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Using a Management System to Drive and Sustain Quality Results

Gary S. Kaplan, MD, Chairman/CEO
Virginia Mason Medical Center
Seattle, Washington

Declaration of Conflict of Interest or Relationship

- Speaker: Gary S. Kaplan, M.D.
- I have no conflict of interest to disclose with regard to this presentation

Key Messages

- Delivering reliable, high quality care requires having an improvement system and a management method.
- A world class management system is dependent on leadership behaviors and standard work to create reliability and continuous improvement.
- Share how the improvement method and management system support creating flow using inpatient nursing and outpatient care as examples.

“Safety and quality efforts applied on a project by project basis may produce results but is rarely sustainable and never leads to zero harm.”

Mark Chassin, MD
President and CEO,
Joint Commission

“System Science and innovation is the next massive major opportunity to advance human well-being and health.”

Atul Gwande, MD

Virginia Mason Health System

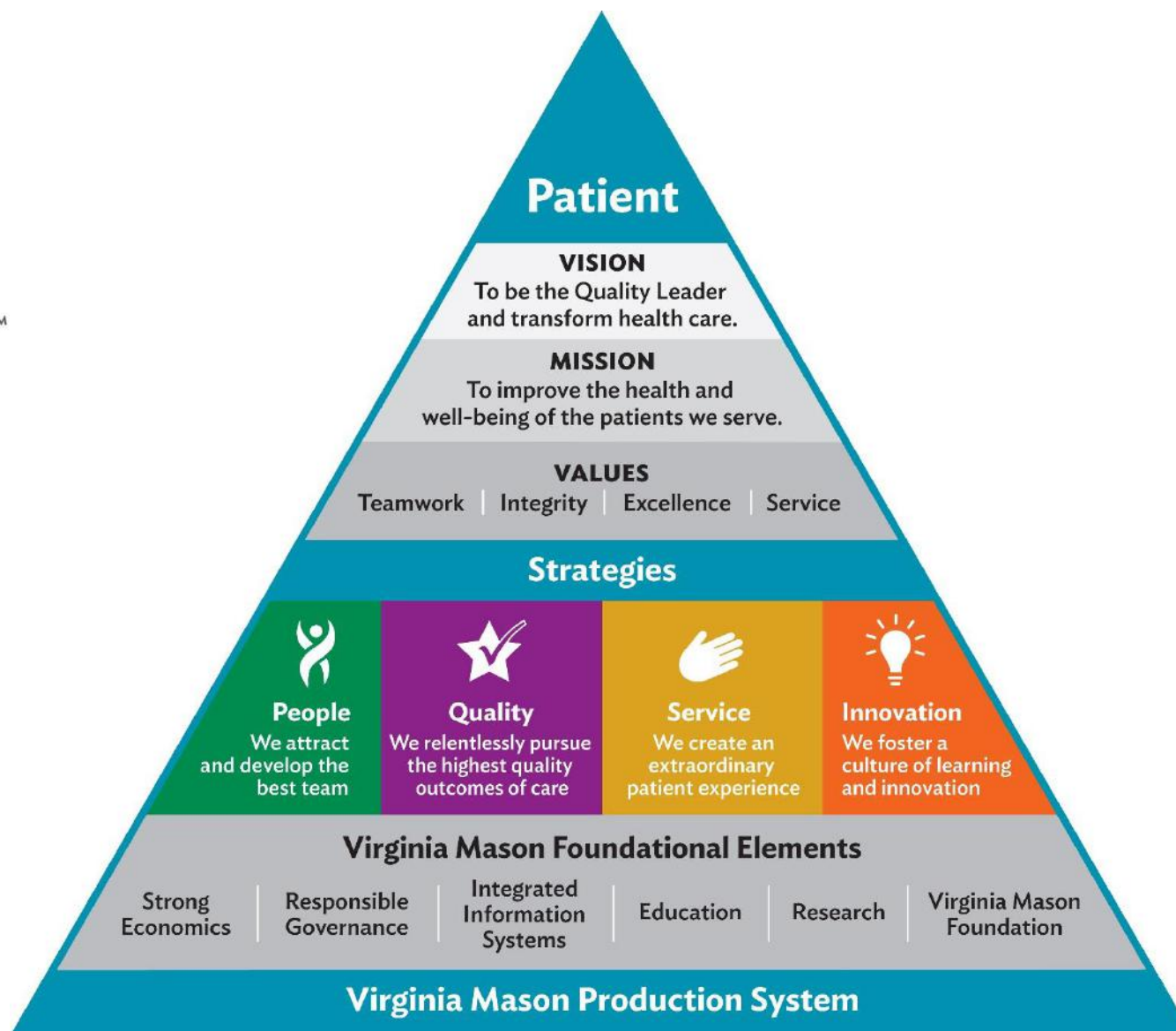


- Integrated health care system
- 501(c)3 not-for-profit
- Two hospitals
 - Virginia Mason Medical Center, Seattle
 - Virginia Mason Memorial, Yakima
- 40+ medical clinics
- Graduate Medical Education
- 1,100+ physicians
- 8,400+ employees
- Benaroya Research Institute
- Virginia Mason Institute
- Strategic Affiliation and Clinical Partnership with CHI Franciscan

