applied to other aspects of prison healthcare, not already covered under the collaborative model.

### **Conclusion**

This is the first patient safety collaborative within a prison setting to be undertaken in Scotland. There has and continues to be great progress undertaken, but there has been challenges. It cannot be underestimated the challenges posed with testing change within a custodial environment. Testing new approaches and processes can frequently be setback and delayed due to strict prison regimes. In hindsight testing with one workstream instead of the original three may have been a better approach. Working across the patient pathway of care and involving staff from the wide range of specialities in planning improvements has helped build will and the capacity and capability for change.

## **How to increase the feeling of safety in spite of obstetric complications:**

Call for Posters - Work in Progress

Diane Malberg, Stine Storm

Dept. of Obstetrics and Gynaecology, Lillebaelt Hospital, Denmark.

### **Background**

In the Danish nationwide survey of patient experiences of births 2016, 38, 9 % of the women stated, that they were not sufficient prepared for complications during birth.(1) Furthermore an increasing amount of Danish multipara women request caesarian section, because of previous traumatic birth experiences.(2) The need to understand the topics of importance for the couples, when the birth is no longer uncomplicated and how to increase the couples feeling of safety, is of highest importance.

Aim: We need to gain more knowledge of the topics of importance for the couples in complications of birth and the characteristics of these.

### **Methods**

An explorative interview study, conducted in a highly specialized hospital unit, interviewing five couples admitted (postpartum) to the postnatal ward. Data were collected in November 2017 at Kolding Hospital - part of Lillebaelt Hospital, Denmark. The five couples interviewed were admitted because of complications during birth. Each interview lasted approximately one and a half hour. The interviews were continued until there were no more new topics or views. The interview started with one question. The couples were asked to tell about their pregnancy and birth experience of importance to them. The word complicated was never mentioned, since the meaning of the word can be understood in different ways and also bias the intent of the interview. Explorative interviews were used, since the intent was to learn about new dimensions of the topic.

### **Outcome**

The partners experience is highly important. The partner had a lot to say and was affected by the circumstances equally to the women in terms of psychological wellbeing.

We found, that the feeling of safety was increased, when medical staff showed on these parameters:

- Honesty in regards of complications;
- Responsibility for progress during pregnancy, birth and the postnatal period;
- In-depth knowledge of the women's obstetric history and the couple's - individual wishes and needs;
- The information is the same regardless different staff;
- Expectations are adjusted during the pregnancy, birth and postnatal period;
- Staying with the next of kin in case of their partner's hospitalization in the operation room;
- High level of information from the staff in relation to their actions in the delivery room;
- Clearly shows caring in their body language;
- Professionalism;
- When information and thoughts related to the circumstances are clear to the couples.

### **Conclusion**

Conclusions of the explorative interviews were, that the care and actions from midwives, doctors and nurses is of high importance, in regard of the interviewed couples feeling of safety. Team-spirit was an overall topic, when the aim was to increase the feeling of safety for the couples, despite of obstetric complications.

## **Towards prevention of pressure ulcers in a Danish nursing home**

Call for Posters - Work in Progress

Ditte Jensen, Mette Hammerschmidt Rasmussen, Marlene Ravn Wegener, Kirsten Høgh Obling  
City of Aarhus, Denmark

### **Background**

Aarhus Municipality continuously works with quality improvement in elder care e.g. by being a part of the Danish Patient Safety Program called In Safe Hands. The aim of In Safe Hands is to improve patient safety in primary care through elements such as systematical education in improvement methods, leadership involvement, and learning from data.

As a part of In Safe Hands a nursing home in Aarhus Municipality has worked systematically to prevent the development of pressure ulcers amongst the 38 residents at the nursing home. The 38 residents at the nursing home are elderly people with a lasting need for care and practical help 24 hours a day. Many of the residents are immobile and have the need for socializing and close contact with caregivers. The aim of the intervention is to reach a minimum of 300 days without pressure ulcers.

### **Methods**

New workflows are implemented with the aim to reduce the amount of pressure ulcers in the nursing home. The new workflows include A) establishing daily huddles B) implementing systematic risk assessment with Braden Scale C) implementing a checklist (HUSK ) for the prevention of pressure ulcers in residents at risk.

The improvement team is the primary driver in disseminating the change to other staff members. The team tests change ideas through PDSA cycles. They collect data and emphasizes the results continuously. Sharing of experiences takes place in leaning seminars with other improvement teams from the same municipality. The residents are involved in activities that focus on what they can do themselves to prevent pressure ulcers, e.g. wearing the right footwear and how to use personal aids.

### **Outcome**

Preliminary results show that the number of days between the onset of new pressure ulcers in the nursing home is increasing. The results are moving in the right direction, but the aim of 300 days without pressure ulcers has not yet been reached. The process measures also show a tendency in the desired direction even though we lack seeing stable processes. We aim to reach stable process measures before we spread the change ideas to other units. The team has reached 226 days without pressure ulcers at the nursing home.

### **Conclusion**

Pressure ulcers are very demanding and in the worst case can lead to complications associated with bone inflammation and blood poisoning. In addition, there are high costs associated with treatment of pressure ulcers. Pressure ulcers are therefore both a major health issue to the individual and an economic problem. The changes made at this nursing home is an important step in the prevention of pressure ulcers as the 38 residents have had more than 226 days without the agony of a pressure ulcers. We anticipate that our work will result in better and safer patientcare at the nursing home in the future.

Key messages to others:

- It is important to have a clear aim – easy to understand
- Testing change ideas in small scale is crucial to secure sustainable improvement
- Involve all types of staff members when testing ideas for change
- Collect data on both outcome and process measures
- Leader management is crucial to secure that improvements are carried out and to sustain momentum

# **Improving Tertiary Paediatric Surgical Access for acutely unwell surgical patients within an Regional Network**

Call for Posters - Work in Progress

Dorothy Kufeji, Miriam Cabib, Iain Yardley, Zeni Haveliwala, Owen Miller, Hannah Wright, Kelly Heard, Neville Telles, Joy Simmonds  
Evelina London Children Hospital, UK

## **Background**

- Care redesign project undertaken by Evelina London Children's Hospital (ELCH) and referring district general hospitals (DGHs) in South East England.
- A multidisciplinary team comprising specialist paediatric surgeons, nurses, DGH staff, teams from bed management and ELCH Specialist Paediatric Network.
- Our work focussed on acutely unwell surgical patients 0-16 years of age requiring transfer from a DGH within the regional network to our tertiary centre ELCH, for specialist paediatric surgical care.

The problem the team was trying to solve was that transfers from DGHs to tertiary centres for acutely unwell surgical children took longer than expected. This led to poor patient satisfaction and potentially increased the risk of a poorer outcome for our patients.

## **Methods**

- Evaluated the current state of the service by identifying what was of value in the process of transferring a sick child from the network to ELCH. The team had a mixed-methods approach including face-to-face interviews with staff from ELCH and network hospitals, patients and their families in order to map children's care pathways. Based on this we devised our mission.
- Audit of the inter-hospital transfers including review of any patient complaints was undertaken.
- Following the process and value stream mapping exercise the team identified five key tasks to focus on amongst which increasing the DGH staff confidence to refer appropriately and treat the patient locally when appropriate, and reducing the waiting time from call received from DGH to admission to ELCH surgical ward.
- The team brainstormed during multiple sessions over a 6 month period to identify interventions followed by implementation and evaluation plan. We designed a new pathway in keeping with our value proposition

## **Outcome**

Work in progress: specialist paediatric surgical bed capacity is scarce and valuable resource with increasing demand. Therefore efficient timely transfer of children needing the service will lead to reduced hospital stay, more efficient bed utilisation and cost savings.

- To measure improvement the team created a 'Benefit Realisation' wheel. This resource enabled the team to devise relevant outcome metrics that would quantify or demonstrate the impact of project initiatives over time.
- From February to May 2018 the team scoped the problem; from May to September 2018 the team finalise changes and disseminate to the wider ELCH team and regional network
- Changes implemented November 2018 with prospective collection outcome data to measure impact of the changes
- Our work will undergo repeat PDCA cycles

## **Conclusion**

- The project team highlighted the benefit of having a clear vision for the project early on in the process. Working with an MDT of healthcare professionals, patients and their families gave us panoramic view of the problem and in turn the ability to devise a pathway that is valuable to all stakeholders.

- Given the nature of service transformation projects in terms of the length of time from planning to implementation, the team have involved service managers to support any purchasing or funding needed for project initiatives.
- Working in a multi-disciplinary team has allowed the team to work more creatively about possible solutions using a project approach.
- The project has been implemented from November 2018. We anticipate a possible reluctance to change which is the most likely obstacle. We theorise the inclusion of a vast array of staff from all disciplines involved will minimise the potential problems encountered.

## **Patient experience of mental health tribunals**

Call for Posters - Work in Progress

Dr Andrew Lawton, Dr Nicole Needham, Dr Arun Chopra  
NHS Lothian - Scotland

### **Background**

The work was done within the General Adult Psychiatry department at the Royal Edinburgh Hospital, supported by the Lothian Quality Improvement Support Team. The project focuses on adults for whom Compulsory Treatment Orders (CTOs) were being sought under Scottish Law. The tribunal process for CTO applications can cause unnecessary stress for the patient. sources of stress including a sense of feeling under-prepared for the tribunal

### **Methods**

The intervention was to develop a patient information video (content guided by patients/other stakeholders) to promote a better understanding of the tribunal process and ultimately improve patient experience

### **Outcome**

We anticipate measuring the following:

- Video utilisation – percentage of appropriate patients reached
- “Preparedness” – Patient self-report before and after watching video (in collaboration with Napier University)

### **Conclusion**

The diagnostic process was lengthy due to consulting as many relevant parties as possible and conforming the project to match their concerns involved ceding control. However, the result was sustained enthusiasm from all involved and arguably, the co-production approach became an intervention in its own right, altering the dynamic of some patient interactions

## **Initiative for true integration of medical and surgical management for a safe, patient's centred, efficient care for patients with FNOF**

Call for Posters - Work in Progress

Dr Boukadida, Dr Wong, Julie Lander  
Southend University Hospital

### **Background**

The project was performed in a acute hospital, Southend University Hospital, Southend on sea, Essex. Most of patients admitted with hip fractures are elderly and frail. In addition to their complex medical problems and comorbidities, they have to overcome additional physiological and physical challenges induced by the hip fracture and surgery. The service for patients with fractured neck of femur (FNOF) witnessed an increased rate of complications pre and post-operatively including delirium, sepsis, AKI, cardiovascular-complications leading to delayed physical recovery associated with increased mortality rate. Over the years the chronic shortage of ortho-geriatricians, and the lack of co-ordinated multidisciplinary input has led variations and inconsistency in managing these patients.

### **Methods**

1. We Increased ortho-geriatric input by 100% daily during the week days and by 50% of ortho-geriatric inputs over weekends.
2. We introduced standardised a neck of femur handover and communication pro forma based on SBAR protocol. It was co-designed around best practice tariff and to ensure patient safety is maintained throughout. This proforma provides essential medical information in real time including patients medical problems, their NEWS score, their up to date blood tests, their fitness for surgery. It also includes medications review and bone prophylaxis, as well as their rehabilitation progress and discharge planning. This proforma was regularly updated by MDT members.
3. We also ensured regular update and communications with patients and their carers.

### **Outcome**

We managed to improve our ortho-geriatric input to 95% in most cases, this included adherence to the best practice in terms of analgesia, bone health management, IV fluids, pressure ulcers and early mobilisation.

most importantly We noticed cultural change where staff work together in more cohesive way, prioritising patients safety throughout the process.

by improving our handover system, we identify early and manage promptly our unwell patients, this resulted in better quality of care, reduction in our mortality rate and length of stay.

### **Conclusion**

Caring for patients as whole is must in a challenging ERA of the NHS. Our experience with this project showed that regardless of clinical background whether it is medical or surgical we can improve our patients pathways by working together more effectively towards high quality and safe care for our patients; and better efficiency across the whole system.



## **Reducing ventilator associated pneumonias in a neonatal intensive care unit.**

Call for Posters - Work in Progress

Dr Jennifer Brindley, Tina Kane, Dr Matthew Cawsey  
Birmingham Womens Hospital, UK

### **Background**

We are a level 3 neonatal intensive care unit in inner city Birmingham, we take the most extreme premature babies and those requiring surgery from around the West Midlands. We have undertaken a quality improvement project to minimise the risks our ventilated babies have of developing a ventilator associated pneumonia.

Ventilator associated pneumonias (VAPs) in preterm neonates are a significant concern. There is a strong association between VAPs and mortality with VAPs being an independent predictor. VAP has been proposed as an indicator of quality of care. Patients with VAP require prolonged periods of mechanical ventilation, extended hospitalisation, excess use of antimicrobials and increased medical costs. Theories relating to the pathophysiology of VAP mainly focus on the bacterial colonisation of the respiratory tract due to a biofilm forming in the mouth and oropharynx, these contaminated secretions then pool over the ETT and leak in to the lungs.

### **Methods**

In our NICU, 35 babies were identified over a six month period to be at risk of ventilator associated pneumonia having been ventilated for more than 10 consecutive days and of these babies there were 27 episodes when a baby was confirmed to have VAP. This was determined by their need for antibiotics, increased oxygen or ventilatory support and radiographic changes whilst being ventilated. Therefore we designed a care bundle based on reducing the risks identified in our research on the pathophysiology of VAPs. These included elevation of the incubator head to 30 degrees in clinically stable neonates whilst maintaining head in midline; reducing the biofilm build up orally and on the endotracheal tube. Ventilator tubing positioned down and away from the neonate. Emptying of the tubing condensation using an aseptic non-touch technique. Undertaking oral care 4 hourly, ideally with colostrum, suctioning of oral secretions and minimising tracheal suctioning.

### **Outcome**

This care bundle is currently being implemented on our neonatal unit. To encourage uptake of the care bundle we have firstly done some education with the nursing and medical staff about ventilator associated pneumonias and why the techniques being implemented are beneficial to babies. We have also promoted the new care bundle on boards within the unit, published it in our weekly neonatal communications sent to all staff, and discussed it during our daily multi-disciplinary huddles. We will re-audit the occurrence rate of ventilator associated pneumonias over the next 6 months to see if our care bundle has had a significant impact.

### **Conclusion**

This care bundle is currently being implemented on the neonatal unit after a period of time for education of staff and we will re-audit our rate of ventilator associated pneumonias over the next 6 months.

## **Delivering a Regional COPD Discharge Bundle: Improved process and outcomes**

Call for Posters - Work in Progress

Dr Jo Congleton, Ellie Wells, Tom Myers

Kent Surrey Sussex Academic Health Science Network, England

### **Background**

Kent Surrey Sussex (KSS) has a population of 4.2 million served by 11 acute trusts. KSS AHSN (Academic Health Science Network) runs a multi-disciplinary Respiratory Network of community teams, primary care, secondary care and commissioners. The aim of the Respiratory Network is to reduce unwarranted variation in care, spread innovative practice and to improve outcomes. Chronic obstructive pulmonary disease (COPD) admissions account for around 45,000 bed days per year in KSS hospitals, patients admitted with acute exacerbation of COPD (AECOPD) were the focus of this work.

A study in West London showed that improving adherence to a 'bundle' of standard interventions in AECOPD was associated with reduced re-admission rate and reduced length of stay (Hopkinson 2011). In 2014 the network recognised that there was room for improvement in care of hospitalised COPD patients and agreed to work on a programme aiming to increase the number of AECOPD patients receiving a discharge care bundle.

### **Methods**

KSS AHSN developed a 'respiratory dashboard' of COPD outcome measures providing baseline data. Respiratory Collaborative events were held 6 monthly based on the IHI (Institute of Healthcare Improvement) 'Breakthrough Series: Collaborative Model for Improvement' methodology, reporting results and sharing good practice. Data from the respiratory dashboard was presented and discussed at these events, also a snapshot of data with commentary from the clinical lead was circulated widely every 4 months.

The main change to practice is for acute respiratory teams to find ways to identify patients admitted with AECOPD and pro-actively deliver the elements of the discharge bundle:

1. Inhaler technique checked and corrected if necessary
2. Patient provided with written information and action plan
3. Prescribed 'Rescue Pack' on discharge
4. Referred from smoking cessation if appropriate
5. Assessed for, and referred for, pulmonary rehabilitation
6. Appropriate follow up arranged

### **Outcome**

Respiratory Teams agreed the elements and wording of the COPD Discharge Bundle at 'Respiratory Collaborative' meetings, these were further refined over the 1st 6 months. Teams in acute trusts started recording delivery of the 6 elements; the Respiratory Dashboard was edited to show these process measures, enabling progress to be tracked.

Change is tracked by the Respiratory Dashboard. By June 2018 65% of patients were receiving all elements of the COPD DB ( $P < 0.005$  for trend).

There has been a significant downward trend in both length of stay (6.2 to 5.5 days,  $P = 0.003$  for trend) and in-hospital mortality (4.7% to 3.4% at January 2014 and 2018  $P = 0.0001$ ). More patients are receiving appropriate basic interventions in their hospital stay. In 2017 3,626 patients in KSS region received at least one element of the COPD Discharge Bundle. In contrast to previous work we have not shown a reduction in all cause 30 day re-admission rate (26.2% in January 2014, 26.7% in January 2018).

### **Conclusion**

Sustainability: Collaborative events include educational sessions and training in quality improvement methods. We produce a quarterly ePublication (Breathing Matters), circulated to over 700 network members keeping people up to date on various aspects of COPD care.

Healthy competition can be a stimulus for QI work.

Ideally we would have a dedicated programme manager, able to contact acute sites regularly aiming to facilitate more rapid change.

Our main anticipated challenge is around data collection. The National COPD audit involves teams collecting an overlapping data set. There are a significant number of patients for whom we do not have any process data.

With strong networks and collaborative working it is possible to achieve large scale change.

The programme is associated with both reduced length of stay and inpatient mortality for AECOPD, more patients were seen by respiratory clinicians.

## **Injecting the Emergency into Febrile Neutropenia**

Call for Posters - Work in Progress

Dr Katherine Green, Jo Davison, Katie Terry, Richa Ajitsaria, Dr Alex Chan  
Hillingdon Hospital London, United Kingdom

### **Background**

This project took place in a paediatric oncology shared care unit in a paediatric district general hospital in London. This centre cares for children with cancer and is the attending hospital for children with fevers or illnesses whilst immunosuppressed on chemotherapy.

We identified that many children with febrile neutropenia at Hillingdon Hospital were not receiving intravenous antibiotics within the nationally accepted gold standard of 60 minutes. This is a life threatening delay and could potentially lead to preventable deaths.

Furthermore, many children were not examined thoroughly for source of febrile neutropenia, were receiving the wrong antibiotics, or not having supportive medications prescribed.

Our aims were to improve the time to intravenous antibiotics within 60 minutes for children with confirmed or suspected febrile neutropenia at Hillingdon Hospital.

### **Methods**

We used the London school of paediatrics endorsed Quality and Improvement course, "Change One Thing In Paediatrics" to direct a formal quality and improvement project around the management of paediatric febrile neutropenia at Hillingdon Hospital.

Having established baseline measures through audit data collection and nurse and doctor questionnaires, multiple PDSA cycles were completed, including delivery of a teaching session to all junior doctors and to nurses, creation of a new interactive colour clerking pro forma with the "Oncology 8" initiative, and design of a new doctor's handbook. Data was re-analysed following each cycle and end data compared to start data to measure overall improvement.

Further change interventions include a 60 minute alarm clock, emergency stickers and posters, and these are being implemented currently.

### **Outcome**

We have seen great successes in the paediatric oncology department in terms of attitude to the problem and improved time to intravenous antibiotics for children with febrile neutropenia.

By using individual teaching sessions to educate clinicians on febrile neutropenia there was no significant change in the median time to intravenous antibiotics but an improved and reduced variability in the measures, with fewer extreme timings >60 minutes.

However, introduction of the colour clerking proforma has shown excellent initial results. The median time to intravenous antibiotics has reduced from 52 to 37 minutes overall, with no children receiving intravenous antibiotics outside of the golden hour since the proforma's introduction. There is far less variability seen from post-intervention measures, therefore permitting a more reliable and consistent service for patients; thus reducing the risk of preventable child deaths from febrile neutropenia.

### **Conclusion**

It is an essential life-saving measure for children with febrile neutropenia to receive intravenous antibiotics within one hour of presenting unwell.

The most successful intervention seems to have been the implementation of the new proforma for clerking in patients, with benefits seen from its colour print and user friendly approach. Teaching sessions have been useful but are difficult to catch a wide audience and need to be repeated to maintain standards and so are time intensive. Handbooks are a useful and concise way of improving the knowledge and resources for clinical staff but are less interactive and at risk of becoming 'another guideline'.

We have shown that simple but important quality improvement measures such as more frequent teaching sessions, a new, interactive and user- friendly clerking pro forma along with an alarm clock to remind and motivate medical staff to administer intravenous antibiotics in a quick but safe manner.

