

How to design and manage large scale collaborative quality improvement based on real world global maternity projects

An interactive session to build confidence in improving at scale

An Introduction to Improving at Scale

John Boulton



Aidan Fowler





02 E 03 DE MAIO DE 2017

C-Sections in Brazil - PPA

***IHI BMJ International Forum 2019
Glasgow***

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***Pedro Delgado, Head of Europe and Latin
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Dr Paulo Borem (Senior Director, IHI)



1. Aim

2. Content Theory

3. Execution
Theory

4. Data,
Measures

5. Comms,
Dissem.

*Project Progress Scale	
1.0	Infraestrutura de Melhoria Desenvolvida Diagrama Direcionador, Pacote de Mudanças, Indicadores e Estratégia de Medição desenvolvidas; pelo menos 135 hospitais e até 150 hospitais comprometidos com a iniciativa e formalmente inscritos via o site da ANS e a Extranet; Indicadores e Equipes criadas na Extranet; equipes da colaborativa definidas e com capacidades desenvolvidas para utilização da Extranet.
2.0	Atividades Iniciais Progredindo mas Nenhuma Evidencia de Melhoria Todas as equipes participantes utilizando a Extranet, com conhecimento da Estratégia de Medição do PPA e as funcionalidades da Extranet para introdução de dados; 75% dos hospitais com pelo menos 6 pontos nos indicadores de resultado; 30% dos hospitais com pelo menos 1 ponto nos indicadores de equilíbrio (admissões UTI neonatal, eventos adversos e satisfação).
3.0	Melhoria Modesta 50% dos hospitais participantes informando indicadores de equilíbrio (pelo menos 3 pontos informados nos indicadores de admissões UTI neonatal, eventos adversos e satisfação), e 80% dos hospitais participantes com os seguintes resultados (considerando pelo menos 12 pontos de linha de base para o indicador de resultado: partos vaginais Robson 1-4). <ul style="list-style-type: none"> • Grupo 1 (Meta 40%): 80% dos hospitais com pelo menos 4 pontos acima da linha de base (% de partos vaginais Robson 1-4), preliminarmente indicando que o indicador está evoluindo na direção desejada • Grupo 2 (Meta 65%): 80% dos hospitais com pelo menos 6 pontos acima da linha de base (% de partos vaginais Robson 1-4), preliminarmente indicando que o indicador está evoluindo na direção desejada • Grupo 3 (Meta 75%): 80% dos hospitais com pelo menos 6 pontos acima da linha de base (% de partos vaginais Robson 1-4), preliminarmente indicando que o indicador está evoluindo na direção desejada
4.0	Melhoria Significativa 50% dos hospitais participantes informando indicadores de equilíbrio (pelo menos 6 pontos informados nos indicadores de admissões UTI neonatal, eventos adversos e satisfação), e 80% dos hospitais participantes com os seguintes resultados (considerando pelo menos 18 pontos de linha de base para o indicador de resultado: partos vaginais Robson 1-4). <ul style="list-style-type: none"> • Grupo 1 (Meta 40%): Dados agregados demonstrando pelo menos 30% de partos vaginais (média ou mediana). • Grupo 2 (Meta 65%): Dados agregados demonstrando pelo menos 45% de partos vaginais (média ou mediana). • Grupo 3 (Meta 75%): Dados agregados demonstrando pelo menos 60% de partos vaginais (média ou mediana).
5.0	Melhoria Espetacular 50% dos hospitais participantes informando indicadores de equilíbrio (pelo menos 12 pontos informados nos indicadores de admissões UTI neonatal, eventos adversos e satisfação), e 80% dos hospitais participantes com os seguintes resultados (considerando pelo menos 24 pontos de linha de base para o indicador de resultado: partos vaginais Robson 1-4). <ul style="list-style-type: none"> • Grupo 1 (Meta 40%): Dados agregados demonstrando pelo menos 40% de partos vaginais (média ou mediana). • Grupo 2 (Meta 65%): Dados agregados demonstrando pelo menos 65% de partos vaginais (média ou mediana). • Grupo 3 (Meta 75%): Dados agregados demonstrando pelo menos 70% de partos vaginais (média ou mediana).



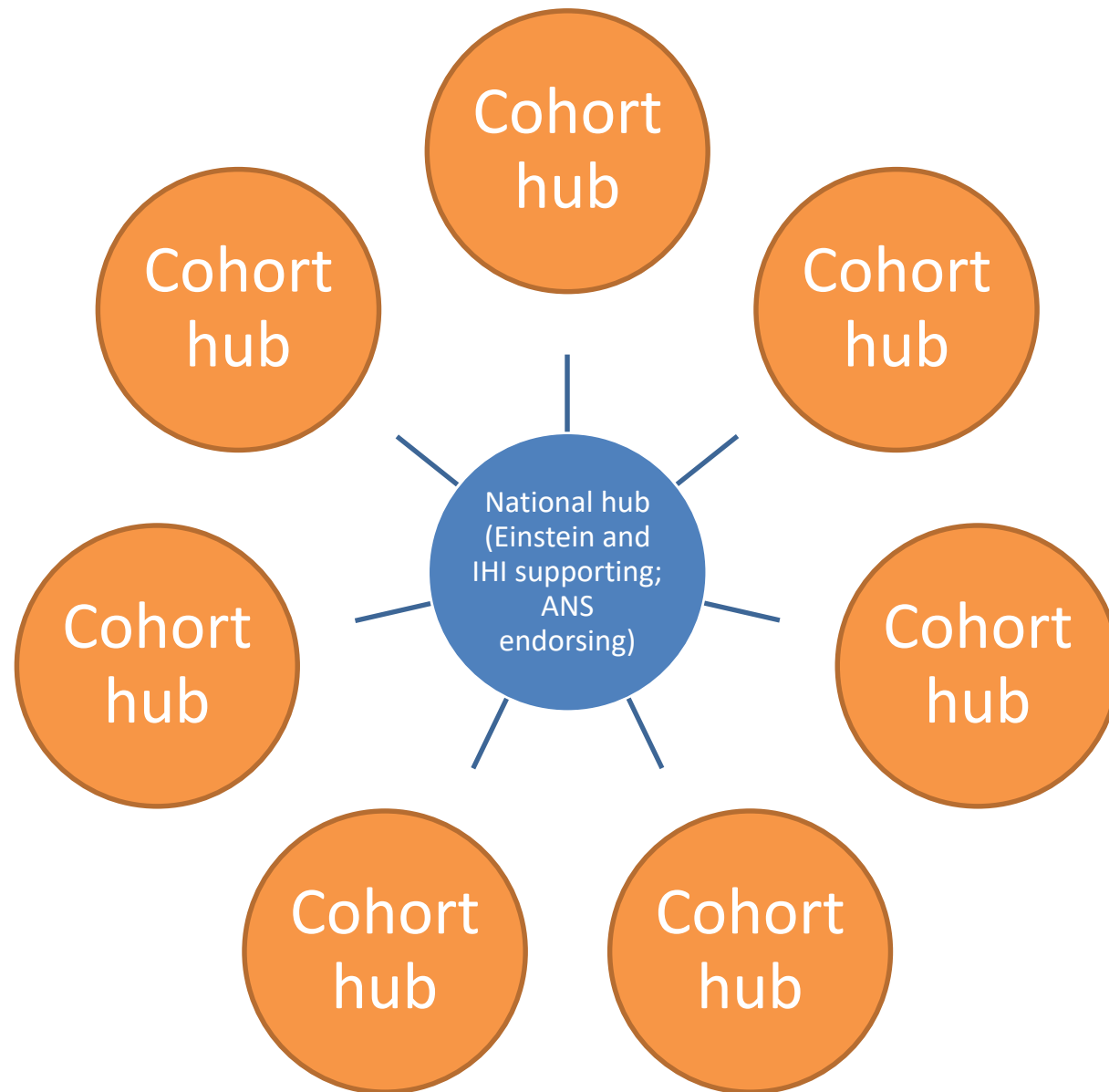
Activities	Role		Phase 2 Year 1 2017											
	Lead	Support	Jan	Fev	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Pilot Group Learning Sessions	IHI/HIAE	ANS/MoH							PLS5					
National Learning Sessions	IHI/HIAE	ANS/MoH					NLS							
Hub Learning Sessions	Hubs	HIAE/ANS								HLS1				
Hub Improvement Science Training	IHI	HIAE					LS1					LS2		
Hub Breakthrough Series Training	IHI	HIAE					LS							
Hub Monthly Coaching Calls	IHI	HIAE/ANS												
Clinical Technique Simulation Training	HIAE							Clinical Technique Training						
Progress														
Actual Progress			0	0	0	0	1	1	1	1	1	1	1	2
Expected Progress			0	0	0	0	1	1	1	1	1	2	2	2

Activities	Role		Phase 2 Year 2 2018											
	Lead	Support	Jan	Fev	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Semi-National (Publics) Learning Sessions	IHI/HIAE	ANS/MoH						sNLS					sNLS	
Semi-National (Privates) Learning Sessions	HIAE/ANS	IHI/MoH					sNLS					sNLS		
National Virtual Learning Sessions	HIAE/IHI	ANS/MoH												
Hub Coaching Calls	IHI	HIAE/ANS												
Hub Improvement Science Training	IHI	HIAE		LS3			HG							
FIGO Congress	HIAE/ANS/Hubs	IHI										FIGO		
Progress														
Actual Progress			2	2	2	2	2	2						
Expected Progress			2	2	2	2	2	3	3	3	3	3	3	3

Activities	Role		Phase 2 Year 3 2019											
	Lead	Support	Jan	Fev	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Semi-National (Publics) Learning Sessions	IHI/HIAE	ANS/MoH											sNLS	
Semi-National (Privates) Learning Sessions	IHI/HIAE	ANS/MoH										sNLS		
National Learning Sessions	IHI/HIAE	ANS/MoH					NLS							
National Virtual Learning Sessions	IHI/HIAE	ANS/MoH												
Progress														
Actual Progress														
Expected Progress			3	3	3	3	4	4	4	4	4	4	4	4

Activities	Role		Phase 2 Year 4 2020											
	Lead	Support	Jan	Fev	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
National Learning Session / National Campaign Launch	HIAE/ANS	IHI/MoH					NLS							
National Virtual Learning Sessions	HIAE/IHI	ANS/MoH												
Progress														
Actual Progress														
Expected Progress			4	4	5	5	5	5						







Improvement skills

1. *Basic Improvement Science for all*
2. *Specialized Improvement Science for selected Hubs (Especialista)*
3. *Specialized BTS Collaborative training for hubs*

IHI Psychology of Change Framework

Unleash Intrinsic Motivation

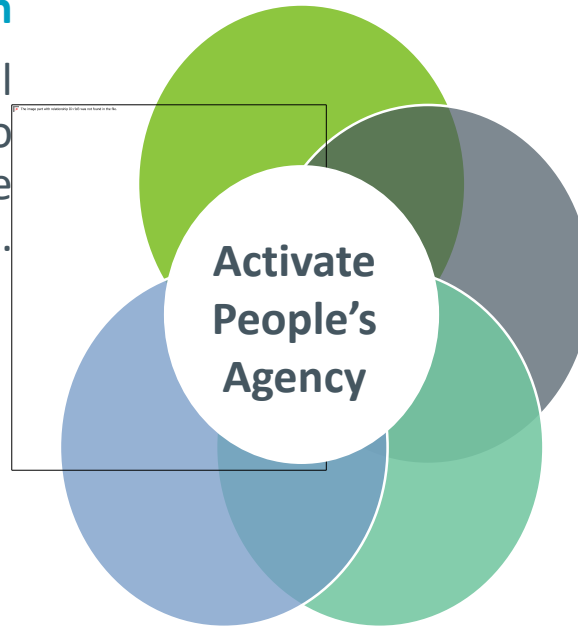
Tapping into sources of intrinsic motivation galvanizes people's individual and collective commitment to act.

Adapt in Action

Acting can be a motivational experience for people to learn and iterate to be effective.

Distribute Power

People can contribute their unique assets to bring about change when power is shared.



Co-Design People-Driven Change

Those most affected by change have the greatest interest in designing it in ways that are meaningful and workable to them.

