



**THE OHIO STATE UNIVERSITY**

WEXNER MEDICAL CENTER

# How to Lead a Patient Safety Revolution with Sustainable Change and Measurable ROI

## Today's Speakers

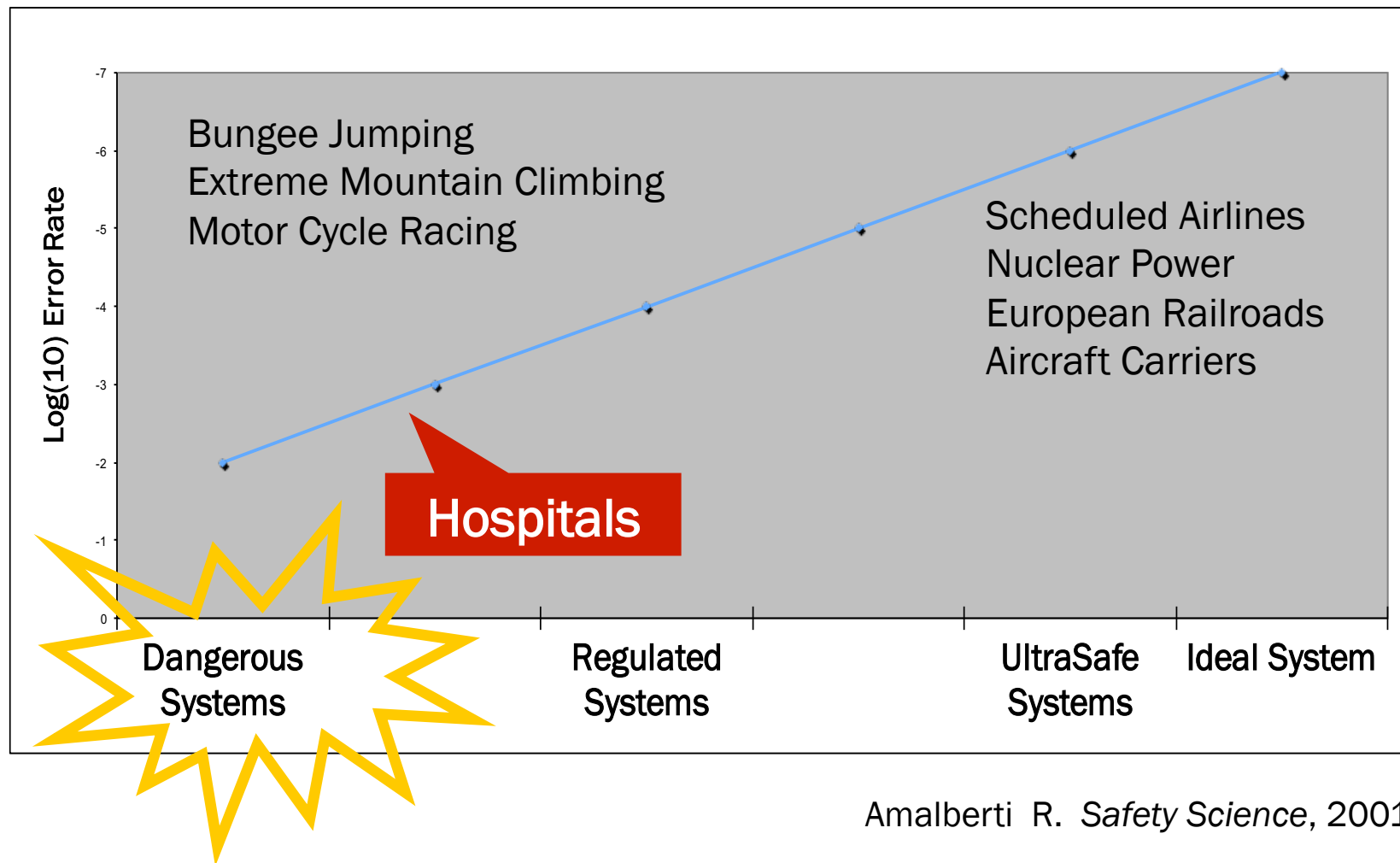
Susan Moffat-Bruce, MD, PhD, MBA  
Chief Quality and Patient Safety Officer  
The Ohio State University  
Wexner Medical Center

Judy Bournique  
Senior Quality Manager  
The Ohio State University  
Wexner Medical Center