## **SCReaM: Securing translation of Human Factors training into behaviour change within our Theatres environment**

Call for Posters - Work in Progress

Dr Louisa Chrisman, Dr Andrew Kermode, Dr Suzi Lomax, Dr Soumen Sen, Jenny Sutcliffe

Royal Surrey County Hospital, United Kingdom

Nicola Davey

Quality Improvement Clinic, United Kingdom

Capt David Moss

CRM trainer for SCReaM, United Kingdom

### **Background**

A major proportion of adverse events within the theatre environment are due to human factors. These have a negative impact on patients and staff. Additionally, we know there are often omissions of key safety steps by staff when under stress, particularly during emergencies.

SCReaM is a safety initiative within Royal Surrey County Hospital aimed at improving theatre team performance and patient safety. It includes Human Factor and Crew Resource Management (CRM) training for staff delivered by accredited CRM instructors from the aviation industry.

Despite introducing multidisciplinary CRM training, we have been unable to capture whether resultant learning has been translated into practice.

### **Methods**

Main aim: to provide human factors training and secure translation of training into behaviour change within the clinical environment. Our initial PDSA cycle involved inviting participants to make pledges. This is a simple change which participants commit to at the end of each CRM training day. In our first test cycle, pledge collection revealed the mixed ability of participants to create "SMART" (Specific, Measureable, Achievable, Relevant and Time Bound) pledges and we were concerned that despite additional coaching from the course tutor, participants did not move beyond the pledge stage. Over successive cycles we incorporated a worked example of a 'SMART' pledge during the training day and developed a "SMART" and simple template for participants' use. We aimed to determine the optimum follow up period and method. This small QI project is being undertaken within a wider departmental piece over the next year with QI support from a QI coach.

### **Outcome**

Participants initially found making "SMART" pledges a challenge. Through our successive PDSA cycles, we were able to simplify our template for the pledges, which participants found easier to use to make their initial pledge and to record their progress within the workplace. Through these changes to the template, and over successive cycles altering the follow up period from 6 weeks to 2 weeks and incorporating the use of whatsapp, we were able to improve the reporting from participants of outcomes and positive impacts of their changes in the workplace.

### **Conclusion**

Through supporting our participants to translate and sustain a change in their individual practises following the course, we aim to demonstrate a contribution to an overall improvement in patient safety within our department through measures such as rates of patient complaints, incidents, staff morale, health and retention.

The project lead has secured expert QI support and this is helping us to understand the principles that underpin QI using the model for improvement. We have tried to do QI in the past and have struggled with translating small changes and data collections into meaningful differences that lead to sustained changes in practice. Due to the importance of human factors in patient safety, we hope that we can achieve more, and expect to gain more learning that can be applied to our next QI project.

## **The Big Room – Improving Young People’s Services at Imperial**

Call for Posters - Work in Progress

Dr Philip Oddie, Dr Katie Malbon  
Imperial College Healthcare, London, UK

### **Background**

Adolescence is a challenging time for all young people, but especially for those with chronic illness. It is a time of shifting roles and responsibilities, with young people taking over many tasks formerly managed by parents. This means that young people have unique healthcare needs which are often poorly supported by traditional children’s and adults’ services. We recognised considerable variation in the quality of young people’s services at Imperial College Healthcare Trust (ICHT) including variation in outpatient transition pathways between different paediatric subspecialties, poor access to adolescent care for 16 & 17 year-olds admitted onto adult wards and variation in availability of specialist young adult services. In September 2018 we founded a Big Room to improve the quality of our young people’s care. This weekly meeting includes multiple health professionals and aims to use patient stories, shared experiences and quality improvement (QI) methodology to drive change.

### **Methods**

Using QI methodology, including a driver diagram, staff created a list of problems with the existing service. This included a lack of clear transition guidelines, lack of high quality mental health support and a lack of support for inpatients on adult wards. The driver diagram was created by all staff participating in the big room, with no extra weight given to the voice of one particular staff group. All staff had the opportunity to revise the initial draft of the driver diagram until consensus had been reached. We recognised the need for patient involvement in assessing the problem and have also conducted a survey of outpatients using any transition service. One striking finding was that only 50% of young people (n=30) agreed that they “had support transitioning from paediatric to adult care”. Once we had developed this driver diagram, we were able to suggest interventions and trial them as plan-do-study-act (PDSA) cycles to assess whether they were effective.

### **Outcome**

To date the Young People at Imperial (YPI) Big Room has made several improvements to care. We have implemented “ready steady go” documentation across our clinics for young people with chronic health conditions. This change has been praised by patients and staff. We are currently improving the quality of adolescent social history taking to improve care for young people who do not have chronic health conditions. As part of this we have planned an innovative session where we use “sequential simulation” to model patient experience and allow patients to contribute more to service design. Another outcome has been surveys of inpatients and outpatients which has revealed several challenges with the current service and is now allowing us to make a business case for a dedicated young people’s inpatient team.

### **Conclusion**

Our main lesson from this project has been the power of using Big Rooms to enact significant changes. Many quality improvement projects fail because they do not have support from all stakeholders within a department or organisation. We have found that using a Big Room approach results in a rich variety of ideas and helps tackle problems that one person or staff group would not be able solve on their own.

## **Clinical Leadership Training: Something to shout about**

Call for Posters - Work in Progress

Dr Rachel Trickey  
Cardiff & Vale UHB, Wales  
Dr Lowri Evans, Dr Ian Collings  
Health Education and Improvement Wales  
Dr Madhu Kannan  
Cwm Taf UHB, Wales

### **Background**

The Welsh Clinical Leadership Training Fellowship (WCLTF) is a programme for junior doctors developed in response to the increasing global recognition of the importance of clinical leadership. It comprises a one year out of programme experience to equip junior doctors with the skills needed to be effective clinical leaders. Applications for the 2018/19 cohort of leadership fellows were reduced and for the first time since the programme began, a second round of applications was required. We aimed to explore why this occurred and how best to engage junior doctors with the fellowship programme. Ensuring sufficient and high quality applicants at trainee level is essential to the sustainability of leadership and management programmes in Wales. A shortage of clinical leaders in Wales may impact negatively on health care and patients.

### **Methods**

Applications were significantly lower than previous years. A focus group of current fellows highlighted a general lack of awareness of the scheme. We conducted a mixed-methods survey of WCLTFs from 2015 to the current cohort exploring this. Of the 14 responses:

- 100% were made aware via word of mouth with 64.3% (9/14)
- One fellow heard about the post via email and one from a consultant
- No fellows were made aware of the post via social media, their health board/employer, hearing an announcement at a training day or seeing a poster

The results suggest that word of mouth and fellow input has been effective.

Responses from the survey were used to devise a coherent promotion strategy including:

- WCLTFs attending trainee events to promote the scheme
- Harnessing the power of alumni fellows for promotion of scheme
- Social media campaign targeting trainees
- Ratifying application process
- Interim deputy dean liaising with senior colleagues to promote scheme.

### **Outcome**

Applications for the 2019/2020 cohort were significantly increased compared with the year with before with 22 applicants compared to 10. These included applicants from specialities not previously represented including Radiology, General Practice and Psychiatry. All were interviewed and subsequently, all posts have been filled with no requirement for a second application period.

In the long term, the hope is that ensuring successful recruitment into the programme will have a positive impact for the population of Wales in the years to come.

### **Conclusion**

Engaging current fellows and alumni can be effective in promoting the leadership scheme. Social media is increasingly being used to advertise and promote job opportunities but engaging people face to face is essential. If this ongoing work does not have the desired impact we may need to consider alternative strategies. Achieving high online survey return rates can also be difficult.

Promoting leadership and management programmes effectively is essential for trainee engagement with these schemes. Harnessing the power of current fellows and alumni to promote leadership schemes can be valuable. We hope that encouraging junior doctors to apply to leadership programmes will result in

new consultants and GPs having the expertise to become effective clinical leaders and improve patient care.



## **Pain in the older person**

Call for Posters - Work in Progress

Dr Rebecca Cole

Northampton General Hospital, UK

### **Background**

It is well documented that in older patients, pain is common but not always recognised or managed. The British Geriatric Society created a national guideline in co-operation with the British Pain Society on how to assess pain in older patients which was released in March 2018.

Nationally, studies report patient in older people in the community has a prevalence of 50%. This increases to 83% in residential homes. In Northampton General Hospital, the baseline measure in September 2018 showed that pain was documented in the medical notes for 75% patients who reported or demonstrated pain. However, only 25% had regular analgesia prescribed; most only receiving paracetamol.

An initial staff questionnaire showed that 78% of staff are "confident or "very confident" in their assessment and management which shows a gap between perceived expectations and current practice.

### **Methods**

PDSA cycles that have been implemented so far include:

1. Involvement of the frailty team in the documentation of pain and using alternative questioning.
2. Nursing seminars were held on the admission wards where both the importance and the practicalities of how to assess and manage pain were addressed. They lasted twenty minutes and included an interactive teaching session including evidence-based guidelines and followed by a game.
3. The seminars were then adapted to prescribers and junior doctors and physician associates were educated on the same issues.
4. Posters were created to highlight the problem and also to give succinct prescribing advice following feedback that doctors find it challenging to prescribe in older patients.

The next PDSA involves developing a new trust tool for recording pain scores for older patients with challenges communicating their pain and includes a modified Abbey Pain Score.

### **Outcome**

- Outcome measure – Percentage of patients 70 years old and over on a medical admission ward in pain that are on regular analgesia has shown an improvement over two PDSA cycles from 25% to 50% but then fell back to the baseline at 27%.
- Process measure – Percentage of patients in pain who have pain documented in the medical or nursing notes. The percentage of patients with pain documented in the medical notes has actually fallen from 75% to 33%. This is following a change in documentation in department from paper to electronic. When they returned to paper documentation, it increased to 100%.
- Balancing measure – Percentage of patients on regular pain relief who have a side effect documented. This has improved from 6% to 0%. This is likely due to effective use of appropriate analgesia and prophylactic prescribing of laxatives following the seminar sessions.

### **Conclusion**

Thus far, this project has improved management of pain in older patients on the medical admission wards although the documentation of the pain has fallen.

The project was welcomed, particularly by the frailty team and the senior nursing staff, on the admissions ward. However, barriers to improving clinical practice included difficulty arranging teaching that ward staff could attend due to winter pressures and staff shortages. This was addressed through short, flexible sessions that were repeated at different times and certificates were provided to encourage attendance. In particular, there was a rapid turnover of medical staff in on the wards. Furthermore, a move to a newly opened ward and a change to electronic documentation were factors which I had no influence over and certainly impacted on the project.

This project could be adapted to most hospitals with medical admission wards and is an important topic as the patient population with dementia and frailty grows.

## **Is Everything Still Dreamy Three Months On? A Review of Hospital at Night**

Call for Posters - Work in Progress

Dr S Moledina, Dr S Stezaker, Dr W G Hunter, Dr C Nadarajah  
Hampshire Hospitals, UK  
Iman Ahmedani  
University College London, UK

### **Background**

Hospital at Night (H@N) is a clinically driven process that utilises a multiprofessional approach to meet patients' immediate needs and to provide a safer clinical environment for out of hours (OOH). Before this, the junior doctors were directly informed of ward jobs generated during the night shift via a bleep system. This resulted in a high bleep burden, interruptions to the assessment of unwell patients due to a need to answer each bleep, and a series of individual teams that were not working cohesively. Junior doctors from Medicine and Surgery were asked to meticulously record all bleeps received during their night shift. This highlighted that the busiest times were between 21:00 and 02:00. It took an average of 583 seconds for doctors to respond to a bleep. The average number of bleeps received for the medical and surgical doctors was 42 and 23 respectively. The data highlighted common bleeps were for non-urgent tasks rather than reviewing clinically unstable patients.

### **Methods**

Following the initial quality improvement project, H@N service was implemented. This took the shape of:

- A night practitioner whose role was to triage bleeps and delegate tasks appropriately, filtering inappropriate bleeps and resulting in more time for doctors to review unwell patients.
- A combination of surgical and medical junior doctors to provide one cohesive team OOH and to share the workload.
- A new structured and compulsory multidisciplinary handover in which junior and senior members of the medical, surgical and orthopaedic teams met to discuss unwell patients.
- A new IT system modifying existing technology allowing ward staff to create an online list of tasks. This can be accessed remotely by the night practitioners and doctors.

### **Outcome**

In the initial period following the introduction of H@N there was a decrease in number of bleeps received by the surgical and medical junior doctors by 39% and 74% respectively. The average time for a bleep to be answered during the busy period was reduced by 75%. Three months on, since the introduction of the new IT system, there has been a decrease of 91% in bleeps to junior doctors with a sustained 75% faster response time to bleeps, resulting in increased time spent with unwell patients. In addition, there has been a 68% reduction in Datix reports filed against the night team versus the same period the year before H@N was implemented.

Across all specialties, doctors were spending a larger proportion of their time assessing and managing unwell patients, which has led to improved patient care and safety. A survey of junior doctors has shown that 100% (n=30) found H@N had a positive impact and provides a safer environment for both patient and doctors OOH.

### **Conclusion**

In summary, our project has shown that Hospital at Night is a safer system allowing more timely and thorough reviews of deteriorating patients out of hours. As well as helping patients, H@N allows staff to work more efficiently as a team to prioritize jobs effectively. During this quality improvement project, our main obstacle was to try to convince healthcare professionals to make a paradigm shift in the way they work out of hours, as the nurses and doctors were accustomed to prior systems. It was sometimes a struggle to convince front-line staff of the potential benefits of a switch to H@N.

Our key message is that the success of a quality improvement project can depend on getting the right people on board across the hospital- ranging from chief executives to IT staff, nurses, doctors and sponsors. It is essential to introduce change slowly and evaluate at each step to find the best way forward.

## **Steps to improve the efficiency of Outpatient Spine Service: A Quality Improvement Project**

Call for Posters - Work in Progress

Dr Teri Toi, Mr Jozef Kamp, Mr. Maheswara Akula  
United Kingdom

### **Background**

A district general hospital that serves a population of 405,000 runs a busy, acute and elective spine service. It was noted that many acute patients were breaching their prescribed follow-up clinic appointments or were lost to follow-up completely following discharge. This compromised the quality of care patients received and resulted in poor patient satisfaction.

This project aims to quantify compliance with outpatient follow-up recommendations and improve the proportion of acute spine patients seen for their prescribed follow-up appointment to >95%.

### **Methods**

Outpatient data was reviewed to assess adherence to outpatient follow-up recommendations. This was achieved by reconciling inpatient records with outpatient appointments booked. Ward clerks and clinic staff were consulted to access and collect data.

Focused discussions were held between the spinal team, ward and clinic staff. It was hypothesised that this delay was due to both an unavailability of clinic appointments as well as complex referral process for both junior members of staff and ward clerks.

Two major interventions were introduced to address this study's problem. Firstly, a bi-weekly clinic was set up in October 2018, specifically for inpatient referrals with the aim of increasing total clinic capacity. Secondly, the referral process was simplified so that specific referral forms were no longer necessary to book an appointment.

### **Outcome**

It was found that over 50% of inpatient referrals required follow-up and over 60% of acute spine referrals were not seen by the intended clinic appointment date or were lost to follow-up completely. Those inpatients that were given an appointment were often displacing elective patients, thereby disrupting the elective service.

Following the introduction of bi-weekly acute spine outpatient clinics, we have been able to significantly reduce the proportion of patients' breaching their standard of care, from 61.5% to 46.2%. Patients being seen by their target outpatient follow up date improved from 38.4% to 53.8%. Through a simplified referral process we improved accessibility to clinic appointments and limited the number of patients lost to follow up.

### **Conclusion**

By increasing capacity through dedicated acute clinics and streamlined referral pathways, we have been able to improve the efficiency of the spine outpatient service without compromising elective waiting times.

Similar projects in other centres and specialities will allow for a broader perspective of the pitfalls faced in ensuring patient continuity of care. By looking into outpatient follow-up outcomes, simple and cost-effective solutions can be set in place to enforce a system that smoothly transitions patients from inpatient to outpatient care. This will allow centres to be able to maximise patient outcomes and improve the overall quality of the service provided.

## **Managing opioid analgesics safely and effectively in practice: Massive Open Online Education**

Call for Posters - Work in Progress

Dr Victoria Hewitt

Faculty Medical Sciences, Newcastle University, England

Suzanne Hardy

Learning, Teaching, development and Support Team, Newcastle University, England

### **Background**

Opioids are commonly-prescribed drugs, causing addiction and serious harm if misused, prescribed or administered incorrectly and accounting for more reported drug errors than any other high-risk medication. Furthermore, the “opioid crisis” is a global public health issue caused by the rapid increase in the use of these drugs, which impacts hugely on individuals, their families, healthcare economies and society.

Newcastle University offers a fee-bearing, online module (ONC8012: Managing Pain) as part of the MSc’s in Oncology and Palliative Care. Through its interactive discussion boards, an emergent demand for education specifically focusing on safe opioid prescribing was identified. This mirrors the World Health Organization and United Nations, who advocate for more opioid-related education for prescribers to improve patient safety and reduce misuse.

### **Methods**

Literature review and qualitative interviews of experts in opioid-prescribing confirmed the need for accessible education aimed at generalist opioid prescribers. The course learning design was created using the ABC toolkit (University College London, 2018). This engaged clinicians in creating the vision for change, which informed the strategic education strategy. The University’s Special Project Team then approached FutureLearn, who agreed to host a course on their online platform.

### **Outcome**

The intervention is a massive open online course (MOOC), covering the theory and principles of safe opioid prescribing in practice and which will be freely available on the FutureLearn platform. Its impact in terms of clinician engagement and acceptability and patient safety will subsequently be evaluated in a partner NHS Trust.

### **Conclusion**

Early evaluation of the design process highlighted the importance of secure strategic approval by communicating a strong and consistent vision of change to stakeholders. The design toolkit proved a useful project management tool, with features and applications similar to lean methodology.

## **Value Based Health Care Engagement and Education Survey**

Call for Posters - Work in Progress

Dr. Ahmed Raia, MD, MPH, EMMPHID

Revenue Cycle for Healthcare consulting (RCH)- Saudi Arabia

Dr. Ian Stewart

Kaplan Leadership and Professional Development - UK

Dr. Omar Alshanteety, Dr. Reem F. Bunyan, MD, MSHA, MS

Vision Realization Office, Ministry of Health- Saudi Arabia

### **Background**

Saudi Arabia is undergoing major health system reform with Value Based Healthcare (VBHC) to be the main model of care delivery. The “value” in value-based healthcare is derived from measuring health outcomes based on the experience that matter to patients against the cost of delivering the outcomes. Healthcare providers -particularly physicians- buy in and proper understanding is a key issue in transforming to VBHC delivery model.

Kaplan and Revenue Cycle for Healthcare consulting (RCH) have successfully piloted a situational judgement assessment with the Ministry of Health in the Kingdom of Saudi Arabia in order to engage physicians with the skills, knowledge and attitudes required to support the Kingdom’s transformation to a value based model

### **Methods**

The assessment instrument is norm referenced against best practice in value based care as identified by the MOH . These practices were analysed into 5 Factors: Professional Commitment and Mindset; Integration of Provision; Cost Management; Patient Outcomes; Data Management and Sharing that organise a competency sub set.

These factors were used to create a number of scenarios and following statements. The respondents in the pilot group (n=22) were asked to assess whether these statements are true or false or record that they didn’t know. They were also asked to assess their level of confidence in their assessment.

This combination of competence and confidence produce data that identifies individuals high in competence and high in confidence, but also variations – for example, high in confidence but low in confidence.

The respondents were coded for specialism, location and length of tenure. The survey took 25-30 minutes to complete.

### **Outcome**

The pilot data revealed good levels of understanding but low confidence in key topic areas, e.g. Cost Management and Data Sharing. It also revealed low levels of understanding but some high confidence in other factors: Integration of Provision and Patient Outcomes. The data is represented in the form of an easy to read ‘heat map’ which lets MoH see at a glance those areas of high engagement and understanding and those where we need to place more targeted effort.

The data is produced in real-time for both the individual respondent and the administrator overseeing the project.

### **Conclusion**

If these results were replicated across the wider population of physicians, it would allow the MOH to identify a group of ‘early adopter’ advocates as well as identify which aspects of value base care practice they should focus their training and development. However, the small sample size and the self-selecting nature of this cohort is not thought to be reliable and we await the full launch of the survey

## **Supported return to training - programme, scenarios and resources**

Call for Posters - Work in Progress

Dr. Brygitta Aleksandra Atraszkiewicz, Pamela Leaper, Vicky Garrod, Jane Bradley, Sid Beech  
Northampton General Hospital, UK

### **Background**

Northampton General Hospital is a district general hospital employing nearly 5000 staff which includes approximately 530 junior doctors.

Medical staff may undertake professional and/or personal career breaks of varied duration from weeks to months. When returning, staff members will navigate a constellation of clinical and non-clinical activities. They will be involved with local reporting, meeting national contract requirements, professional regulation, and curriculum targets to demonstrate performance. This occurs in a period of personal adjustment and change in workplace need.