Co-Produce in Authentic Relationship

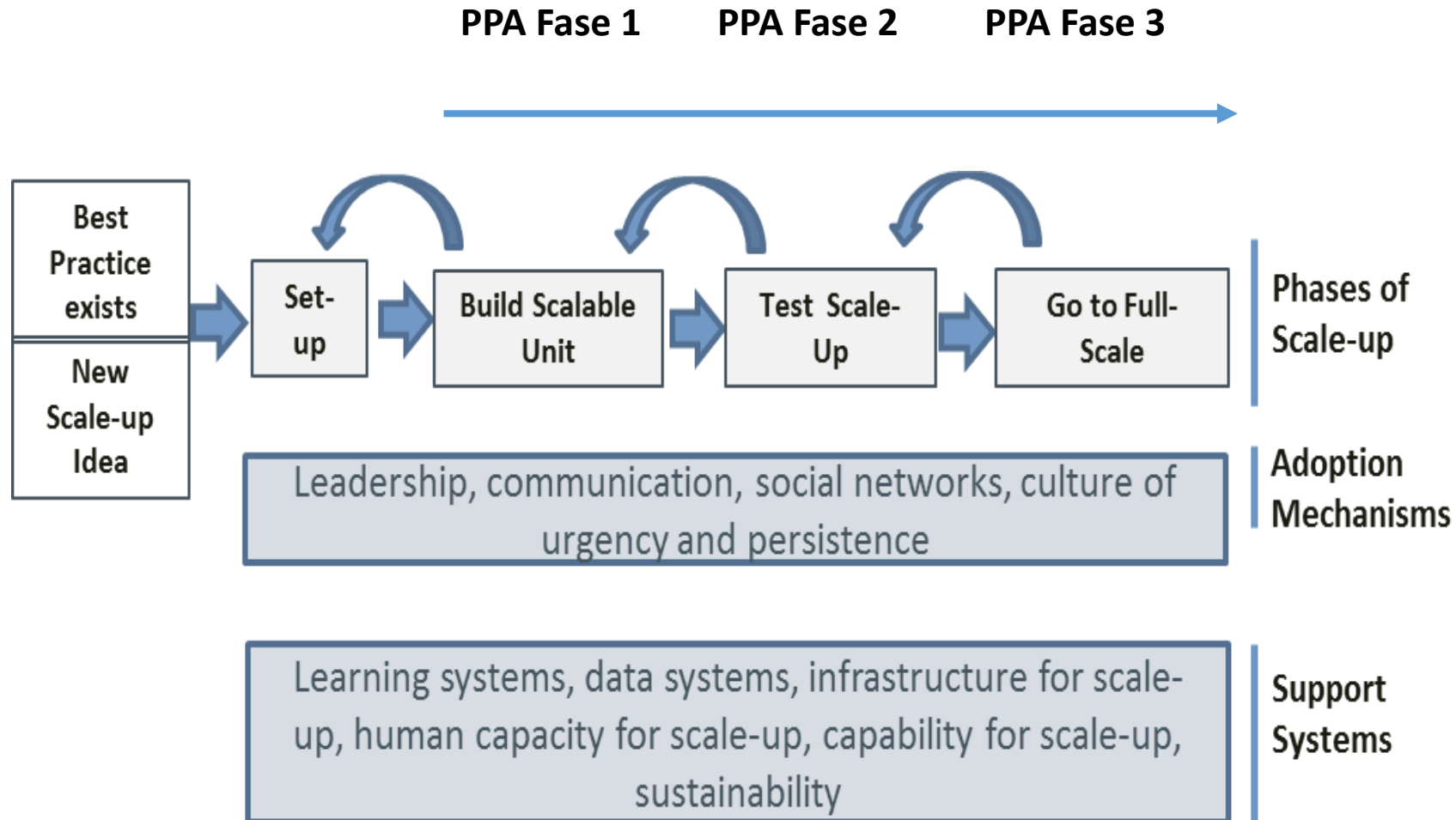
Change is co-produced when people inquire, listen, see, and commit to one another.





A framework for scaling up health interventions: lessons from large-scale improvement initiatives in Africa

Pierre M. Barker^{1,2*}, Amy Reid³ and Marie W. Schall¹

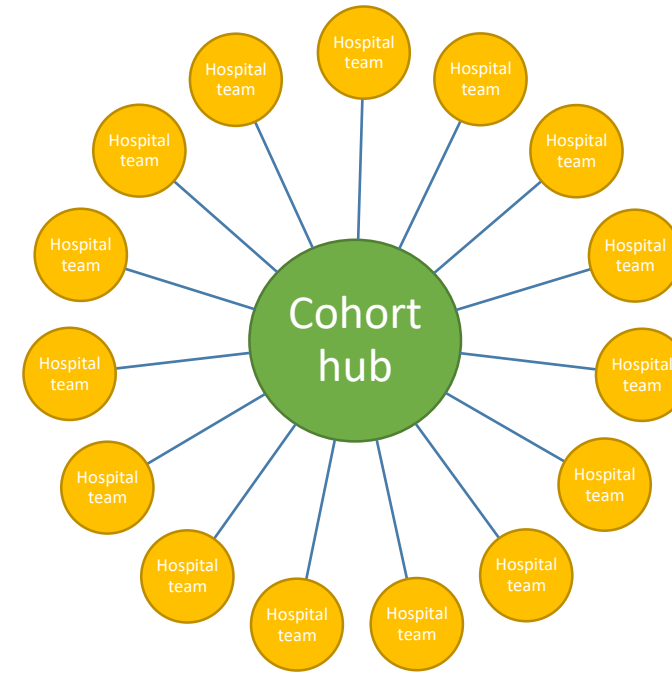
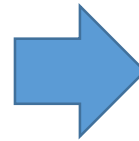
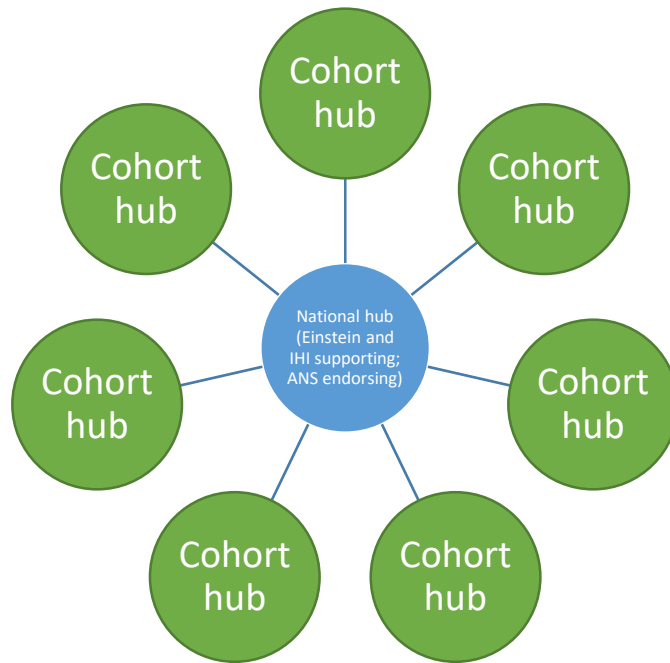


Infraestrutura nacional e regional: 7 hubs, 15 hospitais cada

- 100 hospitais, 500 pessoas
- 1 banco de dados; 5 SAPS

Conselho Colaborativa
Representantes de classes e
gestantes

- 2 SAPS Nacionais
- 2 SAPs regionais
- 1 SAP inter-regional



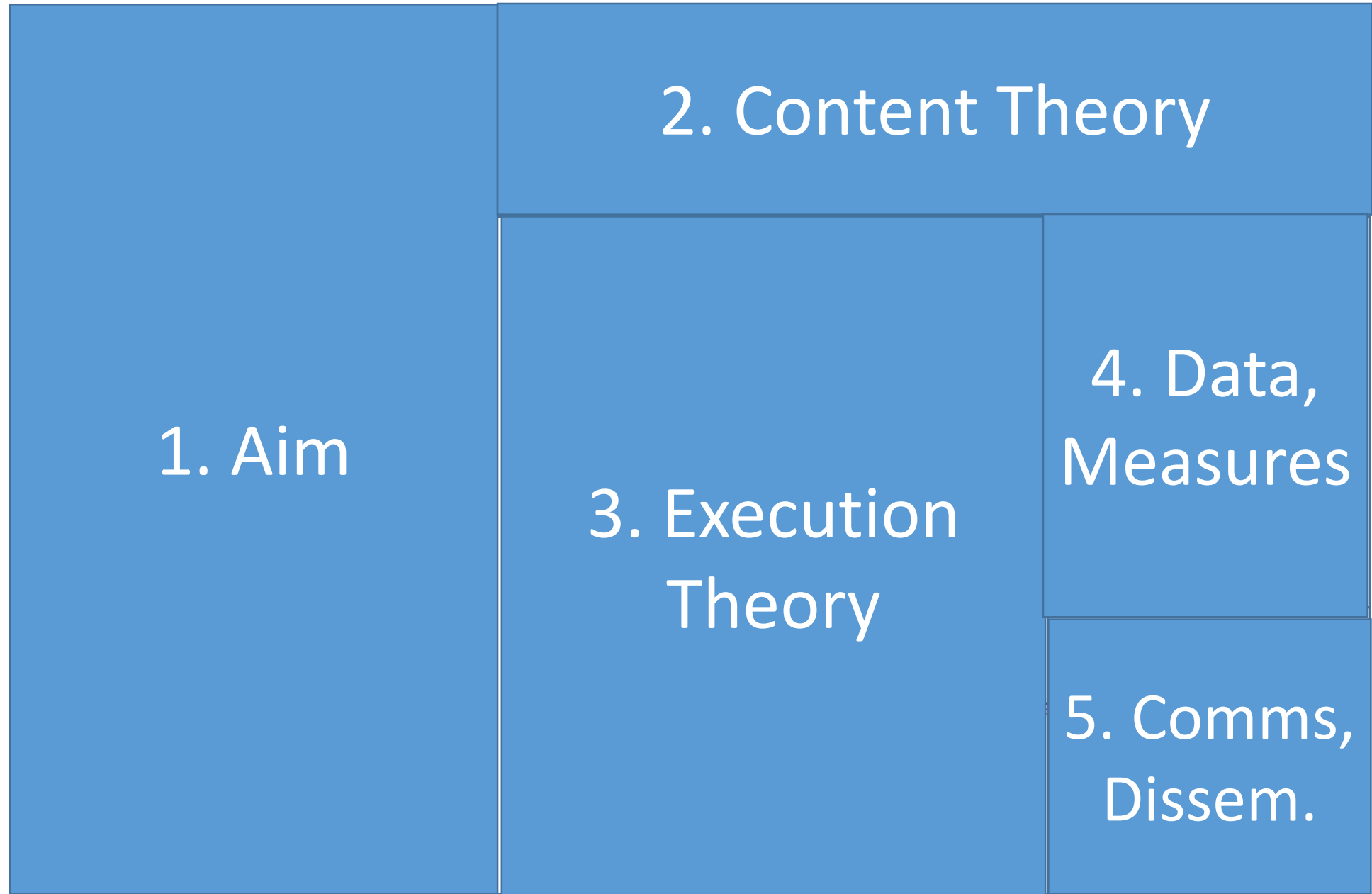
Group 1 Aim: Private *new* hospitals will achieve 40% or more of vaginal birth rate within their Robson 1-4 population (low risk pregnant women) by May 2019.

Group 2 Aim: Private *pioneer* hospitals will achieve 65% or more of vaginal birth rate within their Robson 1-4 population (low risk pregnant women) by May 2019.