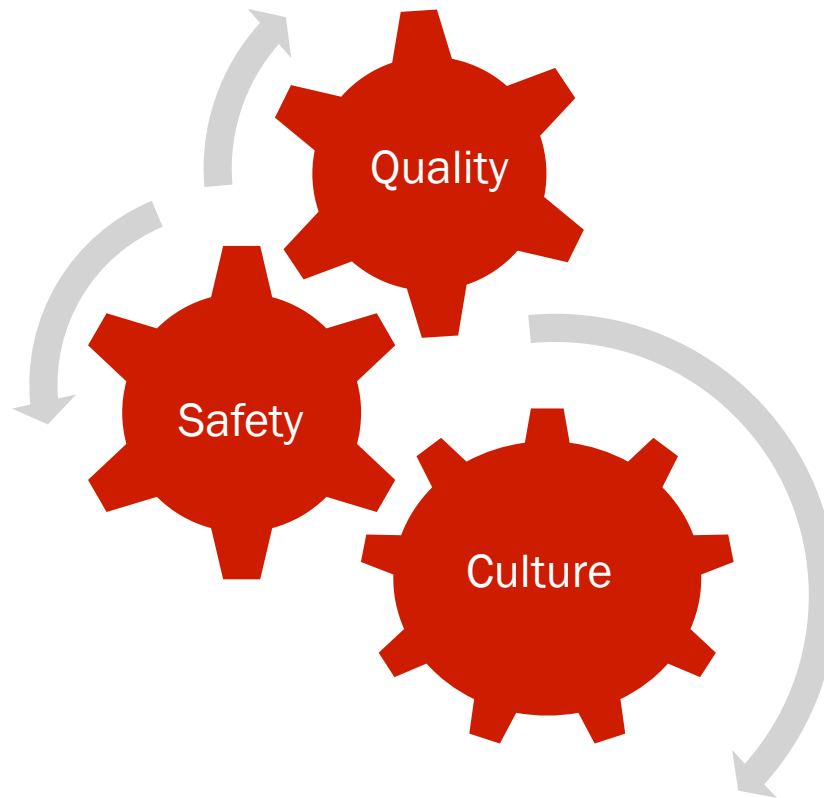
# What This Talk Will Cover

- Motivation and Strategy
- Process
- Tools
- ROI
- Q&A

# Not So Safe Systems



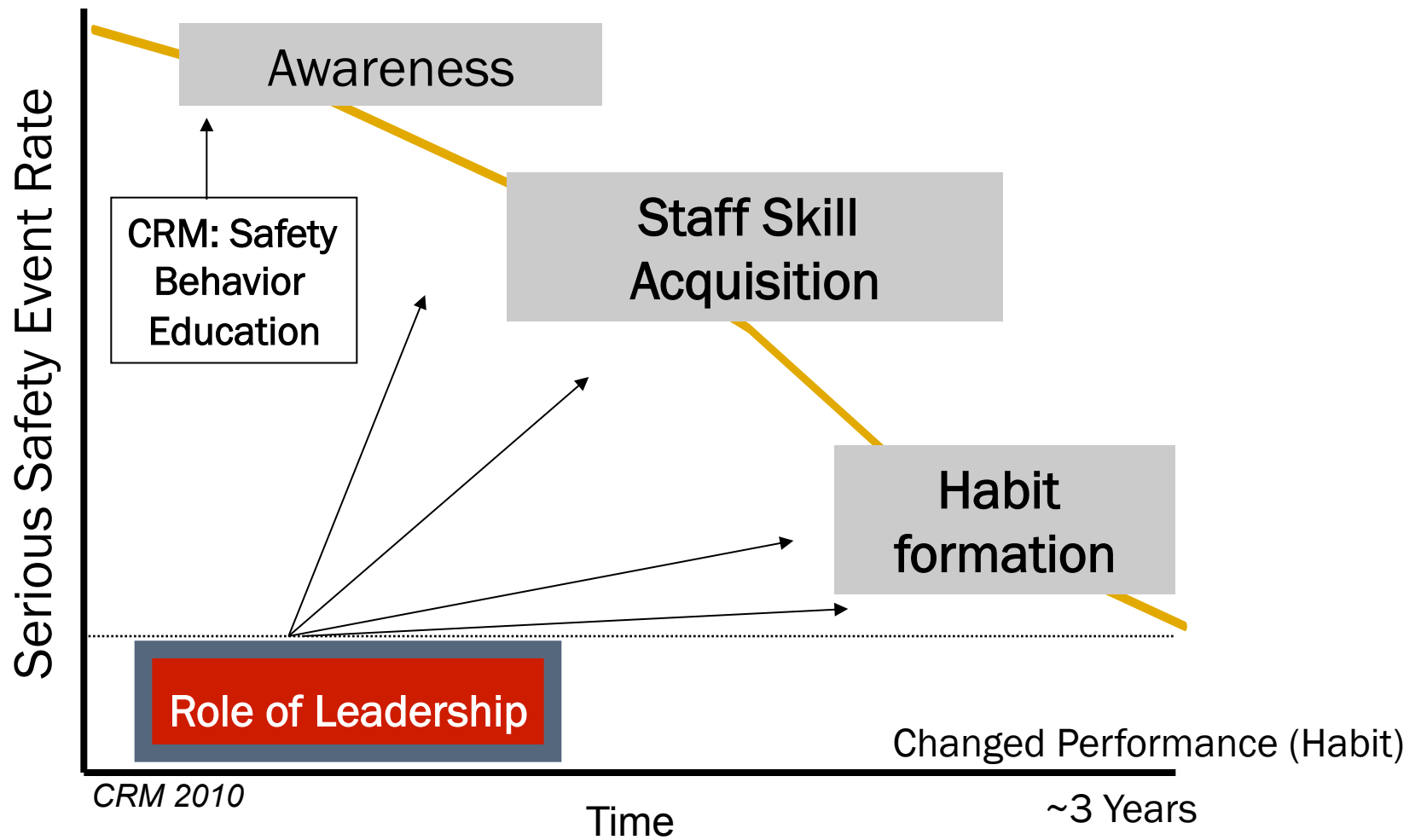
# Why Safety? Why a Team Based Approach?



Safety, quality and culture are interconnected.

It must be a team sport.

Starting Point



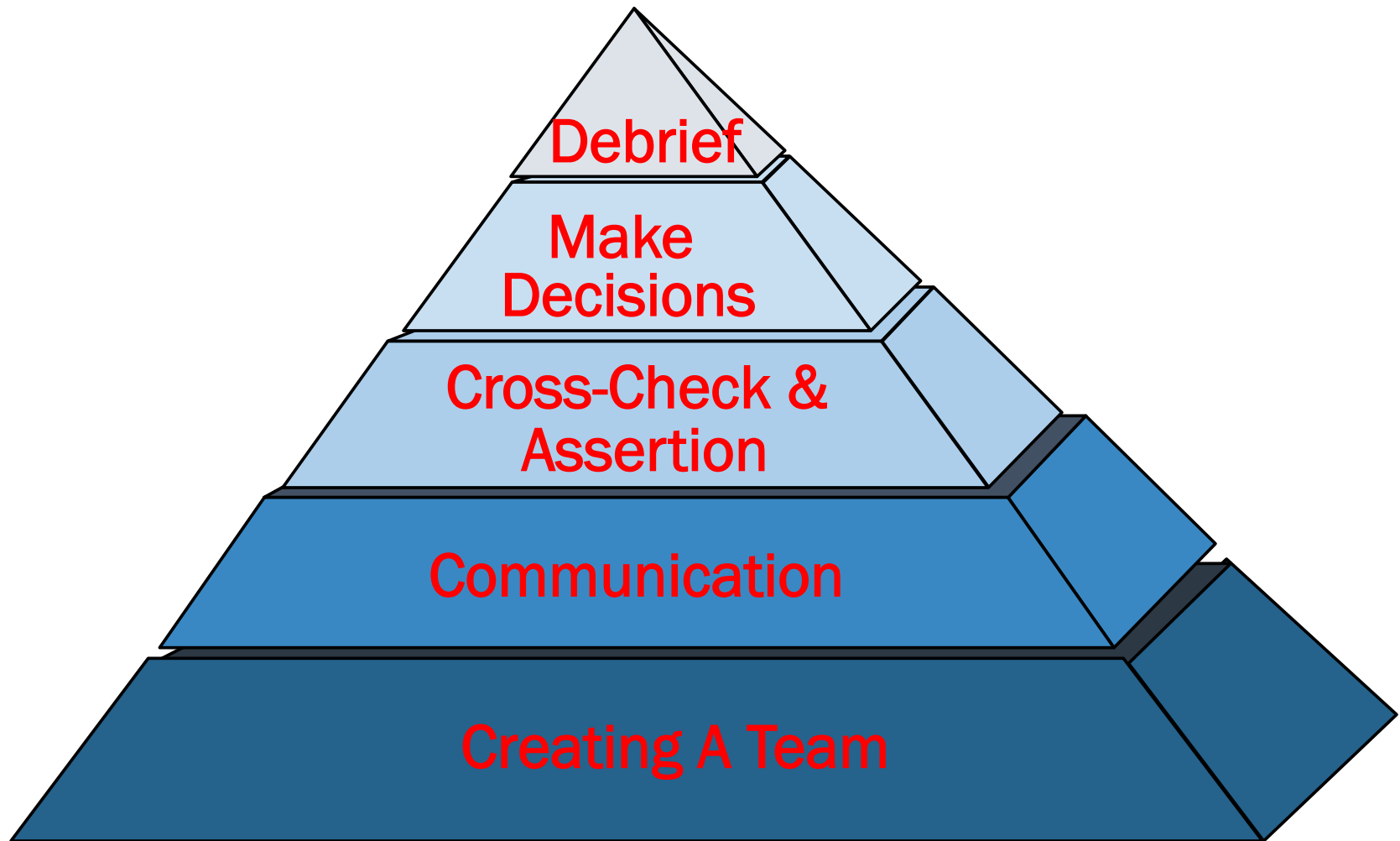
“You should not  
use an old map...