Developing a visible local policy, up-to-date resources and promoting awareness supports staff returning to work and follows the Health Education England policy of Supported Return to Training. The SMART Aim is to increase awareness and effectiveness in the process of returning staff to the workplace and their training programme by 50% by February 2019.

### **Methods**

Through Plan, Do, Study, Act (PDSA) cycles, a programme and resources have been produced for medical staff returning to work. The first PDSA involved producing draft simulation suite material adequate for a FY2 returning to the workplace. A self-assessment reflection tool was produced in the subsequent cycle to be completed prior to returning to work. A survey of training grade doctors and consultants assessed perceived practice and what was required from the programme and the self-assessment tool. The results of this were used to refine both the programme and the form. A monitoring guide and checklist for returners have also been produced. Grade specific simulation suite scenarios have been developed, all with input from peers.

### **Outcome**

Of 100 staff members, reflection during return to work has been cited as a relevant activity by 80% of responding staff, with 74% suggesting proactive development of the process, 67% interested in preparatory simulation of clinical environments.

Staff satisfaction of Supported Return to Training (SRTT) will be identified through survey, feedback and participation. The programme is in its early stages, however early feedback has been very positive.

### **Conclusion**

SRTT allows a timely response to milestones for the phased return, updating and demonstrating knowledge and skills through simulation, and evaluating progress.

The process has been identified as relevant to all medical staff grades and others. The topic covers workplace demands and training activities. The issues faced by staff members occur on a day-to-day basis returning from leave or rota patterns and long-term career breaks. As workplace demands sit alongside educational targets, closing the knowledge gap has served to promote effectiveness and efficiency, in the best interests of patients and public.

Few materials existed previously for the process, awareness was low and an expedited requirement for the process was necessary, in the view of a contemporary SRRT policy. Dedicated staff, implementing small incremental changes and effective leadership and management has allowed us to overcome these problems and develop a programme to support our staff.

## **Improving feeding establishment in preterm infants**

Call for Posters - Work in Progress

Dr. Ebtehal Hamed, Dr. Claudia Chetcuti-Ganado  
Luton and Dunstable university hospital, United Kingdom

### **Background**

This collaborative quality improvement project has been done in level III neonatal unit at Luton and Dunstable hospital, UK. It involves the neonatal and the midwifery teams focusing on feeding management of the preterm infants.

As survival rates for preterm infants improve, more attention is being focused on improving the quality of survival through optimal nutritional management. Current research suggests that breast milk with appropriate fortification for the very low birth weight (VLBW) infant is the optimal care for both preterm and term infants. The aim of the project is to improve feeding establishment in premature infants.

The feeding of preterm infants in our unit was assessed through a retrospective sectional study of 35 preterm infants  $\leq$  36 weeks gestational age (GA) (15 infants  $<$ 28week GA, 10 infants 28-30 weeks GA, 10 infants  $>$ 30-36 weeks GA). The median age when infants reached full enteral feeds were 21.5, 13 and 6 days in  $<$ 28, 28-30 and  $>$ 30-36 weeks GA respectively. Percentage of infants who were commenced on donor expressed breast milk (DEBM) in the 1st 2 days of life in the absence of mother's breast milk was 36.4%, and 50% in infants  $<$ 28weeks GA and 28-30 week GA respectively. The rate of necrotising enterocolitis (NEC) was 20% in both groups of  $<$ 28 weeks GA and 28-30 weeks GA.

### **Methods**

The aim of this project is to optimise enteral nutrition in preterm infants.

The primary driver is to decrease the median time to full enteral feeding by 25%.

The first secondary driver is to reduce the time taken for the mother to start expressing through the following change ideas

1. Antenatal counselling by the medical team to stress the importance and benefits of breast milk in preterm infants
2. Introduction of breast milk expression pack to mothers with anticipated preterm delivery
3. Midwife champion to support the change
4. A midwife care pathway geared towards optimisation of antenatal management of mothers with threatened preterm labour which involves early expression counselling

The second secondary driver is reduce the time for commencing feeds in infants on the neonatal unit through the following change ideas

1. Increasing awareness among the nursing and medical team through teaching and nurse champions
2. Using any available colostrum for mouth care
3. Early introduction of DEBM if maternal milk not available on first day
4. A nutrition policy and care pathway

These change ideas were obtained following consultation with midwifery teams, neonatal teams and breast feeding counselors. Advice and planning involved face to face meeting with midwife lead, breast feeding champion on the neonatal unit, breast feeding counselor and neonatal doctors involved in the process. Communication was subsequently followed up by email.

### **Outcome**

The data of our study was presented in the neonatal department teaching sessions approaching the medical and nursing staff. The midwifery team lead and breast feeding counselor were contacted.

- We have produced antenatal breast milk expression leaflet for women with anticipated preterm delivery
- Breast milk expression (MEBM) pack (patient information leaflet and syringes) is given to them to commence breast milk expression.
- We increased the awareness of the importance of breast milk and early feeding establishment in preterm infants among the medical, nursing and midwifery team via teaching.



- The introduction of donor breast milk (DEBM) to preterm infants from day 1 of life when mother's milk is not available.

This quality improvement work is in progress. We are in the planning and doing part of the PDSA cycle. Our initial assessment and preliminary finding are shown above. After implementing the changes, data will be collected and studied and our anticipated outcome to shorten the duration of establishing full enteral feed by 25% and to establish full enteral feeds in the shortest time, optimising growth and nutrition and avoiding the adverse consequences of rapid advancement of feeding.

### **Conclusion**

Premature infants have greater nutritional needs to achieve optimal growth in the neonatal period. Human milk is recognized as the optimal feeding for all infants because of its proven health benefits to infants and their mothers. However, mothers of vulnerable infants, such as preterm infants, encounter a variety of unique breastfeeding barriers and challenges that result in a decreased rate of breastfeeding in preterm compared with term infants.

This work in progress project is one arm of a multidisciplinary project in collaboration with maternity to optimise antenatal and postnatal preterm management with an overarching aim to reduce our rates of NEC and bronchopulmonary dysplasia (BPD). The aim of this project is to optimise enteral nutrition in preterm infants.

- Embarking on a quality improvement project necessitates doing a lot of ground work, engaging the multidisciplinary team is instrumental. And it is important that a lot of time is spent on the planning.  
The awareness through champions, emails, posters is necessary.
- Patient is a valuable member of the team, hence empowering the patient is crucial.
- Engagement of maternity team is instrumental
- Making the parent part of the team by increasing their knowledge empowers them to take an active role in the management of their child
- Time constraints can be a significant challenge

## **Food that moves you (meal experience)**

Call for Posters - Work in Progress

Eline Vermeulen, Ellen Reijnders, Cathelijnn Bogaers  
Elisabeth-TweeSteden Hospital (The Netherlands)

### **Background**

Elisabeth-TweeSteden Hospital (ETZ) is a top clinical training hospital and trauma center with three locations in the south of The Netherlands. Our main goal is that our patients get extraordinary person centered care. At this moment, we offer good quality food and drinks to all our patients. We know a lot about clinically relevant interactions between food, medication and mobilization, but we do not always use this information to our patient's best interest within hospital walls. That is why we started searching for a better connection between food, mobilization and medication to make sure our patients get the best possible treatment.

### **Methods**

In this new and unique Dutch concept, we wanted to incorporate hospitality, food, drinks, medication, mobilization and patient-oriented nutrition. With this new concept, our food will be a positive contribution to the treatment, recovery and well-being of our patients. We have spoken with our patients and worked together with physicians, nurses, dieticians, physiotherapists and kitchen staff to create this new concept. The project started in 2018 with preparation for the go-live in 2019. From June 2019 we are going live in different waves within the hospital; each wave consists of a group of departments that gets training and on site go-live support. We expect this new concept to be implemented hospital wide at the end of 2019.

### **Outcome**

Since this project is work in progress, we do not have definitive numbers to share at this moment. We are expecting to see the following effects after implementing this project:

- Higher level of patient satisfaction
- A better quality of food that is in tune with our patient's preferences
- Patient's will encounter less complications/ a shorter length of stay during hospitalization
- A positive boost for the hospital's public image
- Hospitalization costs will go down
- Our overall food costs will go down by 7% by using our kitchen's more effectively

### **Conclusion**

One of the big project challenges was making a financially sound business case that reflected everything we wanted to incorporate into the new concept without making it more expensive. Next to this, it was difficult to find physicians and nurses that had time to work on the project together with the project team. We found solutions for each issue driven by the thought of giving all of our patients the perfect food: to their taste, whenever they want it and in perfect alignment with their specific illness or medication.

## **: Communicating and implementing evidence and best practice into nursing care for amputation patients – CLICK and FIX**

Call for Posters - Work in Progress

Else Kofoed, Nadia Barouni-Fellner  
Sygehus Sønderjylland, Denmark

### **Background**

Introduction and aim of the study: Orthopedic Trauma Ward, Sygehus Sønderjylland, Aabenraa started Oct.-18 to treat and nurse patients having peripheral amputations caused by medical complications such as diabetes and/or arteriosclerosis.

OTAA want to offer the patients the most professional care possible according to national standards.

Central document management, the InfoNet, is essential when new practice is going to be implemented into professional teams. Colleges often claim that it's complicated to find actual documents in the local and regional InfoNet.

Hypothesis: Will QR reading documents simplify access and improve implementation of new practice?

### **Methods**

Central professional workflows, patient flows, patient information and other instructions have been made in the teams.

1. The respective documents are assigned a QR Code in collaboration with the Quality Department.
2. Codes have been made visible on patient wards and nursing offices.
3. Smartphones are available to all staff members.

### **Outcome**

Having valuable feedback by focus group interviewing the staff in spring 2018 and by central quantitative measuring how often the tools are used.

Positive feedback and results will create precedence to use the tool in document management i internally and cross-sectorally.

### **Conclusion**

The study is in progress.

We expect that results will be positive and are going to be evaluated in spring 2019

## **Improving Compliance with Nutritional Support and Follow up sheet documentation in the Third floor in Children's Cancer Hospital Egypt CCH 57357 using FOCUS PDCA Methodology**

Call for Posters - Work in Progress

eman zakaria abdelhameed soliman, Gulsen Saleh  
Children's Cancer Hospital Egypt CCH 57357, Egypt

### **Background**

The project is an ongoing improvement initiative of 57357 Children Cancer Hospital Egypt which is a 320 bed, non-profit hospital providing the most advanced treatment to cancer diseased children. Poor compliance with nutrition support sheet and follow up sheet documentation in the hospital will affect continuity and coordination of care, patient clinical outcomes, response to treatment and presence of historical nutritional data in the patient's file. percent compliance of support sheet and follow up sheet ( 14% and 8%) respectively collected by electronic medical record .

### **Methods**

increase compliance of support and follow up documentation in the third floor of the hospital by:  
Set support and follow up documentation awareness in the department plan( 1/9/2018).  
Effective distribution of workload (9/9/2018).  
Discuss the importance of support and follow up documentation in the department meeting (16/9/2018 )  
Monitor and report the support and follow up documentations of nutrition department.(30/9/2018)  
Training of all nutritionists on how to fill the nutritional sheets  
Cultural change to understand the importance of nutritional documentation  
Continuous communication and feedback with the team members for any issues to be resolved  
Leadership support  
Effective distribution of workload.  
monitor and report the documentations of nutrition department.  
Make a KPIS card for nutritional documentation to monitor the performance

### **Outcome**

increase compliance of support sheet documentation from 14%(before intervention) to 58 % (present) in and from 8% to 30% in compliance of follow up sheet.  
There is a better overall understanding of the criticality and the importance of nutritional documentations.  
Better care of patient.  
Increase communications between the caregivers.  
Staff is motivated to implement the change.  
To make the documentation process easier for the nutritionists the follow up sheet will be combined with the nutritional support sheet starting from the 1st of December 2018.  
Leadership support is crucial for any improvement initiative  
Involving all relevant stakeholders in your improvement initiative will lead to a successful project.  
Continuous communication and feedback between all involved parties is another factor for success.  
Monitoring is very important to achieve sustainability.

### **Conclusion**

Some complains about workload that was resolved by reschedule  
resistance of change and resolved by increase awareness about importance of documentation and staff is motivated to implement the change.  
Some problems identified during implementation regarding lack of knowledge of newly hired staff with the process and that was resolved by making the documentation training process part of the general orientation.  
To make the documentation process easier for the nutritionists the follow up sheet will be combined with the nutritional support sheet starting from the 1st of December 2018  
Poor documentation may affect continuity of patient care

Be focused in your improvement initiatives

Always listen and don't disregard any feedback given

Continuous monitoring and inspection is very important

Engage all stakeholders in the process

communicate the results with the staff

# **The Management of Metformin in Patients with Poor Renal Function**

Call for Posters - Work in Progress

Emma Hughes

Manchester University NHS Foundation Trust, UK

## **Background**

This work was carried out in Heaton Medical Centre, a GP practice based in Bolton and will be relevant to any health professional involved in prescribing and monitoring metformin for example GPs, pharmacists and advanced nurse practitioners.

Many patients are prescribed metformin to control type 2 diabetes. Of these, high proportions are elderly and therefore at risk of deteriorating renal function. Although metformin is generally well tolerated, there is a risk of developing lactic acidosis if prescribed in those with significant renal disease. NICE guidelines state that during treatment with metformin, renal function should be monitored, the dose of metformin reviewed if renal function deteriorates, and metformin stopped if eGFR is less than 30mL/min/1.73m<sup>2</sup>.

This work aimed to audit current monitoring and prescribing practice at Heaton Medical Centre with regards to metformin and eGFR and to develop an intervention to help to ensure that current NICE guidance is adhered to.

## **Methods**

Patients were identified using an 'Emis search'. 329 patients had been prescribed metformin in the last 6 months. Of these, 29 patients had an eGFR  $\leq 45$ .

0% of patients with an eGFR  $\leq 45$  had their eGFR result documented in their 'diabetic review'. 20% of patients with an eGFR of 30-45 had their medication reviewed and this review documented. 0% of patients with an eGFR  $< 30$  had their metformin stopped and this decision documented.

We recommended that documentation of a patient's eGFR within their 'diabetic review' is improved in order to clarify that this has been acknowledged and acted upon, and that a plan is documented.

A box has been added within the 'diabetic review proforma' for entry of the patient's eGFR result. A prompt has been created that flags up patients who are prescribed metformin and whose eGFR  $\leq 45$ , prompting the healthcare professional arrange a medication review. An email has been sent to staff outlining the above changes and the importance of documenting a plan.

## **Outcome**

A re-audit is to be undertaken by myself at Heaton Medical Centre in the next month. I will attend one of the weekly staff meetings and ask for feedback with regards to the 'eGFR box' and the 'flag' to find out whether they are being used and whether staff feel they are helpful prompts. Results not currently available as re-audit has not taken place yet. The method will be the same as described for the initial audit cycle. We would anticipate an improvement in the percentage of patients meeting Standards 1-3.

## **Conclusion**

Anticipated challenges/obstacles: I am no longer working at this practice therefore it is more difficult for me to produce regular reminders with regards to this work; other staff will change at the practice so it is important to remember to deliver regular teaching on this area to ensure all relevant professionals are up to date; professionals do not have long during appointments with patients, therefore we need to ensure that they see the importance of carrying out this documentation to ensure patient safety.

Take home message: it is imperative to monitor renal function in those with poor renal function who are prescribed metformin to avoid the risk of lactic acidosis, in line with current NICE guidance.

## **Creating QI Capacity and Capability; It is more than providing training**

Call for Posters - Work in Progress

Grier McGhee

NHS Ayrshire & Arran Scotland

### **Background**

The Allied Health Profession business unit within NHS Ayrshire and Arran comprises of 6 AHP professions. As part of the health and social care integration these 6 professions are spread and managed across three health and social care partnerships. The Quality Improvement Curriculum Framework promotes a “One Scotland” approach to building capacity and capability for quality improvement across our workforce. Our AHP staff are able to access locally developed Practitioner level training: Improvement Science Fundamentals. On completion of the programme, it is anticipated staff will have the confidence and skills to lead a local improvement project team and provide ongoing knowledge and support for QI projects being taken forward within their area of practice. Despite the participation of AHPs there has not been the anticipated return on investment. The aim as such is to develop and maximise QI capacity and capability across the AHP teams delivering services to the population of Ayrshire.

### **Methods**

A scoping exercise was undertaken to ascertain current QI capacity and capability for practitioner level training- Numbers of staff by profession/ HSCP undertaking ISF. A survey was conducted to establish: Current self assessment of QI capability/ skills gaps; Effectiveness of QI coaching / Line Manager Support; Completion of QI project; QI activity since ISF; Support for ongoing QI activity. The data was collated into a position paper. Incorporating a QI approach, a project integral to the 2019-2021 AHP workforce and improvement plans will drive this change. Key stakeholders are integral to the project team; feedback from and to service users regarding change ideas and ongoing PDSAs is ongoing. Driver diagram and project charter have identified outcome, process and balancing measures. We anticipate that the changes will result in maximising the ongoing QI contribution of staff with Practitioner level training across Ayrshire.

### **Outcome**

A planned and targeted approach is required to utilise QI capability and maximise capacity for staff to engage with ongoing QI to benefit the population. This is integral to our 2019-2021 Workforce and Improvement plans. Immediate changes have been tested in relation to pre ISF communication, line management support and QI coaching throughout the 6 month ISF. Service leads are now aware of where their local capacity for practitioner level capability and measures to address identified skills gaps have been identified.

AHP Managers are aware of staff with practitioner level skills and can maximise these through engaging them in QI activity and in supporting staff develop foundation level skills.

Staff involved in ISF will feel more supported and complete their projects

Staff previously undertaking ISF will have their skills gaps addressed and become involved in ongoing QI activity

### **Conclusion**

In carrying out this work it is critical strategic leaders recognise that developing a QI culture is more than allowing staff to attend training. Developing an infrastructure that supports staff to use and continue to develop these skills is fundamental if we are to gain a return on investment to benefit the population of Ayrshire. Critical to this is creating capacity within the working day to facilitate QI activity and support sustainable improvements.

## **Development of an Anaesthetic Crisis Manual for Acute Critical Events**

Call for Posters - Work in Progress

Jacklyn Yek, Clara Tong

Singhealth Anaesthesiology Residency Programme, Singapore

Yee Yian Ong, Shin Yuet Chong

Singapore General Hospital, Singapore

### **Background**

Cognitive aids such as crisis manuals have been shown to reduce the cognitive load experienced by healthcare teams during crisis management. They guide the team to perform the most appropriate steps that will help achieve the best possible patient outcomes. The 'leader-reader' model, whereby a dedicated reader of the crisis manual provides prompts to the team leader, is most effective. The reader however must be well-trained in the use of the crisis manual as unfamiliarity can lead to confusion and error. Using a crisis manual will also enable the team to feel confident that none of the key steps are missed during patient resuscitation. The objective of our study was to introduce a crisis manual in the operating theatre and train perioperative teams in its use in a quaternary 1400-bedded hospital in Singapore. The crisis manual was developed based on evidence-based guidelines, local practice and the Stanford Emergency Manual.

### **Methods**

A total of 11 possible intraoperative crises, including malignant hyperthermia and local anaesthetic toxicity, were included in the crisis manual. These were chosen based on the likelihood of potential catastrophic outcomes if not appropriately managed. Each crisis management protocol was limited to one page in the manual for easy reference and were organised by alphabetical order. 7 perioperative management teams comprising a specialist surgeon, a trainee surgeon, a specialist anaesthesiologist, an anaesthesiology trainee, scrub nurses and anaesthesia nurses were recruited to participate in a series of in situ simulation scenarios in the hospital's operating theatres over the period of April to June 2018. All teams were told that the crisis manual can be found next to the telephone in the operating theatre and they were advised to use it during the simulated crisis. The simulated crises were malignant hyperthermia, airway fire, massive haemorrhage, difficult airway, and eclampsia.

### **Outcome**

The crisis manual was only used by 2 of the 7 perioperative teams and both of them participated in the malignant hyperthermia (MH) scenarios. These teams reported that the crisis manual was invaluable as MH is exceedingly rare and hence no one in the teams had had prior experience managing MH. The management of MH is also complex and requires the performance of multiple steps and administration of special drugs such as dantrolene that are not found in every operating theatre. The crisis manual provides dosage and dilution guidelines for dantrolene and also includes its storage location in the operating theatre. The other teams did not refer to the crisis manual as the specialist anaesthesiologists involved said that they were familiar with the management of the other crises and did not think of using the crisis manual. At the post-scenario debrief, it was pointed out to these teams that there were still missing or inaccurate steps in the care of their patients.

### **Conclusion**

Despite the high volume of surgery performed in our hospital, life-threatening crises remain rare and perioperative teams are often inadequately prepared to handle these emergencies. The crisis manual is an effective, accessible and easy-to-use reference guide that can enhance teamwork and performance, and thus potentially improve patient outcomes. Additional training and increased familiarity with the manual will increase its use during a crisis. Our hope is that it will be one of the first things team members will reach out for in a crisis and assume the role of the reader. More simulation sessions are being planned to train perioperative management teams in its appropriate use. Further research should be done to evaluate its impact on real-life patient outcomes.