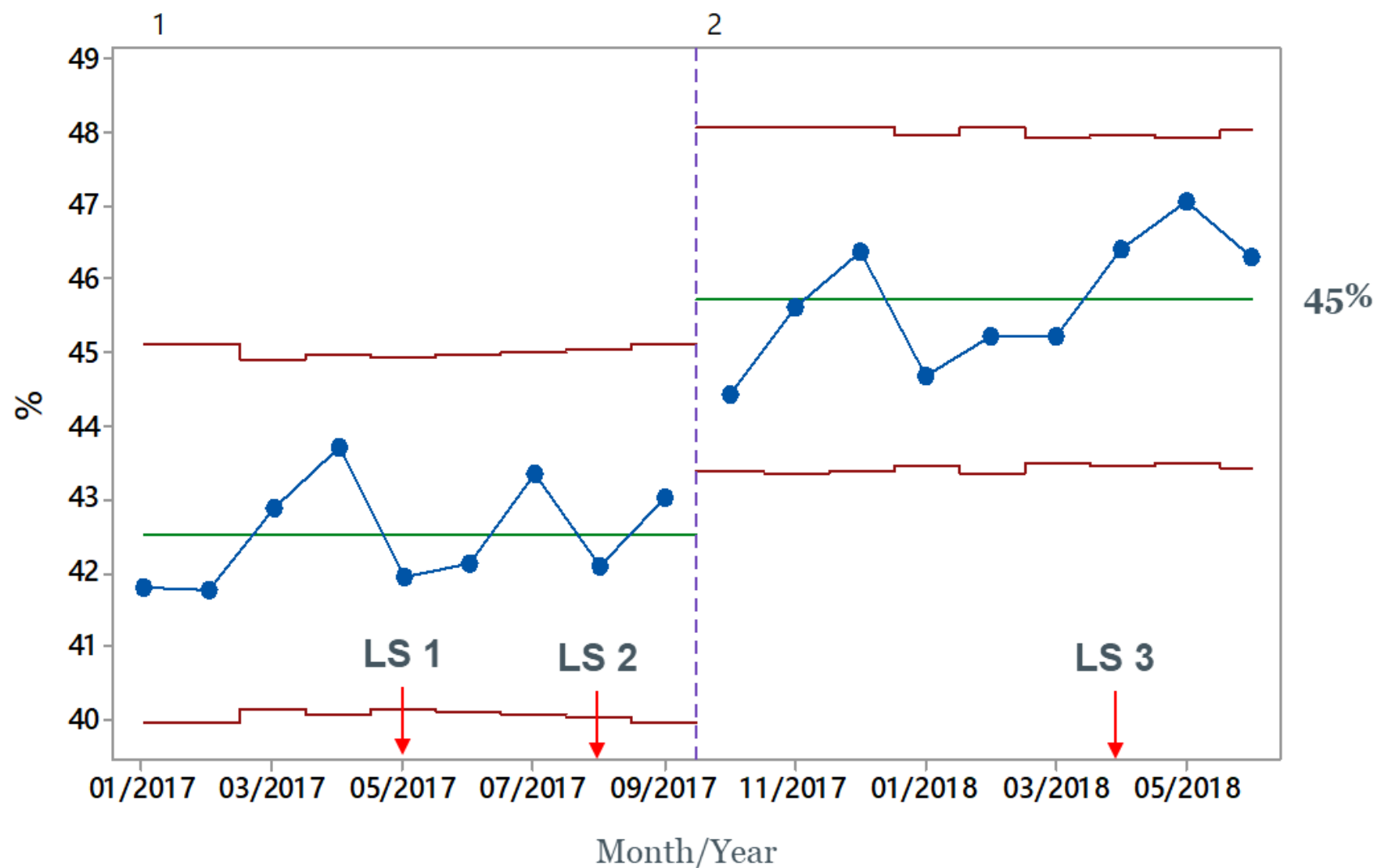
Group 3 Aim: Public *new and pioneer* hospitals will achieve 75% or more of vaginal birth rate within their Robson 1-4 population (low risk pregnant women) by May 2019.



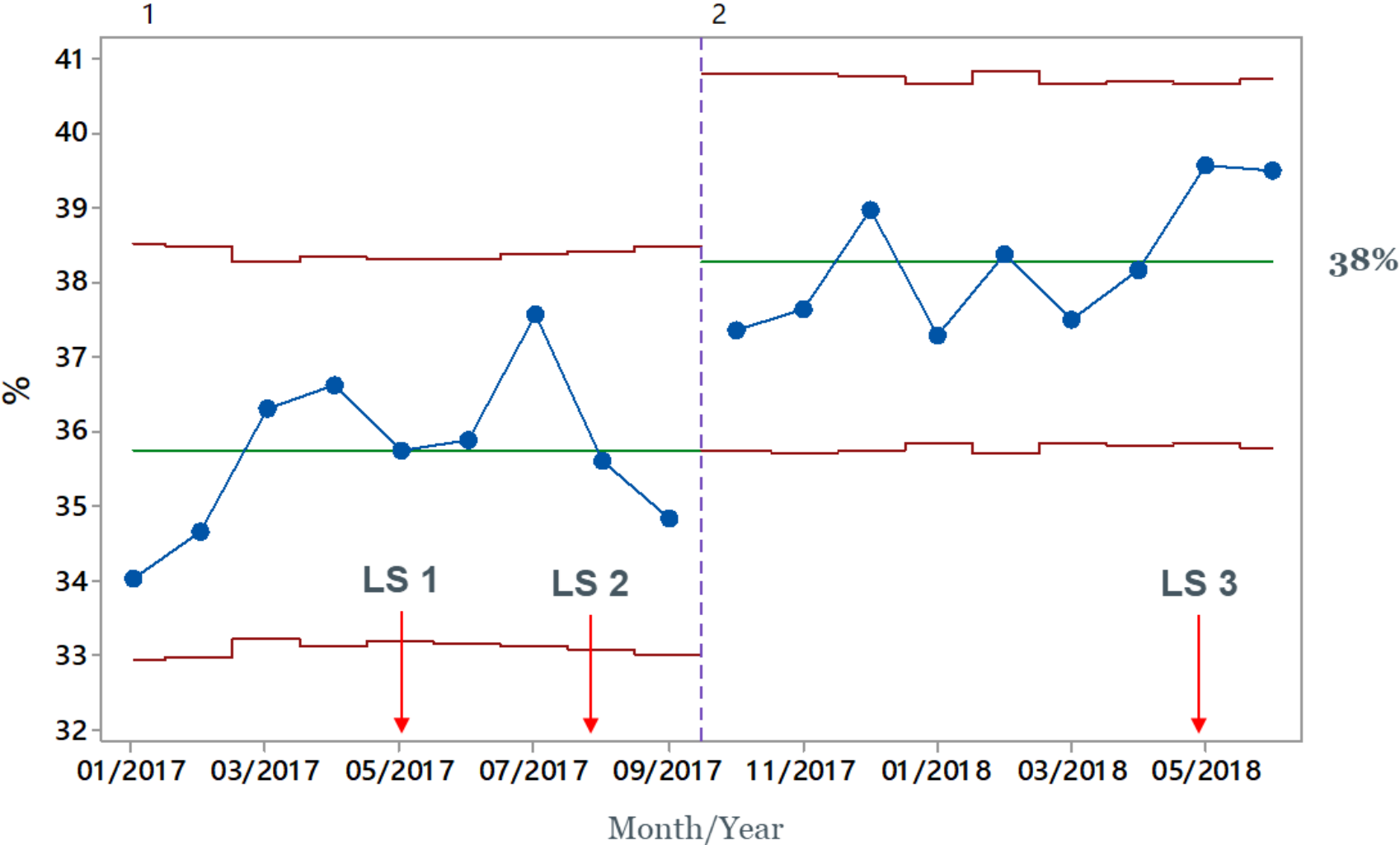
PROBLEM: EXCESS C-SECTION RATE PRIVATE (~85%) AND PUBLIC (~50%) SECTORS
Lack of reliable measurement of adverse events, patient satisfaction and costs
Intervention: Improvement Science; IHI Breakthrough Series (BTS) Collaborative – 24 months



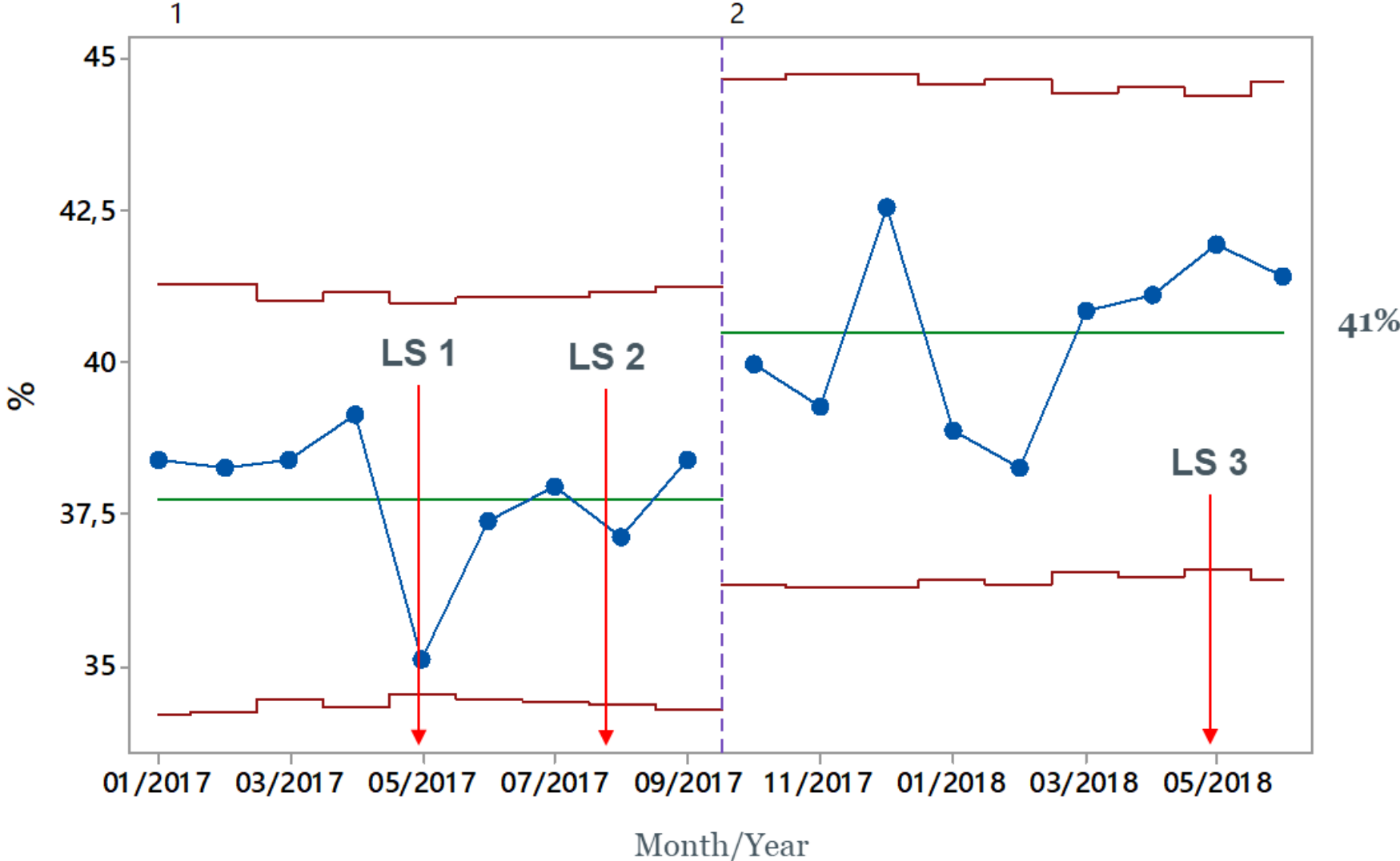
Aggregate: Vaginal Birth Rate (Robson I to IV) All Hospitals