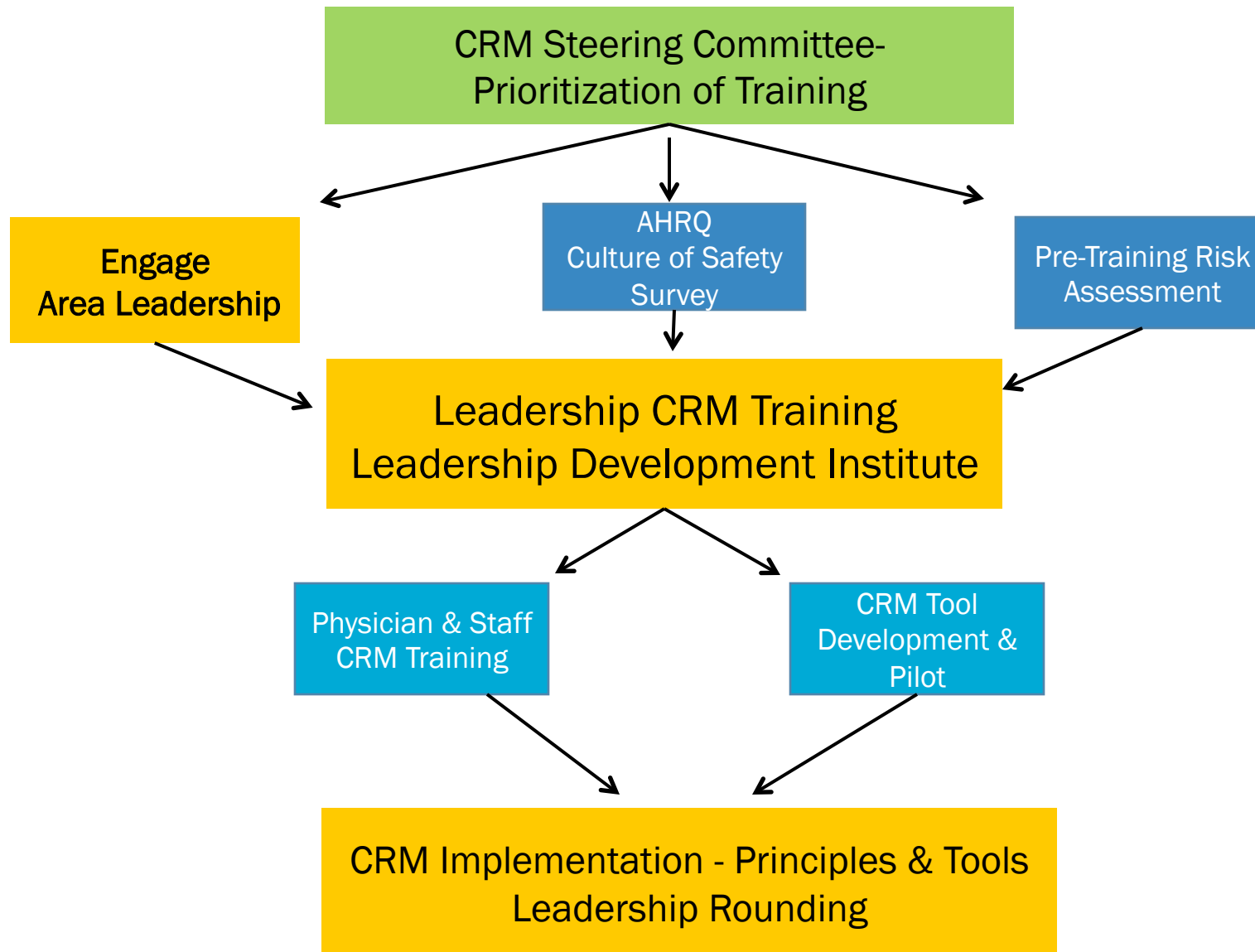
...to explore a new  
world. ”

*Albert Einstein*

Reduced Errors, Increased Safety & Quality Care



# CRM Implementation Process






# Implementation Gant Chart

Area Approx. Staff Count	Jan 13	Feb 13	Mar 13	Apr 13	May 13	Jun- 13	July 13	Aug 13	Sep 13	Oct 13	Nov 13	Dec 13	2014
ED UH/UHE (328)													
Periop Refresher													
New House Staff (150)													
Interventional Radiology UH/UHE (<100)													
Nuclear Medicine UH/UHE (<100)													
Endoscopy UH/UHE (<100)													
Bronchoscopy Suites (<100) (Tour / RA; No LDI)													
Radiation Oncology UH/Stephanie Spielman (<100)													
Critical Care Areas (1200)													

 Area Tours; Pre-Briefs; Pre – Training Risk Assessment; Leadership Training

 Training classes (Teamwork Skills Workshop - TSW)

 Hardwire Safety Tools (HST) Workshops / HST Piloting

 Full implementation of CRM principles, Unit level audits/observations

 Observation/Coach Feedback (OCF): Post Implementation Risk Assessment

## OSUWMC CRM Trained Areas: 6000 + trained

Calendar Year	Departments
2010 - 2011	Health System Perioperative Services (5 Hospitals)
2012	Perinatal Services Heart Catheterization Labs (2 Hospitals) Electrophysiology Labs (2 Hospitals) Invasive Prep & Recovery (2 Hospitals) Emergency Services (2 Hospitals)
2013	Interventional Radiology (2 Hospitals) Nuclear Medicine (4 Hospitals) Bronchoscopy Suites (2 Hospitals) Endoscopy (2 Hospitals) Radiation Oncology (2 Hospitals)
2014	Critical Care – 15 Units (4 Hospitals)
2015-2016	MRI (3 Hospitals); Noninvasive Cardiology; Radiology (4 Hospitals)

# CRM Hardwire Safety Tools & Principles

## OSU SURGICAL TEAM SAFETY CHECKLIST



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### SIGN IN

(Before Induction)

Initiated/Led by Anesthesia Attending  
(Acceptable for Resident/CRNA to lead in cases involving MAC/block outside of OR)

- ☐ Team Members Introduce Themselves
- ☐ Patient Identification
  - Procedure
  - Site marked by Attending Surgeon
  - Confirmed Consent
  - Blood Band
  - Allergies
  - Positioning
- ☐ Anesthesia Assessment
  - Machine and Equipment Check
  - Difficult Airway?
  - OSA?
  - Patient's ASA status
  - Beta Blocker given, if indicated
  - Oxygen Level/Fire Safety
  - Glucose Management
- ☐ Blood Available
- ☐ Equipment and Special Medications Available

### TIME OUT

(Before Skin Incision)

Initiated/Led by Attending Surgeon

- ☐ Team Members Introduce Themselves
- ☐ Patient, Operation and Operative
  - Site Verified
  - Anticipated Operative Course
  - Blood Loss Anticipated
  - Imaging available
- ☐ Fire Safety
  - Oxygen, tube, saline in cuff, patient protection, environment check
- ☐ Confirm pressure ulcer prevention
- ☐ Allergies
- ☐ Antibiotics Given
  - Selection and Time
- ☐ Imaging Displayed

### SIGN OUT

(After First Closing Count)

Initiated/Led by Surgeon

- ☐ Performed Procedure Recorded
- ☐ Wound Class Verified
- ☐ Body Cavity Search Performed
- ☐ Counts Correct
  - Sponges, Sharps, Instruments
- ☐ Specimens visualized, verified and labeled
- ☐ Team Debriefing
  - DVT
  - Prophylactic antibiotics
  - Glucose management
  - Beta blockers
  - Sleep apnea
  - What went well?
  - Recommendations for improvement?

