



Leading the Transformation: Improving Quality, Service, and Innovation During a Time of Change

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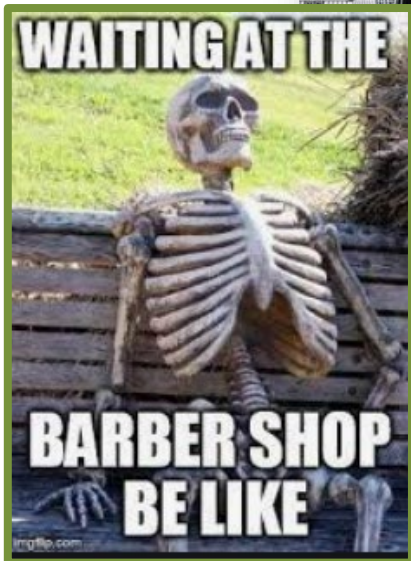
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Organization for Excellence in Health - November 12, 2021

There's never a Shortage of Processes to be Improved



In our personal lives...



Your package may be lost

Packages are rarely this late and we're sorry yours still hasn't arrived

You can wait another couple days or check out these options.

GET A REFUND

See details



Leading Process Improvement in Healthcare



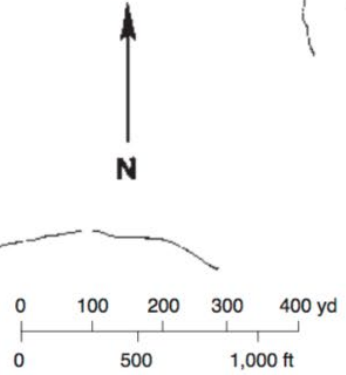
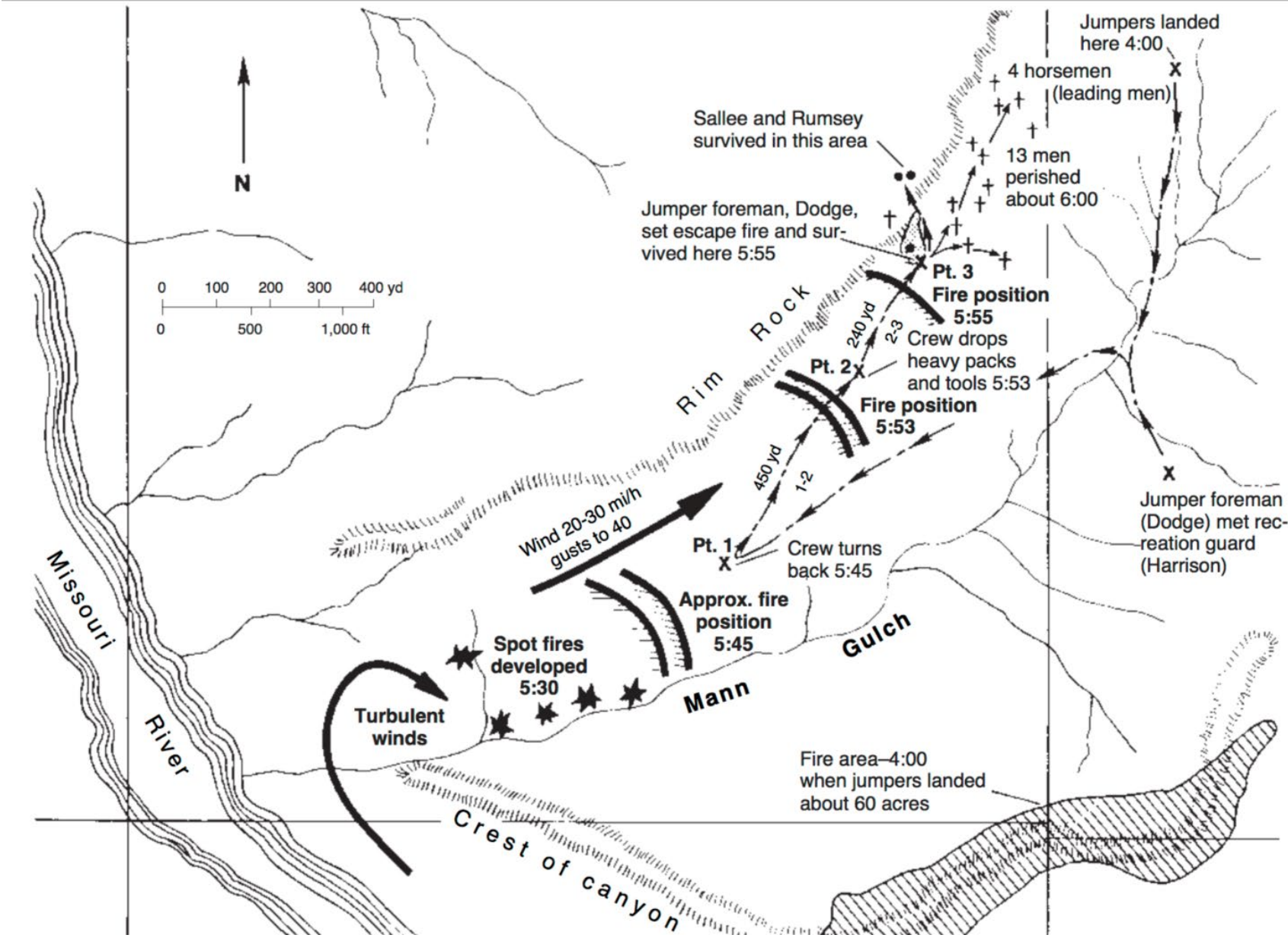
Leaders have people's attention. Be the leader who can get individuals and teams to care about things that they might not normally want to address – the leader who can get individuals and teams to take ownership of a significant challenge and to work together to improve it.

Attention is the Currency
of Leadership

~Ronald A. Heifetz















Any of Your Work Processes in Mann Gulch?





Teach Them to Fish



Break Mental Models



Identify Change Agents

Failure is simply the opportunity to begin again, this time more intelligently.



Henry Ford
Founder, Ford Motor Company

So what ?

**Fail Fast,
Fail Often**

Practical Tools for Process Improvement



Lean

PDCA

Human-Centered
Design Thinking



14 Principals of Lean



1. Long Term Philosophy - Base your management decisions on a long-term philosophy, even at the expense of short-term financial goals
2. **Create Continuous Process Flow – no sitting or waiting idle; design processes to achieve high levels of value-added work**
3. **Use a “Pull System” to provide the downstream customer only what’s needed; avoid overproduction**
4. Level the workload – work like the tortoise not like the hare; eliminate unevenness in work schedules in order to not overburden people
5. Build a culture of continuous improvement by stopping to fix problems and get quality right the first time
6. **Standardize tasks to reduce variation and maintain predictability**
7. Use Visual Controls so that no problems are hidden
8. **Drive out fear, so that everyone may work effectively for the company**
9. Grow Leaders
10. Develop People – teach to work in teams & to build a strong, stable culture and philosophy
11. Respect your suppliers – challenge them & help them improve
12. **Go-see (go to the Gemba) for yourself in order to thoroughly understand the situation**
13. Decide carefully by consensus, implement rapidly
14. Become a Learning Organization through relentless reflection with Plan-Do-Check-Act (PDCA) cycles and continuous improvement

Types of Waste: (non-value-adding activities)



Waste is any activity that does not add value to the process.

Below are the **8 different types of waste** which occur in processes.

The acronym **DOWNTIME** articulates examples of waste for identifying potential metrics:

- Defects
- Overproduction
- Waiting
- Not Using Creativity or Talent
- Transportation
- Inventory
- Motion
- Extra-Processing

The word "DOWNTIME" is displayed in large, white, uppercase letters against a dark background with bokeh light effects. The letters are slightly blurred, giving a sense of motion or depth.