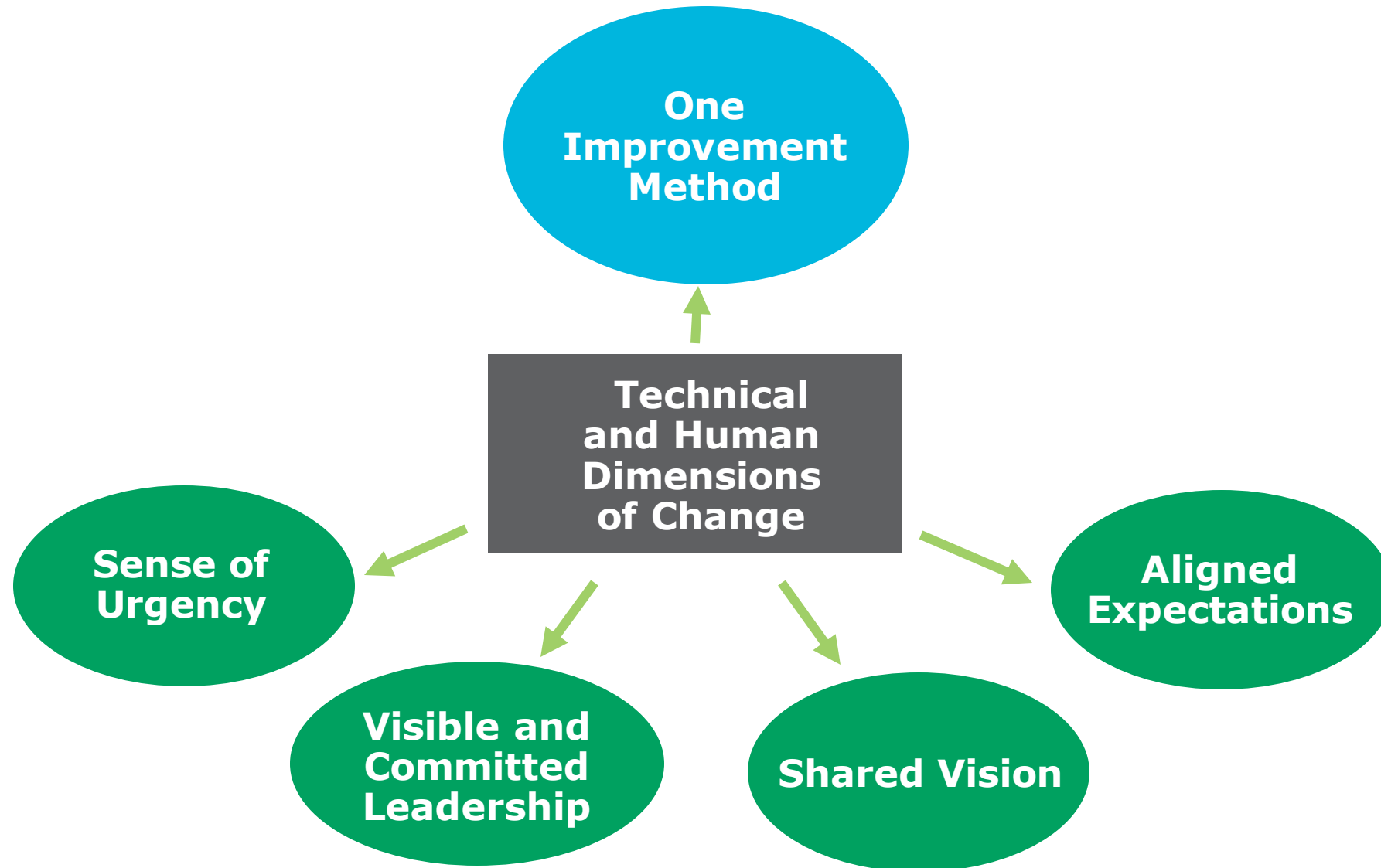


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OUR STRATEGIC PLAN

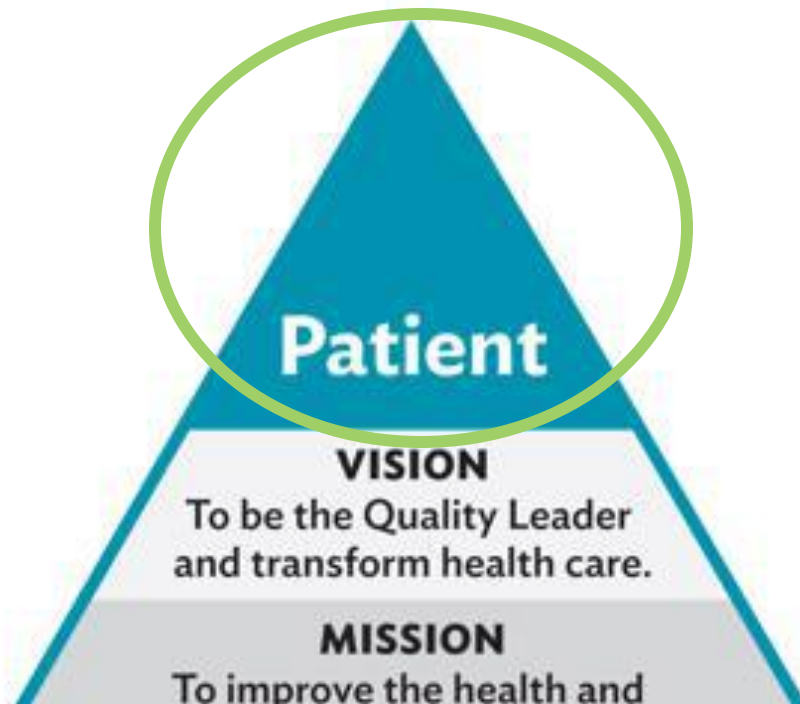


Requirements for Transformation



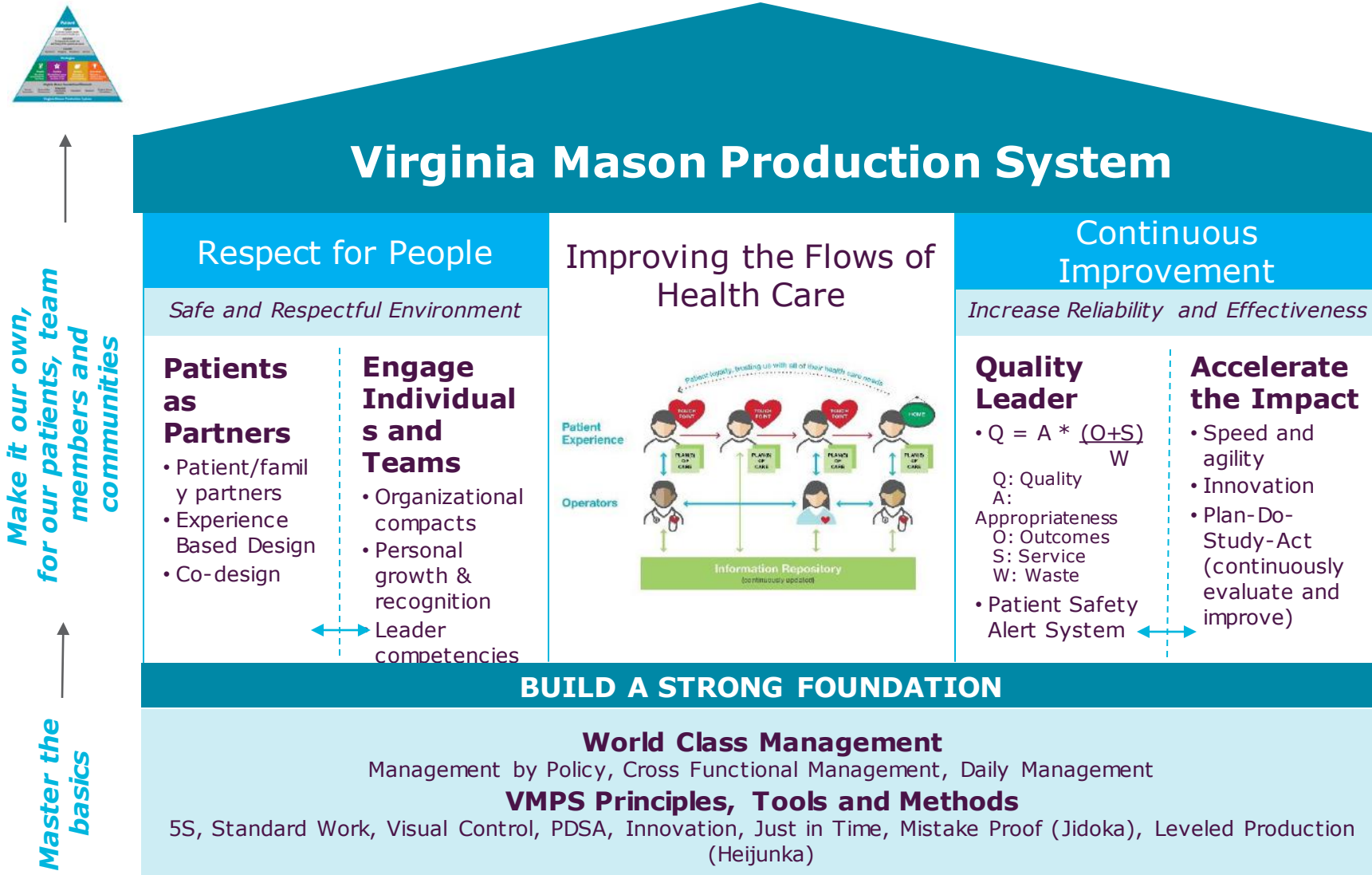
The Virginia Mason Production System

We adopted the Toyota Production System key philosophies and applied them to healthcare



1. The patient is ***always*** first
2. Focus on quality and safety
3. Engage all employees
4. Strive for the highest satisfaction
5. Maintain a successful economic enterprise

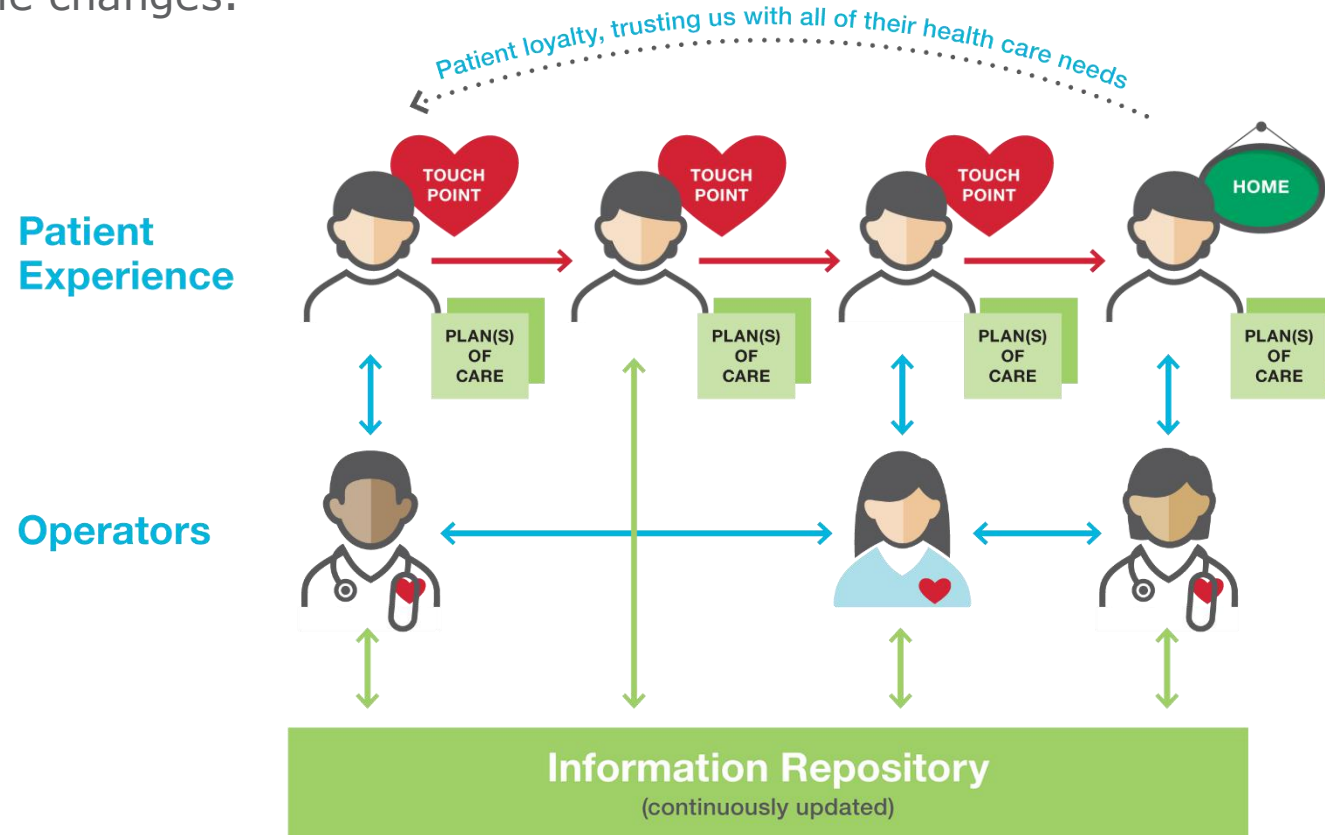
VMPS Evolution: Virginia Mason House



Flows of Health Care

People are not cars... what makes health care unique?

- People caring for people to improve their health and well-being.
- Patients have individual emotions and values and are an equal partner in designing their care processes.
- Plans of care can change at each step in the journey as the information available changes.



In a World Class Management System

Leaders have two jobs:

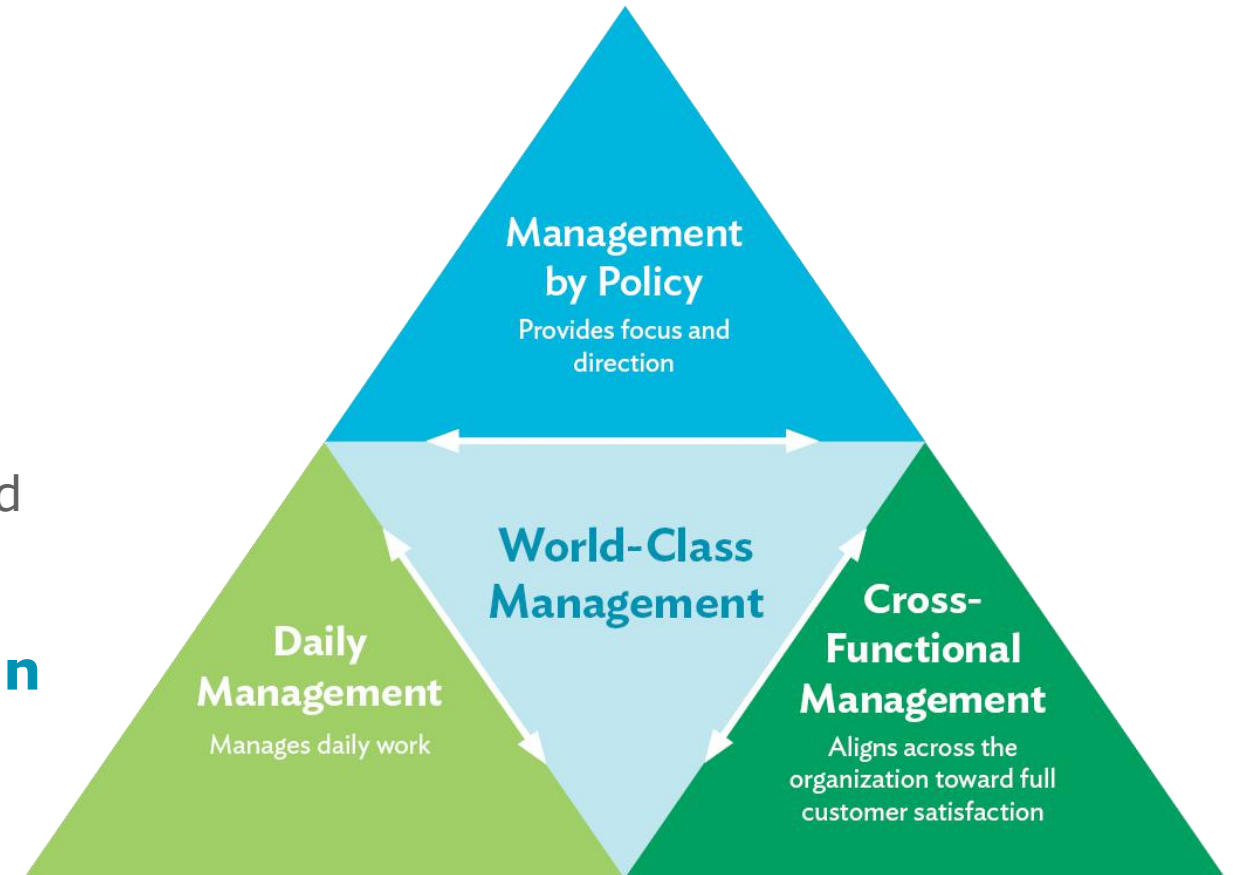
1. Run your business
2. Improve your business

Creating stability and reliability

Leaders engage in daily activities and behaviors to identify abnormal conditions and ensure customer demand is met.

Leading improvement and innovation

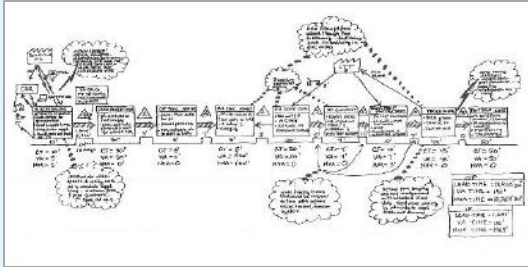
Leaders create kaizen plans, lead improvement and innovation events and activities, and coach everyday lean ideas.