V5 CRM Tool #1 Susan Moffatt-Brune, MD, PhD  
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PLEASE SPEAK UP WITH QUESTIONS AND CONCERNS

## CRM Theme of the Month



### Red Flags

November



See it...Say it...Fix it...

Red flags are warning signs of situations that may be leading to an undesirable outcome. Examples include conflicting inputs, distractions, confusion, not communicating, violation of a policy or procedure, fatigue and stress.

#### See it...Say it...Fix it

- See it: you must be able to recognize the red flag by what it looks like, sounds like and feels like. If you see one, not flag, start looking for others.
- Say it: communicate what you see to your team by clearly stating the problem and proposing a solution before continuing the procedure.
- Fix it: take appropriate action to get a solution and stop the error chain before there are adverse outcomes.

Please review this CRM Theme of the Month at upcoming Leadership, Faculty, Staff and Quality meetings.  
For more information on Crew Resource Management at Ohio State's Wexner Medical Center, visit us on our [Outsides](#) site.

If you have questions or comments, please contact Judy Bourneque, Senior Quality Manager for Health System Perioperative Services and Crew Resource Management at [judy.bourneque@osu.edu](mailto:judy.bourneque@osu.edu) or x3-8893.

See it

## CRM Theme of the Month



### Focus

September



When distractions compromise or have the potential to compromise patient safety, use the word "Focus" to get the team's attention. Here are some key points to remember when the word "Focus" is used.

#### Focus:

- Discontinue non-essential conversations. Focus attention on the speaker, who will state the concern or intent.
- Turn down any music.
- Use computers only to access information critical to the case.
- Use phones only for emergency conversations.

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See it



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## Anesthesia Handoff to Patient Care Provider

### Perioperative Services

- I Introduction of Team
- S Surgical Procedure
- Pt Name Ht/Wt
- B PMH
- Allergies
- Isolation Precautions
- Antibiotics
- Access
- Monitors
- Position
- Anesthetic Type
- Anesthetic Course
- Medications
- Surgical Course
- A Airway issues
- Hemodynamic stability
- Oxygenation/ventilation
- Pain management
- Temperature
- R Plan
- Expected Recovery and discharge

"What questions do you have?"

V5 Perioperative CRM Tool No. 1

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Mike Ardittica, MD

# Customized Standardization

OSU SURGICAL TEAM SAFETY CHECKLIST		
<b>SIGN IN</b> (Before Induction) Initiated/Led by Anesthesia Attending Surgical Representative Must be Present (Acceptable for Resident/CRNA to lead in cases involving MAC/Block outside of OR)	<b>TIME OUT</b> (Before Skin Incision of Each Procedure) Initiated/Led by Attending Surgeon	<b>SIGN OUT</b> (After First Closing Count) Initiated / Led by Surgeon
<b>**Team Members Introduce Themselves**</b> <ul style="list-style-type: none"><li>Include Patient</li></ul> <b>Patient Identification</b> <ul style="list-style-type: none"><li>Procedure</li><li>Site marked by Attending Surgeon</li><li>Confirmed Consent</li><li>Blood Band</li><li>Allergies</li><li>Positioning</li></ul> <b>Anesthesia Assessment</b> <ul style="list-style-type: none"><li>Machine and Equipment Check</li><li>Difficult Airway?</li><li>OSA Risk?</li><li>DVT</li><li>Beta Blocker given if indicated</li><li>Oxygen level / Fire Safety</li><li>Glucose Management</li><li>Foley Catheter/ Orders</li><li>Antibiotics</li></ul> <b>Blood/ Special Medications Available</b> <ul style="list-style-type: none"><li>Implants, Devices, Special Equipment/ Supplies</li></ul>	<b>Team Members Introduce Themselves</b> <ul style="list-style-type: none"><li>Patient, Operation and Operative Course<ul style="list-style-type: none"><li>Site Verified (using consent)</li><li>Anticipated Operative Course</li><li>Blood loss anticipated</li></ul></li><li>Fire Safety<ul style="list-style-type: none"><li>Oxygen, tube, saline in cuff, patient protection, environment check</li></ul></li><li>Confirm pressure ulcer prevention</li><li>Allergies</li><li>Antibiotics given<ul style="list-style-type: none"><li>Selection and Time</li></ul></li><li>Imaging Displayed, Reviewed by Attending Surgeon</li><li>Expected Patient Disposition</li></ul>	<b>Performed Procedure Recorded</b> <ul style="list-style-type: none"><li>Wound Class</li><li>Body Cavity</li><li>Counts Correct<ul style="list-style-type: none"><li>Sponges, Shave</li></ul></li><li>Specimens verified and labeled</li></ul> <b>Team Debrief</b> <ul style="list-style-type: none"><li>DVT</li><li>Prophylactic</li><li>Beta blockers</li><li>Glucose management</li><li>Foley Catheter</li><li>OSA Orders</li><li>What went well</li><li>Recommendations</li></ul>

PLEASE SPEAK UP WITH QUESTIONS AND CONCERNS

OSUWMC Interventional Radiology Team Safety Checklist		
<b>SIGN IN</b> (Upon Arrival to Room) Initiated/Led by Physician	<b>TIME OUT</b> (Before procedure start) Initiated/Led by Attending Physician	<b>SIGN OUT</b> (Prior to leaving the room) Initiated/Led by Physician
<b>**Team Members Introduce Themselves**</b> <ul style="list-style-type: none"><li>Patient's Name, 2nd Identifier</li><li>Procedure read from informed consent</li><li>Site laterality verified</li></ul>	<b>**Team Members Introduce Themselves**</b> <ul style="list-style-type: none"><li>Patient's Name, 2nd Identifier (with anesthesia)</li><li>Procedure read from informed consent</li><li>Site laterality verified</li></ul>	<b>Physician</b> <ul style="list-style-type: none"><li>Summary of procedure performed</li><li>Role Assignments Post Procedure</li><li>Specimens visualized, verified &amp; labeled (if Applicable)</li><li>Device Implants (if Applicable)</li><li>Medications<ul style="list-style-type: none"><li>Sedation</li><li>Other</li></ul></li><li>Counts Correct (if Applicable)</li><li>Plan of Care</li></ul> <b>Team Debriefing</b> <ul style="list-style-type: none"><li>What Additions Do You Have?</li><li>Comments/Suggestions for improvement in debrief box</li></ul>