DOWNTIME

HENRY FORD LAB PRODUCTION SYSTEM

2006

Transforming to a Quality Culture

The Henry Ford Production System

Richard J. Zarbo, MD, DMD, and Rita D'Angelo, MS, ASQE, SSBB

Leaders Wanted

© Rectangular Snip

2010

A Call to Change the Status Quo in Approaching Health Care Quality, Once Again

Richard J. Zarbo, MD, DMD

2012

Creating and Sustaining a Lean Culture of Continuous Process Improvement

Richard J. Zarbo, MD, DMD

2015

Daily Management System of the Henry Ford Production System

QTIPS to Focus Continuous Improvements at the Level of the Work

Richard J. Zarbo, MD, DMD, Ruan C. Varney, CT, Jacqueline R. Copeland, MT, Rita D'Angelo, MS, and Gaurav Sharma, MD

2017

Deviation Management

Key Management Subsystem Driver of Knowledge-Based Continuous Improvement in the Henry Ford Production System

Richard J. Zarbo, MD, DMD, Jacqueline R. Copeland, MLS, and Ruan C. Varney, CT

From Pathology and Laboratory Medicine, Henry Ford Health System, Detroit, MI.

Key Words: Deviation management; Lean; Continuous improvement; ISO 15189; Henry Ford Production System

Am J Clin Pathol October 2017;148:354-367

DOI: 10.1093/AJCP/AQX084

Continuous Improvement Culture Lean Enterprise Since 2006



2017
Henry Ford Health System Enhances Patient Care Through Lab Automation Partnership
Ongoing
HFHS Pathology and Laboratory Medicine Lean Silver Course (2-Day) through HFHS University.

HFHS Lab Organization – Solid Tumor Reagent Stock



KANBAN APPROACH:

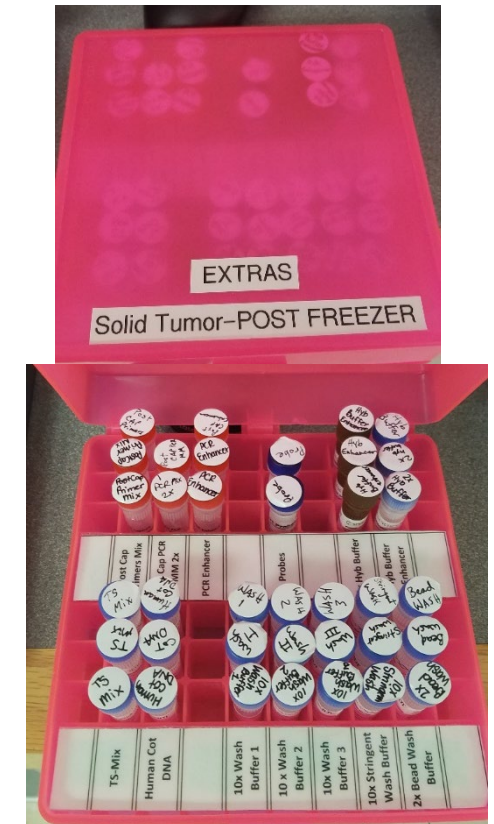
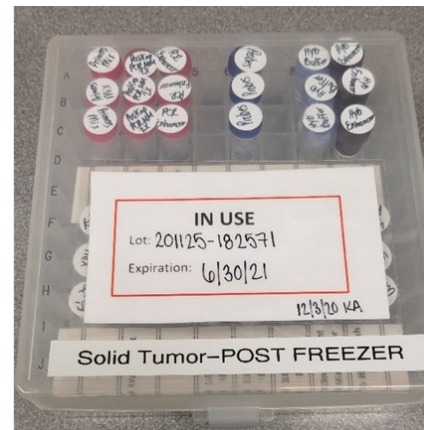
BEFORE

- Remained boxed
- No visualization for individual reagent stock
- Took up more space



AFTER

- Reagents organized to one box by lot
- Lot and expiration on top
- Extra reagents all in one box
- Reagents in row by type
 - Ease of pulling
 - Ease of visual stock remaining



Results - DATA

CONDITION

TIME

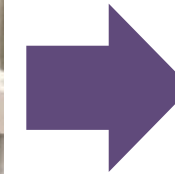
When slides are NOT in drawers

Time to **Pull** 1 set of slides-
9 min 28 sec

When slides are in drawers

Time to **Pull**
1 set of slides-
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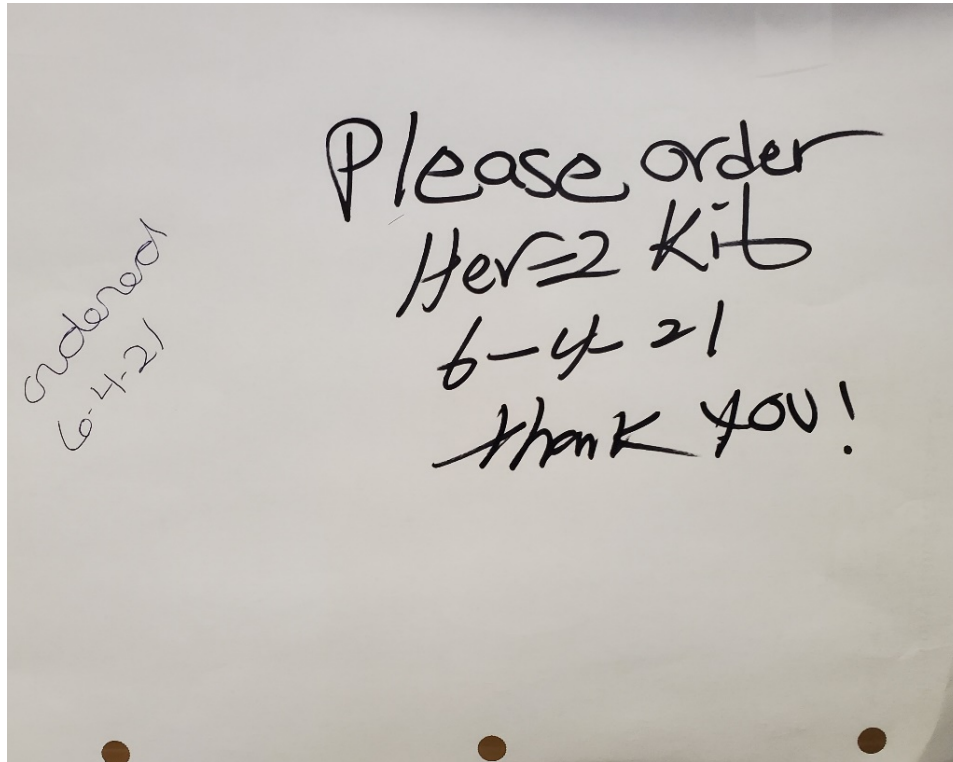
Time to **Return**
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4 min 45 sec



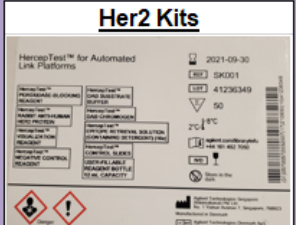

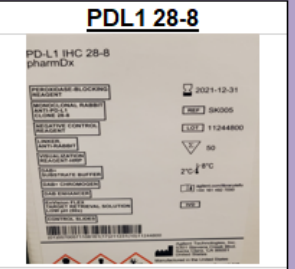
HFHS Lab Organization – Kanban Cards (Ordering Test Kits)