## **Positive Behavioural Support in Adult Mental Health A nurse led approach to enhance quality of life and reduce restrictive interventions. (Work in progress)**

Call for Posters - Work in Progress

James Boyle  
NHS Lothian-Scotland

### **Background**

In the aftermath of the Winterbourne Report, the Royal College of Nursing (RCN) produced draft guidance on the minimisation and alternatives to restrictive practices in health, adult social care and special schools. This document's key recommendation was the use of Positive Behavioural Support (PBS) methodology to support service users who exhibited behaviours of concern. Lothian secured funding for a nurse-led project to explore the implementation of PBS within an adult mental health service. The aim of the project was to reduce the incidence of restrictive interventions to manage challenging behaviours and to increase the skills and competence of staff in applying positive behavioural support interventions.

### **Methods**

The implementation process broadly follows the methodology and time-frame employed by McClean et.al, (2005, 2007 & 2012) longitudinal study which focuses on PBS using a Person-Focused Training (PFT) model.

### **Outcome**

PBS has significantly reduced behaviours of concern and the use of restraint.

Quotes of individuals experiences include "This PBS has kept me on my toes, kept me going, kept me happy."

"I can see me out of here in a couple of years time in the future and getting my own house my own accommodation, supported accommodation."

"I felt in control for once in my life. Before, everybody else was in control of my life – 'you do this, you do that, you do the next thing' - and I was left to just get on with it, I never had any control."

### **Conclusion**

In terms of the key success criteria, early indications in relation to PBS would signify that there is some evidence in the data that demonstrates a shift towards achieving these. The project has developed a training programme and operational implementation care-pathway which is being utilised to develop the second operational PBS plan with a view to expanding the PBS methodology to other patients.

The lack of evidence of its efficacy coupled with the paucity of literature in adult mental health, may be a barrier to the implementation of PBS, however NHS Lothian is fully supporting its development and is looking to increase its application in other areas.

## **Reducing urinary tract infection rates for gynaecology patients receiving Botox injections**

Call for Posters - Work in Progress

Jemilat Gbadamosi

Health Education East Midlands, United Kingdom

Ami Shukla, Pamela Leaper, Liz Smillie

Northampton General Hospital NHS Trust, United Kingdom

### **Background**

Overactive bladder (OAB) affects about 12% of the population and increases with advancing age to 70-80% by the age of 80. It is characterised by symptoms of, increased daytime frequency, nocturia and urgency (with or without urgency incontinence). 33% of patients have OAB with urgency incontinence ("OAB wet") and 66% without urgency incontinence ("OAB dry"). Lifestyle modifications, behavioural therapy and pharmacotherapy in the form of antimuscarinics or B3-agonists are the mainstays of treatment. For patients who do not respond to conventional treatment Botox injections into the bladder wall can be offered. This can lead to an increased risk of urinary tract infection (UTI). The aim of this project is to reduce the UTI rate for gynaecology patients receiving Botox injections by 50% by October 2019.

### **Methods**

The main intervention in this project was ensuring that prophylactic antibiotics were prescribed as standard following Botox injection. This would prevent UTI and prolong the effect of the Botox treatment. This involved engaging Consultant colleagues, showing them the difference that this would make to patients and making this standard practice in the department.

The second PDSA cycle is to review the structure of clinics appointments. With a reduction in UTI rates patients will require less face to face appointments and the follow up interval will be extended. This means that clinics will be streamlined, improving patient experience.

### **Outcome**

Following the first PDSA cycle prophylactic antibiotic prescription has increased from 10% to 60%. We have also seen a reduction in post procedure UTI rates within three months from 76% to 40%. Self-catheterisation rates also reduced by 32% and urinary retention rates fell by 5%.

The new clinic appointment structure has already led to a reduction in face to face consultations.

Following the reduction in UTI rates patients do not require as many face to face appointments. Only 76% of patients required a phone appointment within 3 days of their procedure, with a reduction to 80% for an appointment 2 weeks later, 47% after 4-5 weeks, 56% after 6 weeks and 40% after 3 months.

These improvements have allowed better use of resources within the urogynaecology unit and improved patient experience.

### **Conclusion**

Within a relatively short time this project has led to a reduction in UTI rates for gynaecology patients receiving Botox injections. We hope to see this further improve as the changes are embedded. This improvement has meant we have been able to reduce face to face follow up appointments, improving patient experience and allowing better use of resources. Implementing this project using PDSA cycles has shown us that small incremental changes are better in the long term than large structural changes.

## **Organisational Transformation Strategy for patient-centred care education and training**

Call for Posters - Work in Progress

Jenepher Martin

Monash University, Australia

Jenny Barr, Kathryn Ogden, David Greenfield

University of Tasmania, Australia

### **Background**

The Organisational Transformation Strategy (OTS) for improving patient-centred care has been generated by healthcare researchers from the Launceston Clinical School & Australian Institute of Health Service Management, University of Tasmania and Eastern Health Clinical School, Monash University.

There has been a growing awareness by this research team that patient-centred care capacity building was needed. OTS is derived from empirical participatory research conducted by this team to identify the requirements for patient-centred health systems. The OTS serves to assist all health service organisation stakeholders, including patients, strive towards achieving a patient-centred care system.

Requirements of Patient-Centred Care Systems map, ROPPCS, forms the basis for an OTS logic to guide organisations for implementing and monitoring change. Building shared understanding and developing a suite of tools about roles and responsibilities for patient-centred care is fundamental.

### **Methods**

The program logic development derived from ROPPCS domains, clusters and statements is designed to underpin OTS and to date has focussed on the 'Career-spanning Education and Training Elements' domain of the concept map. ROPPCS statements were operationalised and inserted into the logic as inputs, process, outputs and outcomes. This iterative process included verification with original ROPPCS researchers as to the specific meaning of conceptual statements, and maintenance of the audit trail from conceptual map statements to operationalised logic. The current logic therefore sets out how an organisation, through the lens of education and training, could achieve a greater capability for delivery of patient centred care. In addition, when all clusters in the ROPPCS conceptual map are incorporated in the logic, an operational definition for Patient-Centred care will be derived.

### **Outcome**

The OTS is designed to assist health services to transform patient-centred care strategies across their organisation.

The next stages for this improvement work are two-fold:

1. To partner with a health service organisation to pilot the OTS and map their health service from a patient-centred care education and training perspective. An organisation can utilise the strategy as an audit tool to determine their level of patient-centred care achievement and test the outcomes when they implement changes.
2. Validation of the logic by patients. Statements forming the basis of the logic framework were empirically derived with patients and consumers as one group of stakeholders. We will next seek patients' 'sense-making' of the logic in terms of flow and importance to them, ensuring there are no gaps in the logic.

### **Conclusion**

There is a cross-sector responsibility to bring about PCC organisational reform. It is known that engagement of health services for measuring and implementing patient-centred care change can be challenging. However, the work of transformation is achievable when organisations understand the requirements for patient-centred care and have a desire to test their achievements in order to develop strategies for improvement.

The intent of the OTS logic is to enable stakeholders to identify the connections between patient-centred care requirements within an organisation, thus avoiding silos and enabling shared responsibility.

## **Implementation of care team structure for ICU admission of the critically ill patient**

Call for Posters - Work in Progress

Joana Ramos

Northzealand Hospital Denmark

### **Background**

Receiving a patient in the intensive care unit (ICU) presents challenges to the ICU staff due to potentially rapidly deteriorating critical illness.

5 years ago, at the ICU at North Zealand University Hospital, it was decided – as part of an ongoing hospital health care improvement program – to develop a structured, well-defined and uniform model for patient admission to the ICU. The project aimed at improving patient safety as well as staff competency and satisfaction.

Studies in trauma care, aviation, and other high-risk enterprises have demonstrated that the outcome of critical situations depends less on the technical skills of the personnel as compared to non-technical skills, communication, leadership, and teamwork.

### **Methods**

The literature on crew resource management (CRM) in intensive care is scarce; inspiration was sought primarily in the CRM literature on trauma care and surgery.

Upon literature analysis, a model for ICU patient admission was developed by use of repeated Plan-Do-Study-Act (PDSA) cycles (worksheet developed by Institute for Healthcare Improvement, Cambridge, Massachusetts). The final model was largely inspired by the corresponding trauma care model.

### **Outcome**

The model implies a clear division of staff roles and duties during patient admission to the ICU: Nurse 1 is the leading nurse, responsible (jointly with the physician) for the general patient overview. Nurse 2 assists Nurse 1, including coordination of logistics (requisition of various tests, medications, and additional staff). In addition, the ICU admission team consists of a physician and a laboratory technician. With every change of the guard, Nurses 1 + 2 for the upcoming shift are appointed.

A special reporting scheme with clinical patient information in accordance with the ISBAR system was developed for notification of the arrival of a new ICU patient.

Action cards for each team member were developed. Additionally, a special trolley was introduced, containing all the necessary utensils. Before clinical implementation of the model, the entire ICU staff underwent simulation training, focusing on non-technical skills and teamwork including closed loop communication.

### **Conclusion**

The model was finally launched in the spring of 2017.

Improvement in patient outcome measures and staff satisfaction resulting from the implementation of the new ICU admission model is yet to be formally assessed; at this point in time, staff satisfaction appears significantly improved.

## **A National Collaborative Programme to Improve Clinical Care Outcomes for Patients with Chronic Obstructive Pulmonary Disease (COPD) in Ireland**

Call for Posters - Work in Progress

John Brennan, Rachel MacDonell  
Royal College of Physicians of Ireland  
Timothy McDonnell  
National Clinical Programme for COPD, Ireland

### **Background**

The National Chronic Obstructive Pulmonary Disease (COPD) Improvement Collaborative is a nationwide quality improvement (QI) programme in Ireland aimed at improving care for patients with this condition. The collaborative is a joint initiative between the Clinical Strategy and Programmes Division (CSPD), National Clinical Programme for COPD (NCP COPD) and Royal College of Physicians of Ireland (RCPI). Ireland has the highest rate of admission for COPD in the OECD, with marked variation evident in hospital performance contributing to COPD being the 4th leading cause of death nationally. Significant scope for improvement was a driving factor in designing and developing this national collaborative.

### **Methods**

A rapid scoping literature review and national performance data on COPD in Ireland informed an initial QI Collaborative pilot in acute COPD care with improvement teams in two pilot hospitals. The achievements of these pilot teams led to national level approval and funding for a 15 month national collaborative learning programme focused on improving COPD acute care outcomes, underpinned by national performance data, site-specific systems understanding and patient care data.

The collaborative involves:

- 17 consultant-led teams representing 18 hospitals across Ireland
- Multidisciplinary teams; usually frontline COPD care providers (consultants in respiratory and acute medicine, respiratory nurses, physiotherapists & non-consultant hospital doctors)
- 5 mandatory, face-to-face Learning Sessions with faculty support during 'Action Periods'
- A dedicated RCPI QI faculty; including QI, subject matter and coaching specialists from medicine, nursing, education & patient representation

### **Outcome**

The COPD Collaborative has just held its 3rd Learning Session. Each is tailored to help teams implement individual projects within their local setting. They are also learning methodologies and skills to overcome challenges to local initiatives and to contribute to national improvement.

Participant feedback and self-assessment of progress shows that at this midway point, individuals are benefiting from the coaching methodology. Comments demonstrate a resilience and understanding of key QI concepts. e.g. "Most things in the way of our goal can be influenced by us".

Teams submit a monthly dataset on patient experience times and evidence-based clinical interventions in acute COPD care at presentation and discharge.

Teams use this data, and collect other project specific data to inform their own outcome, process and balancing measures. Some early improvement trends are becoming apparent in the national data, but significant work is required to sustain these changes.

### **Conclusion**

The National COPD Improvement Collaborative is in its early stages. However, liaison with improvement teams (through site visits and remotely) and early data trending indicates that QI methodology is being used effectively to generate improvements at all stages of the patient journey, through site specific changes.

There is an opportunity to build on the improvement capability with the COPD Improvement Collaborative Teams in a second phase to enhance integration of care into the community and primary healthcare setting.

## **Clarifying and Improving Patient Information for the Breast Reconstruction Journey at University Hospitals of Leicester**

Call for Posters - Work in Progress

Jvalant Nayan Parekh, Perry Liu, Binay Gurung, Ibrahim Haq  
Leicester University, UK  
Chiraag Thakrar Karia, Nakul G Patel  
University Hospitals of Leicester, UK

### **Background**

This project was carried out at the University Hospitals of Leicester (UHL) through the Plastic Surgery department nominating itself as one of the Listening into Action (LiA) teams. A short pilot questionnaire identified that over 20% of patients who had previously undergone breast reconstruction felt they wanted more information and a more personal perspective from patients who had undergone reconstruction.

It was recognised that patients receive too many information leaflets which they are not often fully able to understand and were often overwhelmed. Therefore, one of the main aims was to streamline and clarify the reconstruction journey by making the information more accessible through patient centred videos to allow a better understanding of it.

### **Methods**

The main intervention was the introduction of videos which would provide the information previously provided through numerous consultations and information leaflets (whilst not replacing consultations altogether). This intervention was first identified in January 2018 by surveying patients at a support group following which a list of topics was generated that would need filming to be covered.

Having current patients and those who have gone through the reconstruction journey take part in the videos means they can help alleviate fears of prospective patients. Patients have provided their own perspectives on aspects such as procedures they had done or their interaction at the local support groups.

Videos with staff (including doctors, nurses and support group volunteers) provided key information about what to expect at appointments and anything patients should bring with them. They also answered commonly asked questions which can help shorten outpatient consultations too.

### **Outcome**

With this project still a work in progress, we are currently surveying patients and staff to collect feedback and further improve the videos created to ensure they achieve the best desired effect. One of the major anticipated benefits is that patients will also have greater awareness of support they can get especially after surgery via the support group as many had mentioned they did not know about the meetings available.

This intervention will also help patients come to a more informed decision with regards to their choice of treatment as they will be able to visualise steps of the reconstructive journey first hand through the perspectives of fellow patients. They will also be able to tailor the outpatient consultations regarding their options more effectively as they will have a better understanding of their options beforehand.

### **Conclusion**

Whilst the exact effects of introducing these videos is not yet known, it is anticipated to make a positive change with respect to patient understanding of the breast reconstruction journey. This in turn will result in patients making more informed decisions with regards to their care.

Some of the problems encountered have included difficulty with recruiting willing patients for the videos who are either willing to describe their journey or show the changes they have had. Furthermore, the volume of filming required along with editing needed means that the production of complete videos takes time.

In summary, we have been able to see that providing patient information via patient centred personal videos can be an effective means of improving understanding of their care. The full benefits will only be

seen when the videos are all completed and uploaded online for public viewing and for doctors to reference during consultations. This will only be demonstrated with time.

## **Value Management - A Team Approach to Continuous Improvement**

Call for Posters - Work in Progress

Karen Kendall  
NHS Tayside, Scotland

### **Background**

NHS Tayside faces continuing pressures to meet growing demand for increasingly complex care needs in an affordable way.

Value Management was viewed as a potential way to have a systematic approach to effectively improving service quality and affordability at the point of care that would enable all staff to contribute to overall organisational aims.

Initial meetings with managers and clinicians highlighted:

- Perceived loss of empowerment at operational level;
- Staff keen to change things but not sure how to begin;
- Difficulty making sense of monthly data/information to inform what needed to change or how best to manage costs;
- iMatter's feeling involved in decisions relating to the organisation scored lowest overall.

Working with 5 test teams we wanted to understand whether we had the right infrastructure, culture, and leadership to support this methodology. And whether it complements existing QI approaches used within NHST.

### **Methods**

- 1 day introductory workshop, open to all
- 5 prototype teams selected to implement VM
- Intensive support over 3 months
- Awareness sessions, process mapping, baseline data-sharing to identify improvement ideas
- Staff experience baseline via anonymous questionnaire
- Teams identify improvement measures for box scores
- Coaching in the workplace course offered;
- Improvement ideas assessed for potential impact vs effort required; tested through PDSA cycle

Main changes to practice:

- Provision of weekly quality, capacity & finance data (Box Score)
- Workplace reorganisation (6S) – improving working environment
- Engagement of whole team in weekly huddles to review data & agree actions required
- All staff able to share daily/weekly experience (mood marbles, comments boxes) & improvement ideas
- Managers commit to listening & making actual improvements
- Teams encouraged to incorporate patient feedback into huddles to inform changes for testing/implementing

### **Outcome**

Initial findings suggest

- Staff welcome being involved and listened to
- Small gains in effectiveness and time by improving stock management
- Positive impact on patient / carer / staff experience through 6S
- Improved fasting times in one of the ward areas

Potential benefits:

- A better, safer environment;
- Improved patient care;
- Improved staff experience leading to lower sickness absence levels and a reduction in supplementary staffing costs.

Feedback from staff:

- I like the fact that everyone had the chance to suggest areas for improvement;



- Coaching skills training was very helpful;
- I like the meeting every week to review the board, I feel involved;
- Value Management has been a huge driving force in allowing us to make changes and improvements.

**Conclusion**

With collaboration our infrastructure can support this methodology.

Value Management would support a culture based around quality, experience, empowerment, and ownership.

There has been a willingness from staff at all levels to engage with Value Management – “it makes sense”.

Biggest challenge has been release of staff time to engage in the process.

## **Co-assessment of post-stroke rehabilitation needs and health value in integrated care**

Call for Posters - Work in Progress

Kari J Kvaerner, Linn N Støme

Oslo University Hospital and BI Norwegian Business School, Norway

Jonathan Romm, Marianne Støren Berg, Karianne Rygh, Frida Almquist

The Oslo School of Architecture and Design

### **Background**

Stroke constitutes one of our major societal challenges, is the third most cause of death and challenges the patient pathway in rehabilitation. A major bottleneck is the access to rehabilitation. In Norway, there is national agreement that the current situation is characterized by a need for an integrated, holistic and patient-centric approach comprising both of levels of care.

Sunnaas Rehabilitation Hospital and Oslo Municipality has initiated an innovative procurement project where the procurement will be based on common rehabilitation needs, as defined and agreed upon by patients, both health care and decision-makers in each system. This is an ongoing process, where we present the need specification phase of this case study.

Our aim: to demonstrate how a co-assessment tool can be applied in the need-specification phase of an innovative procurement projects to assess health value and align stakeholder needs.

### **Methods**

Stakeholder analysis and scenario building was performed in a co-creation setting (strategy sandbox). The following stakeholders participated: specialists in the field of stroke rehabilitation; physicians and health personnel at primary and specialist level, patients, the health care industry, health purchasers and decision makers.

- In session 3 of the strategy sandbox process, a new co-assessment tool was applied to assess health value and align stakeholder around four needs agreed upon in session 1 and 2. The four-health value aspect of the co-assessment tool is based on Health Technology Assessment (HTA) methodology. As a group task, the four health value domains user benefits, economic organisational treatment effect/health gain was rated as low, medium or large benefit. Next, the results were presented, and stakeholders were asked to list rehabilitation needs that had not been addressed in the three needs that were explored.

### **Outcome**

We identified the most important following four post-stroke rehabilitation needs and assess the size of their potential health value:

1. Early discovery of cognitive impairment
2. Rehabilitation continuity
3. Empower patients and next of kins
4. Remote monitoring and digital touchpoints

Empowering the patients and next of kins was regarded

- The most important post-stroke need
- To have the largest potential health benefit; the largest patient value, clinical benefit, cost-effectiveness and societal value.

In addition, the expected quality improvement of post-stroke rehabilitation in each need category was specified and will be used to select outcome measured that need to be measured when the new solutions are piloted and its health value will be assessed.

### **Conclusion**

We have learned that addressing health value in the need phase of quality improvement work provides an opportunity to implement changes that give the desired health effect if outcome are defined in the next phase of development. Further, we experienced that our co-assessment tool successfully aligned stakeholders around post-stroke rehabilitation needs.

# **Is the Early Warning Score an appropriate tool for Intermediate Care Patients? A Feasibility Study.**

Call for Posters - Work in Progress

Karina Leitgeb, Gerald Sendlhofer

Executive Department of Quality and Risk Management, University Hospital Graz, Austria

Gudrun Pregartner

Institute for Medical Informatics, Statistics and Documentation, Medical University of Graz, Austria

Gernot Brunner

Research Unit for Safety in Health, Department of Surgery, Medical University of Graz, Austria

## **Background**

The Intermediate Care Unit (IMC) at the University Hospital Graz, Austria, is operated as a unit with attending physicians from different surgical wards. The team at the IMC consists of trained nurses and a general practitioner (GP) who care for patients with vulnerable vital functions. Due to structural conditions the IMC is not having a 24/7 cover-up of specialists on site but on call. It is possible that in terms of emergency no specialist is available on time. Deterioration of patients is likely to escalate and admission to Intensive Care Unit (ICU) is a possible consequence. Several critical incident reports described situations with critically ill patients delivered to the IMC rather than to the ICU. Furthermore, some reports indicated misled interdisciplinary communication about patient conditions. This study investigated if the Early Warning Score (EWS) is an appropriate tool to identify and respond to patients at risk of deteriorating in an IMC setting.