Superhero Leadership Doesn't Work



The New Leaders



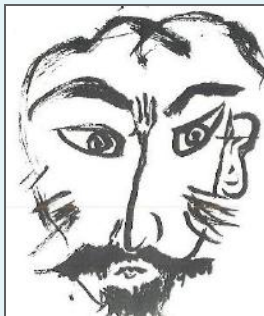
System thinker



Coach



Problem framer



"Go and see"



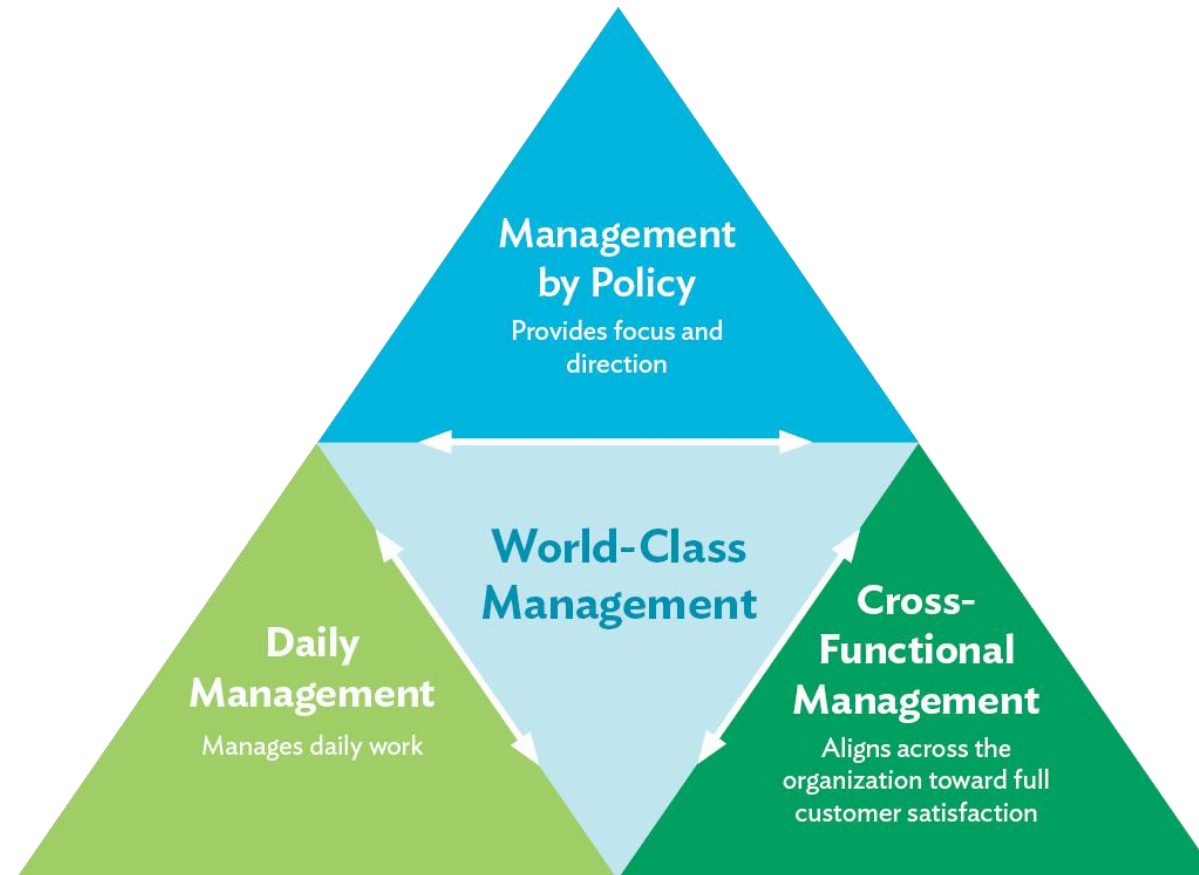
Learner

GENBA	Follow-Up
AM	Review Issues Board for items in ORANGE status
Mid-Day	These items are:
PM	- New Issues
Complete Rounding form	- Have updates/Changes
Quality Check- (Did they fill out EPB?)	- Require Assistance
Applause	
NOTES	
	Transparent Management Questions
	- What is working well for you?
	- Are there any barriers I can remove?
	- What is not working well for you?
	- Is there anyone I should recognize for good work?
	- How are you & LU's coming?
	- May I help you with your LU's?

Follows leader standard work

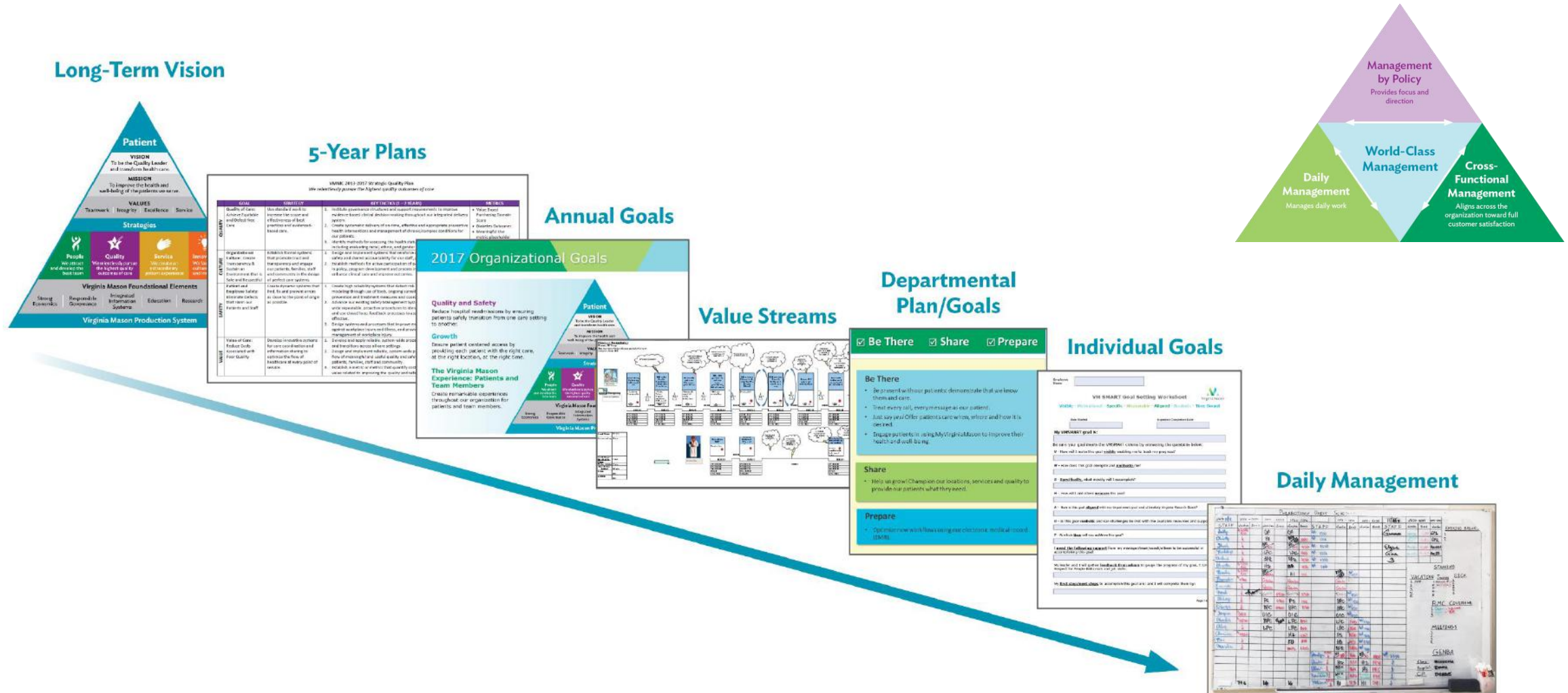
World-Class Management

The world-class management system is a leadership system that provides focus, direction, alignment, and a method of management for daily work.



Management by Policy

Aligning vision and strategy from the boardroom to the front line



Creating Accountability: Tier Reporting

Tier 1 Reporting:

Senior executive leadership reports updates on key metrics to the board of directors



"Stand Up" Tier 2 Reporting:

Vice presidents, KPO and administrative directors report updates on key metrics to the chief executive officer



PeopleLink Tier 3 Reporting:

Managers report to department staff and administrative directors

**How well does your organization do
at communicating its most
important work?**

Cross-Functional Management

Creating accountability across a value stream



Orthopedic Value Stream



Throughout the patient's experience we will improve

Home → Access to Clinic → Clinic Day of Visit → ED Length of Stay → Acute Length of Stay → Home

Quality of Care

- Surgical variability (smoothing patient flow)
- Falls with injury
- Readmissions
- Hospital-induced delirium
- Glycemic control
- Sepsis
- Hypertension

Supply Chain

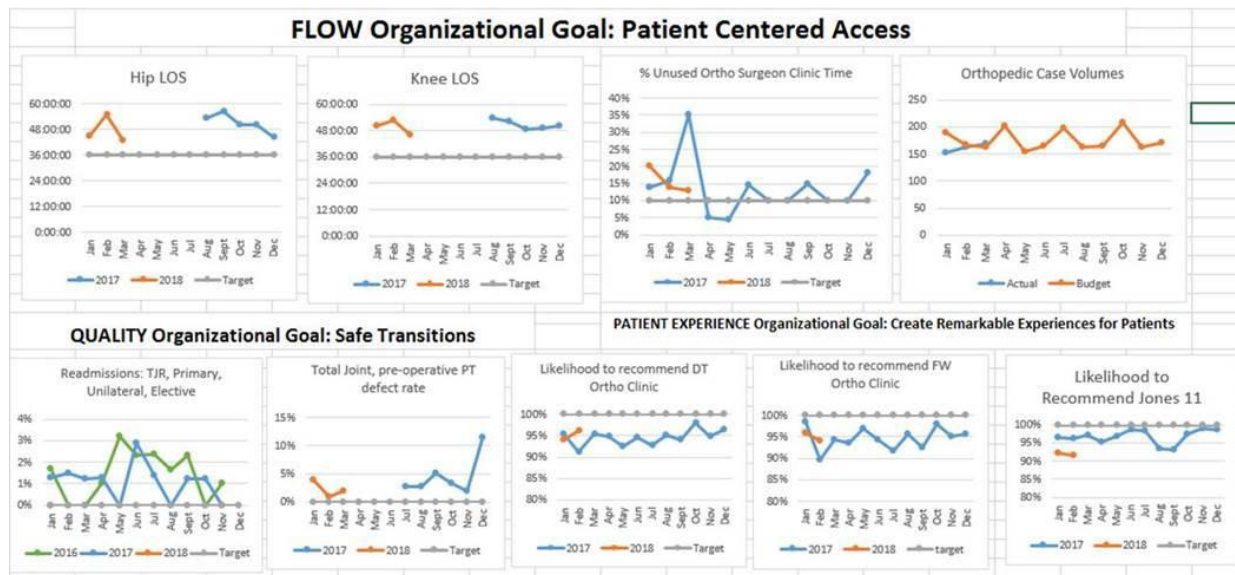
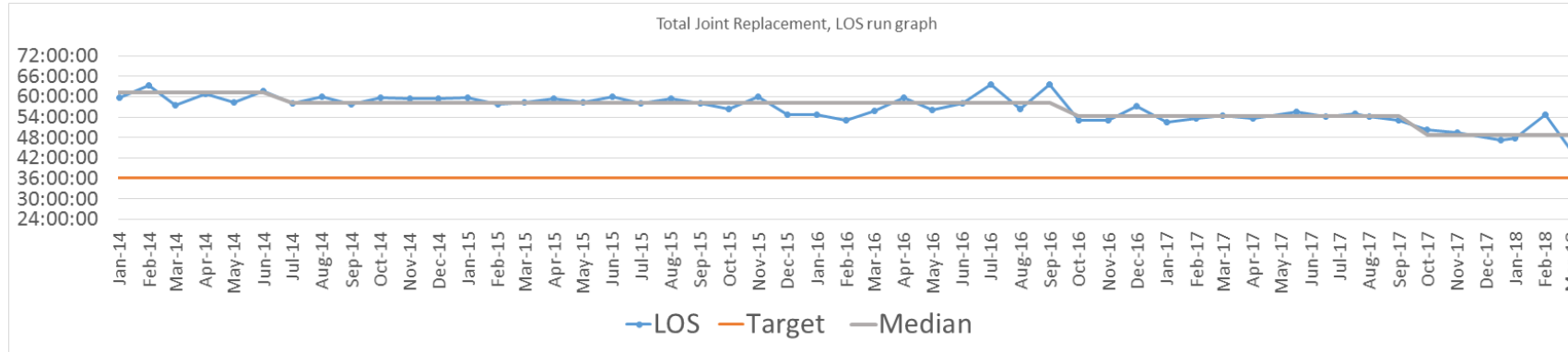
- The right supplies are available when and where they are needed – just-in-time (JIT).