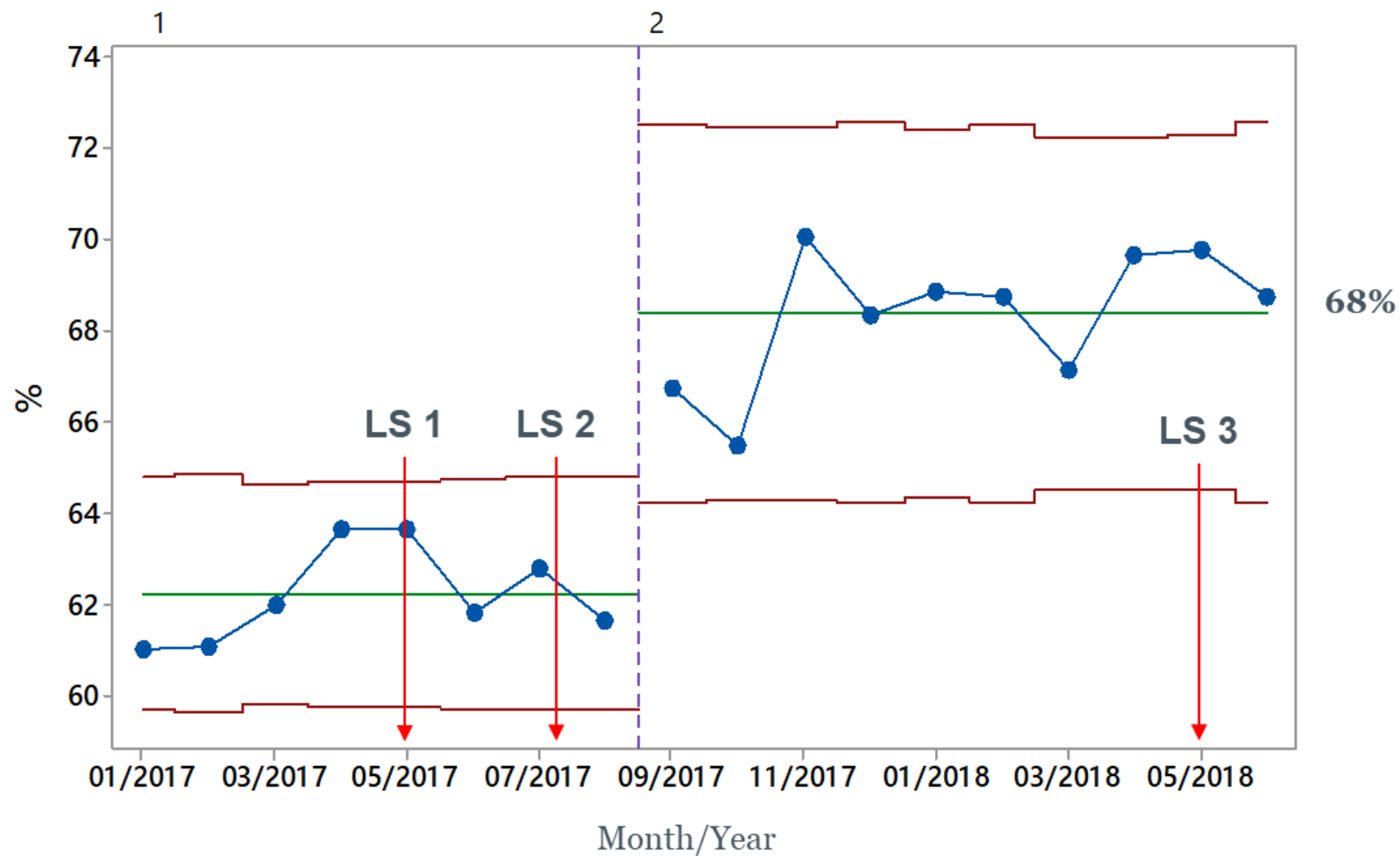
Group 1: Vaginal Birth Rate (Robson I to IV) New Private Hospitals



Group 2: Vaginal Birth Rate (Robson I to IV) Pioneer Private Hospitals



Group 3: Vaginal Birth Rate (Robson I to IV) Public Hospitals



Providing Support to Enable Improvement

Tony Kelly & Phil Duncan

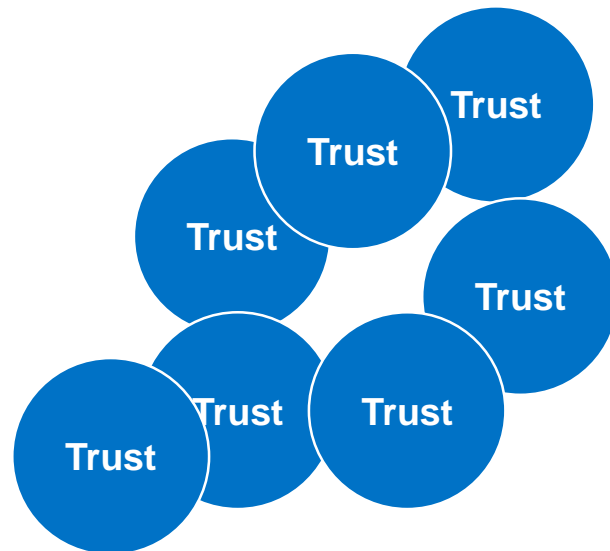
Maternal & Neonatal Health Safety Collaborative
NHS Improvement

How have we provided support for improvement?

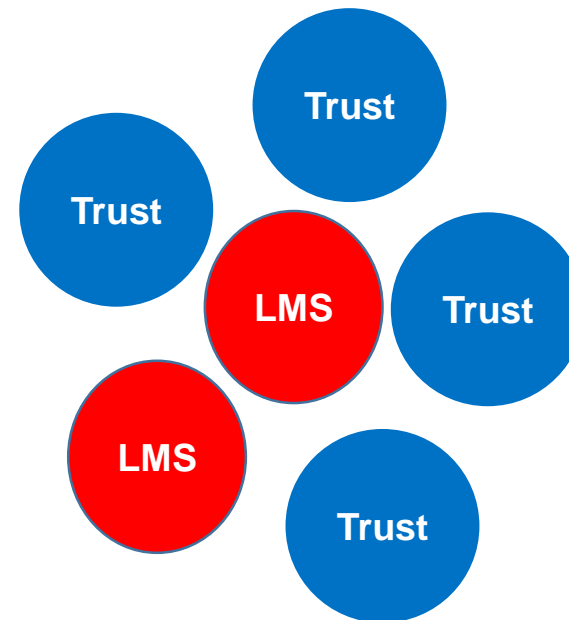
- What structures have we put in place?
- How have we developed capability?
- How have we supported teams?
- How have we supported the system?
- What have learnt along the way?

How is the collaborative structured?

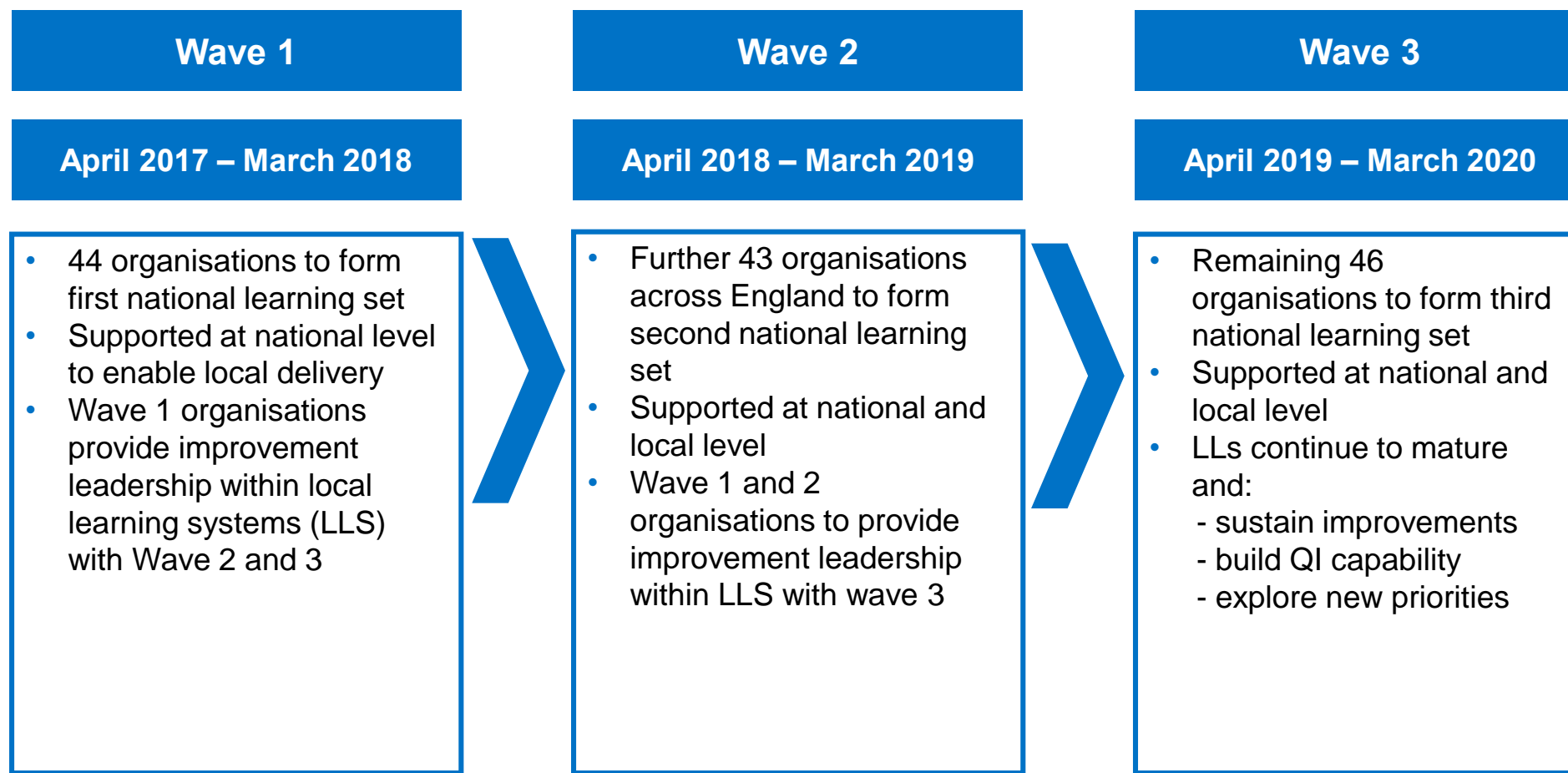
National Learning Set (Trust Improvement)



Local Learning Systems (Trust & System Improvement)



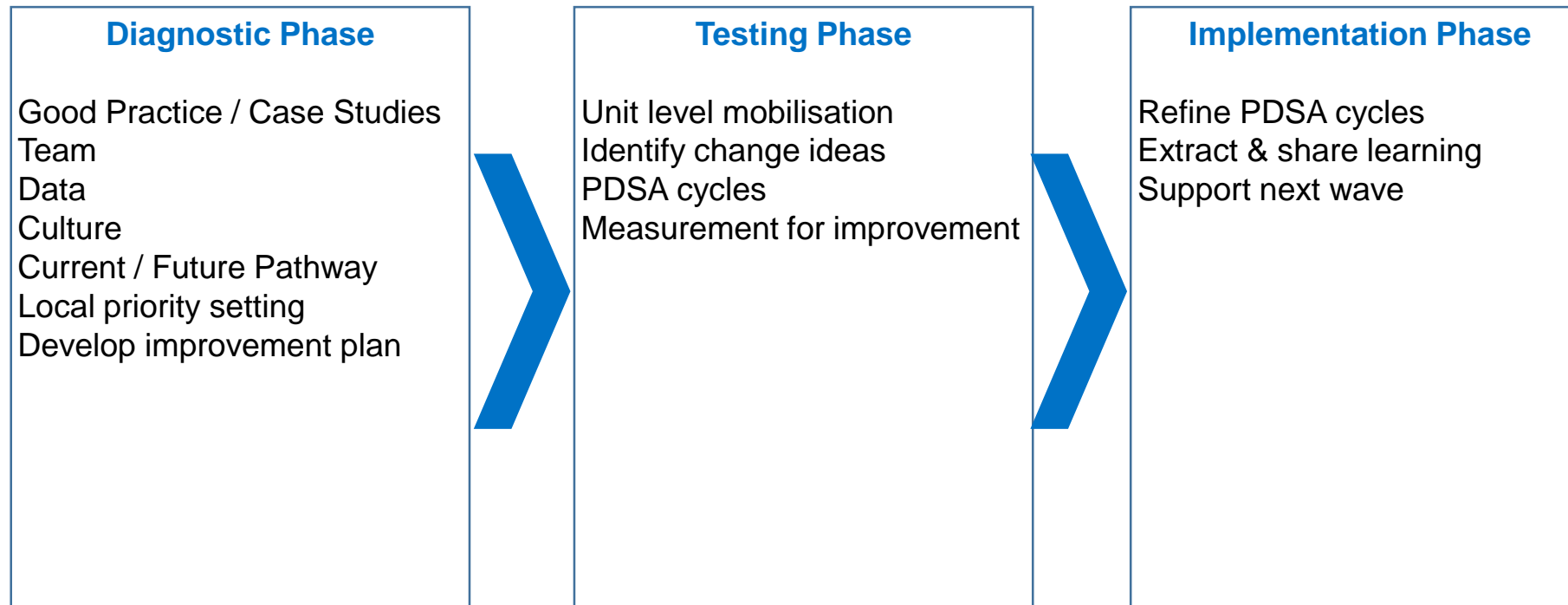
How is the collaborative structured?