## **Methods**

EWS parameters were customised (Figure 1), the standard operating procedure in case of deteriorating was aligned and explicitly described. A poster with the key moments of the procedure was designed. Staff was informed of the EWS as a tool to determine early deterioration in patients and as an enabler of structured communication in a multidisciplinary setting. Trainings took place, a pilot phase of four weeks was set up. Feedback was given to the Department of Quality and Risk Management, which was the linkage between staff of IMC and specialist disciplines.

Data of EWS observation charts were analysed descriptively using R version 3.4.4. Percent times within the respective risk category were calculated for each patient stay using an algorithm that interpolates linearly between the different measurements (Rosendaal). Medium risk was assumed from a hypothetical value of 3.5-5.5, whereas high risk was assumed above 5.5.

## **Outcome**

In a 3-months-period (07-09/2018), 2,111 observations of 238 patients from surgical wards during 255 in-patient stays were analysed. Of these patients, 221 patients had 1 stay and 17 patients had 2 stays. The medium length of stay was 2 days (minimum 0, maximum 32). In sum, 10 out of 11 specialist disciplines allocated patients to the IMC.

In total, 92.7% of the observations were rated with an EWS-score between 0 and 3 (low risk, no specialist discipline needed for treatment), 5.3% were rated with an EWS-score between 4 and 5 (medium risk, specialist discipline is needed within 30 mins) and 1.1% were rated with an EWS-score  $\geq 6$  (high risk, specialist discipline is needed within 10 mins, maximum score was 10).

There is indication for higher risk of being transferred to the ICU (38,5%) when scoring  $\geq 4$  at admission to the IMC.

It is more likely for patients to spend more time at medium and high risk (23%) if they score  $\geq 4$  at admission to the IMC.

## **Conclusion**

The study shows that in the observation period patients were predominantly suitable for IMC. Nevertheless, 12.5% of patients were scored higher or equal 4, which indicates that subsequent intensive care conditions were to be expected. Suitability of patients for IMC should therefore be verified by scoring before allocation to the IMC. Missing data regarding to where patients were being allocated to after being discharged from the IMC are to be improved. The EWS represents a tool to improve patients care and collaboration between professionals and will be implemented at the University Hospital Graz.

## **Reducing the use of restrictive practices in in-patient mental health services**

Call for Posters - Work in Progress

Kate Frowein, Rosemary Smyth, Louise Galligan  
Mental Health Commission, Ireland

### **Background**

This study was conducted by the Mental Health Commission, Ireland. The Commission is the regulator for mental health services in Ireland. In-patient mental health services ('approved centres') are licensed by the Commission. The focus of this study was on approved centres that use restrictive practices, specifically physical restraint and seclusion.

The Commission has an oversight role to ensure that restrictive interventions are only used where strictly necessary and that any interventions are undertaken, safely and in line with specified rules and codes of practice. Any intervention employed which compromises a person's liberty should be the safest and least restrictive option necessary to manage the immediate situation. It must be proportionate to the assessed risk, and employed for the shortest possible duration.

The Commission has been collecting data on the use of restrictive practices in approved centres since 2008.

### **Methods**

In 2014, the Commission published a Seclusion and Restraint Reduction Strategy (MHC, 2014) for the purposes of achieving significant reductions in the use of seclusion and physical restraint while also ensuring resident and staff safety. The Strategy highlighted the use of data as one of the eight key interventions.

The 2014 Strategy suggested that each service should establish a baseline measure of occurrences of each of the restrictive interventions and to use the data collection and analysis as a source of clinical and organisational learning to support the reduction of seclusion and restraint.

Approved centres are required to return aggregate data on the use of seclusion and physical restraint on an annual basis, in templates specified by the Commission. Data were analysed by overall number of interventions, duration of intervention and rate of intervention per person and per population. The study also analysed the demographics breakdown by age and gender.

### **Outcome**

The results of the study showed the use of seclusion and physical restraint in 2016 nationally and by sector (Community Healthcare Organisation (CHO)/private sector).

The study showed that use of restrictive practices varies between approved centres and service providers. Since 2008, the use of physical restraint has consistently increased in terms of the total number of episodes reported. The total number of episodes of seclusion has decreased, but the average duration has increased. There is little evidence of the impact of the use of data alone as an intervention to reduce the use of restrictive practices. However, there is now a rich data source to allow services to benchmark themselves against comparable services and the national average.

### **Conclusion**

Use of data alone may be a weak intervention for the reduction of restrictive practices. However the 2014 Strategy also highlighted seven other interventions for the reduction of restrictive practices, categorised as: Leadership, Engagement, Education, Debriefing, Environment, Regulation and Staffing. In 2017, the Commission set mandatory training for all healthcare professionals in approved centres to be trained in the prevention and management of violence and aggression. We are hopeful that increased training levels will contribute to the reduction of restrictive practices and will continue to support services to implement the 2014 Strategy.

For the use of data to be more effective as an intervention the data may need to be more timely and accessible for services. The Commission is also actively developing systems for real-time notifications and reporting of restrictive practices.

## **Applying NHS Education for Scotland Quality Improvement e-modules to reduce number of patients discharged from tertiary centre before dietetic assessment**

Call for Posters - Work in Progress

Leigh Hamilton, Claire Armstrong, Carole-Anne Fleming  
NHS Greater Glasgow and Clyde, UK

### **Background**

The Beatson West of Scotland Cancer Centre (BWoSCC) covers four Health Boards in the West of Scotland to deliver non-surgical oncology treatment to 60% of Scotland's population. NHS Greater Glasgow and Clyde (NHSGGC) Adult Acute Dietetic Services (AADS) Oncology Team provide nutritional care for 114 inpatient beds at this centre. An increasing trend in the number of patients who were referred but discharged before nutritional assessment was noted in 2018. NHSGGC AADS policy is that these referrals should be appropriately managed within 5 working days from discharge. In the BWoSCC these patients are telephoned at home for first line advice which leads to a delay in receiving appropriate dietetic assessment.

### **Methods**

A key stakeholder meeting was arranged to present caseload tracker data. A Cause and Effect diagram and 5 why methodology were employed to structure a brainstorming session and determine the root causes of the problem. The stakeholders agreed to aim to reduce the percentage of discharges before assessment to less than 10% of the total number of referrals by the end of 2018. It was proposed that this could be achieved through improving patient management by implementing a structured dietetic team daily huddle to discuss new referrals, discharge plans, waiting times and agree team responsibilities for the day. The IHI Quality Improvement (QI) Toolkit project planning and PDSA worksheets were used for planning change. Structure and implementation of huddles were researched. Key stake holders devised a huddle template with patient safety issues relevant to dietetic care and agreed to trial the daily huddle for a period of four weeks.

### **Outcome**

Verbal feedback was obtained from the team in a retrospective format. From this, further PDSA cycles were completed to switch from a paper recorded huddle to a visual patient management board. Effects of change were measured by plotting number of discharges before assessment (expressed as a mean of the total number of weekly referrals) on the IHI run chart template. Perla et al (2011) analysis tool was used to interpret the findings. As at October 2018, the run chart displays 17 runs suggesting changes in the number of discharges before assessment are random. However, a shift (9 consecutive points below the median) was noted after PDSA cycle 2 indicating a non random pattern of change. This may be attributed to the implementation of the visual patient management board; ongoing measurements are required to assess whether shift below the median is sustained. From January to October 2018 the median percentage of patients discharged before assessment reduced by 57% (14% to 6%).

### **Conclusion**

Management of discharged patients is now incorporated into daily routine and a higher percentage of patients are now being assessed before discharge. This first QI initiative undertaken by the BWoSCC Dietetic Team has been invaluable to introduce the team to QI methodology. No patients or carers were involved in this QI initiative. Additional learning re patient involvement can be addressed with future initiatives once the team are confident in applying QI methodology. The author has benefited from independent learning through completion of the NHS Education for Scotland (NES) QI foundation e-learning modules and has shared this learning within the team. Participation in the online foundation e-learning modules through NES is encouraged. The interactive format encourages learning and retention of knowledge. Using the IHI Improvement Toolkit was invaluable in allowing the QI initiative Lead to put the learning into action.

## **Conveyance of under 2 years old children by SECAmb**

Call for Posters - Work in Progress

Lemlem Tewolde-Berhan  
United Kingdom

### **Background**

To ensure that patients aged under two years of age receive safe and effective care from South East Coast Ambulance Service (SECAmb).

- Ensure that those who should be conveyed to the emergency department, as per local guidance, are conveyed.
- Assess the safety of non-conveyance decisions in patients aged 1-2 years.
- Ensure that patients in the population are receiving adequate physical examination.

### **Methods**

- Randomised retrospective audit over three months; January, February and March 2018. The population was established by searching our patient clinical record database for all patients under two years of age.
- A calculation for a 5% margin of error and 95% confidence interval showed the minimum population size we needed was 354 cases. A stratified sample of 120 random patients from each month was produced. Cases where no patient clinical record could be located were excluded, leaving us with a final sample of 354 patients.

### **Outcome**

The results show guidelines aren't strictly adhered to; 87% of under 1s were conveyed over 3 months' and 34% of the non-conveyed children in the sample had community follow up arranged.

The data shows not all children have vital signs recorded on patient clinical records. HR and RR were the better recorded vital signs; 91% had HR and 93% had RR recorded. BP was recorded for 7% of the patients.

Looking at working diagnoses given by ambulance crews, the commonest is 'childhood illness'. This is a very non-specific diagnosis and can range from minor such as coryzal to something more serious such as evolving severe bacterial infection. When assessing whether a child under the age of 2, and in the case of SECAmb, a child under the age of 1, it is difficult to confidently tell the difference between such illnesses. Therefore, having a guideline saying children under a specific age should be conveyed, and if not conveyed, should be referred for community follow up would be safe.

### **Conclusion**

This audit gave us a snap shot of conveyance of under 2 years old children from a diverse and geographically large area of England. It is a small indicator that perhaps guidelines suggesting blanket conveyance of the most vulnerable members of the population is necessary.

## **Falls Project**

Call for Posters - Work in Progress

Linda McDougal  
NHS Dumfries & Galloway Scotland

### **Background**

Cree Ward in Midpark Hospital is a 16 bed mixed sex unit providing specialist assessment for those individuals with an Organic illness who are experiencing an acute episode in their disease process and require a more intense level of care and treatment. The majority of individuals are aged 65 and over although this is not exclusive.

Between September 2016 and August 2017, Cree experienced a significant amount of falls within the ward which equated to 57% of the falls within Midpark as a whole. There was therefore a clear need to develop a strategy aimed at reducing the number of falls within the ward which improved the quality of life of this vulnerable patient group and enhanced the patient/carer experience.

### **Methods**

The project involved the implementation of falls prevention strategies for all inpatients who were admitted to Cree Ward and included changes for patients, relatives, family & professional carers, MDT staff and other support services.

Improvement activity needed to balance with ideas of independence, personal choice, privacy and dignity. By using the model for improvement it was possible to identify what it was that the project was trying to accomplish (reduction in falls), how it was known that change was an improvement (data analysis, quantitative and qualitative) and what changes were made that would result in improvement (PDSA cycles).

A driver diagram was completed to establish outcome, primary drivers to identify areas for improvement including data analysis to provide baseline for audit results and secondary drivers to plan the changes or interventions required

### **Outcome**

Feedback was sought from families and carers at the start of the project to gain an understanding of their thoughts around falls and why they may occur in hospital. The development of a multifactorial risk assessment tool By using the new tool to ask specific questions around falls, patients and carers felt they'd had a greater input into the whole assessment process during the person's stay. As falls care plans were developed in a more person centred and holistic manner, staff were able to highlight not only the greatest risk areas but also what was being done to address these risks which families and patients appreciated.

### **Conclusion**

Through the work within the project, staff now recognise that falls are not an inevitable occurrence within this high risk group and can take sound clinical steps to reduce falls or harm from falls.

Early results show a slight reduction in the percentage of falls, but falls with harm have reduced by 57% within Cree. Work is now underway to develop and spread the work through the other wards within Midpark, firstly concentrating on the other older adult wards

## **Distracted Practice: How Safe are You and Your Patients?**

Call for Posters - Work in Progress

Lynn K. D'Esmond, RN, PhD, Matthew Machado, Senior Nursing Student, Research Assistant  
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Paula Moreau, Rn, PhD

Qunisigamond Community College, Worcester MA, United States

Kelly Shanley, RN, MSN

Southcoast Health System, Fall River, MA United States,

Carol Bova, RN, PhD

UMass Medical School, Worcester, MA, United States

### **Background**

Distracted practice has been linked to medical errors which are now classified as the third leading cause of death in the United States. Distracted practice is defined as the diversion of a portion of available cognitive resources that are needed to effectively perform or carry out an activity and has been found to be the result of individuals interacting with the environment and technology in the performance of their jobs. Distractions are detrimental to human functioning in circumstances requiring cognitive processing of large amounts of intricate, constantly changing information that occur frequently in healthcare settings. Eighty percent of medical errors are attributed to human factors that include distractions. When new information is presented, the mind of the healthcare professional must be able to focus attention to properly encode the information to memory for retrieval at another time. Diverting focus at key times of information coding is linked to healthcare errors.

### **Methods**

This was a multi-method eight step instrument development study. Qualitative data from a previous study on Distracted Practice was used to generate scale-items (97). Face validity and content validity were conducted with two different expert panels that included nurses, physicians and pharmacists from the community partner. After a series of item reviews the scale was reduced to 25 items resulting in a CVI of 0.88. After pilot testing with the community agency was concluded, the scale was completed by 341 health care providers at the community agency. Full psychometric evaluation is currently in progress. The preliminary Cronbach's Alpha is .88 prior to refinement of the scale.

### **Outcome**

Distracted practice can potentially happen anywhere and everywhere across all healthcare settings. Having a valid and reliable scale to measure it is, understanding the causes, and raising awareness is just the beginning. The scale will now be utilized to assist in the identification of interventions that will decrease and or eliminate distracted practice. This we believe will improve safety in health care delivery.

### **Conclusion**

A reliable and valid distracted practice scale resulted. The scale is essential for future testing the effectiveness of interventions to reduce distracted practice and preventing errors in the acute care setting.



## **Quality Improvement in Older People Rehabilitation: Falls Prevention**

Call for Posters - Work in Progress

Lynn Marotta

NHS Greater Glasgow and Clyde - Scotland

### **Background**

The project is being carried out in an ambulatory care hospital within an off-site older adult rehabilitation ward. The Multidisciplinary Team (MDT) are involved in the project however, this project was primarily undertaken by the nursing team.

There are 15 trained nurses and 14 health care assistants within the ward. Physiotherapy and Occupational therapy staff are also based here. There is one clinical case manager, a ward doctor and consultant and ward rounds twice weekly. The patient group are adults over the age of 65 who have had an acute hospital admission and require rehabilitation.

The ward had a high incidence of falls between January-April 2018 which led to 5 falls with significant patient harm. We aimed to understand the primary drivers for these falls and reduce falls by 50% over six months.

### **Methods**

The MDT met to discuss and assess the cause and extent of the problem. An open forum was established to focus on both the negative and positive aspects of falls prevention.

Four themes emerged from the forum: patient handover; environment; risk assessment and equipment.

- The safety brief was changed to an electronic version
- 'Falls risk assessment walk round' implemented
- One hourly care rounding implemented.
- A second nursing station and hot desks have been opened

June- Safety rounds initiated

June – Further nursing station created

June– Communication with MDT educational sessions introduced.

July- One hourly visual checks initiated

July- Electronic safety brief introduced

July- Meeting with allied health professionals (AHPs)

### **Outcome**

The effect of change was measured using reports from the incident reporting system and is displayed within a run chart.

Data showed a decrease in falls: in January 2018 the ward had 17 falls in comparison to only 2 falls in August 2018 and 1 fall in January 2019. The ward has had one fall with harm since April 2018 (a 9 month period).

Through the creation of an open forum, nursing staff report that they feel fully informed of risks and have a sense of ownership in relation to patient safety. The involvement of AHPs has been extremely positive with active participation in visualising patients and care rounding.

### **Conclusion**

Staff place all patients at risk, on one hourly care rounding on admission. Despite interventions the ward layout can create challenges in relation to visualisation. One of our most successful changes has been the simplest; by using our second nursing station visualisation of patients has been improved.

To ensure temporary or visiting staff are aware of this programme of work, we are in the process of creating a welcome pack to ensure communication of appropriate information.

It is essential to engage all stakeholders and ensure momentum is kept. It is easy to over complicate a project; however, our advice is focus on what can easily be changed. The reduction in falls has reduced patient harm. These simple interventions could be tailored to other areas.

## **Implementation of a long-term outcome measurement program at Public General Hospital**

Call for Posters - Work in Progress

Marco Aurélio Vitorino Cunha, Adolfo Martin da Silva, Hafiza Abdon Muser Hadi, Adriano Augusto Meirelles Truffa

Instituto de Responsabilidade Social Sírio Libanês - Brazil

Carla Bernardes Ledo, Luiz Francisco Cardoso

Hospital Sírio Libanês - Brazil

### **Background**

The study was conducted in a public general hospital located in Jundiaí, São Paulo, Brazil. It has 136 beds and an emphasis on surgical and cardiologic care. The hospital performs approximately 2,300 catheterisms and 550 angioplasties per year.

There is a growing need for the standardization of outcome measurement and evaluation of value delivered to patients in the continuum of care. The vast majority of hospital quality indicators at Brazilian public hospitals focus on in-hospital processes and outcomes.

The aim of this study is to analyse the outcomes of angioplasties performed during hospital stays and after discharge and to measure patient adherence to treatment using ICHOM (International Consortium for Health Outcomes Measurement) standards.

### **Methods**

A partnership was established between ICHOM and Hospital Sírio-Libanês; the standards and questionnaires were translated to Portuguese and the same methodology was used at this public hospital. Our hospital is the first public hospital in Brazil to adopt this methodology.

Data was gathered on 453 patients regarding in-hospital outcomes and 30-day post-discharge assessments from November 2017 to September 2018.

Process for implementing an outcome and process measurement system:

- Mapping of cardiologic procedure volume
- Presentation of the methodology to hospital clinical leadership
- Data collection flow definition
- Data collection team training
- REDCap platform access granted to team

All patients will be followed for 5 years after discharge

### **Outcome**

In-Hospital Data (2018):

Acute Kidney Injury 5.2%, Significant Coronary Dissection 1.1%, Coronary Perforation 0.0%, Death 0.19%, Cerebrovascular Accident 0.0%, Emergency Surgery 0.0%, Vascular Complication 0.19%, Hemorrhagic Event in 72h 1.48%.

Medication Intake - Follow-up 30 days (2018 January to September):

Aspirin 85.9%, P2Y12 75.4%, DAPT 73.2%

Adverse Event - Follow up 30 days (2018 January to September):

Death 0.3%, Stroke 0.0%, Acute Myocardial Infarction 1.1%, Coronary Artery Bypass Grafting 0.0%

After the implementation of the program, we identified a high incidence of acute kidney injury (AKI) following the angioplasties, leading to the introduction of a new protocol and a 47.4% decrease of this complication. We are currently working on strategies to improve medication adherence post-discharge.

### **Conclusion**

The implementation of this program helped establish where to focus our improvement efforts. Our in-hospital results, except for AKI, are compatible with American College of Cardiology standards; there is potential for improvement on post-hospital patient adherence to treatment. We are currently working on quality of life questionnaires to identify further areas for improvement. The authors hope that these findings can help other institutions develop strategies to improve angioplasty outcomes in the Brazilian public health care setting.

## **How to convert admitted subacute cardiac patients to ambulatory care**

Call for Posters - Work in Progress

Mette W. Hansen, MD, Erlend G. Singsaas, MD, Tor H. Melberg, MD, PhD

Department of Cardiology, Stavanger University Hospital, Norway

Aase L. Kalberg, MD, Erna Harboe, MD, PhD

Medical Department, Stavanger University Hospital, Norway

### **Background**

The Department of Cardiology at Stavanger University Hospital in Norway has 55 beds, 6000 inpatient admissions per year. The Subacute Ambulatory Cardiac Unit (SACU) provides rapid diagnosis and management of patients presenting to the Emergency Department (ED) with subacute cardiac conditions. Opening hours in the SACU are 08.00am-08.00 pm, where 06.00pm-08.00pm are open for emergency assessments from the ED.

Patients who present to ED with a potentially severe cardiac condition are admitted to the subacute cardiology ward and often have to wait overnight for specific diagnostics (e.g. exercise test, echocardiography). Patients not in need of observation per se are eligible for direct transferral to the SACU from the ED the same day that they are admitted.

The emergency appointments in the SACU have not been fully utilized. Baseline measures found that maximum one patient per week was assessed in the SACU on the same day they were admitted to the ED.

### **Methods**

A multidisciplinary team was established in September 2018. We prepared a driver diagram to identify the different factors that affect our goal: nine admitted patients weekly were to be assessed at the SACU on the same day of admittance by the end of February 2019.

Three primary drivers were identified: "right patient" (secondary driver: "patient identification"), "patient flow" (secondary drivers: "transferral from ED" and "available appointments"), and "staff" (secondary drivers: "motivation" and "knowledge").