Daily Management

- The system we use to perform daily activities – standardize operations and identify and eliminate waste with root-cause analysis. Our system uses data to ensure we are continuously improving our business.

Cross-Functional Management

Orthopedic Value Stream Targets – Weekly, Monthly, Yearly

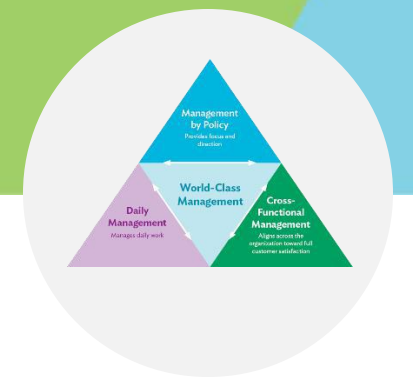


Tied to Goals:

- Access
- Quality
- Patient Experience
- Financials

Daily Management

Daily or weekly team huddles



Share information on improvement activity, status of work, update on goal work, and countermeasures required.



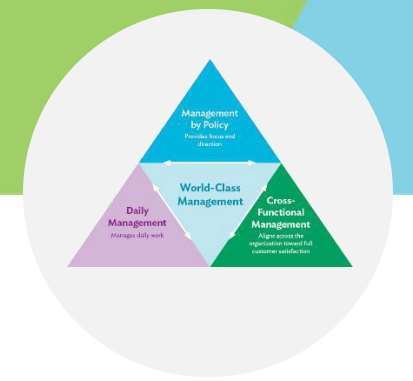
Example: Laboratory



Example: Health Information Services

Daily Management

Daily: flow, demand, capacity



OR Production Board

Time	Name	Procedure	Status
8:30	Johnson, David	Open Prost.	On Hold
9:00	Johnson, David	Open Prost.	On Hold
9:30	Johnson, David	Open Prost.	On Hold
10:00	Johnson, David	Open Prost.	On Hold
10:30	Johnson, David	Open Prost.	On Hold
11:00	Johnson, David	Open Prost.	On Hold

Anesthesia Daily Schedule

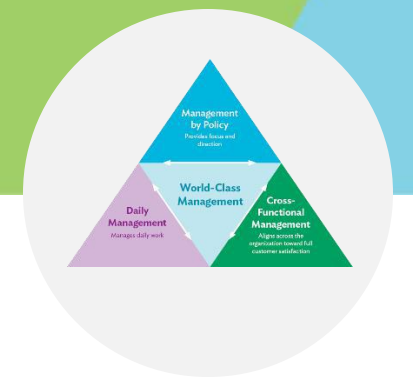
Date	Time	Provider
10/27/2017	8:00 AM	Dr. Smith
10/27/2017	9:00 AM	Dr. Jones
10/27/2017	10:00 AM	Dr. Brown
10/27/2017	11:00 AM	Dr. White
10/27/2017	12:00 PM	Dr. Green
10/27/2017	1:00 PM	Dr. Black
10/27/2017	2:00 PM	Dr. Red
10/27/2017	3:00 PM	Dr. Blue
10/27/2017	4:00 PM	Dr. Yellow
10/27/2017	5:00 PM	Dr. Purple
10/27/2017	6:00 PM	Dr. Grey
10/27/2017	7:00 PM	Dr. Silver
10/27/2017	8:00 PM	Dr. Gold
10/27/2017	9:00 PM	Dr. Bronze
10/27/2017	10:00 PM	Dr. Copper
10/27/2017	11:00 PM	Dr. Nickel
10/27/2017	12:00 AM	Dr. Zinc
10/27/2017	1:00 AM	Dr. Iron
10/27/2017	2:00 AM	Dr. Steel
10/27/2017	3:00 AM	Dr. Tin
10/27/2017	4:00 AM	Dr. Lead
10/27/2017	5:00 AM	Dr. Bismuth
10/27/2017	6:00 AM	Dr. Antimony
10/27/2017	7:00 AM	Dr. Arsenic
10/27/2017	8:00 AM	Dr. Selenium
10/27/2017	9:00 AM	Dr. Tellurium
10/27/2017	10:00 AM	Dr. Polonium
10/27/2017	11:00 AM	Dr. Astatine
10/27/2017	12:00 PM	Dr. Francium
10/27/2017	1:00 PM	Dr. Radium
10/27/2017	2:00 PM	Dr. Actinium
10/27/2017	3:00 PM	Dr. Thorium
10/27/2017	4:00 PM	Dr. Protactinium
10/27/2017	5:00 PM	Dr. Uranium
10/27/2017	6:00 PM	Dr. Neptunium
10/27/2017	7:00 PM	Dr. Plutonium
10/27/2017	8:00 PM	Dr. Americium
10/27/2017	9:00 PM	Dr. Curium
10/27/2017	10:00 PM	Dr. Berkelium
10/27/2017	11:00 PM	Dr. Californium
10/27/2017	12:00 AM	Dr. Einsteinium
10/27/2017	1:00 AM	Dr. Fermium
10/27/2017	2:00 AM	Dr. Mendelevium
10/27/2017	3:00 AM	Dr. Nobelium
10/27/2017	4:00 AM	Dr. Lawrencium
10/27/2017	5:00 AM	Dr. Rutherfordium
10/27/2017	6:00 AM	Dr. Dubnium
10/27/2017	7:00 AM	Dr. Seaborgium
10/27/2017	8:00 AM	Dr. Bohrium
10/27/2017	9:00 AM	Dr. Hassium
10/27/2017	10:00 AM	Dr. Meitnerium
10/27/2017	11:00 AM	Dr. Darmstadtium
10/27/2017	12:00 PM	Dr. Roentgenium
10/27/2017	1:00 PM	Dr. Copernicium
10/27/2017	2:00 PM	Dr. Nihonium
10/27/2017	3:00 PM	Dr. Flerovium
10/27/2017	4:00 PM	Dr. Tennessine
10/27/2017	5:00 PM	Dr. Oganesson

Hospital Huddle

Date	Time	Patient Name
10/27/2017	8:00 AM	John Doe
10/27/2017	9:00 AM	Jane Smith
10/27/2017	10:00 AM	Bob Johnson
10/27/2017	11:00 AM	Alice Brown
10/27/2017	12:00 PM	Charlie White
10/27/2017	1:00 PM	Diana Green
10/27/2017	2:00 PM	Frank Black
10/27/2017	3:00 PM	Grace Yellow
10/27/2017	4:00 PM	Henry Blue
10/27/2017	5:00 PM	Ivy Purple
10/27/2017	6:00 PM	Jack Grey
10/27/2017	7:00 PM	Karen Silver
10/27/2017	8:00 PM	Leo Gold
10/27/2017	9:00 PM	Mia Bronze
10/27/2017	10:00 PM	Noah Copper
10/27/2017	11:00 PM	Olivia Nickel
10/27/2017	12:00 AM	Peter Zinc
10/27/2017	1:00 AM	Quinn Iron
10/27/2017	2:00 AM	Rachel Steel
10/27/2017	3:00 AM	Sam Tin
10/27/2017	4:00 AM	Tina Lead
10/27/2017	5:00 AM	Uma Bismuth
10/27/2017	6:00 AM	Victor Antimony
10/27/2017	7:00 AM	Wendy Arsenic
10/27/2017	8:00 AM	Xavier Selenium
10/27/2017	9:00 AM	Yara Tellurium
10/27/2017	10:00 AM	Zoe Polonium
10/27/2017	11:00 AM	Adam Astatine
10/27/2017	12:00 PM	Bella Francium
10/27/2017	1:00 PM	Carl Radium
10/27/2017	2:00 PM	Dora Actinium
10/27/2017	3:00 PM	Ethan Thorium
10/27/2017	4:00 PM	Fiona Protactinium
10/27/2017	5:00 PM	George Uranium
10/27/2017	6:00 PM	Helen Neptunium
10/27/2017	7:00 PM	Ian Plutonium
10/27/2017	8:00 PM	Jane Americium
10/27/2017	9:00 PM	Kyle Curium
10/27/2017	10:00 PM	Laura Berkelium
10/27/2017	11:00 PM	Mark Californium
10/27/2017	12:00 AM	Nancy Einsteinium
10/27/2017	1:00 AM	Oscar Fermium
10/27/2017	2:00 AM	Pamela Mendelevium
10/27/2017	3:00 AM	Paul Nobelium
10/27/2017	4:00 AM	Quinn Lawrencium
10/27/2017	5:00 AM	Rachel Rutherfordium
10/27/2017	6:00 AM	Sam Dubnium
10/27/2017	7:00 AM	Tina Seaborgium
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10/27/2017	3:00 PM	Bella Flerovium
10/27/2017	4:00 PM	Carl Tennessine
10/27/2017	5:00 PM	Dora Oganesson

Daily Management

Genba rounds and checking standard work



AGENDA			
Date: 08/14/13		Purpose: In a brief structured conversation, we will see the work, discuss issues and identify our commitments to improve our business. By doing this, we will strengthen accountability, allow for mutual learning and add clarity of expectations with the focus on results.	
Time:		To be completed by site leader & sent to Executive and AD prior to day of genba rounding.	
Location:			
Meeting Length: 30mins			
	Agenda Item <i>Presenter</i>	C/T	Comments/Suggestions/Action Items
1	Review: Introduction of roles within genba round and purpose of rounding. <i>Executive</i>	1	
2	Review status of commitments made in last rounding <i>Operational D/AD</i>	2	
3	Genba time: - People link (includes foundational elements- if appropriate) - Production board - Kaizen activity/plan - Genba observation - Visual Sweep - Flow Success to Highlight:	20-25	
4	Foundational Elements o Geographic Assignments o Daily Huddle o In Room Handoffs o RN/PCT Integration o Hourly rounding o Documentation Near the Patient o Daily Leader Rounds o Safe Medication Administration		
5	Offstage <i>Site Leader(s)</i> -Leader standard work -Debrief • What did we see • What did we learn • What needs to move forward -Commitments • Clear and mutual expectations for follow-up <i>All</i>	5	



Go to the place, look at the process, talk with the people

Daily Management

Engaging employees daily in improvement



- Employees trained in the common method: VMPS
- Involve employees in improving their own work with everyday improvement ideas, rapid process improvement workshops, and kaizen events
- Participating in goal-related work



Everyday Lean Idea Worksheet

Make sure the following are true:

- ☐ Any patient safety concern has also been reported as a Patient Safety Alert.
- ☐ I can work on this idea by myself or with teammates. (If not, ask your supervisor for guidance on where to direct the issue.)
- ☐ I have arranged for support and coaching by my supervisor.