How are the national learning sets structured?

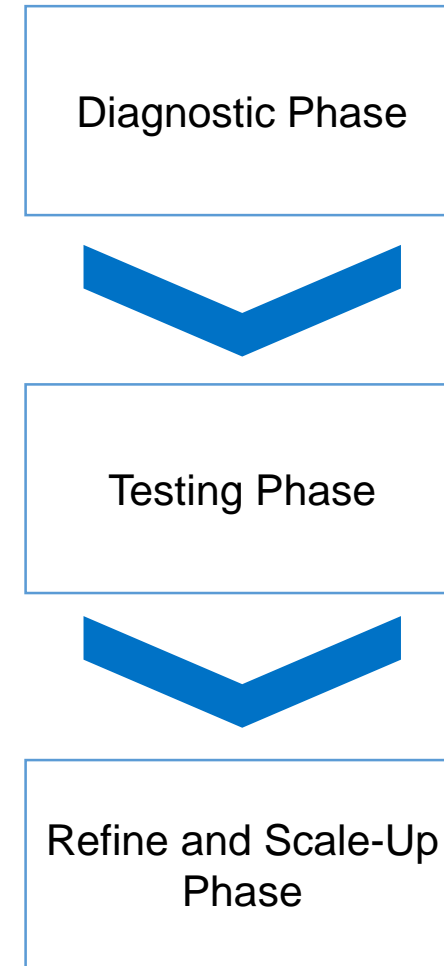
- 3 x 3 day learning sets
 - ▶ Local improvement teams coming together to learn and collaborate
 - ▶ Supported by IHI to improve capability for improvement
 - ▶ Focuses on measurement, team coaching, engagement, scale and spread
- Local site level support
 - ▶ Diagnostics
 - ▶ Development of local improvement plans
 - ▶ Ongoing team coaching
- Local culture surveys
- Measurement support

What activities will individual sites undertake?



What have we found makes for a successful team?

- A focus on process and reliable design not only outcomes
- Early assigning of roles and responsibilities
- A clear communication plan
- Setting of clear aims - avoid solution based projects
- Not getting stuck on the language!
- Creating time to apply new skills
- Gaining the support of clinicians and managers
- Starting with small tests of change
- Stay in touch with the central team

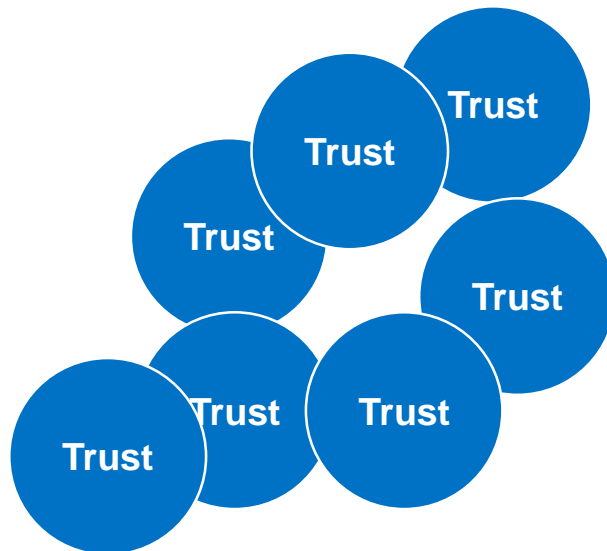


What have we learnt in the first two years?

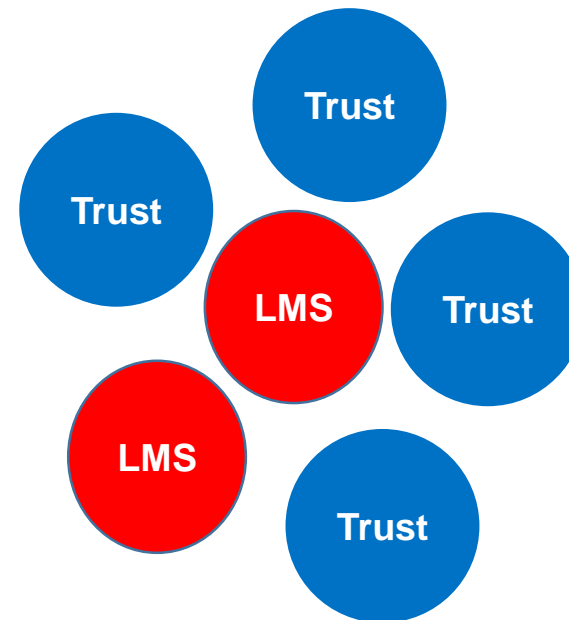
- The baseline understanding of improvement capability is very low
- The home improvement team is very fluid
- You need a much bigger team than you think
- The speed of change is much slower than you want
- Measurement is really hard at all levels

How is the collaborative structured?

National Learning Set (Trust Improvement)



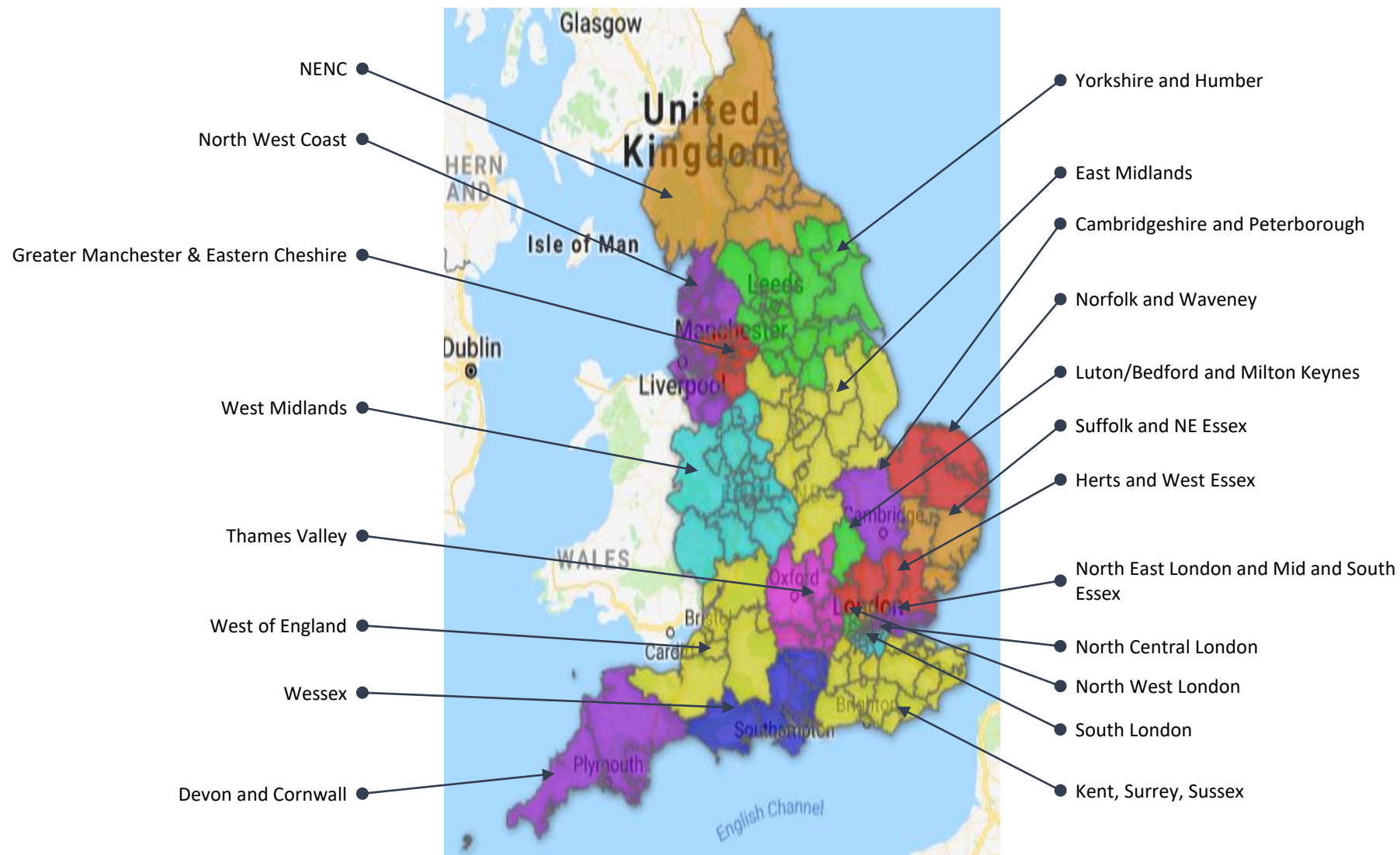
Local Learning Systems (Trust & System Improvement)



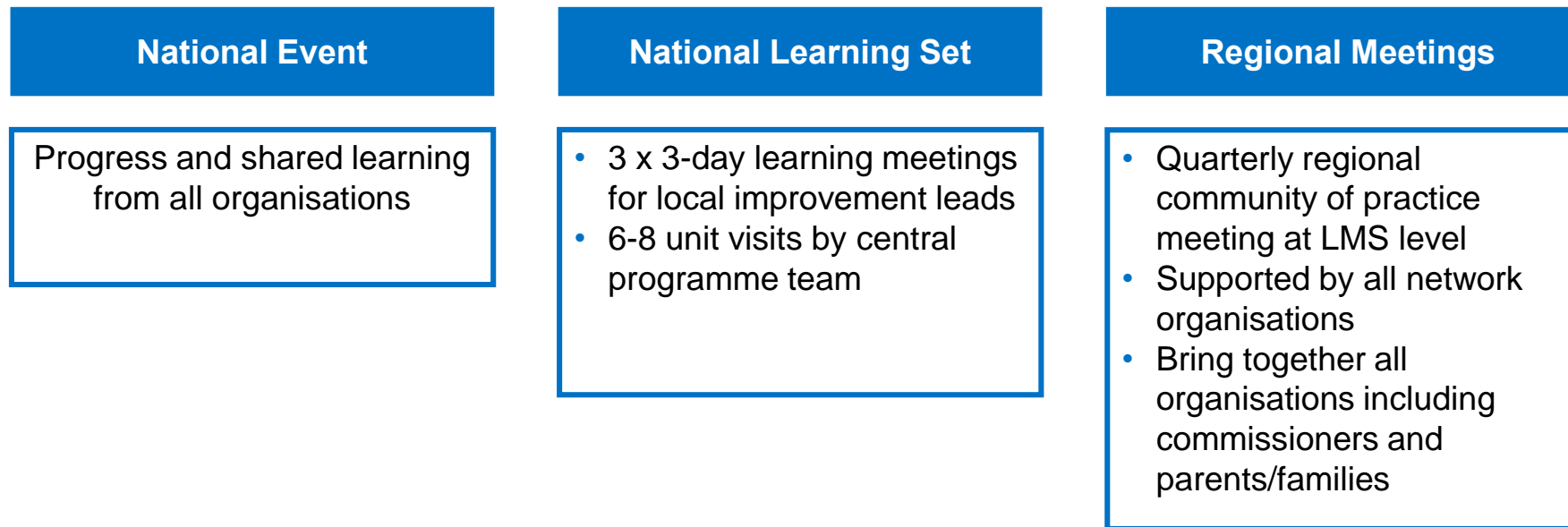
How have we supported the system?