We prepared different change ideas related to the secondary drivers, and did PDSA cycles on selected change ideas. Team meetings secured project progress and served as a forum for exchanging new ideas for improvement.

### **Outcome**

This project is still a work in progress. It will lead to a more efficient patient flow because selected patients will avoid unnecessary overnight stay and waiting for diagnostics. This will liberate beds in the subacute cardiac ward for patients who need inpatient care.

Since the start of the project we have seen a fluctuation of number of patients assessed at the SACU, maximum being 6 patients weekly. Juxtaposing this measure to the current PSDA cycles running we have identified that some change ideas need further follow-up. We correctly anticipated difficulties identifying eligible patients in the ED, and are now in the process of running several PSDAs on change ideas for the secondary driver «patient identification». Continuously running PDSA cycles on selected change ideas clarified which measures had effect and gave us valuable feedback from staff groups involved.

### **Conclusion**

This project is still a work in progress, we did not reach our initial goal of assessing 9 patients weekly at the SACU by the end of February 2019. This project has shown that the model of improvement is a valuable tool even for confined projects like this, directing resources where they matter the most.

## **NICU Development Positioning Proficiency**

Call for Posters - Work in Progress

Mini Shaji, Gillian Ford, Susan Cross, Sarah Cross, Lucy Brown  
Northampton General Hospital, UK

### **Background**

This quality improvement project is led by a Specialist Nurse Practitioner on the Neonatal Intensive Care Unit (NICU) at Northampton General Hospital (NGH). NICU has 20 beds and employs both nurses and healthcare assistants.

In recent decades, survival rates for preterm infants have greatly increased; however the risk for neurodevelopmental impairment remains high. One of the earliest neurodevelopmental interventions available in NICU is developmental positioning. The third trimester in the uterus promotes the ideal, flexed position when the infant is crowded by the uterine environment and experiences rapid brain growth. Developmental positioning involves NICU nurses placing traditional positioning aids, such as swaddling and boundaries, around the body, in order to facilitate and maintain flexion and midline orientation.

In NGH, typically up to 6 neonates require developmental positioning every day. Baseline data collection showed that 55 % were not placed in the correct position.

### **Methods**

1. PDSA 1 (February 2018) - New Infant Positioning Assessment Tool for NICU. A revised assessment tool was produced which provided additional details on correct positioning including chin position, leg position and arm position. This assessment tool has been used to collect baseline data.
2. PDSA 2 (March 2018) - New resources on correct developmental positioning. Web resources and an information folder on the unit were introduced.
3. PDSA 3 (on-going) - Teaching sessions for nursing staff and healthcare assistants. One-to-one teaching sessions for all nursing staff and healthcare assistants are delivered on NICU. The teaching material covers:
  - Foetal development
  - Neurobehaviour for full term and preterm infants
  - Nursing care of pre term infants focused on appropriate positioning
  - Supine, prone and side lying position and their advantages and disadvantages.

### **Outcome**

At baseline, 91% of nursing and HCA staff reported being confident in independently positioning a neonate in a developmental care position. This showed there is a gap between perceived knowledge and clinical practice.

Outcome measure – The percentage of babies requiring developmental positioning who are positioned correctly. The baseline data showed that 45% of neonates were positioned correctly and this improved to 58% being correctly positioned when re-assessed in September 2018.

Process measure – The number of babies on NICU who require developmental positioning. Across the PDSA cycles, this remained relatively stable. The baseline measure was 4.7 and then 4.8 in September 2018.

### **Conclusion**

Research has shown that developmental positioning reduces the risk of neurodevelopmental impairment. Developmental positioning proficiency in NICU at Northampton General Hospital was self-reported by staff as high; however baseline data showed that less than half of neonates requiring developmental positioning were in the correct position. The main intervention is a comprehensive training programme which is delivered by a Specialist Nurse Practitioner to all staff on the unit. New equipment to support correct positioning and educational resources was made available to remind staff of correct positioning has been placed on the unit. Whilst this project is on-going, we hope to improve developmental positioning proficiency in NICU by at least 30 % over the next 9 months.

## **PROMISE - Pressure Reduction through Continuous Pressure Monitoring in a Community Setting**

Call for Posters - Work in Progress

Nicci Aylward-Wotton, Rosanna Wotherspoon  
Cornwall Partnership NHS Foundation Trust, England  
Megan Dale  
CEDAR, Cardiff and Vale, UHB, Wales  
Dr. Peter Worsley  
University of Southampton, England  
Prof. Bridie Kent and Prof. Jos M Latour  
Plymouth University, England

### **Background**

Pressure ulcers (PUs) remain a significant concern to the NHS; approximately half a million people in the UK will develop at least one PU in any given year. PUs usually affect people with an underlying health condition, often with high levels of frailty, with many developing in community settings (Guest et al 2015).

PROMISE uses Quality Improvement to explore the impact of pressure reduction through continuous pressure monitoring in the community setting.

The aim of PROMISE is to determine if pressure monitoring in patient's homes can inform effective management of the prevention and treatment of PUs, especially in those labelled as non-concordant or have a deteriorating PU.

Cornwall Partnership NHS Foundation Trust is the lead organisation, working with LiveWell Plymouth Community Trust; Torbay and South Devon Community Trust; Cardiff and Vale University Health Board; Plymouth University and the University of Southampton. Somerset NHS Foundation Trust is joining in spring 2019.

### **Methods**

PROMISE will identify the differences or adjustments required to successfully implement and explores the effectiveness of introducing and delivering the intervention across four adopter sites in the South West. We will use an implementation pack and continuous pressure monitoring technology as part of local systems and processes.

Objectives:

1. Create a supportive network for shared learning.
2. Evaluate the clinical impact of the intervention on patients, carers and clinicians.
3. Identify differences in the translation across the adopter sites
4. Evaluate the economic and societal impact.

The data collected from PDSA cycles, evaluation questionnaires completed by patients/ carers and focus groups with key stakeholders will be thematically analysed in order to contribute to the overarching KTA framework.

Nov 17 – Project launch

Nov 18 – Implementation with start of active patient participation

May 19 – Implementation in fourth adopter site

May 20 – Patient participation ends

### **Outcome**

After four months of patient participation there has been some early learning.

Adopter sites have reported a steep learning curve, not only with the pressure monitoring equipment but also in relation to the importance of posture, seating and positioning and understanding a patient's wider lifestyle.

Our initial findings have highlighted complexities with the infrastructure around the provision and supply of equipment and in some cases this has led to delays in finding solutions. In order to achieve the optimal benefits for participating patients, we need to work closely with, and in some cases transform, the systems and processes around pressure ulcer prevention and the level of home-based care and support available in local areas.

Equipment previously seen as providing a high level of pressure relief has demonstrated high interface pressures, resulting in delayed healing.

**Conclusion**

Continuous Pressure Monitoring has the ability to enable a patient centred approach and empower previously bed bound patients to return to a normal life whilst achieving positive outcomes.

Preventing and healing pressure ulcers requires the engagement of key stakeholders to review processes and contracts that have the potential to use a whole systems approach ensuring the changes are supported by and reflected in the local infrastructure.

## **Stroke Specific EDN**

Call for Posters - Work in Progress

Nichola Pugh, Aswathy Vijayan  
Northampton General Hospital, UK

### **Background**

Northampton General Hospital (NGH) is a district general hospital which provides acute services for 380,000 people. It has a 12 bed Hyperacute Stroke Unit and a 28 bed rehabilitation ward with access to 7 day therapy. There are over 100,000 strokes per year in the UK. A third of people who have a stroke are left with long term sequelae. Rehabilitation can take months to years following a stroke, so clear communication between secondary and primary care is essential. The electronic discharge notification (EDN) outlines the patients stay in hospital. This is written by a junior member of the team and is used by the GP, community stroke team (CST) and in outpatient clinic. Currently there is no set criteria of what information should be included on the EDN and junior doctors receive little or no training on writing these documents resulting in variable quality and consistency of information included.

### **Methods**

A stroke specific EDN template was introduced which contains prompts for information imperative to ongoing care. Members of the stroke team were involved in what changes should be made to the current EDN, including consultants and therapists. Data was collected from the EDNs of patients discharged from the stroke unit in May 2018 to establish a baseline and a satisfaction survey was disseminated to the stroke consultants, GPs and CST members. The IT department were consulted and the new template drafted. This was implemented in August 2018.

### **Outcome**

Comparison to the baseline data showed a marked improvement in certain areas, with a decline in some other areas. Overall reporting of information improved from 43% (baseline data) to 47.7% when reassessed in Oct/Nov 2018, however it was noted that there was only a 70% uptake of the new EDN. When only those patients who had a stroke specific EDN were analysed then reporting improved to 54.3%. Barriers to using the new template include staff awareness and an issue with IT that once a template has been selected from an inpatient stay it cannot be changed. Information has been disseminated to staff and we are currently addressing the technical issue with the IT department. It is hopeful that the next dataset following these interventions will result in an even higher impact.

### **Conclusion**

Reporting of essential information items on the electronic discharge notification (EDN) notification has increased by 24% for stroke patients discharged on the new stroke specific EDN. Uptake of the template is currently 70% and more can be done to improve this and further the uptake. Some individual items are reported less on the new template, however this may reflect inter-user variability and further changes can be made to address this.

## **Reducing the risks for patients who wander walk**

Call for Posters - Work in Progress

Nicola Wood

NHS Forth Valley, Scotland

### **Background**

A number of patients within our inpatient areas wander walk. This may be a positive experience for the patient that can provide multiple physical and psychological benefits however in some cases there may be concerns that the person may become physically exhausted, malnourished, be at increased risk of falling or be at risk of becoming lost and suffering harm. Staff did not fully understand wander walking, the potential reasons or possible outcomes and we had no formal guidance to assist staff care for this group. This not only left some patients being restricted when they wished to safely wander walk but others were becoming at risk of harm with some managing to leave our ward areas. We aimed to develop a guideline to support staff to utilise a structured approach to the assessment and care planning of patients who may wander walk and put in place interventions for those who may be at risk of harm.

### **Methods**

- A guideline was developed including a screening tool to help identify those potentially at risk, a detailed risk assessment and a therapeutic care plan with potential triggers and interventions for staff to consider.
- Cascaded through the Senior Charge Nurse group to share with staff teams
- Dementia Champions act as experts in this field and drive the utilisation of the guidance document within their clinical areas.
- Monthly meetings between Dementia Nurse Consultant and Champions offer opportunity to provide feedback and escalate any areas of concern.
- If doors to a clinical area become locked due to a risk related to wander walking, Dementia Nurse Consultant attends the area and works with staff to ensure risk assessments are completed and less restrictive options have been explored.
- Pre and post focus group with staff groups

### **Outcome**

- Improved staff knowledge and confidence in assessment and management of people who may wander walk
- Structured process in place for risk assessment
- Appropriate interventions now being utilised to reduce the risk of harm
- Patients being supported to wander walk where it has been assessed to be of benefit
- 96% of locked door incidents had appropriate procedures followed
- 36% reduction in the number of people over 65 reported missing from ward area in 2018 compared with 2017

### **Conclusion**

The introduction of this guidance has resulted in increased staff awareness, confidence levels, person centred approaches and has reduced the risk of harm to people who wander walk within a hospital setting



## **Reducing the time to treatment for seizing children at BC Children's Hospital Emergency Department**

### **Call for Posters - Work in Progress**

Pavan Judge  
BC Children's Hospital, Canada

#### **Background**

The project focus is to reduce the time to administration of the first dose of medication by 50% for seizing children presenting to the BC Children's Hospital (BCCH) Emergency Department (ED). BCCH, is a major pediatric referral center with approximately 45,000 patient visits per year. Literature shows the longer a child is seizing, the more difficult it is to terminate. Timely medication administration is essential as the duration of seizing has a direct impact on patient morbidity, length of hospitalization, and need for ICU care. Current literature reports children receive the first dose of medication sometime between 8 to 20 minutes after ED arrival. The current time to first medication administration is related to reasons such as lack of preparation before the patient arrives, not having guideline-based standardized treatment, failure to consider delivery methods other than the intravenous route, and challenges in a setting where a patient is being stabilized.

#### **Methods**

Developing a status epilepticus order set and standardizing medication preparation before patient arrival were change ideas chosen to tackle first. The outcome measure is the time duration from arrival at BCCH ED or start of seizing to the time the first dose of medication was given to the patient. A standardized status epilepticus order set was developed and introduced at BCCH ED in January 2018. Input was taken from other departments to develop this order set and it was reviewed and approved for use by the local hospital committee. This order set provided alternatives to intravenous options. Informal education sessions about the new order set were held for staff in March 2018. Educational posters were created and the order set was also stored within the trauma/resuscitation rooms in July 2018. New educational sessions were run for nursing staff in August 2018. A new approach to charge nurse initiated medication preparation before patient arrival was started in February 2019.

#### **Outcome**

Recent chart reviews from January to September 2018 showed the average time to administer first medication in children presenting to the BCCH ED with seizing is 13 minutes. The time to first medication was decreased after introduction of the order set. We found for the patients where medication was prepared before arrival to ED, this time was even less. We are still in the process of looking at the results of our latest PDSA cycle. Improving the time to first medication administration has a direct benefit to the patient in terms of delivering appropriate care in a more timely manner. It leads to decreased patient morbidity and mortality. It also has anticipated benefits for the health care providers in terms of increased joy in work when the right care is delivered in a standardized team based timely approach in a high stakes environment.

#### **Conclusion**

In order to optimize adoption of a new approach and achieve timely treatment of children presenting with status epilepticus to BCCH ED, it is key to engage all stakeholders involved in patient care delivery. It is important to identify the main drivers and how to have them participate as partners. For example, earlier emphasis during this project was on the physician group and it became clear the pivotal role nursing staff play in ensuring further uptake of the new order set and medication preparation before patient arrival to ED. The next steps for this project include a standardized process in which once the charge nurse is informed of a seizing patient enroute, a bedside nurse is identified to prepare the medication prior to patient arrival. Improvement and sustainability are dependent on the status epilepticus order set becoming an entrenched part of the workflow. In time, the order set and process are to be shared with other emergency departments.

## **Improving staff knowledge and confidence in managing patients with mental health presentations in the emergency department**

Call for Posters - Work in Progress

Peris Nderitu

Northampton General NHS Trust, United Kingdom

Project lead:

Peris Nderitu,

Junior Sister, Clinical Observation Area, Emergency Department.

Co-ordinated whole project, identified service need/knowledge gap, led service improvement project and collected/analysed all metrics.

### **Background**

Northampton General Hospital (NGH) is located in the East Midlands of England, The hospital provides general acute services for its population. NGH is dedicated in providing free to all patients including those in acute mental health crisis, presenting in emergency department (ED).

Examples of common mental health crisis presentations includes psychotic episode, suicidal thoughts and depression, self-harm including drug overdose, ligature attempts, and insertion of foreign bodies among others.

Effective, rapid triage on presentation is crucial to identify the mental health issue and assess risk.

However timely, quality assessments and treatment are sometimes difficult to deliver due to factors such as lack of mental health skills in ED nursing staff, time constraints and patients absconding before assessment. Following triage, problems such as self-harm whilst in the department inadequate risk assessment without appropriate interventions.

### **Methods**

As part of a quality improvement project, a small scale survey was conducted at Northampton general hospital ED in Nov 2017 'Assessing ED staff knowledge awareness in mental health'. Questionnaire results indicated that nurses had confidence in caring and treating patients with behavioural disturbances and mental health, likely due to training in physical health and limited mental health care skills. The initiative was a multi-professional study day aimed at all ED staff. The structure of the day was classroom based in the morning and point of care simulation in the afternoon in the emergency department. The faculty felt the simulation in the clinical area with the use of an actor was really important in maximising educational benefit to staff. A service user participated in the classroom teaching, to inform daily practice and improve care and experiences for people accessing services.

### **Outcome**

Initially getting Mental health team to get involved with the training was challenging due to their staffing levels, the trainer allocated to facilitate left the trust leading to delays in commencing the training.

Getting ED senior team approval, training room facilities and attendees allocation to attend the training was not too challenging. However communication with teams faculty members involved (mental health link consultant, ED practice educator, SIM team, security team, ALMH) in order to collaborate to make the training effective deemed challenging due to clinical commitments.

As a full time clinical member of staff the project lead struggled communicating with the other faculty members involved also had time constraints as could not organise the training during clinical hours and had to use personal time to ensure is a success. Probably the biggest challenge was ensuring the training went ahead despite the significant challenges ED has had over winter.

### **Conclusion**

The impact of the mental health study day has been positive as there has been a noticeable improvement in the completion of the mental health risk assessment tool (audit outgoing) which then led to better patient care including better communication reducing agitation, absconding risk and making it possible that patient wait for the ALMH assessment

Taking up the quality improvement project 'improving mental health awareness in ED' has been an exciting yet challenging experience. The quality improvement project could not have been possible

without support of senior ED team, Mental health liaison team , quality improvement department and last but not least the project lead passion and determination to improve patient care, safety and experiences of mental health patients in the department.

# **Improving staff knowledge and confidence in managing patients with mental health presentations in the Emergency Department**

Call for Posters - Work in Progress

Peris Nderitu, Nick Adams, Mike Pearce, Sid Beech  
Northampton General Hospital NHS Trust, United Kingdom

## **Background**

Effective, rapid triage on presentation to the Emergency Department (ED) is crucial to identify any mental health issues and assess risks in a timely manner.

The focus of our work is patients presenting to the ED with mental health crisis including psychotic episode, suicidal thoughts and self-harm presentation. Our cohort also includes those requiring urgent medical treatment as well as urgent mental health evaluation, including overdose, deliberate self-harm wounds, ligature attempts, and ingestion or insertion of foreign objects.

Key areas for concern relating to slow triage rates include patients absconding before assessment, further self-harm, increase in agitation due to crowded areas, danger to self & others and higher re-attendance rates.

A lack of confidence, knowledge and appropriate skills to effectively manage patients presenting to the ED with acute and severe mental illness were identified as the largest obstacles in delivering timely assessment and treatment.

## **Methods**

A scoping exercise was completed by the team in order to evaluate current knowledge, confidence and competence in assessing and treating acute and severe mental illness presentations in the department. We found that roughly half of staff in the ED had a good understanding of mental health legislation and two thirds had good knowledge of mental health conditions, symptoms and triggers. Confidence to manage these patients was low – only 45 % of staff felt they could appropriately manage an acute mental health presentation.

In order to support staff with the management of these presentations we introduced comprehensive training in the simulation suite to upskill the staff's knowledge, skillset and confidence in managing acute mental health presentations. These sessions have been included in departmental study days and offered to HCAs, Nurses and Medical Staff. The sessions are delivered by the Acute Mental Health Liaison Team from the local community and mental health NHS provider.

## **Outcome**

We have measured the impact of our project using key questions relating to knowledge and confidence in managing acute and severe mental illness presentations.

Knowledge of mental health conditions, symptoms and triggers improved from 66 % (n = 56) to 88 % (n = 49). Knowledge of mental health legislation improved from 52 % to 69 %.

Confidence in completing a comprehensive mental health assessment improved from 63 % to 85 %.

Confidence in managing acute or severe mental health presentations to the ED improved from 45 % to 69 %.

We anticipate further improvements in these measures with our continued roll-out of the simulation training.

## **Conclusion**

We have introduced comprehensive training on mental health assessment and management in the simulation suite for ED staff in Northampton General Hospital. This training is ongoing, supported by the local community and mental health NHS provider. We have evidenced an improvement in knowledge and confidence in assessing and managing acute and severe mental presentations to the department.

## **Critical Medicines - ensuring the safety of patients on long term steroids**

Call for Posters - Work in Progress

Philip W. Riddell, Victoria Thompson, Paul Morris

West Suffolk NHS Foundation Trust, UK

Lucy E. Dalton-Chambers

Lucy Cavendish College, University of Cambridge, UK

### **Background**

In February 2010, the National Patient Safety Agency released a Rapid Response Report detailing the harm caused by delaying or omitting certain medications whilst people are admitted as inpatients. All NHS organisations were asked to compile a list of critical medications. Many different organisations included glucocorticoids.

Many patients are prescribed courses of glucocorticoids for treatment. Some individuals are required to take these medications on a long-term basis. If these medications are taken on a long-term basis, patients can lose their ability to produce endogenous glucocorticoids. Subsequent withdrawal of exogenous steroids, through delay or omission, can have consequences which include death.

Two cases were identified where these medications were omitted, with a Serious Incident being declared in one of these. In response, the Trust has sought to improve the safety of inpatients who are dependent on glucocorticoid medications to prevent an Addisonian Crisis.

### **Methods**

Using the Model for Improvement, we have aimed to reduce the number of safety incidents involving a delay or omission of exogenous glucocorticoids in these long-term users by fifty percent in six months. Initial work established four main change ideas; identification of individuals at risk of an Addisonian Crisis, education of staff, appropriate clinical review and electronic prescribing. Work is ongoing in each of these areas. Individual patients have been involved in designing resources for some of these change ideas.