PLEASE SPEAK UP WITH QUESTIONS & CONCERNS

OSUWMC Endoscopy Team Safety Checklist		
<b>SIGN IN</b> Led by Attending Endoscopist	<b>TIME OUT</b> (Before Scope Insertion) Led by Attending Endoscopist	<b>SIGN OUT</b> (Post Endoscopy) Initiated/Led by Nurse
<b>Team Member Introductions</b> <ul style="list-style-type: none"><li>Team Verification of Procedure and Anesthesia Consents (if Applicable)</li><li>Radiation Badges On (if Applicable)</li></ul> <b>Anesthesia Assessment (if Applicable, Before Induction)</b> <ul style="list-style-type: none"><li>Initiated/Led by Anesthesia Attending (Acceptable for Resident/CRNA to lead in cases involving MAC/Block)</li><li>Machine and equipment check</li><li>Difficult airway?</li><li>OSA?</li><li>Patient's ASA status</li><li>Beta blocker given if indicated</li><li>Oxygen level/fire safety rating</li><li>Glucose management</li></ul>	<b>Endoscopy</b> <ul style="list-style-type: none"><li>Patient name</li><li>Patient MRN</li><li>Indications for procedure</li><li>Procedure (therapeutic plan)</li></ul> <b>Endo Technician/Nurse</b> <ul style="list-style-type: none"><li>Verify patient identity on wristband</li><li>Verify correct patient on endo and fluoroscopy screen</li><li>Verify correct consent signed</li></ul> <b>Nurse</b> <ul style="list-style-type: none"><li>Allergies</li><li>Anticoagulants (date stopped)</li><li>Antibiotics needed/given?</li><li>Special considerations?</li><li>Pertinent labs: INR, Hgb, Pts</li></ul> <b>Endoscopist</b> <ul style="list-style-type: none"><li>Specimens visualized, verified and labeled</li><li>Medication totals</li></ul> <b>Endoscopy</b> <ul style="list-style-type: none"><li>Endoscopic findings</li><li>Post procedure plan</li></ul> <b>Debriefing (if appropriate)</b>	

PLEASE SPEAK UP WITH QUESTIONS & CONCERNS

OSU Nuclear Medicine Team Safety Checklist		
<b>SIGN IN</b> (Pre-Procedure)	<b>TIME OUT</b> (Before procedure start) Initiated/Led by EP or NMT	<b>SIGN OUT</b> (Prior to leaving the room) Initiated/Led by EP
<b>Team Members Introduce Themselves</b> <ul style="list-style-type: none"><li>NMT/ EP/ RN<ul style="list-style-type: none"><li>Patient's Name, 2nd Identifier</li><li>Allergies</li><li>Review Clinical Indication</li></ul></li></ul>	<b>Team Members Introduce Themselves ALL Members are in the exam room before exam start.</b> <ul style="list-style-type: none"><li>NMT/ EP/ RN<ul style="list-style-type: none"><li>Patient's Name, 2nd Identifier</li><li>Confirm Patient Status (OP/CDU/IP)</li><li>Verifies procedure</li></ul></li></ul>	<b>NMT/ EP/ RN</b> <ul style="list-style-type: none"><li>Performed procedure</li><li>NMT complete exam in Centricity</li><li>RN update IHS</li><li>EP update PowerScribe</li></ul> <b>Team Debriefing</b> <ul style="list-style-type: none"><li>NMT - Check for Follow up imaging/diagnostic procedures, etc.</li><li>NMT is to escort patient to waiting room or inpatient holding area.</li><li>NMT give water to patient</li><li>NMT inform the patient a return time for stress images if applicable</li><li>RN - ensure patient does not need reversal (Ectoscan)</li><li>EP - Clean/sanitize procedure room</li></ul>

PLEASE SPEAK UP WITH QUESTIONS AND CONCERNS

OSU Cardiac Cath Lab Team Safety Checklist	
<b>Time Out</b> (Patient arrival to Cath Lab) Initiated/Led by Attending Cardiologist	<b>Sign Out</b> (Procedure Completed) Initiated/Led by Attending Cardiologist
<b>Confirm Informed Consent has been completed</b> <ul style="list-style-type: none"><li>All Team Members Introduce Themselves</li><li>Patient Identification<ul style="list-style-type: none"><li>Confirm name and MRN</li><li>Procedure</li><li>Site</li><li>Allergies</li><li>Current Anticoagulation/medication</li><li>Risk Assessment</li></ul></li><li>Prior Imaging Reports Displayed</li><li>Assessment of Access Site and Emergency Equipment Available</li><li>Sedation Order</li><li>Please Speak Up With Questions and/or Concerns at Any Time</li><li>What Questions Do You Have?</li><li>Activate Focus Zone</li></ul>	<b>Access Site Closure Assessment</b> <ul style="list-style-type: none"><li>Contrast and Fluoro Time</li></ul> <b>Team Debriefing</b> <ul style="list-style-type: none"><li>What went well?</li><li>Recommendations for improvement?</li><li>Post Procedure Role Assignment</li><li>Plan of Care</li><li>Identification of High Risk Personnel<ul style="list-style-type: none"><li>Blinding</li><li>Hemodynamic instability</li><li>Active Indicators</li></ul></li><li>What Questions Do You Have?</li></ul>

THANK YOU

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OSUWMC Radiation Oncology Timeout Checklist	
<b>Daily Treatment Time Out</b> Led by Radiation Therapist SRS/SBRT: Led by Attending Oncologist & Therapist	<b>Daily Treatment Time Out With Anesthesia</b> Led by Anesthesiologist & Therapist and Nurse
<b>Inside Timeout</b> <ul style="list-style-type: none"><li>TURN OFF MUSIC</li><li>Have EMS mobile on room screen</li><li>Confirm the following with patient: Name/DOB/MRN/Photo ID</li><li>Treatment site verified by patient/staff</li><li>Documentation in Aria</li></ul> <b>Outside Timeout</b> <ul style="list-style-type: none"><li>Two Rad Onc staff members verify clean room</li><li>Therapist running machine verifies patient name/photo/site off EMR</li><li>Second team member independently checks Linc console monitor and gives verbal confirmation</li><li>Repeat outside timeout with multiple site treatments or interruptions</li></ul> <b>ACTIVATE FOCUS ZONE</b>	<b>All Team Members Introduce Themselves Verify head count</b> <ul style="list-style-type: none"><li>Informed consent</li><li>Sedation assessment</li></ul> <b>Inside Timeout</b> <ul style="list-style-type: none"><li>TURN OFF MUSIC</li><li>Have EMS mobile on room screen</li><li>Confirm the following with patient: Name/DOB/MRN/Photo ID</li><li>Treatment site verified by patient/staff</li><li>Documentation in Aria</li><li>States full procedure from memory (anticipated procedural course: PACU)</li><li>Allergies</li><li>TV status</li><li>Risk Assessment (NPO status/emesis, suction, anesthesia machine and monitor functioning, back stand, pediatric code and ambu bag, transport cart, full oxygen tank, fire safety)</li></ul> <b>Outside Timeout</b> <ul style="list-style-type: none"><li>Two Rad Onc staff members verify clean room</li><li>Therapist running machine verifies patient name/photo/site off EMR</li><li>Second team member independently checks Linc console monitor and gives verbal confirmation</li><li>Repeat outside timeout with multiple site treatments or interruptions</li></ul> <b>ACTIVATE FOCUS ZONE</b>

PLEASE SPEAK UP WITH ANY QUESTIONS OR CONCERNS!