BEFORE



AFTER

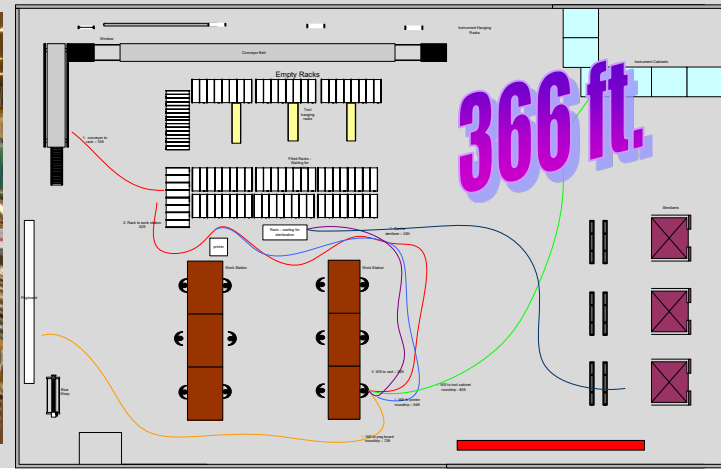
REORDER INVENTORY!!!		REORDER INVENTORY!!!		REORDER INVENTORY!!!				
HFH-DETROIT - IHC	<p>Her2 Kits</p>  <p>Vendor: Agilent 000146725 People Soft/Catalog #:</p> <p>Cart Count/Category # m5545</p> <p>Reorder At: 1 ea</p> <p>Quantity to Order: 3 ea</p> <p>Price \$247.68 ea</p> <p>Note</p>	HFH-DETROIT - IHC	HFH-DETROIT - IHC	<p>PDL1 22C3</p>  <p>Vendor: Agilent 000146725 Catalog #: SK00621-5</p> <p>Cart Count/Category #</p> <p>Reorder At: 1 ea</p> <p>Quantity to Order: 3 ea</p> <p>Price \$3,375.00</p> <p>Note</p>	HFH-DETROIT - IHC	HFH-DETROIT - IHC	<p>PDL1 28-8</p>  <p>Vendor: Agilent 000146725 Catalog #: SK00521-5</p> <p>Cart Count/Category #</p> <p>Reorder At: 1 ea</p> <p>Quantity to Order: 2 ea</p> <p>Price \$3375.00 ea</p> <p>Note</p>	HFH-DETROIT - IHC
If found, please directly notify Supervisor		If found, please directly notify Supervisor		If found, please directly notify Supervisor				

1. Overprocessing – Rework, Redundant work
2. Inventory – Excessive or Insufficient
3. Motion – Unnecessary movement of people

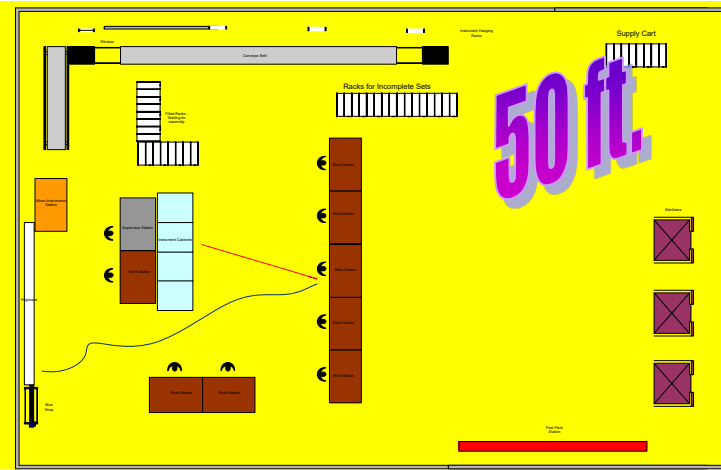
Johns Hopkins General Layout & Flow: Surgical Instrument Processing



B
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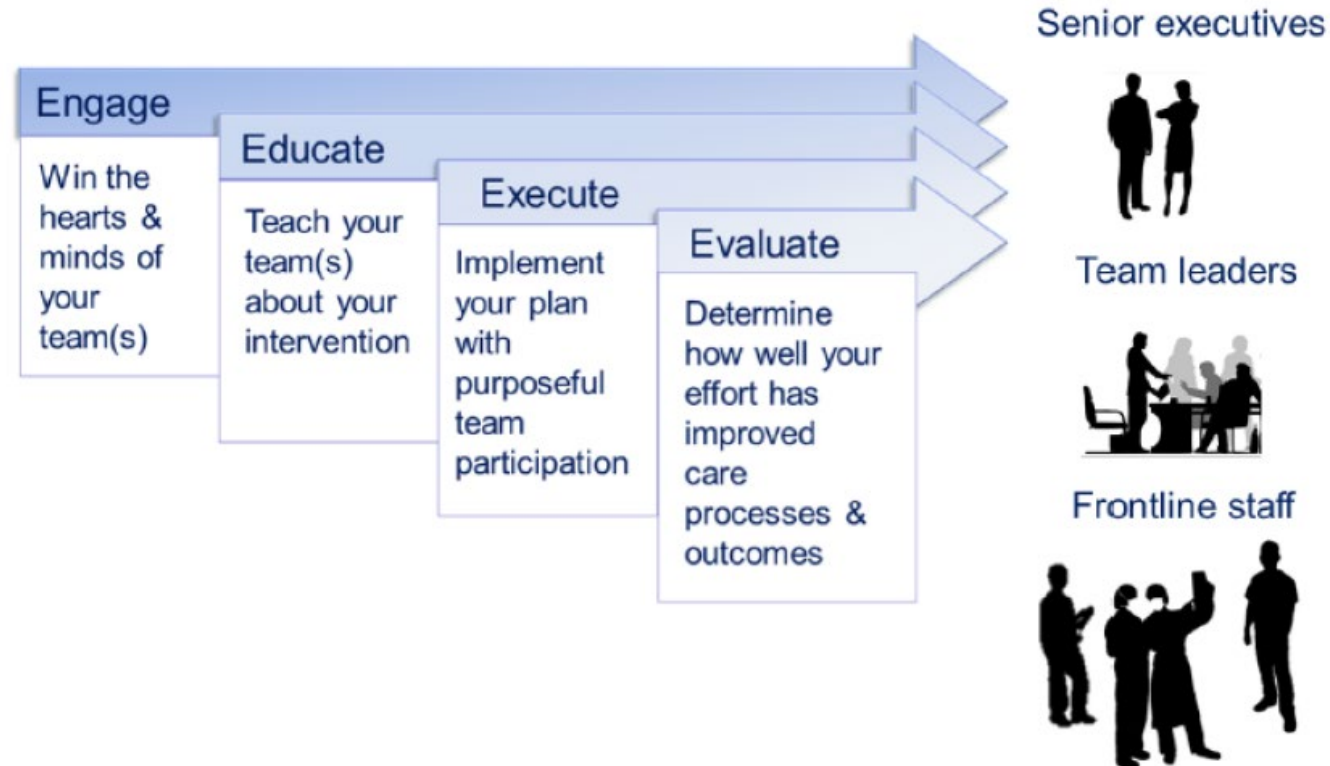


Comprehensive Unit-Based Safety Program – CUSP*



The Comprehensive Unit-based Safety Program (CUSP) is a proven method for preventing healthcare-associated infections (HAIs) and other patient harms. CUSP, which was developed at Johns Hopkins with AHRQ support, combines improvements in safety culture, teamwork, and communication with a checklist of evidence-based practices for preventing the target HAI or patient harm. AHRQ implements CUSP in nationwide projects addressing various HAIs.

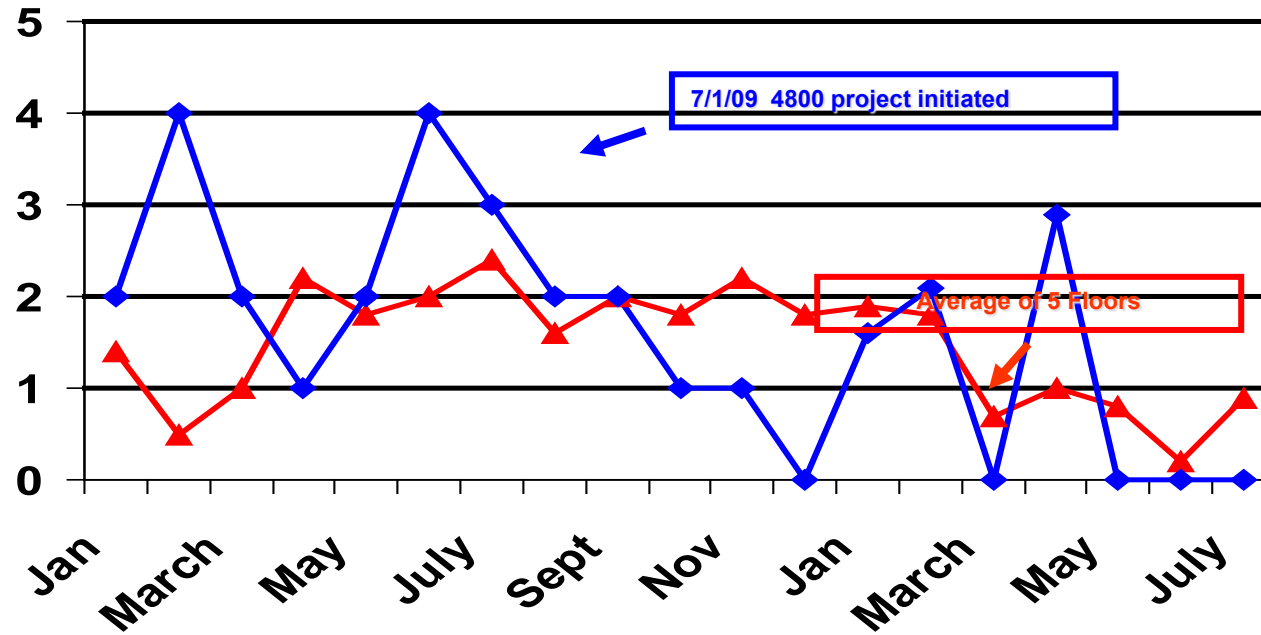
Develop, implement and continually improve a plan to spread understanding of the science of safety in the work setting.