Date: _____

Idea contributor names and work team: _____

Title describing the problem: _____

What is the problem? What did you discover about the root cause when you asked **why** five times? _____

What is my idea? _____

How did I test my idea? Collect evidence to show whether the idea works. (Examples: Try it with 10 patients. Have the team use it for a week to see if it solves the problem. Stop producing it and observe for a month to see if it helps or hurts.) _____

Which waste did my idea address? ☐ Defects ☐ Inventory ☐ Motion ☐ Processing ☐ Overproduction ☐ Time ☐ Transportation

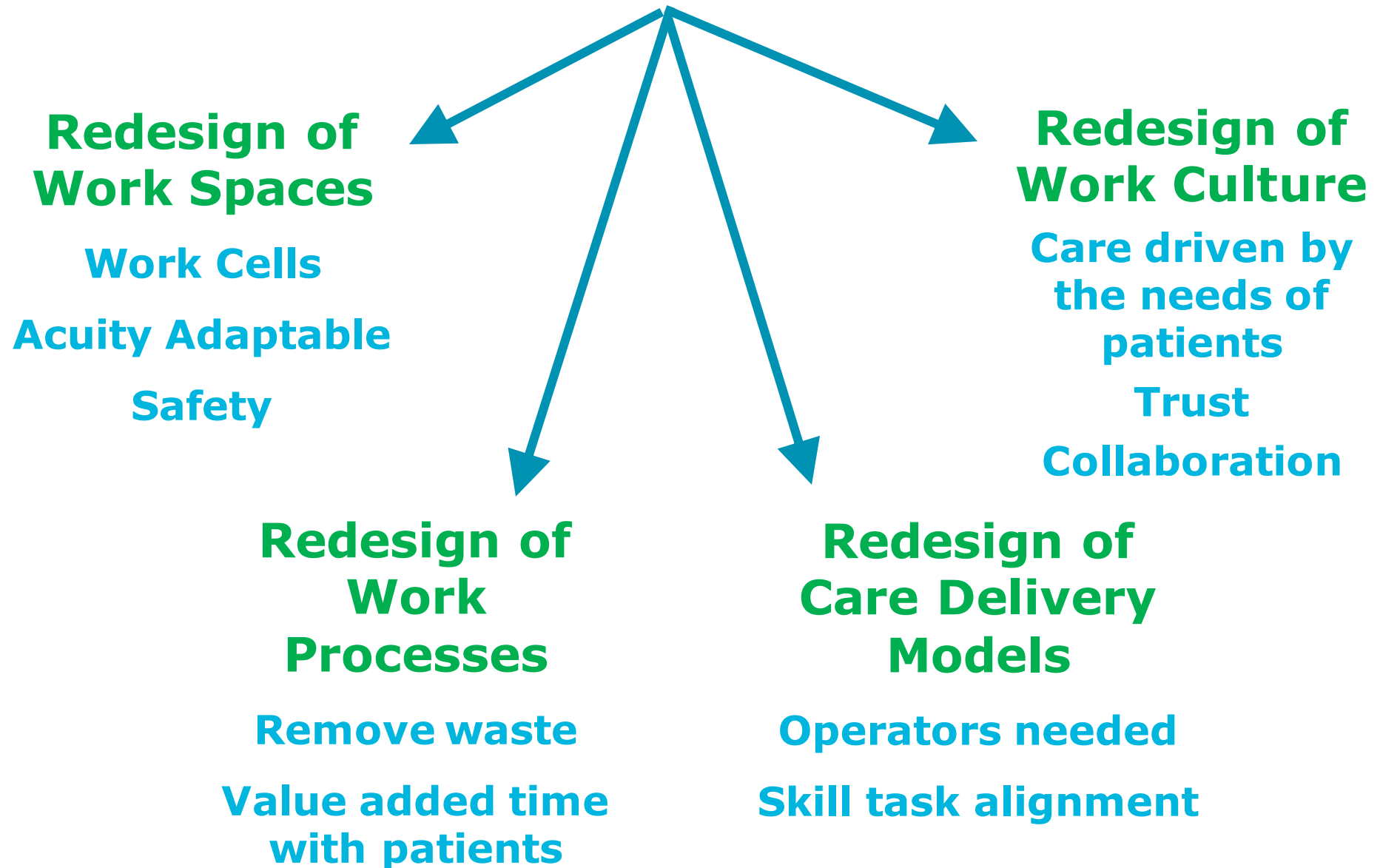
How did my idea impact the waste? (Examples: Saved 28 minutes in processing! Helped me achieve \$1,250 reduction in inventory. Eliminated a potential defect.) _____

Finishing the idea: ☐ My final idea and results have been viewed by my supervisor. ☐ I have implemented the idea. ☐ I will not be implementing the idea because of the test results. (You can still share it with your team for the sake of learning and celebrating the effort.)

Everyday Lean Idea
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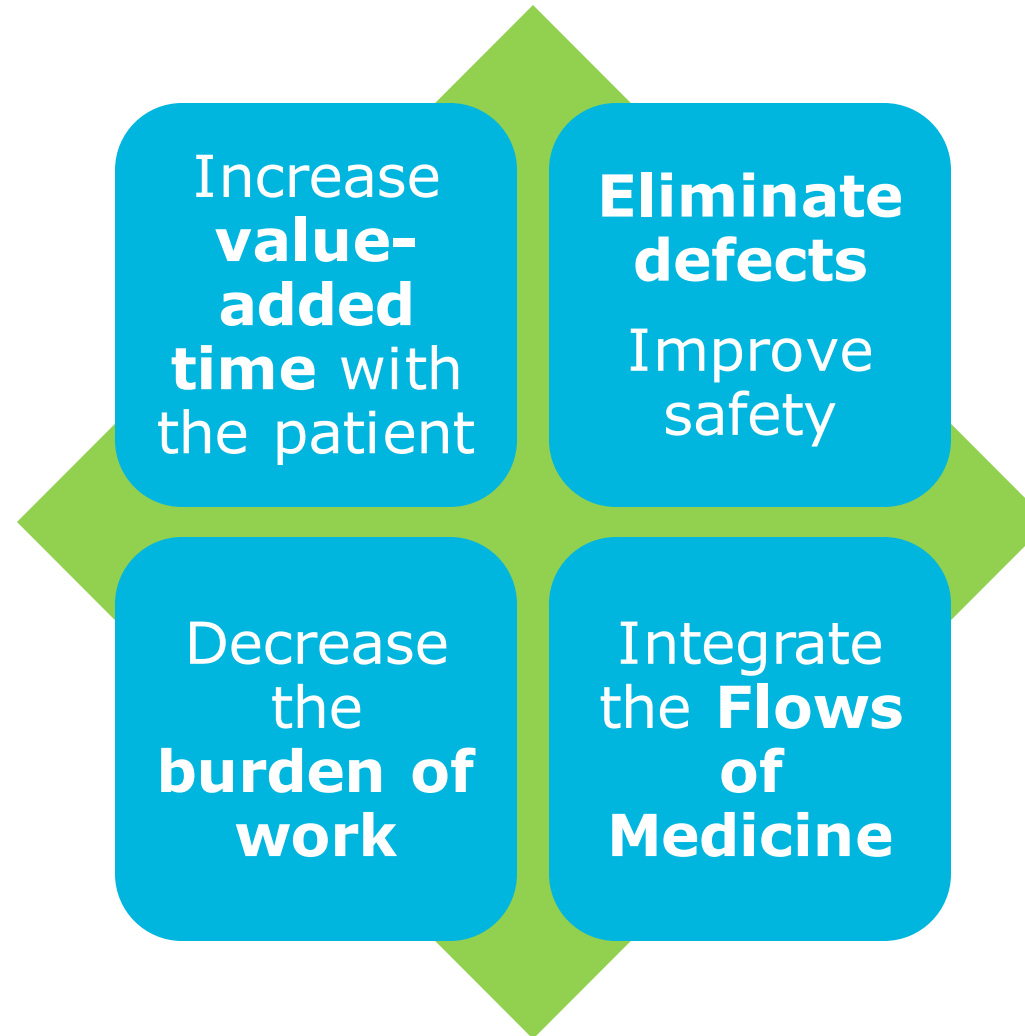
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Whole System Redesign



Virginia Mason Production System

Applications in nursing

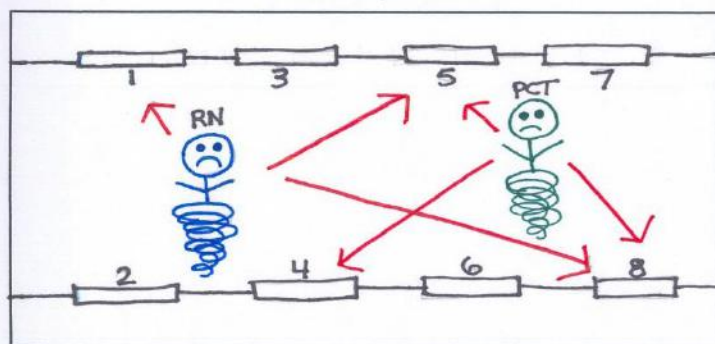


"Nursing Cells" – The Idea

RAPID PROCESS IMPROVEMENT WORKSHOP IDEA FORM

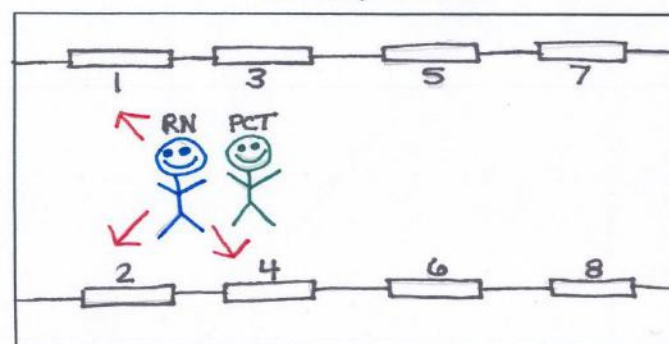
Employee / Area	Problems	Measures Taken	Results
RN / PCT assignment patient room assignment	<ul style="list-style-type: none"> • RN works \pm multiple PCTs + visaversa. • RN assignment spread throughout entire hallway due to pt. acuties • High risk patients clustered at nurse station • Geographical location of RN/PCT not of highest priority 	<ul style="list-style-type: none"> • Create / diagram "cells" of rooms to be assigned to RN/PCT. • PCTs will work \pm only 2 RNs in adjacent cells. • Cells will be rooms of close geographical proximity \pm RN + PCT working in a more synchronized flow • High risk patients 	<ul style="list-style-type: none"> • With RN + PCT both working in a cell, patient surveillance increased. • RN leaves cell less frequently • \downarrow call lights • \uparrow risk pts spread with level loading of cells • easier for RN/PCT to locate each other for assistance

Before Improvement



Remarks:

After Improvement



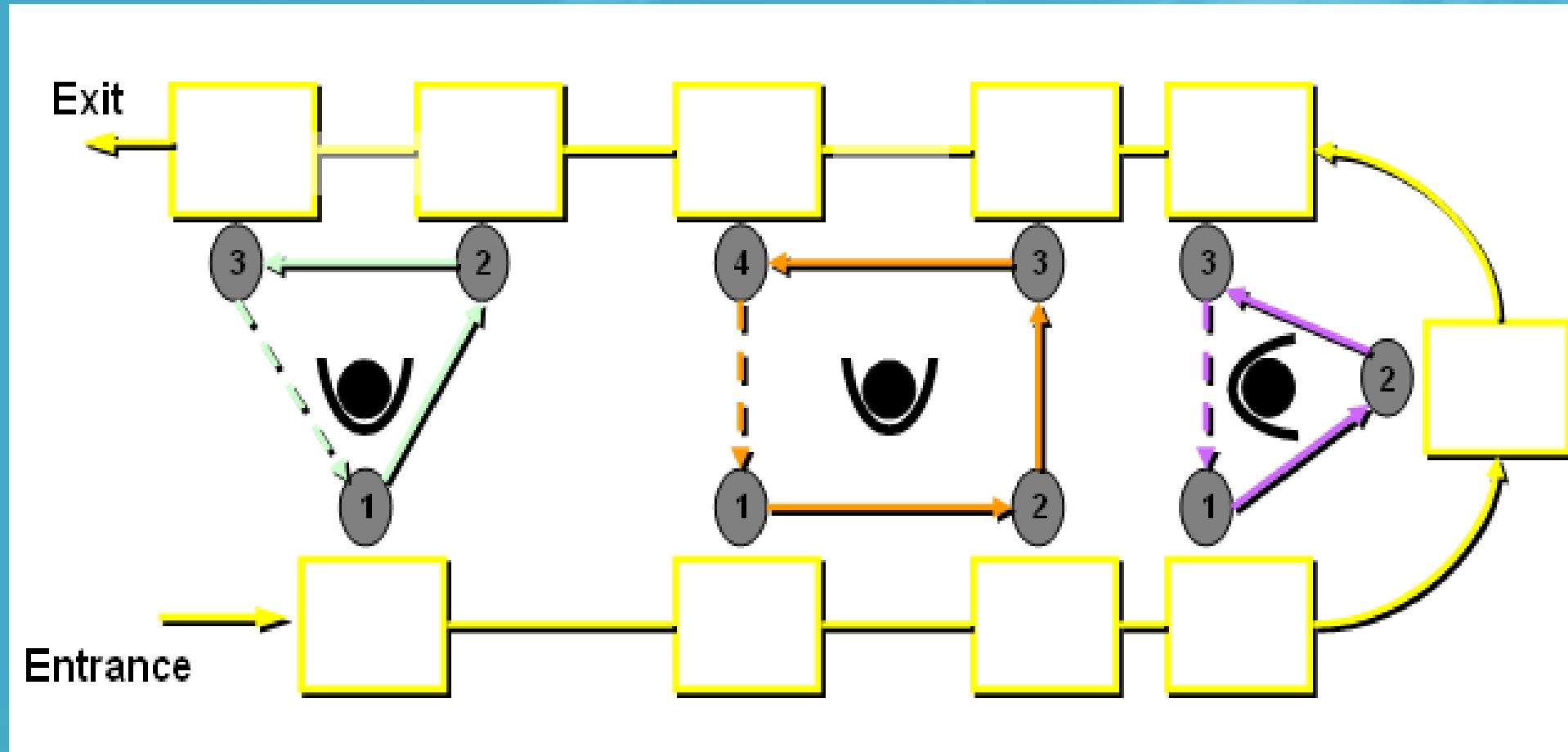
Name: Rowena

6

Application of Virginia Mason Production System Principles in Nursing

- Increase RN and PCT value added time with the patient
- Eliminate defects and improve safety
- Decrease “burden of work” for staff
- Integrate flow of patient, provider, medications, supplies, equipment and information
- Decrease lead time