### **Outcome**

We now know that on average, an incident involving the delay or omission of long-term steroids occurs approximately every ninety days. This may even be under-representative, as the majority of safety incidents identified have come from anecdotal accounts by patients, rather than through the DATIX system.

Pre-intervention, ward staff can correctly identify those who are dependent on exogenous steroids approximately fifty percent of the time. Our first change idea, a new silicone wristband, aims to improve the rapid identification of these patients amongst all staff groups.

We have also implemented an automated referral to our Endocrinology colleagues on admission using our electronic health record. This enables the prompt review of individual patients by experienced clinicians on admission to the hospital.

Our final change idea is based upon staff education and we are currently developing educational material in order to implement a steroid safety event in the near future.

### **Conclusion**

Overall, it is hypothesised that the above will bring about a reduction in the frequency of safety incidents which revolve around the timely administration of glucocorticoids. Despite the fact that only a small percentage of our inpatient population are truly dependent on exogenous glucocorticoids, the life-threatening consequences of a delayed administration or omission makes these medications critical in terms of patient safety. Our apparent under-reporting of these safety incidents is a cause for reflection for other organisations, as we may only be seeing the tip of the 'steroid iceberg'.

## **We don't have time for this! In situ simulation – the proactive approach to patient safety**

Call for Posters - Work in Progress

Philippa Wilson, Ciaran Megoran, Peter Walker, Caroline Curtin  
Barking Havering and Redbridge University Hospitals Trust, United Kingdom

### **Background**

We are running unannounced in situ simulation training within one of the UK's busiest A&E's. Participants in the simulations incorporate the multi-disciplinary team (MDT) within A&E, with facilitators from medical education and senior A&E nurses.

Currently the only way of addressing issues in our department that have occurred in a crisis is after the event has already taken place. This retrospective method of improvement means that harm to patients has already occurred.

We aim to mitigate this harm by identifying and addressing latent safety threats (LST), and train staff in crisis resource management through simulation.

Following personal clinical experiences of poor human factor understanding and latent errors being uncovered it became apparent that these need addressing. We then discussed our concerns with senior members of the A&E team who explained that there was no current formalised way of addressing this.

### **Methods**

To address this we implemented a program of regular unannounced simulation within the department. The in situ simulations are of a critically ill patient that progresses to a cardiac arrest. These sessions take place in Resus, Majors, and Minors.

Simulations run for ten minutes with teams being reviewed by two faculty members using the Ottawa Crisis Resource Management Global Rating Scale, as well as listing LSTs identified.

After the scenario a ten minute debrief is undertaken focussing on key technical skills and human factors. Feedback on the sessions is then collected.

After 6 months of unannounced in situ simulations, we aim to deliver a presentation to the A&E department showing our findings, followed by a continuation of the in situ simulation scenarios to see if the LSTs and crisis resource management issues have reduced.

### **Outcome**

LSTs identified so far include identification of a faulty defibrillator, poor staffing levels, faulty emergency bells, and incorrectly stocked airway adjuncts in the resus trollies.

All LSTs identified have been escalated to senior management. For example the finding of a faulty defibrillator led to identification of an internal manufacturing fault and its subsequent removal from the clinical area.

We currently do not have a complete set of crisis resource management (CRM) results, however CRM issues that participants have reflected on so far is an understanding that the leader in a crisis does not necessarily constitute the most senior person present, as well the importance of clear lines of communication between team members. Anticipated benefits are that A&E staff will show a continued improvement in understanding and recognition of human factors, identified through the Ottawa Scale.

### **Conclusion**

Identification of LSTs through in situ simulation has already led to interventions/repairs being implemented. We expect further LSTs to be identified and addressed in a similar way.

Due to the demands in the department some staff have not wanted to engage. There is also a lack of resources to undertake simulations due to winter/bed pressures. However in both cases we argue that the simulations should continue, as with increased demand there is a need for better crisis resource management.

The main message would be that seeking to identify latent safety and crisis resource management issues within a busy A&E department are a key stepping stone to improving patient safety. We therefore hope that this will spark a change in culture within our hospital, so that in situ simulation will take place within all departments leading to higher quality and safer patient care.

## **Renal and Ureteric Colic: Investigation and Management in the Emergency Department**

Call for Posters - Work in Progress

Rachael Clough, Ikenna Ekeocha, Julia Weatherill, Rebecca Cole  
Northampton General Hospital NHS Trust, United Kingdom

### **Background**

The quality improvement project was carried out in the Accident and Emergency (A+E) department of Northampton General Hospital which is a District General Hospital. The A+E department sees on average 11,000 patients per month and approximately 25% of these are admitted to acute beds within the trust. Our quality improvement project focussed on the work of medical professionals reviewing patients presenting with features of renal or ureteric colic.

In September 2018 there were forty-eight patients seen by A+E doctors that had suspected renal/ureteric colic. The problem identified was that there were inconsistencies in the investigation and management of these patients; which was not meeting the standards set out in the NICE Guidelines from April 2015. We aim to improve initial investigation and management of these patients and ensure that those not requiring admission have appropriate follow-up and outpatient investigation.

### **Methods**

The primary intervention is the introduction of a Renal and Ureteric Colic Pathway for use within A+E. The pathway focuses on; investigations to be performed within the department, identification of those needing hospital admission, prescription of suitable analgesia within the department and on discharge, advice given to those discharged and appropriate follow-up being arranged.

The initial pathway was developed in December 2018 and has been discussed with Emergency Medicine, Urology and Radiology Consultants. Over the following months development cycles have focussed on; ensuring that patients were thoroughly assessed for abdominal aortic aneurysm, balancing risks and benefits of analgesia prescription and streamlining the referral process for those suitable for discharge but that needed further radiology investigation and specialist review.

The final pathway being agreed upon in March 2019 with the aim to implement the change by the start of April 2019.

### **Outcome**

The lengthy process of ensuring that our pathway is safe and robust has involved working with different specialities. This development has taken longer than initially anticipated and our aim now is to implement it by the end of March 2019.

The success of this intervention will be studied by further data collection, for a one-month period for comparison to data obtained before the pathway was published.

Anticipated outcome from this project is improved concordance with NICE guidelines for investigation and management of suspected renal and ureteric colic and a reduction in re-attendance of patients with symptoms of renal or ureteric colic. We may also see a reduction in number of patients needing admission to hospital for investigation and management by introducing an improved analgesia regimen and creating a more robust referral pathway for outpatient investigation and management of those suitable for discharge.

### **Conclusion**

Our main challenge so far in this process has been creating a pathway that is safe for all patients attending the A+E department and considers the differences between them; for example, some patients will have risk factors or contra-indications to analgesia that is usually first line for ureteric colic.

We have also worked hard to align the priorities of the Emergency Department in confirming diagnoses through radiology investigations with the resources available to us and to create a robust discharge plan that utilises existing outpatient services within the urology and urgent care departments.

The key learning point is that involvement of relevant specialties early on in the quality improvement process gives the benefit of their experience in designing and developing changes and also helps ensure their engagement later on in the project. However, the process of co-ordinating input from a variety of specialties can be time-consuming and this should be built into project timelines.

## **The First Irish Paediatric Situation Awareness For Everyone (SAFE) Collaborative**

Call for Posters - Work in Progress

Rachel MacDonell

Royal College of Physicians of Ireland

John Fitzsimons

Quality Improvement Division, HSE Ireland

Alf Nicholson

National Clinical Programme for Paediatrics & Neonatology

Peter Lachman

ISQua, Ireland

### **Background**

Situation Awareness for Everyone (SAFE) is a collaborative improvement programme developed by the Royal College of Paediatrics and Child Health UK to support clinical teams to improve communication, build a safety based culture and deliver better outcomes for children and young people.

The SAFE programme includes Quality Improvement theory, situation awareness methodology and planning of safety huddles on the wards. It has been implemented in over 50 teams across the UK and the Quality Improvement Department of the Royal College of Physicians of Ireland are delighted to bring this initiative to Ireland.

The quality improvement methods and patient safety science encapsulated within the SAFE programme provides an appropriate vehicle for hospitals to collaborate in addressing challenges related to safety culture and implementation of interventions such as the Irish Paediatric Early Warning System (PEWS).

### **Methods**

11 consultant-led quality improvement teams from across Ireland have been recruited to the SAFE collaborative. These teams consist mostly of frontline paediatric clinical care providers (consultants in paediatric medicine, paediatric nurses, pharmacists, dieticians, hospital senior management and non-consultant hospital doctors, amongst others).

Participating teams attend one full-day and 5 further half-day mandatory sessions and are facilitated in using QI methodology by dedicated RCPI QI Faculty, including parent representation, through an adaptation of the IHI Breakthrough Series Collaborative Model, to develop local SAFE improvement projects impacting on

- Reduce avoidable error and harm to acutely unwell children
- Improve communication between all individuals involved in a child's care
- Improve the working culture for healthcare staff providing care to children
- Increase the involvement of parents, children and young people in their care

### **Outcome**

The 11 teams have been working with the collaborative since October 2018, collecting monthly data, learning QI methods and designing and testing locally relevant patient safety initiatives aimed at improving communication, building safety culture and delivering safe care for children in their service. Teams have examined their own clinical systems and processes to identify areas for improvement related to prevention of deterioration, early recognition of clinical and safety issues, and strategies for effective communication and mitigation of risk factors.

The core SAFE intervention is a 'huddle'; teams are either adapting an existing meeting or creating new opportunities for a multidisciplinary huddle with a specific, scripted focus on an aspect of care such as medication safety or identification of 'watcher' patients.

### **Conclusion**

The National SAFE Improvement Collaborative is in its early stages. However, at this point, experience with similar national collaborative projects indicates that QI methodology will be used effectively to generate improvements to positively impact paediatric patient safety outcomes, through site specific changes.



In national collaborative QI work, a variety of datasets are necessary to influence behaviour and drive change. In order to achieve active buy-in from individual sites, it is essential to encourage teams to work on the aspects of care that matter most to their patients and clinical teams and to work towards effective engagement with stakeholders to promote buy-in and leadership for sustainability of improvements.

## **Reducing administrative burden by choosing an Intensive Care core set of quality parameters for «getting better at getting better»**

Call for Posters - Work in Progress

Ralph K.L. So, MD, Joris Arends, MD, W.Jansen, MSc  
Albert Schweitzer Hospital, the Netherlands

### **Background**

The Albert Schweitzer Hospital is a large 550-beds teaching hospital, with 2 clinical locations, 1 outpatient location and 3500 employees, located in Dordrecht, the Netherlands. The work was done on our ICU Adults by a multidisciplinary team of ICU nurses, intensivists, patient representatives, managers and members of the NFU steering committee «Sturen op Kwaliteit».

Healthcare professionals suffer from the amount of quality indicators they register e.g. at the ICU they have to register 122 quality parameters each year. Moreover, they do not perceive all quality indicators as meaningful for patient care or quality improvement.

This project aimed to select a core set of parameters to govern quality of care in the intensive care

### **Methods**

We conducted an adapted Delphi study in our hospital with 11 experts: 3 patient representatives, 3 ICU nurses, 3 ICU physicians, 2 ICU managers. We started of with 3 core sets (ICU Radboud University Medical Center, ICU Leiden University Medical Center, ZiRe experiment), which were determined in 2017 by using a two-phase adapted Delphi study methodology. We asked our expert team to indicate the relevance of existing parameters for assessing the quality of ICU care (Round 1) and then the participants will discuss the results of Round 1 and will determine the final core set of quality parameters in a focus group interview (Round 2).

### **Outcome**

Preliminary results after Round 1 (Dimensions & Parameters):

Organisation of care:

- Nurse –Patient ratio
- Days with full bed capacity
- Recommendations internal audit
- Recommendations NVIC quality visitation

Effectivity of care

- ICU readmissions < 48 h
- Standardized Mortality Rate

Learning from incidents and complications

- Multidisciplinary complicationmeeting
- Preventable mortality and morbidity
- Incidents grades 1-5
- Complaints next-of-kin ICU patients

Quality individual professionals and teams

- Teamclimate
- Recommendations from Teamwork & teamcommunication sessions

Patient -en family experiences

- Experiences of next-of-kin ICU patients
- Experiences ex ICU-patients

### **Conclusion**

The core set is about stimulating a dialogue regarding where the challenges lie, where the concerns lie and where the bottlenecks are; all with the aim of “get better at getting better”.

# **Investigation of an electronic transfer of care service and characteristics of patients with type 2 diabetes referred to community pharmacy on hospital discharge in the North East of England**

Call for Posters - Work in Progress

Sarah M. Khayyat  
Durham University, UK  
Philippa A. Walters, Hamde Nazar  
Newcastle University, UK  
Cate Whittlesea  
University College of London, UK

## **Background**

Ensuring continuity of patient care when transferred between healthcare providers is essential for improving patient outcomes and reducing hospital admissions (1, 2).

Routine practice has not included informing patients' community pharmacy (CP) about their admission/discharge from hospital. A recent systematic review, however, has found that involvement of a community pharmacist in post-discharge care can help reduced drug-related problems (3).

A new electronic transfer of care (eToC) service between hospital and CP was first launched in Newcastle-upon-Tyne and has since been implemented at other locations across England (4). The service is provided for patients being discharged from hospital who might benefit from CP follow-up care.

## **Methods**

A descriptive analysis of 6 months retrospective (12/06/2017-02/01/2018) anonymised routine service activity from a Newcastle-upon-Tyne site was conducted to identify the number and characteristics of patients with type 2 diabetes mellitus (T2DM) referred by hospital pharmacy staff for further care by community pharmacists. Patient characteristics included demographics (e.g. age group), medical characteristics (e.g. presence of co-morbidities, polypharmacy ( $\geq 5$  drugs), prescription of high-risk medication (5), type of diabetic drug), and nature of the referral (e.g. changes reported in the prescription).

Patients with T2DM were identified from their medical history and/or discharge medication if they were prescribed at least one hypoglycaemic drug. The 'Discharge Medication List' and 'Reason for Referral' fields in the database were screened to identify: the presence of co-morbidities, polypharmacy, number of regular/non-regular medication and type of diabetic medication at discharge.

## **Outcome**

The electronic records of 2130 patients referred to CP were analysed; 310 had a T2DM diagnosis and were included in the study. Most of these patients were aged  $\geq 65$  years ( $n=229$ , 73.9%). Presence of co-morbidities ( $n=297$ , 95.8%), polypharmacy ( $n=282$ , 91%) and a prescription for high-risk drugs ( $n=231$ , 74.5%) were common among referred patients. The most frequently prescribed high-risk medicines were opioids ( $n=134$ , 43.2%), insulin ( $n=79$ , 25.5%) and anticoagulants ( $n=58$ , 18.7%).

A total of 210 (67.7%) patients had their medication changed during hospital admission. Dose adjustment and prescribing new drugs were commonly reported ( $n=95$ , 30.6% and  $n=89$ , 28.7% respectively). Most referred patients with T2DM were prescribed oral hypoglycaemic agents (OHAs) ( $n=223$ , 72%) and insulin+OHAs ( $n=63$ , 20.3%). Prescription changes for diabetes medication were mostly identified in sulfonylureas ( $n=53$ , 17%), metformin ( $n=47$ , 15%) and insulin ( $n=28$ , 9%).

## **Conclusion**

Service activity data was used to explore the eToC service and identify the characteristics of T2DM patients admitted to hospital who were identified as requiring post-discharge pharmaceutical care by CP. Analysis showed that T2DM patients with co-morbidities, polypharmacy and on high-risk drugs were admitted to hospital and also were identified for further care by CP. Previous studies have also identified these patients as high-risk for hospital admission (6-8). Most of the patients referred had had their medicine changed during admission which might readily justify the potential need for further CP support on discharge. Prescription changes for certain diabetes medication also justify the need for CP care. Studies found that type of hypoglycaemic agent was a predicting factor for hospital admission (9). The

findings of this study can help develop potential referral criteria to guide the provision of the eToC service and support wider implementation in other locations across England.

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## **Extended Infusion Piperacillin/Tazobactam (Tazocin) Protocol on ITU/HDU**

Call for Posters - Work in Progress

Schnell D'Sa

University of Leicester, United Kingdom

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Northampton General Hospital NHS Trust, United Kingdom

Northampton General Hospital NHS Trust, United Kingdom

### **Background**

Tazocin is a broad-spectrum beta lactam antibiotic commonly recommended as first-line therapy for severe bacterial infections. Recent literature suggests that compared to conventional intermittent bolus therapy, extended infusion times of beta-lactam antibiotics improve prognostic factors including; mortality rate, median hospital length of stay and prolonged patient survival.

Northampton General Hospital NHS Trust provides critical care services across two Critical Care (CC) wards- ITU & HDU. The aim of the project was to reduce the length of stay for patients on Tazocin in our critical care wards by 25% by January 2019. The multidisciplinary project team includes members from Anaesthetists, Pharmacy, Microbiology and a medical student, driving the implementation and compliance of extended Tazocin infusion policy.

### **Methods**

PDSA Cycle 1 – July 2018:

- Creation and ratification of new protocol for extended Tazocin infusions.
- Meeting organised and attended by all nurses and doctors on CC to give training on and discuss the implementation of the new protocol.
- A visual summary of the protocol was created to support implementation and posted in ward meeting rooms.

PDSA Cycle 2 – October 2018:

- Initial data analysis from our electronic prescribing system demonstrated that compliance to the new protocol was an issue.
- This PDSA cycle involved sending a feedback form to nurses and doctors to identify barriers to implementation of the protocol.

PDSA Cycle 3 – ongoing:

- Following feedback, suggested improvements are being implemented:
- Creation of an new ePrescribing template for extended Tazocin infusion
- Training for all nurses and doctors on CC wards to be repeated
- Reminders in nurse huddles and ward meetings
- Repeat feedback forms and re-assess compliance to protocol

### **Outcome**

The aim of this project is to reduce the average length of stay for patients in CC wards on Tazocin. Once the new protocol is embedded and compliance has improved we anticipate achieving this reduction. An indirect cost saving can also be attributed to any reduction in length of stay achieved.

We aim to reach a 100% compliance with prescription changes from the conventional bolus regime to the extended infusion protocol. This change will be measured using our electronic prescribing system (EPMA) data to identify the number of patients being administered the old and new Tazocin regimes.

Feedback from ITU/HDU nurses and doctors will also allow for assessment of improved knowledge and confidence in Tazocin administration/ prescription.

### **Conclusion**

This quality improvement project aims to implement up to date evidence based recommendations of Piperacillin/ Tazobactam administration on Critical Care wards, which include ITU and HDU. In line with recent studies, we anticipate that the new protocol should reduce length of stay and thus have associated financial savings. Additionally, there will be a greater number of nurses and doctors educated

on Tazocin administration for patients. Our initial aim is to encourage compliance with the new protocol, following this we will take steps to assess the impact of this on length of stay on our critical care wards. There is potential for other trusts to adopt this practice around the administration of Tazocin to patients on ITU/HDU; via the introduction of a standardised, approved protocol.

## **Quality Improvement intervention on contributing factors for prolonged Wait Times for elective surgery at a Large Public Hospital in Peru**

Call for Posters - Work in Progress

Sebastian Shu, Lina Roa

Program on Global Surgery and Social Change, USA

Katie Iverson

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Socios en Salud. Peru

Shayna Rubenstein

Tufts University School of Medicine. USA

Jorge Colina

Hospital Nacional Sergio E. Bernales. Peru

### **Background**

The quality improvement project took place at Sergio Bernales Hospital (SBH), located at the northern side of Lima (Peru). SBH is a public tertiary hospital located in an urban area and serves a population of approximately 1 million habitants, most of whom live in poverty and are uninsured. The Department of Surgery of SBH has a high volume of patients, long waiting list and limited access to elective surgeries. The project proposed, in partnerships with Socios en Salud and the Program in Global Surgery and Social Change was to use quality improvement methodology to optimize processes and improve surgical volume and satisfaction.

### **Methods**

Baseline data was collected on surgical volume, patient satisfaction and surgical wait times. Lean Six Sigma methodology, and Plan Do Study act (PDSA) cycles were used to design an intervention to increase surgical volume. Multi-disciplinary Focus groups to map the surgical process for elective and emergency surgeries were conducted. Bottlenecks for patient flow were explored. A new flowchart for elective surgeries was designed by targeting the triage system for elective surgeries in an attempt to decrease elective wait times in order to increase surgical volume and patient's satisfaction. The intervention was implemented from August to November 2018. Data was collected for 8 weeks to evaluate the impact of the intervention.

### **Outcome**

Throughout the 1.5 years the quality improvement project lasted, changes were measured and observed. Significant improvements in the triage center were observed by the creation of organizational tools such to maintain an updated list of patients waiting for elective surgery. The number of weekly scheduled surgeries increased from 10 to 12 ( $p < 0.01$ ). Patient satisfaction increased from 115.1 to 119.1 ( $p$  value = 0.27). Increased awareness of quality improvement methodology and increased collaboration and communication between inter-disciplinary teams was noted.