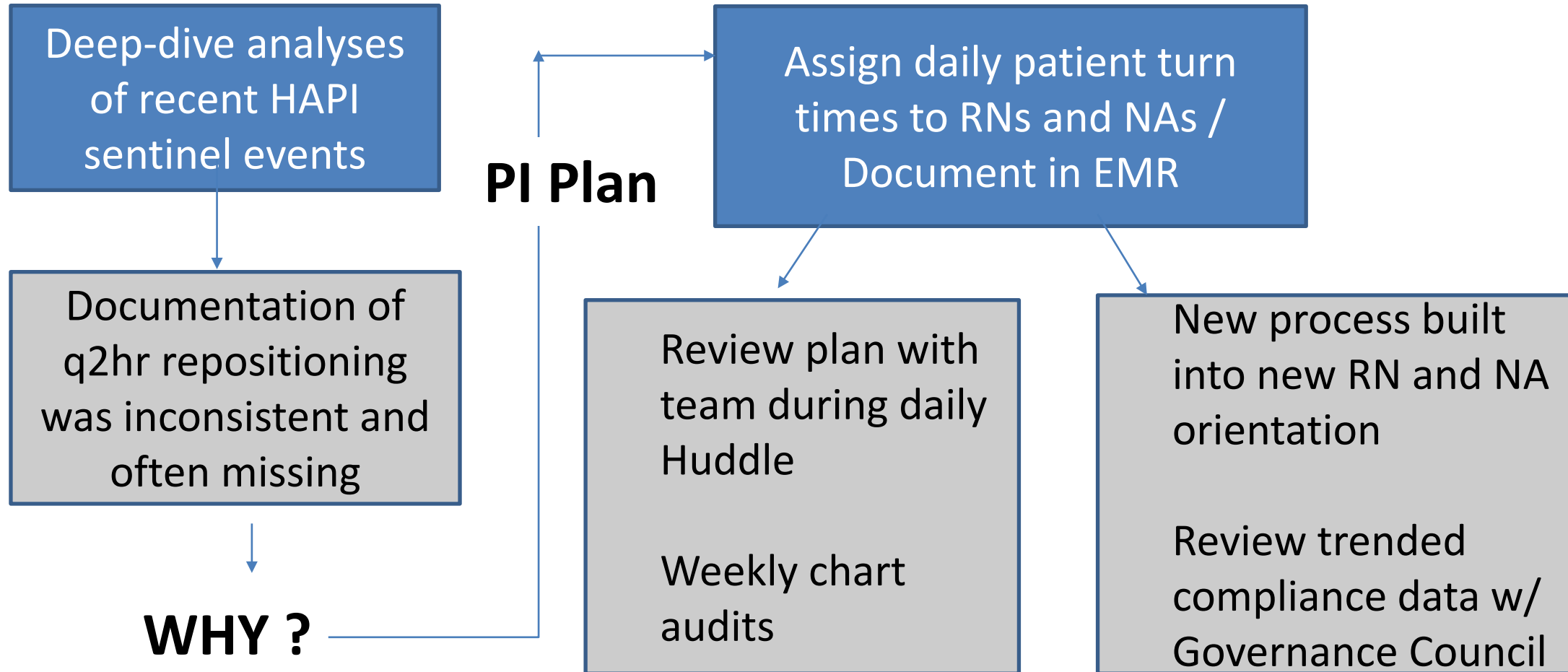
CUSP teams have been rolled out at Henry Ford hospitals, departments and facilities to enhance patient safety through empowering care teams to improve processes using PI tools. Examples will be shared throughout the presentation.

* Created by Johns Hopkins patient safety researchers, CUSP aims to improve patient safety culture while providing frontline caregivers with the tools and support that they need to tackle the hazards that threaten their patients.

Rochester General Hospital C. Difficile Reduction Project (2009 – 2010)



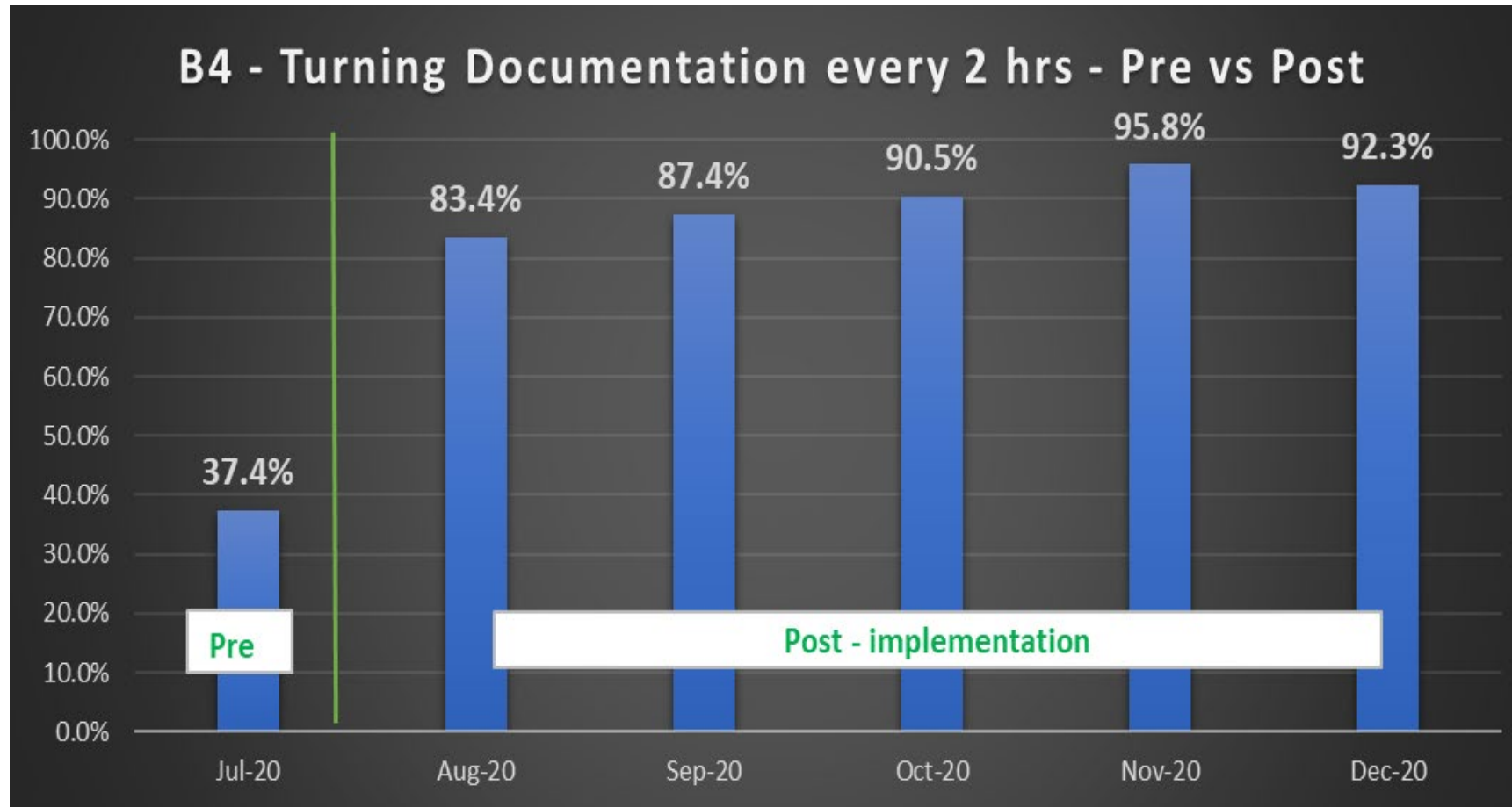
Henry Ford Hospital B4 Care Team Going to the Gemba to Solve Hospital Acquired Pressure Injuries (HAPIs) on Their Unit – CUSP Project