The Best Arrangement is Often a "U" Shape



Foundational Elements Of Nursing Workflow

- Geographic assignments
- RN:PCT integration
- Documentation near the patient
- In-room handoffs
- Huddles every shift
- Hourly rounds by caregivers
- Daily Leader Rounds
- PeopleLink Boards

A place for everything and everything in its place.

- 5S is a **visually-oriented** system for **organizing the workplace** to minimize the waste of time.
- Enhances **quality and productivity**
- Make things easier to find and **problems or the abnormal more** visible.
- **Just in time** supplies and equipment increase time with the patient

Unit



Patient Room



Supermarket System

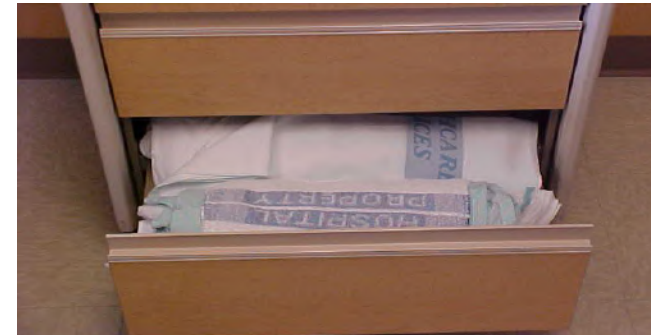
Enhancing staff workflows



Two bin system



Frequently used supplies at bedside



**In-room linen supplied daily
by housekeeper**

Bedside Handoff Standard work

What

Bedside Handoff Checklist	
1 Introduction	
> Name of oncoming RN and assistant	
> Explains handoff process	
> Inquires how patient is feeling	
2 Background (Basics)	
> Age, MD, reason for admission	
> Isolation	
3 Current status	
> Brief history	
> Functioning prior to admission	
> Key medications	
> Tests for the day	
4 Assessment	
> Patient identification	
> High risk meds	
> IV	
> Physical assessment	
> Precautions/Skin/Wound	
> Patient input	
5 Recommendations	
> Plan of the Day	
> Safety concerns	
> Patient issues	
6 Closing	
> "Is there anything you need at this time?"	
> Determine when will return	

Why

- Introduction of oncoming caregivers
- Involve patient and family in the discussion
- Build in safety
- Adds time with patient

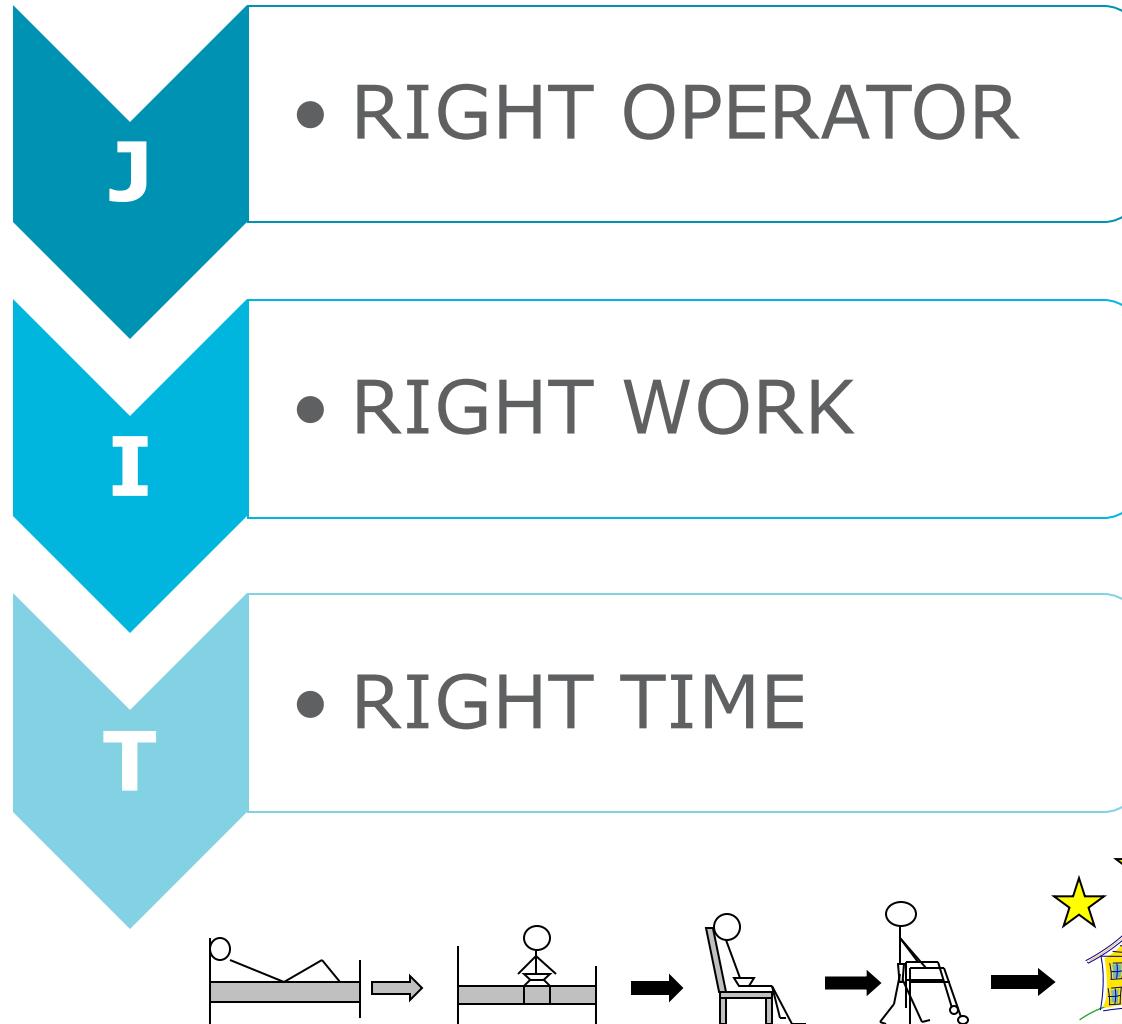
One-Piece Flow

Documentation in room or close to patients



Skill Task Alignment

Flow at discharge

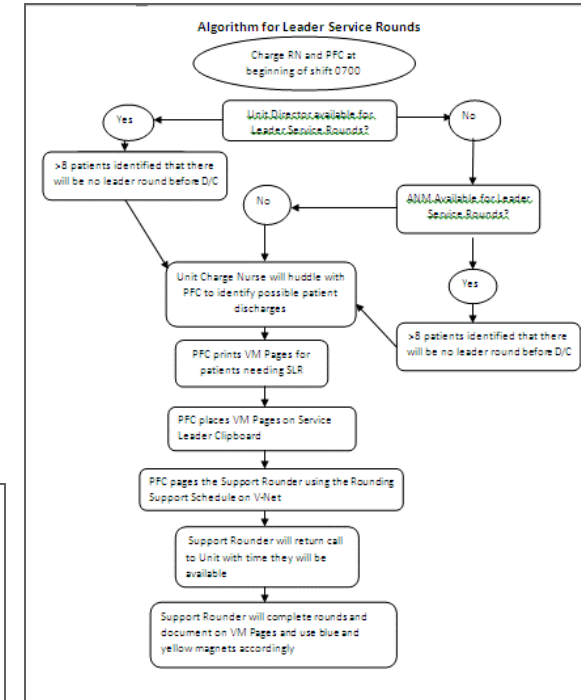


Daily Leader Rounding

Standard process so that every patient receives a service round from unit leader during their stay

- Visual Control
- Standard Work

Standard Process Description: Leader Rounding Scheduling					TEAM MEDICINE
Quality Check		Safety Precaution	Standard WIP		
◆		+	●		
Purpose: Scheduling leader service rounds and Leader coverage					
Related Policies or Evidence: Standard Work for Leaders					
Roles/Work Units Who Must Adopt This Process: All in-patient hospital units			Task Time:		
STEP	OPER- ATOR	TASK DESCRIPTION	TOOLS/SUPPLIES REQUIRED	CYCLE TIME	
1.	Manager/ Director	Schedule 30 minute daily as dedicated leader service rounds. Schedule in quarterly intervals.	Microsoft Outlook/ Calendar	TBD	
2.	Manager/ Director	Notify Administrative Directors (process TBD) if daily rounds are not completed and/or more discharges than unit leadership able to complete.	V-Mail Paging	TBD	
3.	PFC	Notify unit Manager/Director/ANN by 1000 when patients are discharging during the same day and leader service rounds are NOT complete.	V-Mail Paging	TBD	
4.	Manager/ Director	Schedule coverage of unit for anticipated and unanticipated absences with leadership team (ANN, other Manager/Director, Patient Relations, Administrative Directors, Clinical Nurse Leader/Clinical	Microsoft Outlook/ Calendar & Email/ Phone	TBD	



Leader Rounds

Executive/Frontline Leader Alignment and Sustainability

Foundational Elements Progress Report									
Unit:		Month: April 2010							
Director:									
Director:									
Units	Geographic Assignments	RN/PCT Integration	In Room Handoff	Huddles Every Shift	Documentation near the Patient	Hourly Rounds by Caregiver	Daily Leader Rounds	People Link Board (PLB) Updated	Monthly Staff Huddles by PLB
Criteria	Visual Controls	Audit Tool	Observation	Observation	Observation	Audit Tool	Observation	Observation	Observation
CCU-7	NA	NA							
Level 7									
Level 8									
Level 9									
Level 10									
Level 11	NA								
Level 12	NA								
Level 14									
Level 15									
Level 16									
Level 17									
RHU									
ED									
	Not Implemented								
	Implemented Plan with Progress								
	Fully Implemented								

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People Link

	What Our Patients Say	Our Focus	Target Sheet
Our Focus and Purpose	Purpose: To remind staff that the focus of all our work is to ensure the best experience for our patients.	Purpose: To ensure that staff understand what are the important goals for Virginia Mason and the Department.	Purpose: To specify target metrics used to measure success toward department goals and the current status of those targets.
	Supporting Data		
Team Progress	Purpose: To provide specific data to support the department target sheet in the “Our Goals” section.		
	Our Patient’s Experience (Value Stream Maps)	Today’s Work (Newspaper)	
Current Work	Purpose: To show the current state of a patient’s experience, using the tools of VMPS.	Purpose: To ensure staff know the status of work currently identified to help archive department goals.	
	We Need Your Ideas On...	Everyday Lean Ideas	ELI Templates
Turn Your Ideas into Action	Purpose: To help provide direction on which ideas are most needed by the team to help achieve goals.	Purpose: To highlight and celebrate ideas that the staff have submitted and tested with their manager.	Purpose: To ensure staff have easy access to the ELI template.