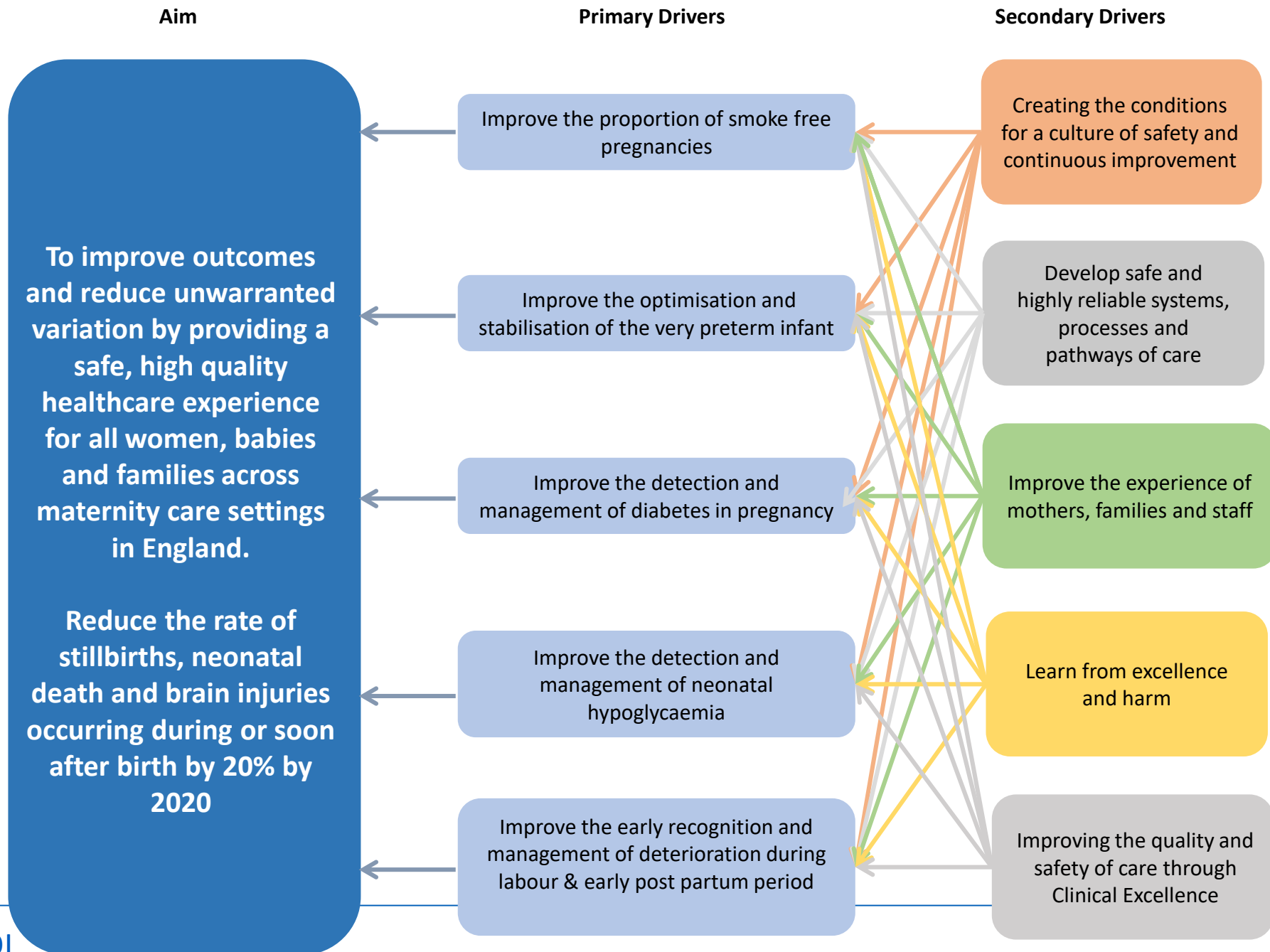
- Developed 20 local learning systems across England
- Supported by 15 Patient Safety Collaboratives and other key stakeholders
- Bring together all providers with a focus on actual improvement and collaboration
- Aim is to focus on system level improvement as well as organisational
- Not strategic groups
- Focus on measurement for improvement not performance
- Hampered by limited capability within system to support these groups
- Need to use common approach to reach maturity quickly

How are the local learning systems arranged?



How does this all fit together?





How can you support improvement in a volatile system?

- Can be difficult to be heard or seen
- May allow for more time for development/refining
- Danger of overlap and duplication – multiple initiatives
- Disorganised effort
- Unrealistic expectations
- Fragmented funding
- Capacity, capability & infrastructure issues
- Operational and strategic direction may change
- Political imperative may redefine focus

What are the advantages of support improvement in a volatile system?

- The pace of improvement may increase - more time for development/refining
- The scale of improvement may increase - multiple ideas may form to solve the same issue
- Greater opportunity for collaboration
- Can attract multiple funding sources

Thank you

@tonykellyuk

@phil_duncan1

@MatNeoQI



Measurement for Improvement

OBS Cymru- An All Wales Collaborative Quality Improvement Project to Reduce Harm from Postpartum Haemorrhage

Sarah Bell, Kathryn Greaves, Thomas Kitchen, Elinore Macgillivray and Cerys Scarr
on behalf of the OBS Cymru Collaborative and 1000 Lives Improvement





"Without data
you're just
another person
with an opinion."

- W. Edwards Deming,
Data Scientist

OBS Cymru: An All Wales Quality Improvement Programme



- Population of 3.5 million
- 31,500 births per year
- 12 obstetric units
- 7 health boards
- Differing maternity data collection systems
- Variation in PPH management across maternity units

An All Wales Quality Improvement Project to Reduce Harm from Postpartum Haemorrhage

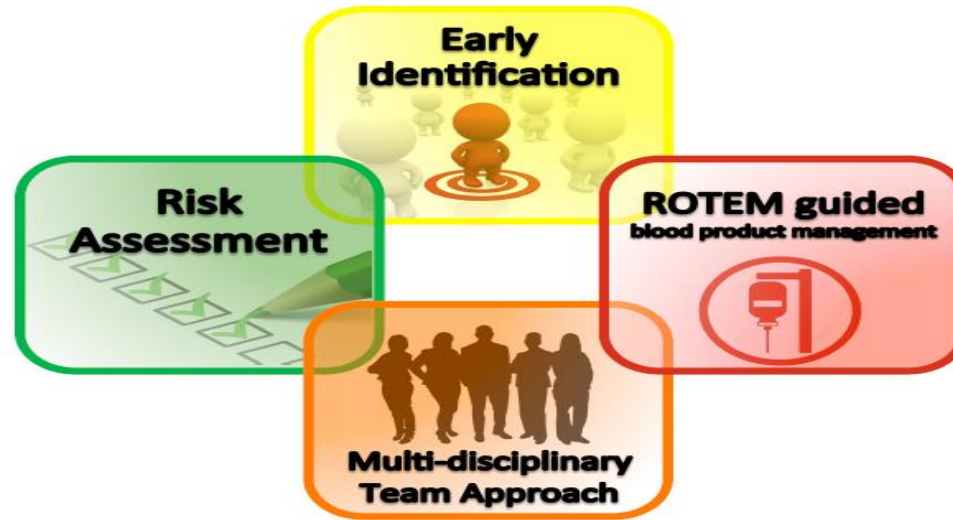
Drivers:

- Reduce the number of women receiving more than 4 units of red blood cells
- Reduce the number of women undergoing hysterectomy for PPH
- Reduce the number of ITU admissions due to PPH
- Reduce fresh frozen plasma (FFP) usage



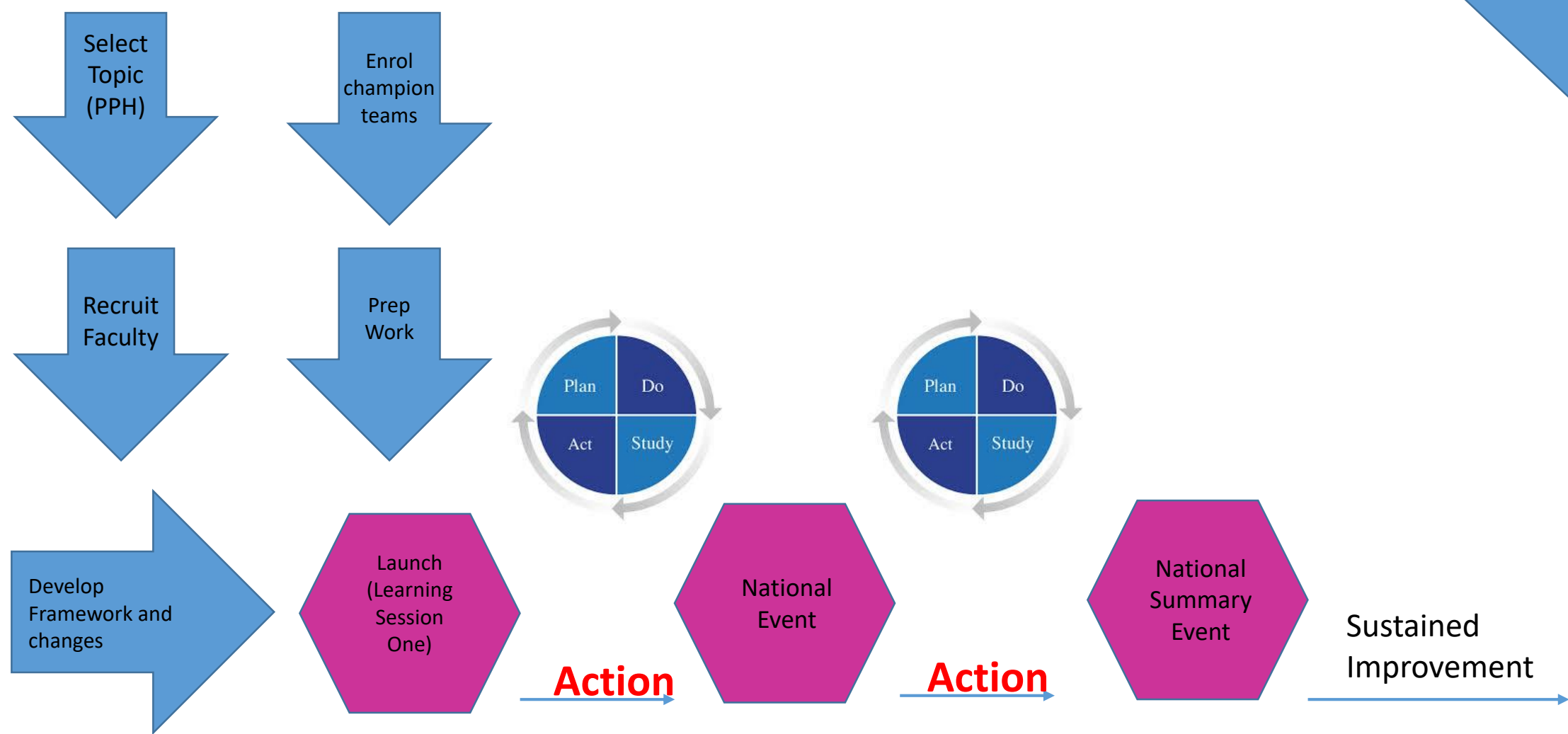
OBS Cymru

An All Wales Quality Improvement Project to Reduce Harm from Postpartum Haemorrhage

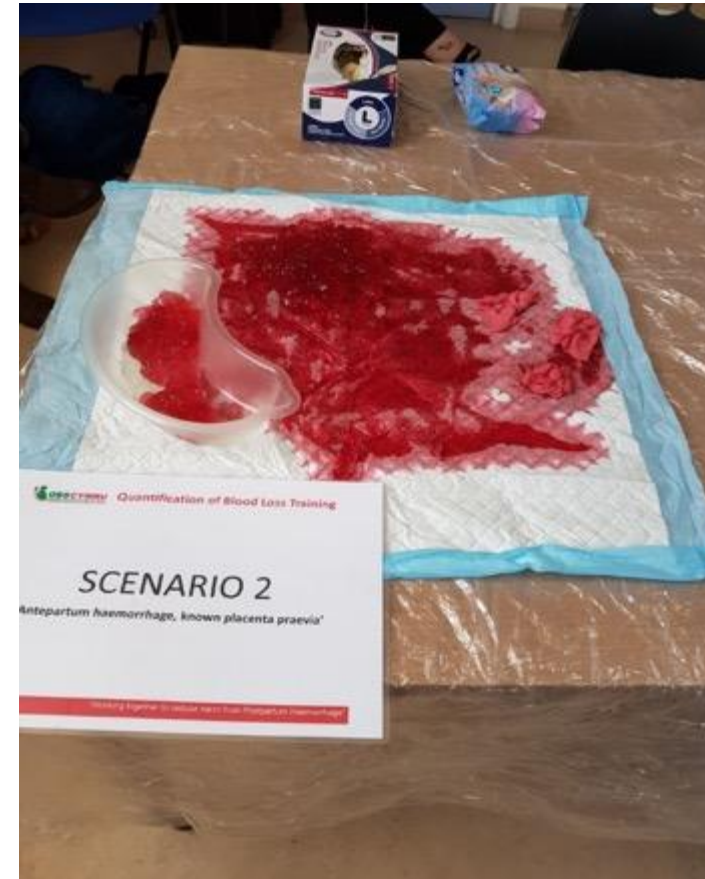


- Universal PPH **Risk Assessment**
- **Early identification** of excessive blood loss
- **Early multidisciplinary team** involvement
- POCT **guided blood product management**