HAPI Process Improvement Results – Pre and Post Implementation



Turning Documentation in EMR increased significantly.



Data Source: Chart Audits conducted on relevant patients

Background

Many patient falls on unit involved alert and oriented patients not compliant with calling for help

Initial project: Improve patient understanding of why they are a fall risk

Team discovered Hester Davis (HD) scoring accuracy was not satisfactory

The CUSP Project morphed from Patient education into Staff Hester Davis Scoring Re-Education

Henry Ford Hospital Care Team: Hester Davis Falls Assessment Scoring Re-education CUSP Project - Results



	Last Known Fall Scored Correctly?	Mobility Score Scored Correctly?	Medications Scored Correctly?	Mental Status/LOC/Awareness Scored Correctly?	Toileting Needs Scored Correctly?	Volume/Electrolyte Status Scored Correctly?	Communication/Sensory Scored Correctly?	Behavioral Scored Correctly?
Oct-20	88%	63%	81%	91%	88%	59%	88%	78%
Nov-20	92%	58%	83%	92%	96%	63%	96%	54%
Dec-20	95%	70%	70%	80%	95%	75%	90%	75%
	improved	improved	Decreased	Decreased	improved	improved	improved	Decreased
Jan-21	100%	60%	90%	85%	80%	75%	95%	65%
Feb-21	97%	74%	74%	87%	95%	90%	82%	67%
Mar-21	100%	70%	90%	100%	85%	70%	90%	75%
FINAL	improved	improved	improved	UP and Down	UP and Down	improved	improved	Decreased

Plan-Do-Check-Act Cycles

Become a Learning Organization through relentless reflection with Plan-Do-Check-Act (PDCA) cycles and continuous improvement.

6. Standardize countermeasures which had a positive impact.
Share the learnings.



1. Define the problem
2. Understand the current condition of the process
3. Uncover the root cause of the problem



5. Evaluate the results and effects of the implemented countermeasure.

What was learned from the experiment?

4. Develop countermeasures which address the root cause of the problem

Implement the change decided by the team (on a small scale first if possible)