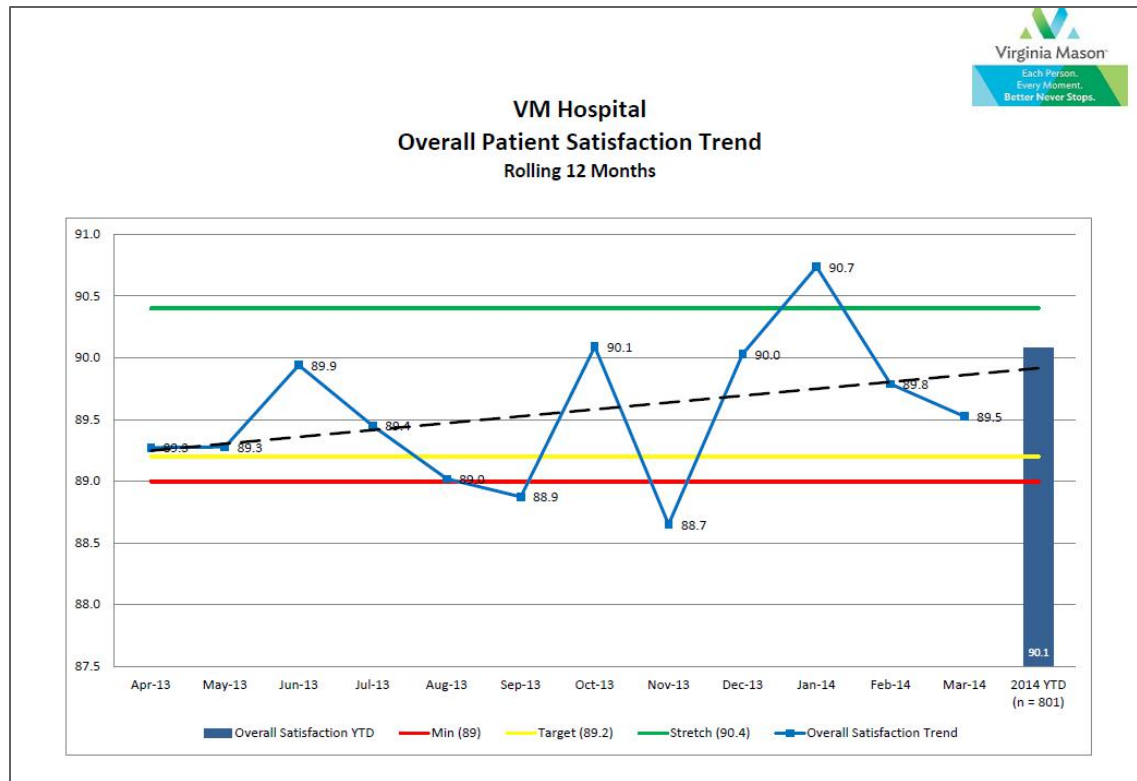
Outcomes

Before	After	Percent Change
RN # of steps = 5838	846	85.5%
PCT # of steps = 2664	1256	52.8%
Am cycle of work = 240 min	126 min	47.5%
Patient dissatisfaction = 21%	See next slide	
RN time spent in indirect care = 68%	10%	85.2%
PCT time spent in indirect care = 30%	16%	46.6%
Call light on from 7a-11a = 5.5%	0%	100%
Time spent gathering supplies = 20 min	11 min	45.0%

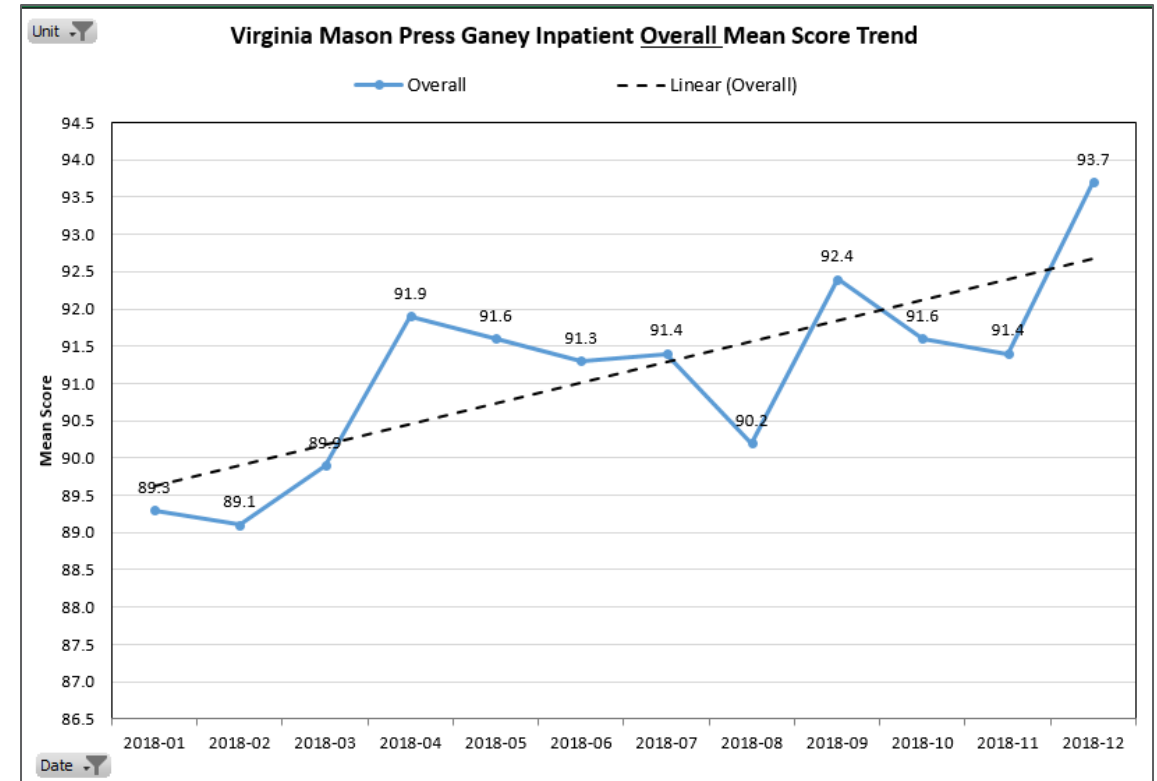
Quality Results

Kaizen: Continuous improvement

2013-2014



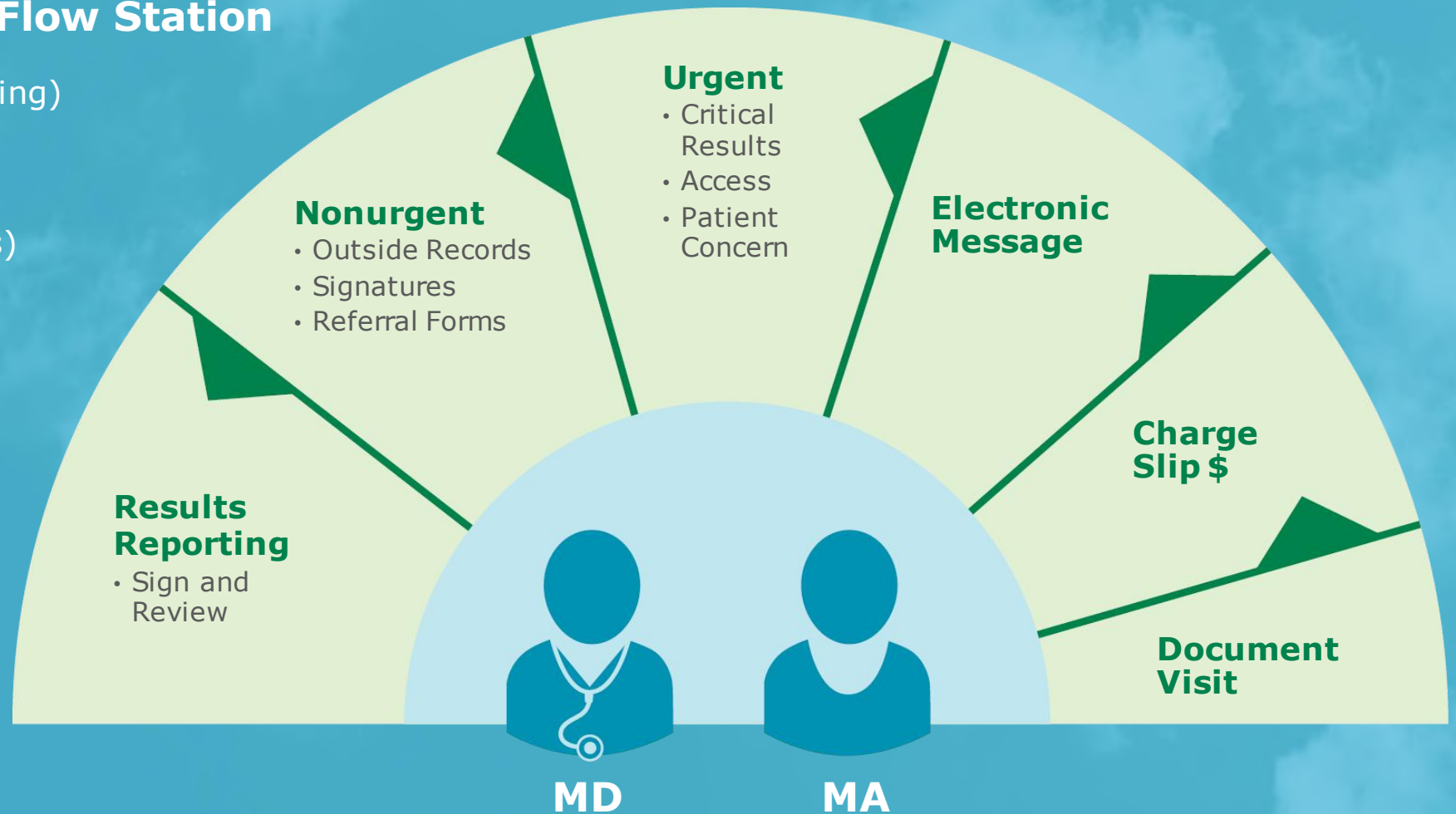
2018



Ambulatory Care – Flow Stations

VMPS Concepts of a Flow Station

- Waste of motion (walking)
- Continuous flow
- Visual control (Kanbans)
- External setup
- Water strider
- U-Shaped Cell