V1 CRM RO Tool No. 2  
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OSUWMC Pulmonary Diagnostics Safety Checklist		
<b>ANESTHESIA SIGN IN</b> (IF APPLICABLE) (BEFORE INDUCTION)	<b>PROCEDURE TIME OUT</b> (CONCURRENT WITH ANESTHESIA SIGN IN or BEFORE PROCEDURE START)	<b>PROCEDURE SIGN OUT</b> (Prior to leaving the room) Initiated/Led by Physician
<b>Team Members Introduce Themselves To Patient On Arrival</b> <ul style="list-style-type: none"><li>Patient's Name, 2nd Identifier read from informed consent</li></ul>	<b>Team Members Introduce Themselves To Patient On Arrival To Room</b> <ul style="list-style-type: none"><li>Physician<ul style="list-style-type: none"><li>Patient's Name, 2nd Identifier</li><li>Planned full procedure</li><li>Literality if applicable</li><li>Additional Equipment/meds</li><li>Fire Safety Rating if applicable<ul style="list-style-type: none"><li>Identified team member responsible for handing off the probe (after "call out" is made)</li></ul></li></ul></li><li>RN/Therapist<ul style="list-style-type: none"><li>Patient's Name, 2nd Identifier, consent verified</li><li>Allergies/Anticoagulation/AACD risk</li><li>Monitoring Equipment (Vp/SpO2/ BP cuff) in place</li></ul></li><li>Therapist<ul style="list-style-type: none"><li>Procedure equipment set up/verified</li><li>Site/Laterality verified if applicable</li><li>Fire safety setup if applicable</li></ul></li></ul>	<b>Physician</b> <ul style="list-style-type: none"><li>Performed procedure recorded</li><li>Post-procedure CXR if applicable</li><li>Specimens verified &amp; labeled</li></ul> <b>RN/Therapist</b> <ul style="list-style-type: none"><li>Specimens verified &amp; labeled</li><li>Medication totals</li></ul> <b>Team Debriefing if indicated</b> <ul style="list-style-type: none"><li>What went well?</li><li>Recommendations for improvement?</li><li>Complete Sign Out form if applicable</li></ul>

PLEASE SPEAK UP WITH QUESTIONS & CONCERNS

# CRM Resource -Themes of the Month

THE OHIO STATE UNIVERSITY WEXNER MEDICAL CENTER

## Crew Resource Management (CRM)


February 2015

### CRM Theme of the Month

#### Debrief

Debrief after a team activity to provide the participants an opportunity to discuss what went well, what could be done better and what needs to happen to address identified opportunities for improvement.

Team activities include procedures, code responses, meetings...



#### Contact Us

Department of Quality and Patient Safety

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Senior Quality Manager  
293-8893


Kim Thompson,  
Program Coordinator  
293-6581

Best practices to promote **Debrief**:

- Focus on team performance
  - Focus on what not who – don't place blame.
- All team members included
  - Leaders open up the discussion, but save input for last. Least experienced answer first.
- Solicit specifics
  - Ask specific open ended questions.
- Timely
  - Perform as soon as possible after the team activity. Keep discussion brief and to the point.

Example: At the conclusion of the procedure, the physician asks the team what went well and whether there were any identified opportunities for improvement. The tech shares that one item was missing from the instrument tray and caused a brief delay. The nurse volunteers to contact the vendor regarding the omission.

Watch this [Video](#)



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## Crew Resource Management (CRM)

May 2015

### CRM Theme of the Month

#### Mutual Support

Mutual Support is the essence of teamwork. Mutual support is a skill that allows teams to function efficiently and effectively. Mutual support helps protect team members from work overload situations, and may reduce the risk of errors.



#### Contact Us

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Program Coordinator  
293-6581


Teams that exhibit **Mutual Support**:

- Distribute and assign work thoughtfully; reallocate tasks as needed; compensate for each other.
- Regularly provide respectful feedback to each other (both individually and as a team).

Examples:


- Two technicians are at the desk during a brief lull in a busy day. They notice another technician racing busily from one area to another. They approach the technician and ask how they can assist until their next patients arrive for testing.
- In an effort to improve efficiency, the medical students offer to assist with room turnover.
- The physician compliments the team on their focus and attention to detail during a long and complicated case.

Watch this [Video](#)



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# Handoff Communication Tools



**Physician to Physician SIGN OUT**  
**Emergency Department**

To be completed on all patients that are not currently discharged.

**I Introduction (if needed)**

**S Situation**  
 Pt Name & Age  
 Complaint

**B Background**  
 Patient presented with / for...


**A Assessment**  
 Suspected / confirmed diagnosis OR diagnosis unknown  
 Pending: Labs / Imaging / Consults

**R Recommendation**  
 Expected Disposition  
 • Admit vs CDU vs Discharge vs based on consult

*"What questions do you have?"*

V2 CRM ED Tool No. 6  
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Date: \_\_\_\_\_  
 Name: \_\_\_\_\_  
 MRN: \_\_\_\_\_  
 Age: \_\_\_\_\_



**Radiology Patient  
Prep Check Sheet &  
Handoff**

RN TO CONFIRM	RN / PA / NP / MD TO CONFIRM
Initials: <input type="checkbox"/> H & P Complete	Initials: <input type="checkbox"/> Site Preference Completed or N/A
<input type="checkbox"/> DNR Y N	<input type="checkbox"/> Informed consent
<input type="checkbox"/> Suspended Y N N/A	<input type="checkbox"/> Procedure Orders
<input type="checkbox"/> Pregnancy Test + - N/A	<input type="checkbox"/> Antibiotics Needed Y N
<input type="checkbox"/> Contrast Allergy Y N	<input type="checkbox"/> Sedation Assessment
<input type="checkbox"/> Labs Completed	
<input type="checkbox"/> Pt ___ PT / NR ___	
<input type="checkbox"/> IV Access	
<input type="checkbox"/> OSA Y N	
<input type="checkbox"/> CPAP/BIPAP Y N	
<input type="checkbox"/> Ability to lie in position for procedure Y N	


Comments:

☒ Patient Ready for Procedure

PRE	POST
<b>I</b> Patient name/MRN Family Expectations	<b>I</b> Patient name/MRN Procedure:
<b>S</b> Procedure _____ Allergies _____	<b>S</b> Physician/Fellow: Needle out _____ Access _____
<b>B</b> ASA/PLAVIX _____ BS _____ ANTIBIOTICS _____ NPO _____	<b>B</b> Complications:
<b>A</b> VS/Pulses _____ IV access/cardiac device/interpreter	<b>A</b> MEDS: _____ VS: _____ SITE: _____ PAIN: _____ CXR: _____ POST LABS: _____
<b>R</b> Specific care instructions	<b>R</b> Disposition/discharge orders Specific care instructions Patient no sedation discharge. _____

V1.18 CRM Tool No. 3  
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Jenna Spier, MD  
 Bridget Brown, RN



**Tech to Tech Handoff**  
**Nuclear Medicine**

**I Introduction**

- Exam room tech introduces covering tech
- Patient name

**S Situation**

- Exam
- Indication of study

**B Background**

- Isolation
- Voiding status
- Ambulation
- IV's
- Allergies

**A Assessment**

- Risk factors
- Red flag examples
  - Altered mental status
  - Physical limitations
  - Language barriers

**R Recommendations**

- Exams to follow

*"What questions do you have?"*

V1.0 Nuc Med CRM Tool No. 3  
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Elizabeth Cao / Martin Raupke