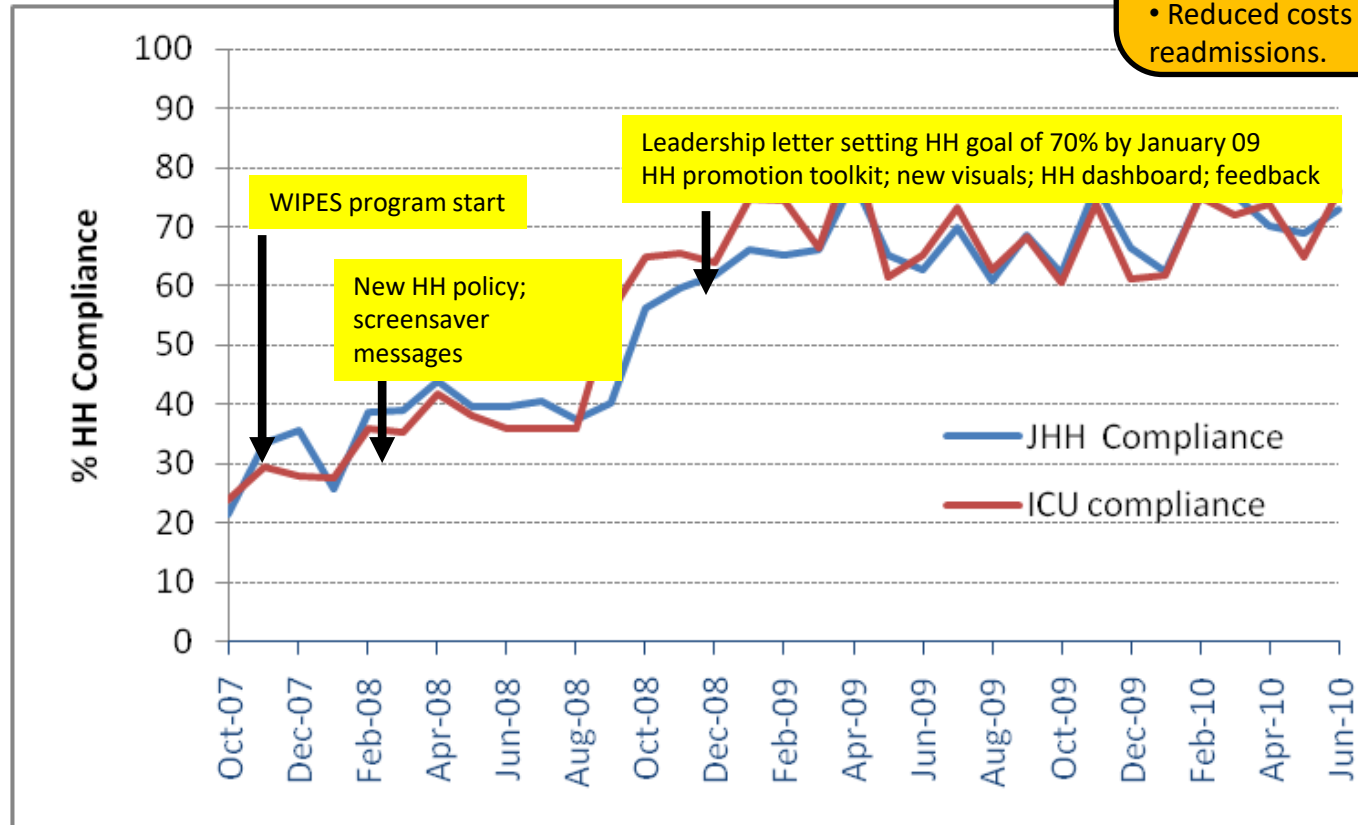
Hand Hygiene Compliance

Johns Hopkins Hospital-Wide and Adult ICUs

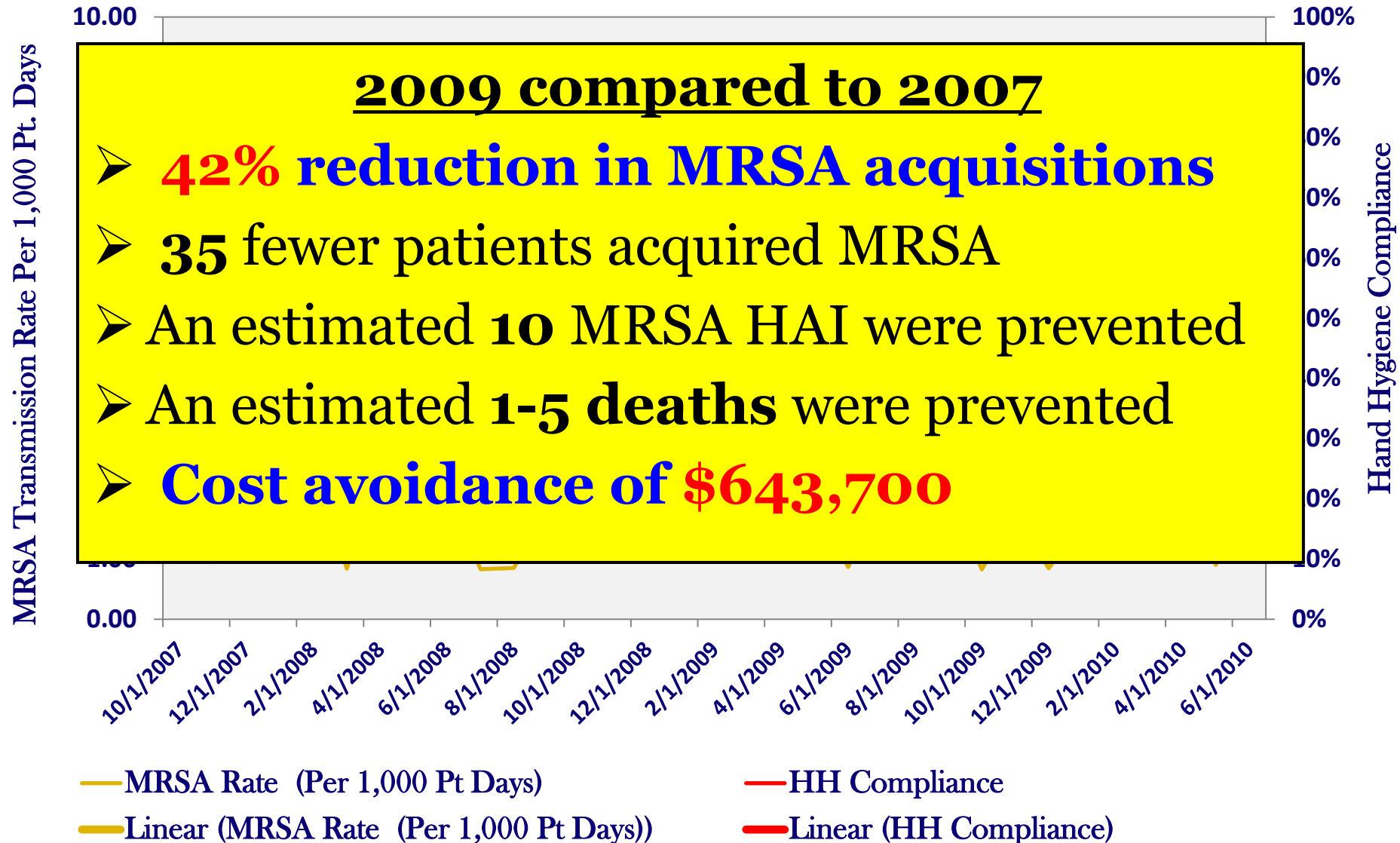


Benefits include:

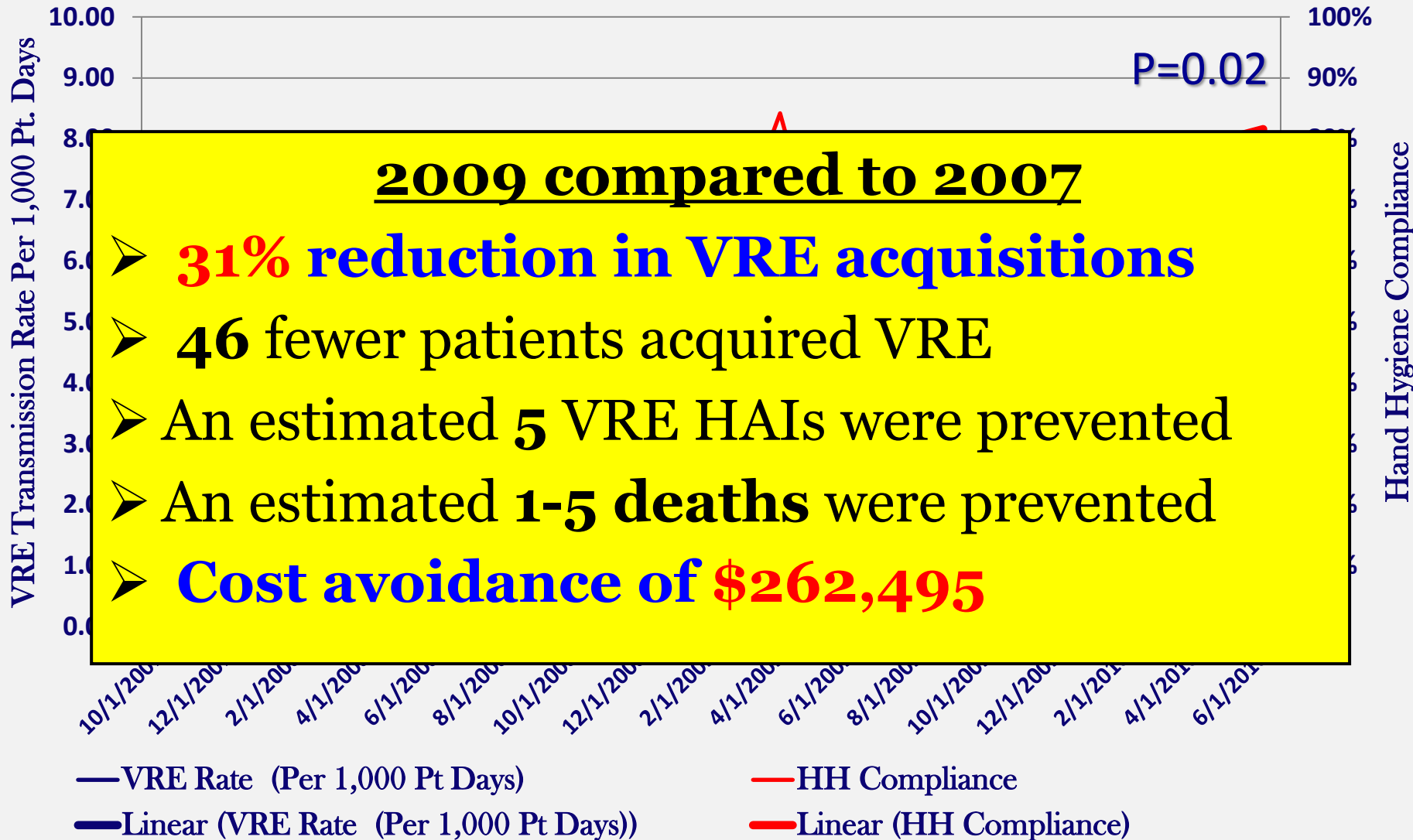
- Decreased patient morbidity and mortality
- Reduced length of stay
- Approx. \$ 1 M cost avoidance for MRSA & VRE HAIs in adult ICUs only
- Reduced costs of subsequent infections and readmissions.