Flow: Unbatching Work

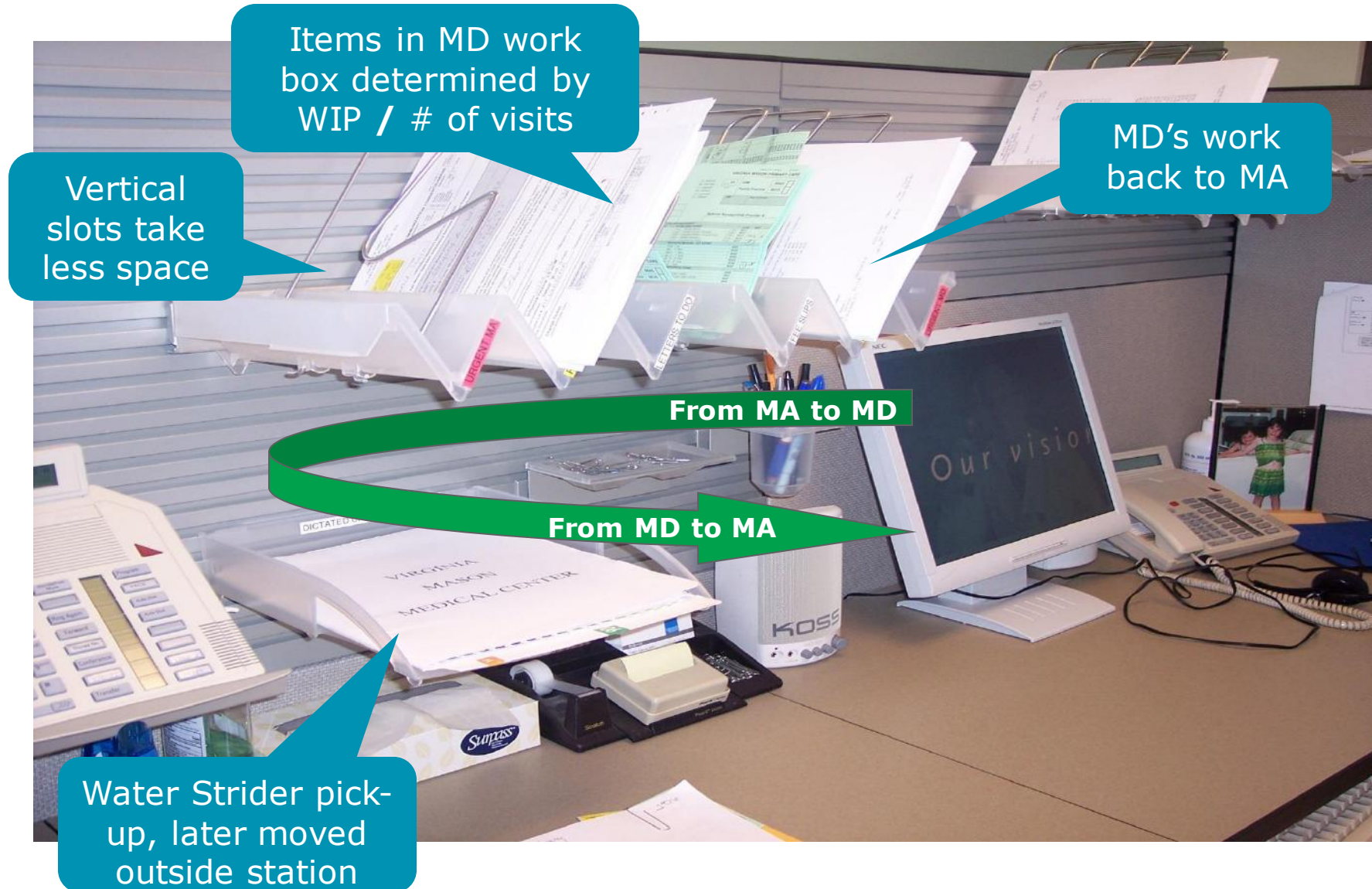
**Traditional MD office and
inbox for indirect care of
information about patients**



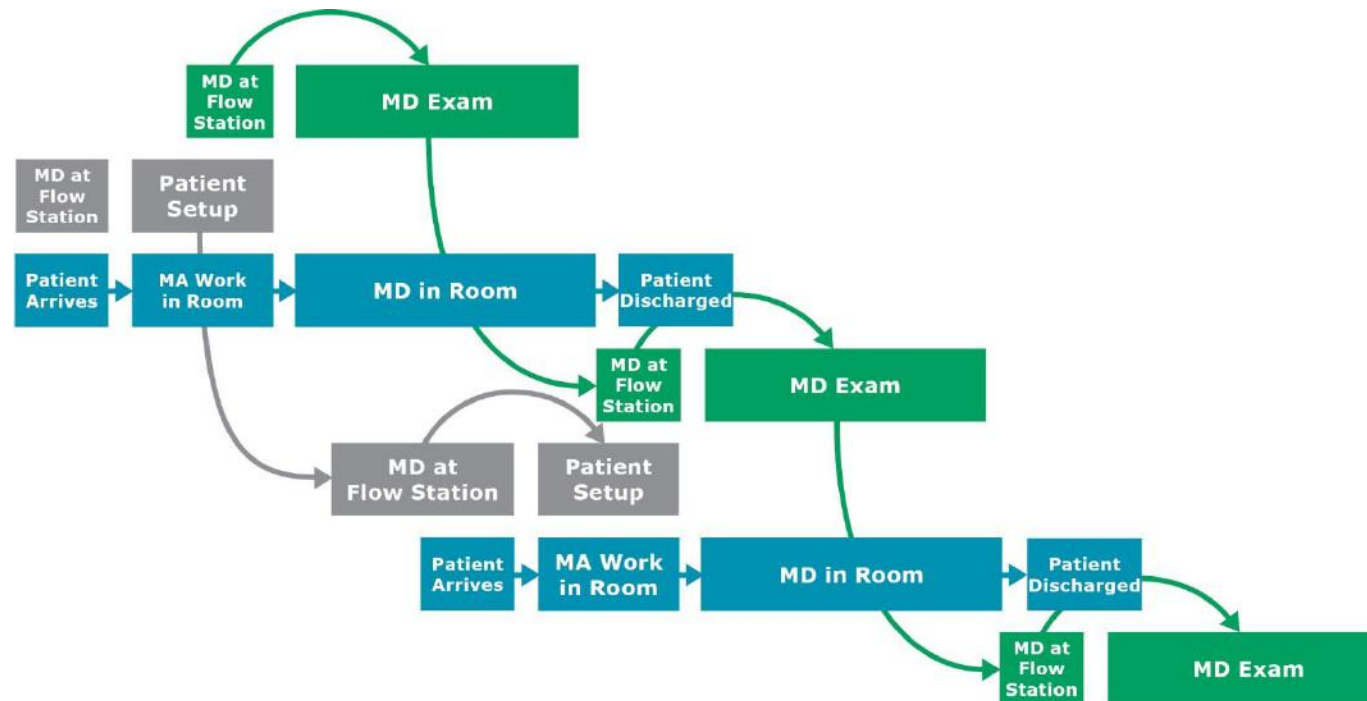
**Virginia Mason Kirkland
flow station for indirect
care flow**



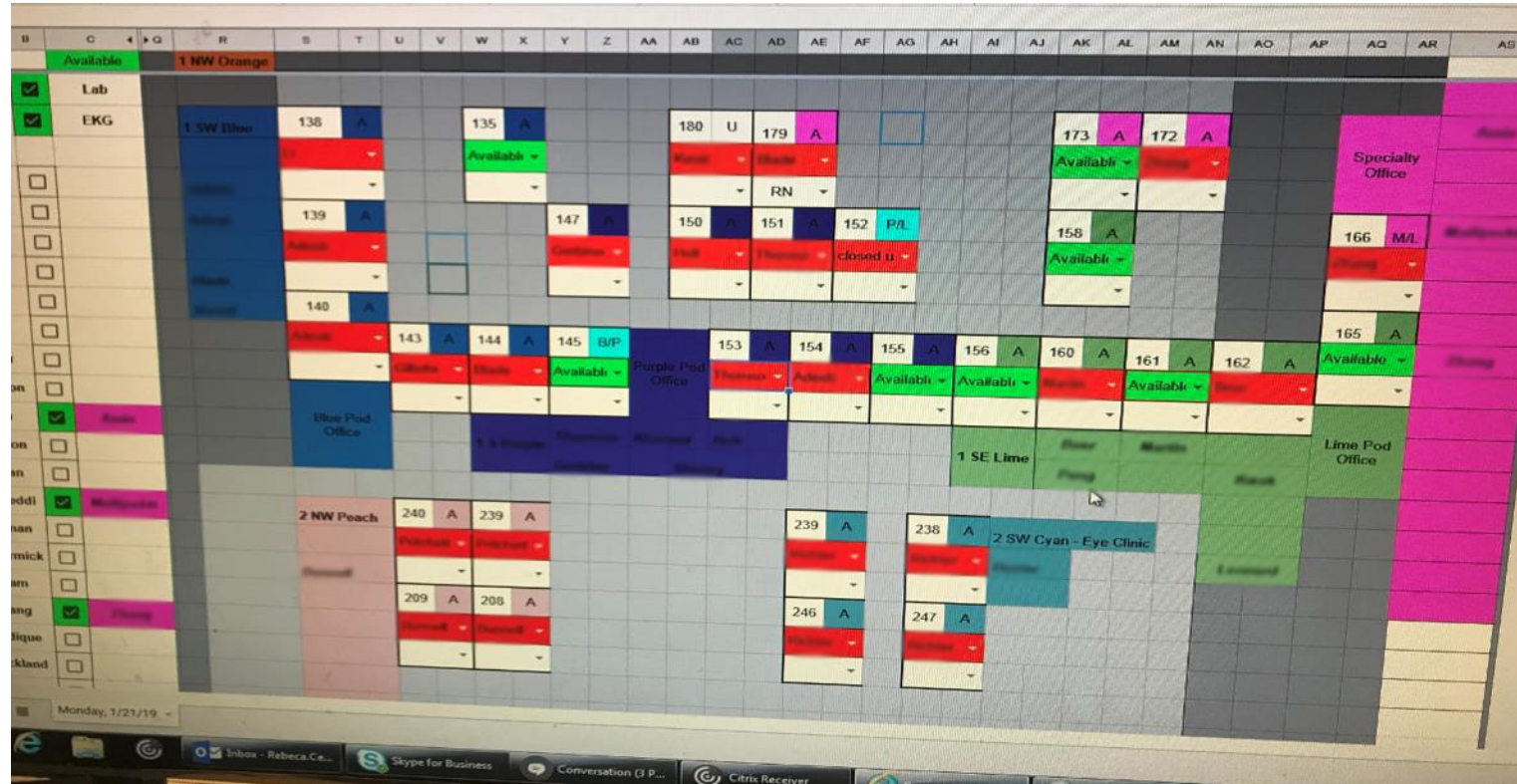
Bellevue Flow Station



Achieving Flow



The Next Innovation: No Assigned Rooms!



Result: Currently achieving 85% exam room utilization

Pharmacist follows up on medication adjustments
Manages multiple medications



Provider assesses diagnosis and oversees the management of complex patients



Flow Master manages prevention needs, sets agenda, Manages flow and indirect care



Pharmacy Tech

Huddles, pulls patients
Manages prior auth, mail in orders, and medication asst programs



Patient
Activated and informed

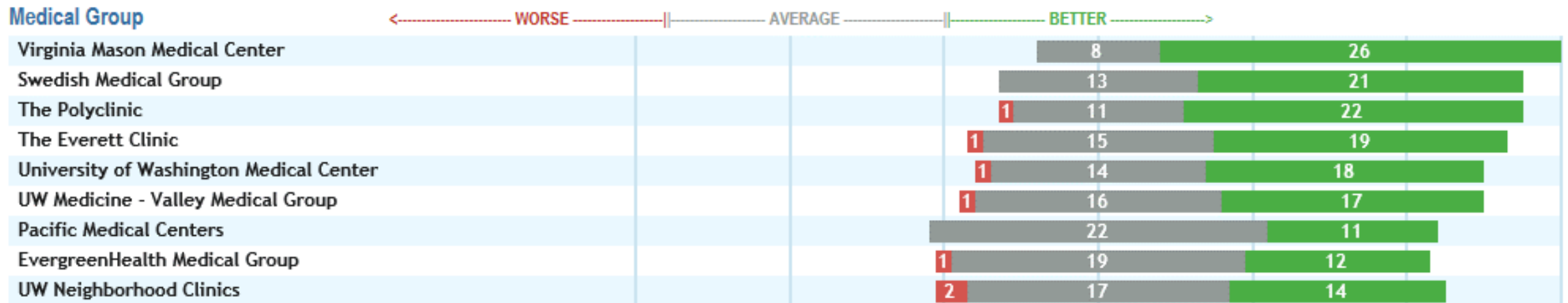
RN Care Manager
Chronic illness goal setting and education
Personalized care plans



YOUR CARE TEAM

Quality Results

Quality and Service Performance Results from Washington Health Care Alliance



How well does your organization do at communicating its most important work?

How often do you go to the genba?



**“In times of change,
learners inherit the
earth, while the
learned find
themselves beautifully
equipped to deal with
a world that no longer
exists.”**

Eric Hoffer



Virginia Mason™
INSTITUTE

A **lean** journey is a **learning** journey™