### **Conclusion**

This project is a quality improvement initiative to increase surgical volume in the context of a limited resource hospital. In conclusion, it was possible to engage a large, diverse team to design and implement a quality improvement intervention in a large public hospital in Peru. However, our main challenges were managing multiple disruptions during the intervention process due to external factors, preventing staff work overload, and constant turnover of local providers. Despite the challenges, Strong partnership between local stakeholders and an ongoing change in culture around QI might be a key a solution for sustainability in the global health context.

## **Examples of Scotland using QI to change the country**

Call for Posters - Work in Progress

Stuart Duncan  
Scottish Government

### **Methods**

The Improvement Framework for Scottish Public Services was published in 2011 and described the approach needed to work differently in Scotland. In 2012, the Leading Improvement Team was established in Scottish Government to support people across all parts of the public service to use quality improvement and to build capacity and capability for improvement. Scotland has a new National Performance Framework, and this poster illustrates how the Leading Improvement Team has been and is supporting work contributing to all of the national outcomes.

### **Outcome**

The Leading Improvement Team has been building better understanding of an improvement approach through supporting projects and sharing learning. This work is both inside government (for example improving response to various types of information requests) and outside – with third sector, local authorities, public bodies, the NHS, etc. Example of these can be seen on the poster.

### **Conclusion**

A small team of improvement advisers working across the public sector can help make a difference but need to influence leadership behaviours and system levers to make a bigger impact. Seeds have been grown in the team for other programmes which were then bedded in education (raising attainment for all – now part of CYPIC) and social work (Permanence and Care Excellence).



## **Postnatal management of neonatal hypoglycaemia - a quality improvement project**

Call for Posters - Work in Progress

Sumaiya Mohamed Cassim, AnneMarie Bruce, Sarah Cleary, Hazel Fisher, Wendy Ramsay, Gemma O'Reilly, Deepa Varghese  
University Hospital Wishaw, UK

### **Background**

This project was carried out in the postnatal wards of a district general hospital with a level 3 neonatal unit (NNU). The target population was postnatal term babies at risk of neonatal hypoglycaemia. Term babies at risk of hypoglycaemia are identified at birth and placed on a care pathway that include early feeds, blood glucose (BG) monitoring and regular feeding/clinical assessment, as untreated hypoglycaemia can lead to neurological injury. Bedside glucometers are generally inaccurate below 2.0mmol/l. Normoglycaemia was defined as  $\geq 2.6$ mmol/l. Hypoglycaemia management involved extra feeds/ feed supplementation and/or admission to the NNU. This led to separation of mothers and babies, interruption of skin-skin and breastfeeding.

A multidisciplinary working group was set up, to decrease term admissions to NNU, through implementation of a guideline in line with the British Association of Perinatal Medicine (BAPM) neonatal hypoglycaemia framework for practice.

### **Methods**

A baseline audit showed hypoglycaemia constituted 2% of all admissions. A new guideline based on the BAPM framework was ratified locally – normoglycaemia in a healthy term ( $\geq 37$  weeks) asymptomatic infant, is a BG  $\geq 2.0$ mmol/l. All term babies with a bedside glucose  $< 2.6$ mmol/l had a blood gas glucose done. If this was  $< 2.0$ mmol/l, a lab glucose was sent and baby received buccal dextrose gel, followed by a feed (maternal choice – breast/bottle). A post-feed BG was measured after 60minutes. The operational threshold for babies  $< 37$  weeks remained  $\geq 2.6$ mmol/l.

The working group worked on a 6month timeline for implementation. The new guideline was disseminated using a 'read and sign' approach. A buccal dextrose monograph/prescription was developed. Educational sessions/videos – blood gas glucose sampling and buccal dextrose administration were created. The blood gas analyser was upgraded to allow neonatal sampling. The incoming guideline was placed on the safety briefs and huddles.

### **Outcome**

The guideline was launched on the 1st of October 2018. Compliance to the process and outcome measures is being prospectively evaluated. The project is ongoing. Preliminary data reveals that hypoglycaemia admission rate to NNU has reduced to 0.3% at this point.

Babies  $< 37$  weeks are continuing to use the former hypoglycaemia threshold; use of correct gestation-based protocol is being monitored.

### **Conclusion**

Following guideline implementation, there is a trend towards reduction in neonatal hypoglycaemia admissions to NNU. Patient benefits include minimizing maternal/baby separation, supporting early skin-to-skin, breastfeeding, reducing use of formula and reduced hospital stay. This could also improve breastfeeding rates in the longer term. Reduced admissions and interventions will also be cost-saving in the long term.

Engagement and sustaining motivation was challenging at times as it involved different staff groups coming together. The process around safe implementation was lengthy - involving teaching new skills and a team approach to reduce person dependency.

## **Long-term outcome after MRSA outbreak and convergence. Implementation of industry total quality management for infection control**

Call for Posters - Work in Progress

Takanori Ayabe, Masaki Tomita, Ryo Maeda, Manabu Okumura, Kunihide Nakamura  
Japan

### **Background**

An outbreak of Methicillin-resistant *Staphylococcus aureus* (MRSA) has a significant impact on society. In May, 2011, there were ten patients with MRSA and the outbreak occurred. We postponed the scheduled operations and separated the MRSA patients. We reviewed our infection standard preventive measures and contact preventive ones, and it took 3 months to stop the outbreak. We then performed strict infection control measures for seven years. However, the novel experience of the outbreak was forgotten, and a thorough hand hygiene and manual compliance of infection control became useless. The new occurrence of the positive detection of MRSA has not been eradicated, and we found it difficult to maintain a strict infection control with a sense of concern which became a challenge.

### **Methods**

I participated in the physician training program of the ASUISHI project (leading to the improvement of the quality of tomorrow's healthcare) with cooperation from the Department of Quality and Safety Management of the University of Nagoya and Quality Management Department of the Toyota Motor Corp. I learned the methods of the quality improvement by industry total quality management, and I tried to practice the method for infection control in our surgical ward. The methods of problem solving are performed using the following 8 steps: 1) theme selection, 2) current situation, 3) setting a goal, 4) factor analysis, 5) measures planning, 6) measures execution, 7) effect confirmation, and 8) standardization and fixing of management.

We calculated the average amount of alcohol per month (ml/patient/day) in the surgical ward and the number of times of hand hygiene (times/patient/day, 1 time = 3 ml). We monitored the occurrence number of new MRSA patients.

### **Outcome**

We practiced the measures planning and confirmed the effectiveness and sustainment standardization. The risk of occurrence of new MRSA patients increased due to reorganization of the surgical ward in April, 2018.

The average amount of alcohol per month (ml/patient/day) in our surgical ward was between 39.1 and 46.3 ml/patient/day. The calculated number of times of hand hygiene was between 13 to 15.6 times/patient/day (1 time = 3 ml). During the observation period from April to October in 2018, one MRSA patient occurred during the practice. The new approach of industry for industry total quality management for infection control has been continued. We will report the outcomes of hand hygiene by multidisciplinary, review of manual, transition of alcohol use and new occurrences of MRSA.

### **Conclusion**

As the method of improvement of quality in healthcare, we implemented the industry total quality management for infection control. A method of problem solving of new occurrences of MRSA can be visualized by creating the process on an A3 sheet. It is useful for multidisciplinary control to perform the improvement of quality and the activity of infection control by teamwork.

# **Improving cohesion and co-ordination between out-of-hours medical ward cover and consultant-led specialty ward rounds in Gloucestershire Royal Hospital**

Call for Posters - Work in Progress

Toby Lewis, Sian Jenkins, Jen Collinson  
Gloucestershire Hospitals NHS Trust, England

## **Background**

All medical wards at Gloucestershire Royal Hospital are covered by three medical SHOs and one FY1 doctor during weekend daytime hours. Four further Foundation doctors assist with two consultant-led 'specialty ward rounds' each, in which new and unwell medical patients are reviewed. The workload between ward cover doctors was unevenly distributed, with little geographical logic to which wards each covered. There was no formal process for ward cover doctors to highlight unwell patients who required consultant review on the ward round.

## **Methods**

We reallocated the wards covered by each ward cover doctor; considering the number of wards covered, proportion of unwell or complex patients and geographical proximity of wards covered by one person. Where possible, we paired each ward cover doctor with a foundation doctor on the ward rounds applicable to the wards they were covering. We introduced an informal handover after each ward round and included ward cover doctors in a weekly email detailing the contact details of the consultant and foundation doctor on each specialty ward round.

We implemented these initiatives in March 2018, using the preceding fortnight to advertise these changes via email and visit each ward individually. We discussed ward cover bleep changes directly with staff on each ward and provided written plans. An existing weekly email was changed to provide ward cover and ward round doctors with contact details for their colleagues. We received qualitative feedback from junior doctors throughout this process.

## **Outcome**

A satisfaction questionnaire was used pre and post intervention, in the same cohort of doctors, to evaluate outcome. Participants assessed frequency of handover between the two teams, selecting 'Never', 'Rarely', 'Sometimes', 'Often' or 'Very often'.

After our intervention, handover 'Sometimes' occurred between specialty ward round doctors and their on-call partners in 83% of cases, previously 13%. Pre-intervention, 50% of respondents reported that handover 'Never' occurred; this fell to 17%. There was no change in the 'Often' or 'Very often' categories. 50% of on-call doctors are now aware how to request a consultant review of an unwell patient, versus 0% formerly.

Satisfaction that workload between ward cover doctors was evenly distributed increased from 25% to 83%.

Qualitative feedback was generally positive, also highlighting areas for further improvement in our next PDSA cycles.

## **Conclusion**

Our interventions have led to increased co-ordination and communication between medical ward cover and specialty ward rounds; we anticipate this has led to more timely senior review of unwell patients. Ward cover workload distribution has also improved, which will improve efficiency of the workforce and thus patient care. However, these conclusions are largely subjective as we are unable to objectively measure how these interventions have enhanced efficiency or patient outcomes.

Small interventions in organisation and communication can hugely impact efficiency, teamwork and therefore patient care without significant financial impact.

## **Immediate Life Support –A first mover education-programimproving patient safety at cardiac arrests for staff**

Call for Posters - Work in Progress

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Charlotte Kammersgaard Christensen  
North Denmark Regional Hospital, Frederikshavn, Denmark  
Per Henrik Lambert  
Aalborg University Hospital, Aalborg, Denmark

### **Background**

Cardiac conditions (ventricular tachycardia, fibrillation or asystole) rapidly lead to irreversible brain damage and death, once cardiac arrest (CA) happens[1]. Every minute a patient in CA is not successfully treated, the chance of survival decreases by 7 % per minute in the first 3 minutes, and decreases by 10 % per minute as time advances beyond 3 minutes[2] .

Our CPR-response-team has a very rapid response to a CA (within 3 minutes). However, the immediate life support at the ward, e.g. using an automated external defibrillator (AED), until the CPR-response team arrives, is crucial to avoid complications, permanent damages and death.

In our continued improvement of patient safety and quality we decided to implement a new CPR-education program, rising the CPR skills to a higher level in all staff-groups.

### **Methods**

We

- Introduced an intermediate level of life support – ILS, (ERC: Immediate Life Support)
- Educated 72 ILS-supporters together with DROC
- Made yearly hands-on training obligatory.
- Made yearly certification of E-learning program obligatory

One of our units, Frederikshavn Hospital, only has planned surgery with CAs being rare events (2-4 yearly). Staff here had to complete the theoretical and physical CPR-training twice in 2018 (see Fig 1.). Prior to the first training (PRE), and after the 2nd training (POST) we examined the staffs experience with CA and their beliefs of own skills and level of performance at CPR with 42 questions.

Training comprised of 20 min theory and 40 min simulation scenario (Photo 1) at either BLS, ILS or ALS according to staff-function.

### **Outcome**

The PRE-questionnaire was answered by 87% (N=138) of staff, 42% nurses, 10% doctors and 14% secretaries. Forty-four % of the staff has been employed at Frederikshavn Hospital more than 10 years, 29% between 5 and 10 years and 26% less than 5 years. Twenty-five % had never participated in CPR-training.

Our results show, that prior to the 1st CPR-training staff have a low level of experience with cardiac arrests (Fig 2).

Staff evaluate mostly their own skills and confidence in performance at very low to middle levels and 42% evaluate their skills in using an AED as low or very low.

When The CPR-response team arrived to a CA, at 25% of CAs, ventilation were initiated, and at 75% of CAs, medicine, defibrillator, patient journal a.o. were prepared, but no AED-use were observed.

### **Conclusion**

The results confirm our hypothesis that 1) at a hospital with only planned surgery, few of the staff members have experienced a cardiac arrest; 2) CPR-training every 5th year is too seldom to achieve confidence in own skills of CPR at a ward, which could impact the quality and timing of immediate life-support.

We predict that staff, after 2 times of CPR- training at either BLS, ILS or ALS level within a year, experience an increased level of confidence in their own skills in CPR and less concern of their own role and

obligations at the next CA. The intense training should be reflected in improved quality and timing of immediate life support at CA's at the ward, prior to arrival of the CPR-response team, thus improving patient safety.

## **Assessing MRI utilisation in a facility without on-site scanning : The first step towards No Unnecessary Tests (NUTS)**

Call for Posters – Quality, Cost, Value

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Eastern Health, Australia  
Jankin Ho  
Monash University, Australia

### **Background**

Magnetic Resonance Imaging (MRI) has become a routine diagnostic tool in hospital practice. Although it offers more detailed images, it does not always provide additional information that changes clinical assessment or management. There is little evidence on the appropriateness of MRI scanning, although some studies have suggested overuse of MRI scans in outpatient settings. Emery et al found evidence of substantial overuse of lumbar spine MRI scans with 55.7% classified as either inappropriate or of uncertain value<sup>1</sup>. Although there are no international guidelines on ordering MRI scans, large radiology firms have provided recommendations for clinical practice<sup>2</sup>.

Prior to May 2016, MRI requests at Maroondah Hospital, Eastern Health, Victoria, Australia had to be performed externally, leading to both organisational obstacles and increased hospital stays.

### **Methods**

Patients aged 17 years and above who had an MRI scan ordered between 01 March 2014 to 30 September 2015 were included in the study. Retrospective data regarding the indication for the MRI, adherence to recommendations, MRI scan result, information available on previous scans, clinical progress and hospital stay were extracted using electronic patient information systems. It was also assessed whether the MRI scan results provided additional or unexpected clinical information that necessitated further actions to the patients clinical assessment and/ or management.

### **Outcome**

- A total of 131 patients had MRI scans between 01 March 2014 to the 30 September 2015 and 11 patients were excluded due to not being able to access MRI scan results.
- Of the remaining 120 patients, 85 patients (71%) had previous imaging prior to the MRI
- Of the 35 patients that went on to have an MRI scan directly, the MRI result did not change their clinical assessment and management in 65% patients.
- Of the 85 patients that had other scans prior to MRI. MRI provided new information about the clinical status in 54% (46) patients. However, of these patients the overall clinical assessment and management was only altered in 35% (16) patients.
- Most clinicians (69%) followed available guidelines for requesting MRI scans and the most common scans performed were of the Brain (n=50, 42%) and the Musculoskeletal system (n=36, 30%)
- Hospital inpatients waited on average 4 days for an MRI scan.

### **Conclusion**

Over-utilisation of MRIs can place heavy burdens on patients and health services, and for many patients it adds little change to clinical management. In hospitals without an MRI scanner on-site, significant wait times for MRIs can substantially increase lengths of stay. Avoiding unnecessary investigations is a positive step towards a sustainable culture change and improved clinical outcomes.

# **Frameworks to maximise effective intervention sustainability in a hospital setting – a systematic review**

Call for Posters – Quality, Cost, Value

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## **Background**

Many effective interventions introduced in hospital settings are not sustained. Although the reasons for this are complex, research suggests that the use of theoretical frameworks and models might increase sustainability. Such frameworks aim to address factors that impact on sustainability. The literature around these frameworks has provided significant contributions to the implementation field, however, there is little consensus around how such theoretical frameworks are usefully applied in practice.

In response we have conducted a systematic review of theoretical frameworks that have been used to address sustainability of interventions. This review focuses on hospital-based interventions, as hospitals have been the focus for a series of implementation projects in recent years. They are challenging and complex environments. Understanding factors that lead to sustained implementation in hospital settings is therefore likely to be of considerable research and practice benefit.

## **Methods**

A systematic review of eight electronic databases was conducted between 01/01/08 and 28/02/18. We also hand searched the Implementation Science journal and reference lists of included articles. One reviewer screened all titles, removing any obviously irrelevant titles. Two reviewers then independently screened any potential abstracts, and full text papers against the selection criteria. Study quality was assessed independently by two reviewers, using tools appropriate to the design of the study. We used a standardised pre-piloted form and extracted the following data: sustainability frameworks, study timeframe, intervention/programme aims and components, study context and participants. Data on barriers and facilitators to sustainability were extracted by using a data extraction sheet where each barrier/facilitator per study was mapped onto existing sustainability frameworks. Models, theories and frameworks were categorised and coded according to level of theoretical visibility and typology. Key findings were brought together within a narrative synthesis.

## **Outcome**

The search identified 154,757 records; we screened 14,626 abstracts and considered 431 full text papers, of which 34 studies were included in the evidence synthesis. The systematic review revealed that sustainability is poorly reported. Less than 10% of included studies (3/34) reported all sustainability constructs we identified. Where frameworks were applied rather than developed by the authors, they were used both individually and in combination. The majority of frameworks were used to understand and/or explain what influences implementation outcomes, including sustainability.

Frequently reported barriers to sustainability were individual factors, management of staff and staffing levels. Frequently reported facilitators highlighted leadership, education and training, support from central functions and adequate resourcing as key drivers underpinning successfully sustained interventions.

## **Conclusion**

Our review confirms the methodological challenges of sustaining interventions in practice. It also provides a contemporary insight into how frameworks have been used for sustaining interventions in hospitals. Key factors for sustaining an intervention have been identified, and inform what is required of sustainability frameworks if they are to have a positive impact on practice. In particular, we reflect on

sustainability as part of implementation, and promote the need to address it as a dynamic, evolving process. Our review also provides empirical evidence that more consistent and complete reporting of sustainability is needed if we are to learn best-practice for implementation work going forward.



## **Improving the Rheumatology Biologics Service at the University Hospital of Wales**

Call for Posters – Quality, Cost, Value

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### **Background**

Biological disease modifying anti-rheumatic agents (biologics) have revolutionised the care of patients in rheumatology. Biologics are used to treat patients suffering from chronic inflammatory conditions, including rheumatoid arthritis and ankylosing spondylitis, which have failed to be controlled with first line conventional treatments such as methotrexate. These conditions can lead to permanent deformity and disability if left untreated so it is of utmost importance that these patients are started and maintained on effective treatment without delay.

Patients who require treatment with biologics are counselled in specialist nurse-led biologic clinics after referral from their rheumatologist. However, patients at the University Hospital of Wales (UHW) were waiting up to 12 months to be seen in the biologic clinic and started on treatment. The size of the waiting list and length of waiting time for biologics was unacceptable and potentially leading to harm for many patients.

### **Methods**

Key barriers were identified, including lack of availability of staff, clinic space and incomplete screening information.

A multifaceted approach was used to tackle the problem with the development of:

- a. A new referral checklist for clinicians
- b. A comprehensive electronic database of patients waiting to be seen, including their disease activity score and results of screening investigations
- c. Group clinics allowing multiple patients to be screened and counselled on biologics simultaneously. An introductory talk on biologic treatment would be given at the start of each session to a group of 10-12 patients. At least two specialist nurses would then be available to screen completed questionnaires with each patient and a doctor would perform any necessary physical examinations within cubicles.
- d. An information pack to be sent to each patient prior to attendance, containing biologic information leaflets, screening questionnaires and outstanding investigation request forms.

### **Outcome**

As of October 2017, the waiting list consisted of 191 patients who had been referred from July 2016 onwards. 119 of these patients were waiting to be commenced on biologics and 72 were awaiting a switch of biologic treatment.

It was agreed that 1-2 group clinics would be held each month on the Rheumatology Day Unit, in addition to the existing one-to-one nurse-led clinics. From December 2017 to April 2018, 86 patients were commenced on biologic treatment after being reviewed in the group (50) and nurse-led (36) clinics. 25 patients were determined to no longer require biologic treatment and 8 patients were offered appointments but did not attend. This resulted in a reduction in the waiting list of new referrals from 119 to 28 as of May 2018.

Waiting time was reduced from 8-12 months to 4 weeks with positive feedback from both patients and staff.

### **Conclusion**

These changes have resulted in a significant improvement in the quality of care being delivered to our patients. Patients are no longer having to suffer for prolonged periods of time with debilitating symptoms and the risk of permanent joint damage whilst awaiting treatment.

Group clinics allowed staff to make better use of their time and available space by avoiding repetition of information in multiple one-to-one sessions. The use of information packs and questionnaires ensured that patients were fully prepared when attending the clinics and their expectations were managed appropriately.

This project has highlighted the potential value of group clinics in improving quality and accessibility of care, particularly for patients with chronic conditions needing education on the condition itself or on treatments. The NHS continues to face rising demand with increasingly limited resources. Novel approaches are required and our experience here suggests that group clinics may be part of the solution.



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