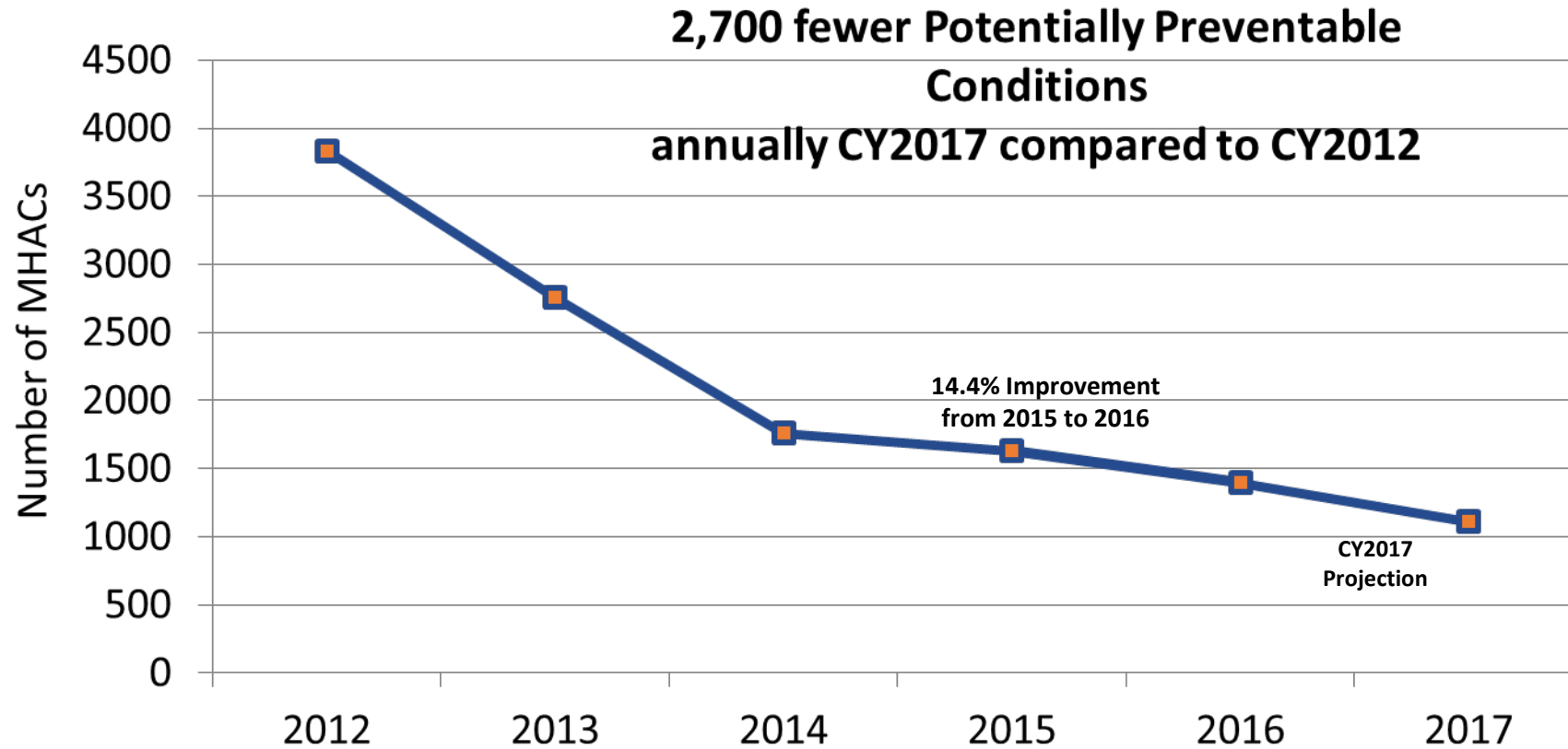
MRSA Transmission Rate in Johns Hopkins Hospital Adult ICUs



VRE Transmission Rate in Johns Hopkins Hospital Adult ICUs



Johns Hopkins Hospital - Maryland Acquired Conditions 70% Reduction in Potentially Preventable Harm



What Have You Touched



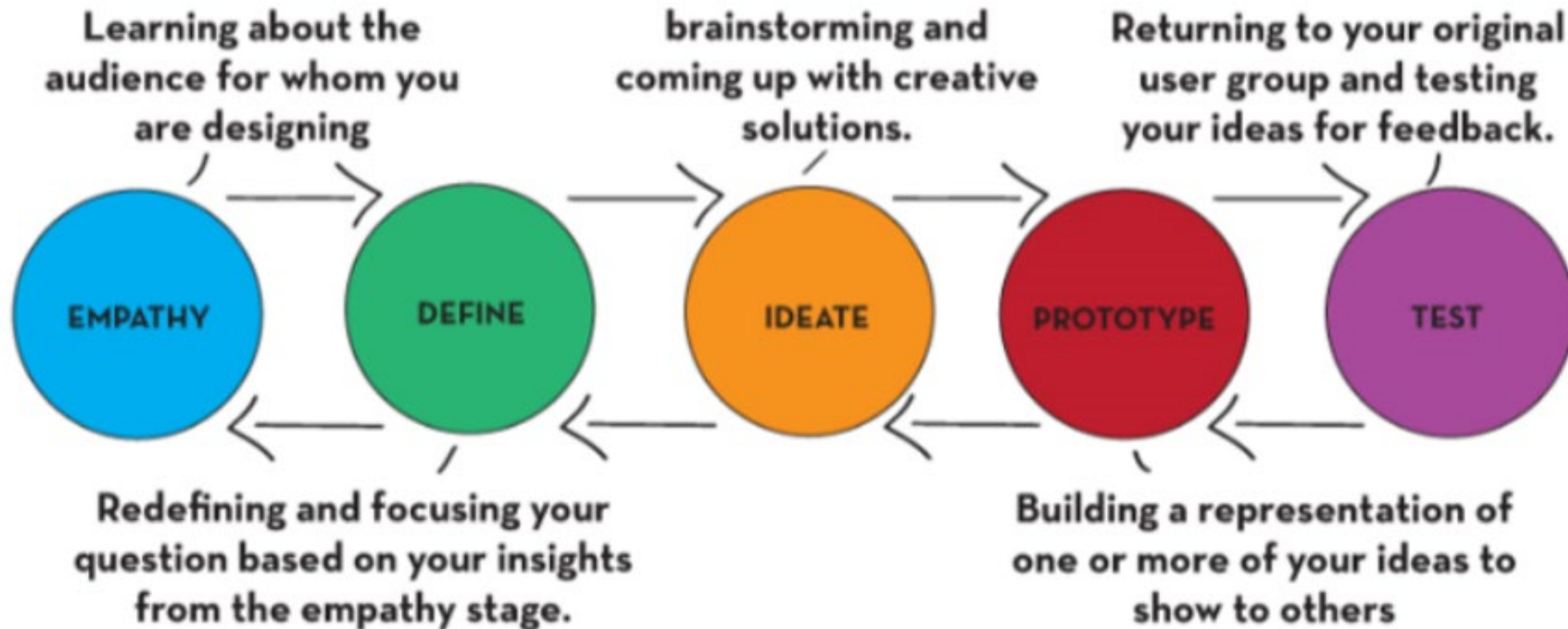
Before You Touch Me?