Breakthrough Series Collaborative Model for Improvement



Measurement to Understand the Problem





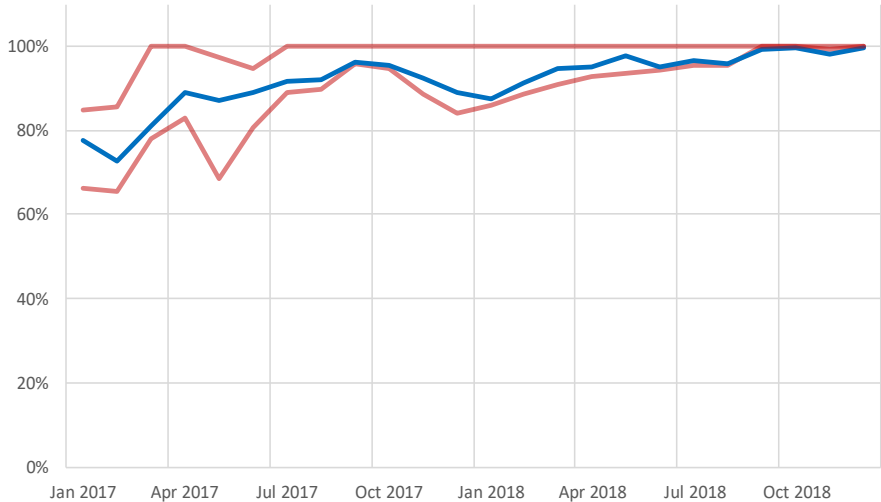
"Without data
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Measurement Creates a Common Language



Measurement of Blood Loss in OBS Cymru episodes
 (All-Wales and Unit-IQR)



A Measure to Motivate



Measurement: Just Enough is Good Enough

- An iterative process
- Initial measures may not be the right ones....and that's ok!
- Review aim regularly. Are the measures helping to work towards it??

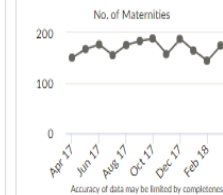
Individual-level data

Enter information on the management and outcomes of episodes meeting any of the following criteria:

- ≥ 1000 mL of blood lost
- Any blood products given (within 1 week of delivery)
- Any ROTEM was performed
- Woman transferred to ITU
- Woman underwent a hysterectomy
- Woman died

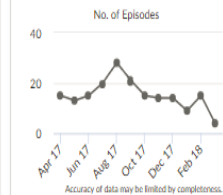
Monthly statistics

Enter monthly numbers of maternities and deliveries.



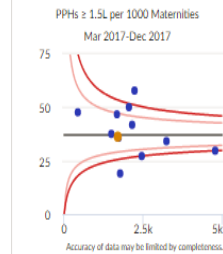
Run Charts

View monthly charts of the data, including process and outcome measures.



Funnel Plots

View variation across Wales.



Download data

Download Individual-level data in Excel format, including ROTEM, blood gas and lab test results.

Measurement to Evaluate Unintended Consequences

- Ensure the measurement plan includes a balancing measure
- This should assess the unintended, or potentially negative consequences of any change.
- These should be an integral part of the measurement for improvement plan.
- There may also be unintended benefits. Improved team working.



Building Sustainability into Measurement

- Data collection without dedicated time, using existing data collection systems
- Data to demonstrate sustainability, supported by existing data
- Had an incidental effect on national data descriptors

Conclusions

- Measurement informs behaviour which underpins improvement
- How much information is ‘just enough’?
- Measurement plan will go through several iterations
- Are your measures helping you to work towards your aim?
- What is meaningful data, and what motivates change will vary



"Without data
you're just
another person
with an opinion."

- W. Edwards Deming,
Data Scientist



Thank you!

Using a collaborative approach to developing a National Maternity Early Warning Score (MEWS)

Bernadette McCulloch

Improvement Advisor and National Lead

 @BernieMcCulloch

Maternity and Children Quality Improvement Collaborative (MCQIC)

Scottish Patient Safety Programme





1. Create a sense of urgency



2. Pull together a guiding team





3. Develop the change vision and strategy



4. Communicate for understanding and buy in

5.

empower action



6. Generate short term wins



7. Don't give up !



8. Make it Stick !



The Eight Step Process of Successful Change

Our Iceberg Is Melting

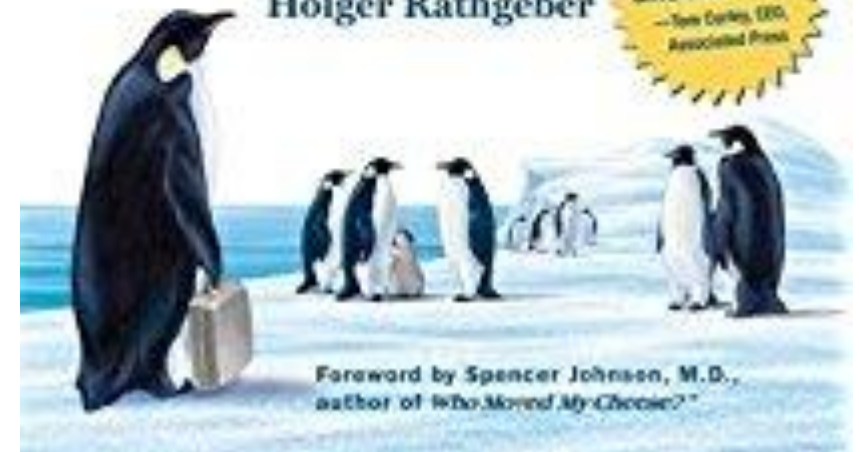
Changing and Succeeding
Under Any Conditions

John Kotter

THE AWARD-WINNING AUTHOR
FROM HARVARD BUSINESS SCHOOL

Holger Rathgeber

"It is making a
difference for us."
—Tom Calkins, CEO,
Associated Press



Foreword by Spencer Johnson, M.D.,
author of *Who Moved My Cheese?*



Scottish Maternity Early Warning System



Booking BP: _____

Most Recent Weight / Gestation: _____ kg / _____ weeks

IF ANY CONCERN WITH CLINICAL CONDITION / RAPID DETERIORATION CALL URGENTLY FOR ASSISTANCE

Date:				
Time:				
Respiration rate is corresponding to:	21 - 24			
	10 - 20			
	58			
	98 - 100%			
Saturations	98 - 100%			
	94%			
Oxygen	1 L/min			
	2 L/min			
Temperature	37.5° - 37.9°			
	36.0° - 37.4°			
	36.0° - 36.4°			
	35.0°			
Heart Rate	180			
	170			
	160			
	150			
	140			
	130			
	120			
	110			
	100			
	90			
	80			
	70			
	60			
	50			
	Systolic blood pressure	210		
		200		
190				
180				
170				
160				
150				
140				
130				
120				
110				
100				
90				
80				
Diastolic blood pressure		140		
		130		
	120			
	110			
	100			
	90			
	80			
	70			
Neuro Response	Alert			
	Sleep			
	Unresponsive			
	Unresponsive			
Urine Output	<30ml/hr			
	>30ml/hr			
Looks Unwell	Yes			
	No			
Total Yellow Scores				
Total Red Scores				
Initials				

CONSIDER OBSTETRIC EMERGENCY CALL (2222) IF RAPID DETERIORATION

1 YELLOW

- > Repeat full set of observations in 30 minutes
- > If remains 1 yellow escalate as per local policy
- > Document action plan and MEWS frequency

2 YELLOW

- > Inform Midwife in charge and Obstetric FY2
- > If no response from Obstetric FY2 within 15 minutes escalate to middle grade Obstetrician (ST3 and above)
- > Repeat full set of observations within 30 minutes
- > Document action plan and MEWS frequency

1 RED OR CLINICAL CONCERN

- > Inform midwife in charge and Obstetric FY2
- > Repeat full set of observations in 15 - 30 minutes
- > If no medical review within 15 minutes or deterioration at any time, call middle grade obstetrician (ST3 and above)
- > If no medical review after further 15 minutes, call senior obstetrician or anaesthetist
- > Document medical action plan and MEWS frequency

ANYTHING MORE THAN 1 RED OR RAPID DETERIORATION OF MATERNAL CONDITION

- > Call midwife in charge and middle grade obstetrician (ST3 and above)
- > Repeat full set of observations in 5 - 15 minutes
- > If no medical review within 15 minutes, request senior obstetric or anaesthetic review
- > Consider HDU level care
- > Consider Obstetric emergency call (2222)
- > Document medical action plan and MEWS frequency

Maternal SEPSIS

NOTE: DO NOT DELAY ADMINISTRATION OF IV ANTIBIOTICS IF UNABLE TO OBTAIN BLOOD

MEWS trigger - THINK SEPSIS

CLINICAL SUSPICION OF INFECTION AND ANY 2 SIRS CRITERIA PRESENT

Temperature: <35°C or >38°C

Heart rate > 100 bpm

Respiratory Rate > 20 bpm

White Cell Count < 4 or > 16x10⁹/L

Woman looks acutely unwell

SEPSIS 6: Complete within 1 hour

GIVE 3

1. Give High Flow Oxygen to maintain Saturations ≥ 94%
2. Give IV Antibiotics (after blood cultures obtained) as per local guidance.
3. Give IV Fluids. Start with 500mls as bolus then consider 20ml/kg (exercise caution with

TAKE 2

1. Take blood cultures and infection screen.
2. Take Lactate and other bloods.

MONITOR 1

1. Monitor urine output (consider urinary catheter)

NOTE 1: Intrapartum women may have an elevated white cell count and temperature in labour without having SEPSIS

NOTE 2: Premature Rupture of Membranes (PROM) provides a path for bacteria to enter the uterus therefore an abnormal CTG after PROM should trigger suspicion of sepsis.

Thank you



@BernieMcCulloch

PROMPT: scaling up

Neil Muchatuta

Anaesthetic Lead and Trustee
PROMPT Maternity Foundation

What is PROMPT?



charity

training

research

How does PROMPT training work?

100%
of staff

know what to do
if an emergency
occurs



multi-professional
maternity staff are trained
together, in the workplace



every year
so your team are up-to-
date with best practice

In 2000...