Human-Centered Design Thinking – The Process

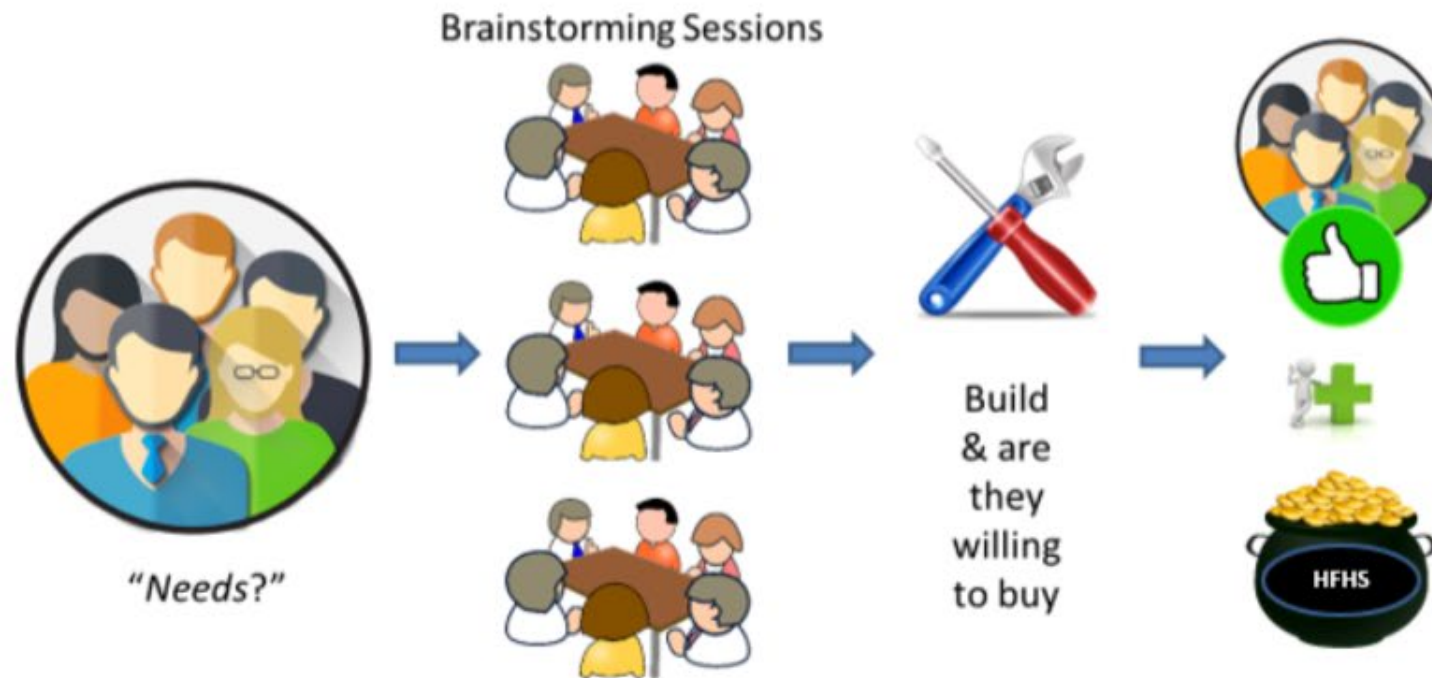
THE PROCESS



Human-Centered Design Thinking – The Voice of the Customer



Design Thinking teaches teams to take an empathetic look at the customers they are building products for, to understand the core needs being addressed and to developed products and services that satisfied their wishes.



Human-Centered Design Thinking – Prototyping



Human-Centered Design Thinking – Test the Prototype with Your Customer(s)



Henry Ford Wyandotte Hospital Surgical Unit Team used Design Thinking Concepts to Improve a Process for the Care of Post-Operative Patients – CUSP Project



What happened?

Staff were being pulled to the surgical unit to care for post-operative patients due to staffing considerations as regular surgical staff were being moved to care for patients with Covid elsewhere in the hospital. Pulled staff did not always feel well prepared to provide optimal care for post-operative patients.

Voice of the customer:

Brainstorming sessions held to identify ways to solve the problem and to assist pulled staff in caring for post-operative patients

Solution:

Float guide was developed and attached to all WOWs for reference to care for specific patient populations



Results / Data indicate:

- ✓ Increased competency amongst pulled staff to meet standard unit practices – measured by staff survey
 - 100% of pulled staff completing the survey reported “agree” or “strongly agree” to feeling more confident providing care to surgical patients as a result of the float staff guide

- ✓ Increased documentation compliance – measured by chart audits
 - CUSP project implementation occurred during COVID. An initial increase in documentation compliance was noted via chart audits. Related audits have been placed on hold.




Human Centered Design Team for Safe Distancing and Practices During Covid



- Henry Ford Hospital, Henry Ford Wyandotte Hospital and Henry Ford Brownstown Center Surgical Services teams
 - Formed a Human-Centered Design Team for Safe Distancing Practices in May of 2020
 - The team utilized Design Thinking methods
 - ✓ Interviewing –
 - ❖ Not only, HFHS members about their concerns working in the hospital setting during the Covid-19 pandemic
 - ❖ But also, interviewing staff members at a Wuhan hospital
 - ❖ As well as, interviewing HFHS patients

Surgery

华中科技大学同济医学院
武汉市中心医院
THE CENTRAL HOSPITAL OF WUHAN

<ul style="list-style-type: none">➤ Selective surgery<ul style="list-style-type: none">● Laminar flow operating room● OR staffs level 1 protective measures● Endotracheal: goggles or face shield● Disinfection : $\geq 0.5h$➤ Emergency surgery<ul style="list-style-type: none">● Negative pressure room● OR staffs level 2 protective measures● Endotracheal: positive pressure hood● Disinfection : $\geq 2h$	 <ul style="list-style-type: none">➤ 择期手术<ul style="list-style-type: none">● 层流手术间● 医护一级防护● 接台消毒时间: $\geq 0.5h$➤ 急诊手术<ul style="list-style-type: none">● 负压手术间● 医护二级防护● 气管插管: 正压头套● 接台消毒时间: $\geq 2h$
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Human Centered Design Team for Safe Distancing and Practices



- The team utilized Design Thinking methods
 - ✓ Brainstorming –
 - ❖ A brainstorming session was held after the customer listing exercises
 - ❖ Twenty-one issues with related notes were identified and ranked
 - ✓ Work Plan –
 - ❖ A work plan was developed
 - ❖ Sub-groups identified and assigned to prioritized items from the brainstorming sessions for implementation
 - ❖ 14 of the 21 items (67%) were implemented which included –
 - Numerous process flow changes
 - Education of staff
 - Education of patients



What Have We Learned During the Past Decade About Change Strategies?



1. **Support by senior leadership is critical, and that support must be “operationalized”**
2. **There must be constancy of purpose**
3. **Goal setting must be aggressive – but also realistic**
4. **Get rid of the jargon**
5. **It’s often best to “start small” and build on success (IHI model)**
6. **There must be considerable emphasis on training. Interdisciplinary teams must be trained in change concepts, tools and meeting skills.**
7. **Continuous quality must be “built into” processes by front-line staff**
8. **The measurement of meaningful indicators is key**

Leader's Role

- **Message:**
Business can never be the same
Patient Care can never be the same
Expectations of leaders' work can never be the same

Who:

- Executive Team
- Clinical Directors
- Directors of Nursing
- Administrators
- PI Physicians



Operationalizing the Organizational Supports for Quality is the Missing Link



- How does your Leadership Team spend its time?
- How much of every agenda is quality or safety?
- Are your administrators, managers, directors of nursing charged with the work of quality?
- Do your leaders provide a clear definition of quality goals (to be the best, to satisfy regulatory requirements, etc.)

Lessons Learned from the Covid Pandemic for Improving Hospital Care & Health Care Delivery*



- Prepare for Unexpected Increases in Demand for Services
 - Updated hospital disaster plans to include how to deal with increased volumes of patients and/or workforce shortages
- Maintain Line of Sight
 - See patients by replacing walls and doors with windows. Upgrade communication devices & video.
- Mind the Air
 - Place high-efficiency particulate air filters and UV lights; Electronic (bipolar ionization) filtration and high fresh air exchange.
- Emotionally Support Health Care Workers
 - Provide stress management, resilience training, recharge rooms, peer support, champion (wellness) rounds, and easy-to-access mental health resources

*Wel, Eric K, MD, Long, Theodore, MD, MHS, Katz, Mitchell, MD. Nine Lessons Learned from the Covid-19 Pandemic for Improving Hospital Care and Healthcare Delivery. *JAMA Intern Med.* 2021; 181(9):1161-1163.

Lessons Learned from the Covid Pandemic for Improving Hospital Care & Health Care Delivery*



- Masks Forever (at Least for Some)
 - Wearing masks for Covid has pushed national population data from 14 states to the lowest cumulative rate of laboratory confirmed influenza-associated hospitalizations since 2005. Some US hospitals will require masks even after Covid is gone.
- Use Technology to Connect Families Near and Far
 - Tablets for family support is a benefit that should continue
- Maintain Caches of Supplies and Diversify Supply Chains
 - Regional caches with rotation of expiring medication should be established
- Reduce the Burden of Unnecessary Documentation
 - EMR changes made during the pandemic allow health care providers to spend more time with patients and help to mitigate burnout
- Address Persistent Racial and Ethnic Disparities in Health
 - Promote primary care programs through access to health care systems

*Wel, Eric K, MD, Long, Theodore, MD, MHS, Katz, Mitchell, MD. Nine Lessons Learned from the Covid-19 Pandemic for Improving Hospital Care and Healthcare Delivery. *JAMA Intern Med.* 2021; 181(9):1161-1163.

Additional Reading



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Pronovost PJ, Weast B, Bishop K, Griffith R, Rosenstein BJ, Kidwell RP, Haller, KB, Davis R. Senior executive adopt-a-work unit: a model for safety improvement. *Jt Comm J Qual Saf.* 2004;30(2):59-68.

Wrap-Up





thank you!