Impact of training



50% reduced HIE
(hypoxic brain
injury)



40% quicker delivery
at emergency
caesarean
section



100% reduced
permanent
brachial plexus
injury

NHS England Maternity Review – 2016



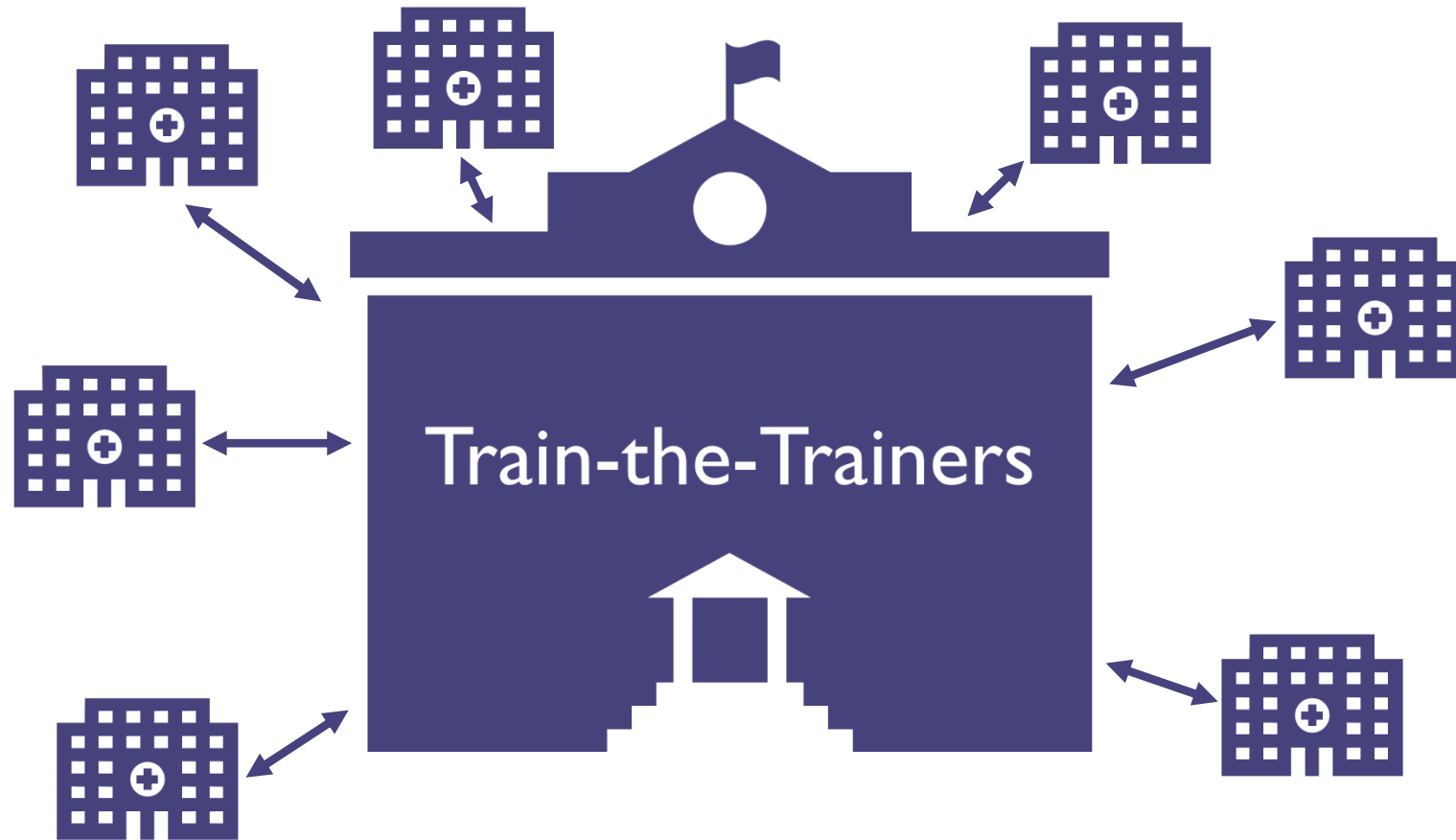
NATIONAL MATERNITY REVIEW

North Bristol NHS Trust – a framework for learning

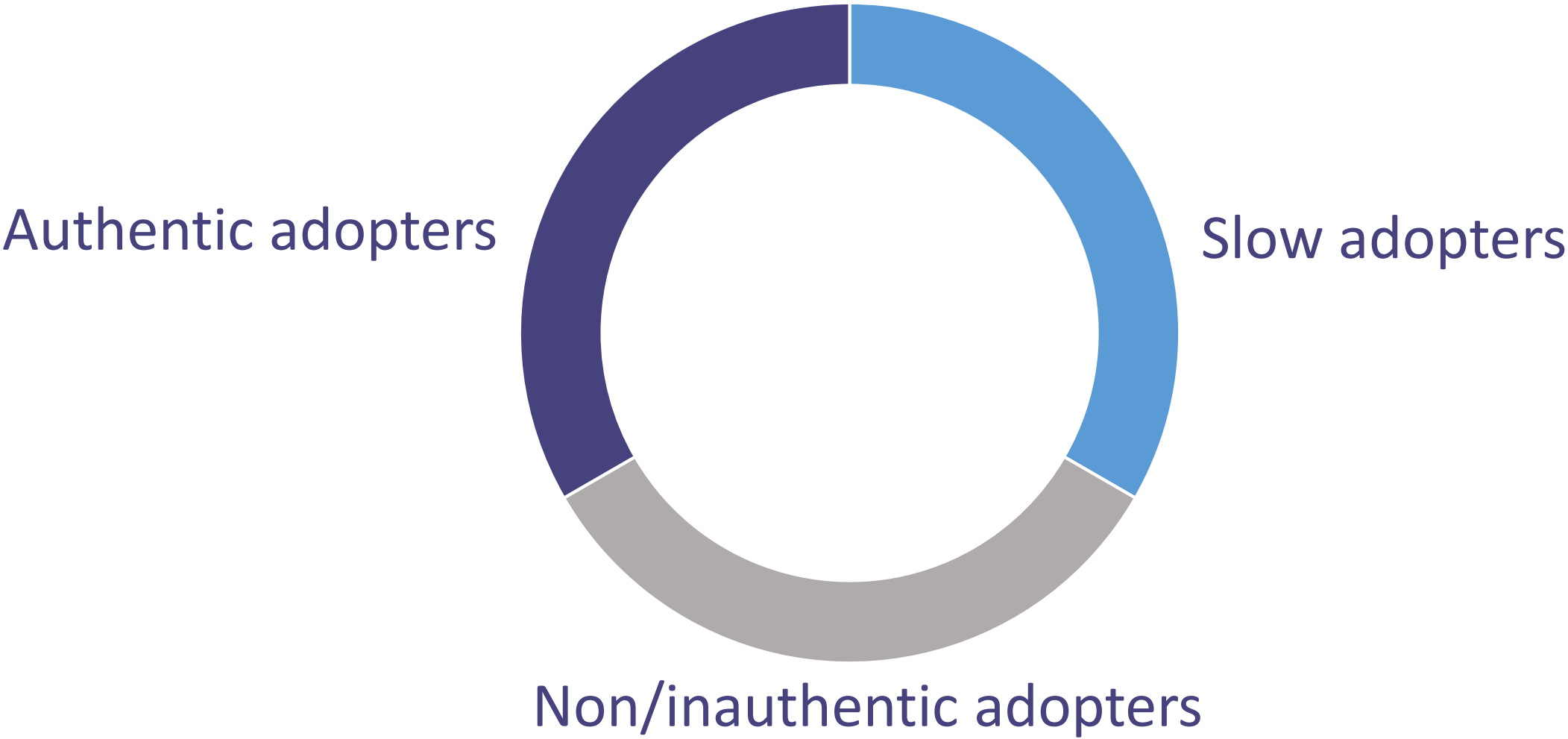
The maternity team at Southmead Hospital have designed an evidence-based multi-professional training programme (PRactical Obstetric Multi-Professional Training, "PROMPT") to improve outcomes for women and babies. The training, which takes place locally in clinical areas and a homebirth setting, is attended annually by all maternity staff: midwives, maternity theatre staff, maternity support workers, obstetricians and anaesthetists. Using practice-based tools, workshops and emergency drills with simple props, high fidelity mannequins and patient actors, PROMPT aims to optimize management of obstetric emergencies. Published research has demonstrated an association between PROMPT at Southmead and: a 50% reduction in babies born with a low Apgar score,⁸⁰ a 45% reduction in school-age cerebral palsy, a 100% reduction in permanent brachial plexus injury after shoulder dystocia, and a 91% reduction in litigation claims. PROMPT has been introduced in other countries – including the USA, Australia, and Zimbabwe – with similar published improvements in perinatal outcomes.

Early findings of an independent study led by the University of Leicester confirm that PROMPT develops high level technical skills as well as excellent team skills. But PROMPT cannot be treated as a one-off intervention; achieving safety requires constant effort and attention and genuine commitment by all team members, regardless of specialty or role. Early analysis also indicates that other features of the way the team at Southmead operates are important in the outcomes it has achieved, including: intelligent use of data, engagement in continuous improvement, and high-quality communication and relationships between team members. The full findings of this independent study are expected to be published in 2016.

Train-the-trainers model



PROMPT Scotland: THISTLE-Plus



Authenticity...



support and
coaching

PROMPT Australia

- 8 units trained across Victoria
- Improvements in Safety Attitudes/Culture
 - Teamwork
 - Safety
- Clinical outcomes:
 - Apgar < 7¹ min: 9.1% vs 7.7% $p < 0.001$
 - Cord lactate (> 5.27): 25 vs 23 $p < 0.028$
 - Baby length of stay: 2.85 vs 2.79 $p < 0.006$

Barnett et al. BJOG. 2014

PROMPT Australia



**The Royal Australian
and New Zealand
College of Obstetricians
and Gynaecologists**

Excellence in Women's Health



**50% reduction in
rates and costs of
litigation in
Victoria, Australia**

PROMPT Australia



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and New Zealand
College of Obstetricians
and Gynaecologists**

Excellence in Women's Health



PROMPT Wales



GIG
CYMRU
NHS
WALES

Partneriaeth
Cydwasaethau
Gwasanaethau Cronfa Risg Cymru

Shared Services
Partnership
Welsh Risk Pool Services



CYMRU / WALES
PROMPT

PRactical Obstetric Multi-Professional Training
Hyfforddiant Aml-broffesiynol Ymarferol mewn Obstetreg

Where next with scaling PROMPT?



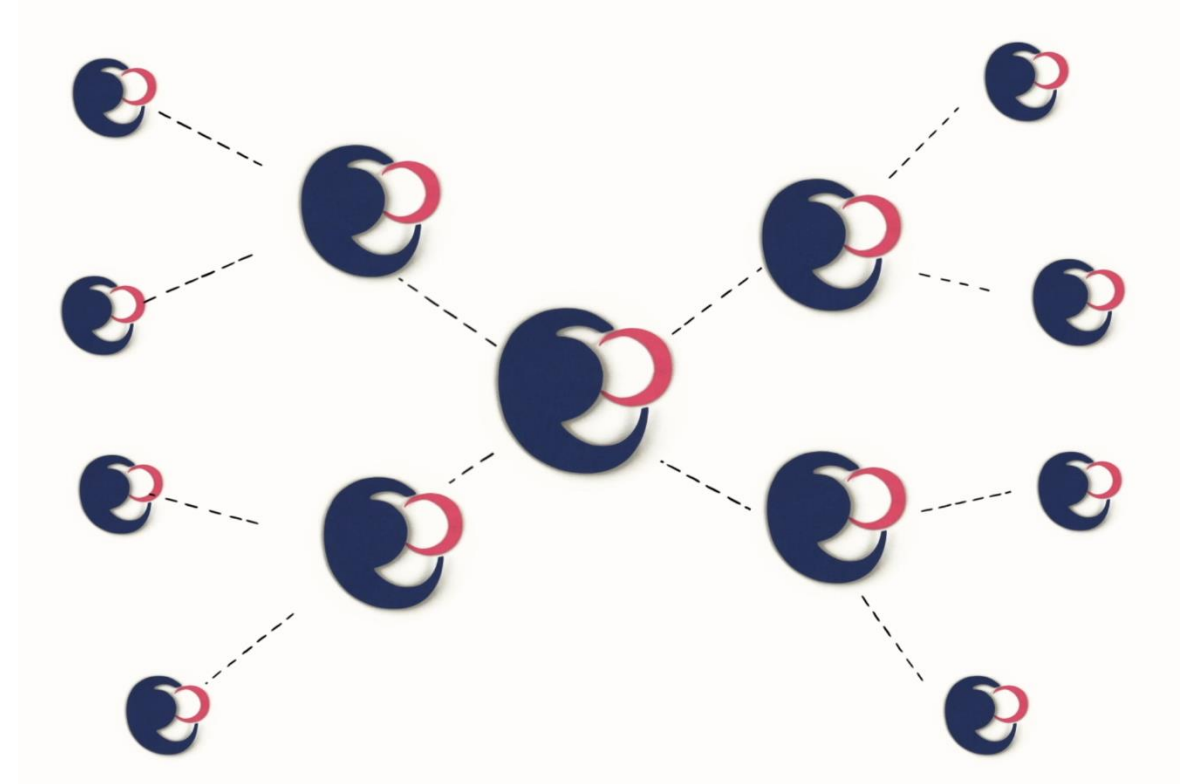
‘Social’ franchising



Where next with scaling PROMPT?



Where next with scaling PROMPT?



Thank you

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World Café

Presenting teams will move around tables for discussion around presentation contents

20 minutes per table

This is your opportunity to learn and share

You will receive a 5 minute warning before the end of the allocated time to consider 3 key learning points

After 20 minutes, the presenting teams will move to the next table