# Can We Calculate a Return on Investment?

Cost of CRM implementation



Avoidable Adverse  
Events

Mortality Reduction

Reduced Patient Safety Indicators

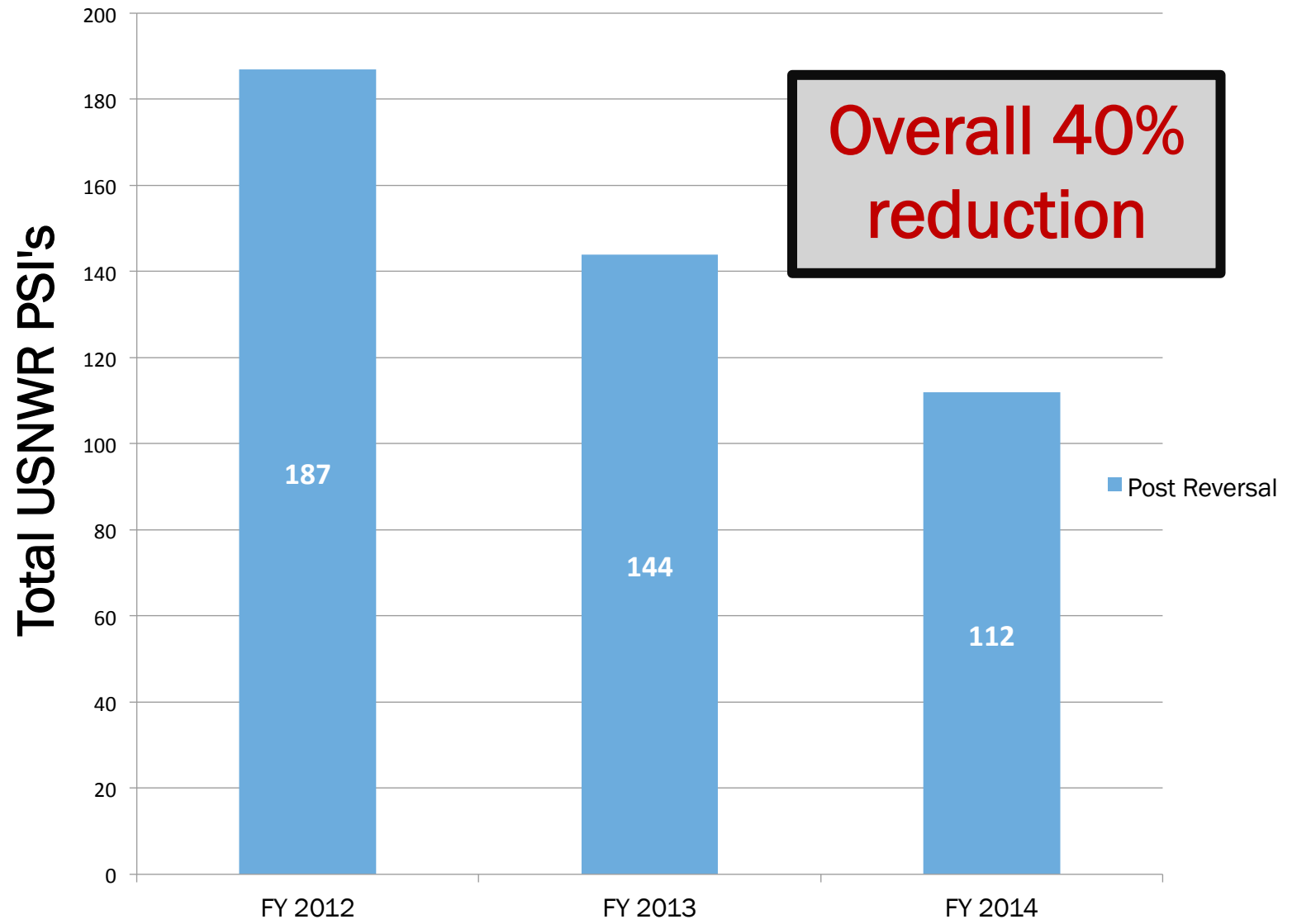
Reduced Claims

# Quality and Safety Scorecard

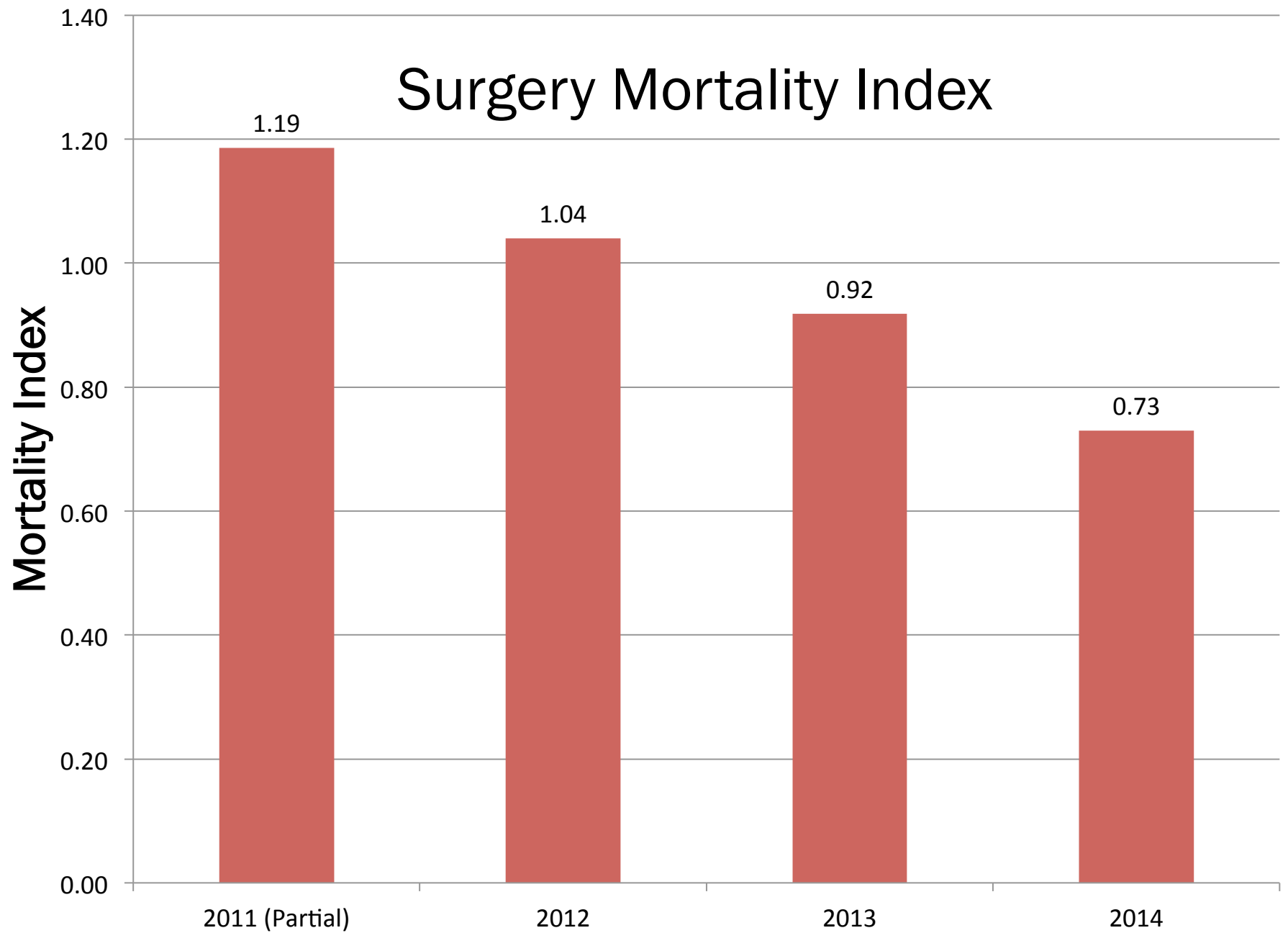
Type of Event
Retained Foreign Bodies
Wrong procedure/site/person events
Medication Events with Harm (Severity E-I)
Severe Injury Falls (Resulting in Change in Patient Outcome)
Hospital Acquired Decubitus Ulcer
Central Line Blood Stream Infections
Ventilator Associated Pneumonia
Hospital Acquired Surgical Site Infections
Hospital Acquired Clostridium Difficile Infection
<b>Total Potentially Avoidable Events</b>



# USNWR PSI Volume



# Surgery Mortality Index



## Potential Savings Per Event

\$ 15,000/ FALL

\$ 60,000/ VAP

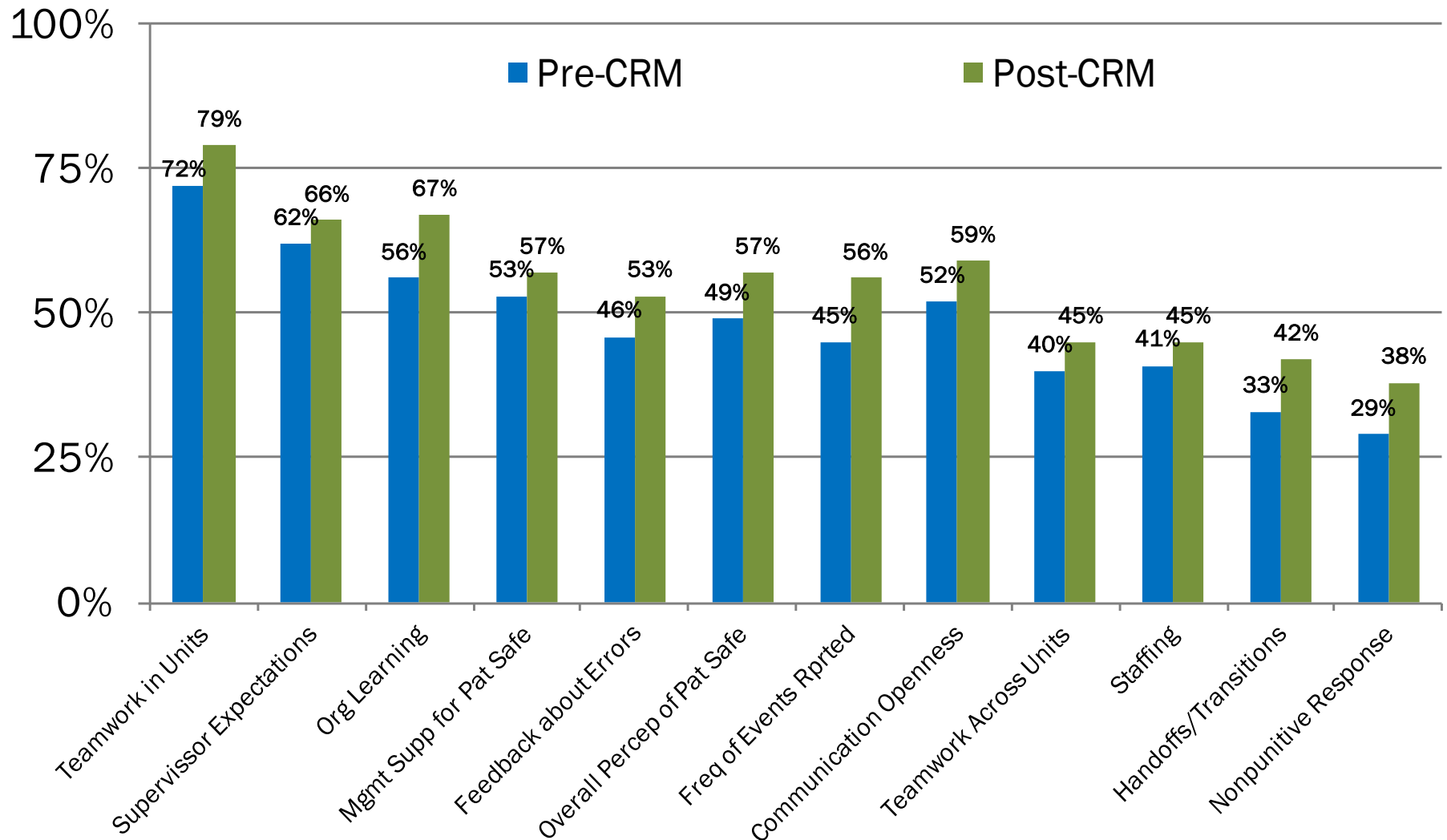
\$ 10,000 / HAPU

\$ 40,000 / SSI

\$ 57,500/ CLABSI

Total Savings

# Culture of Safety Survey



# Operations Council



# Operations Councils

Nurse Lead

Physician Lead

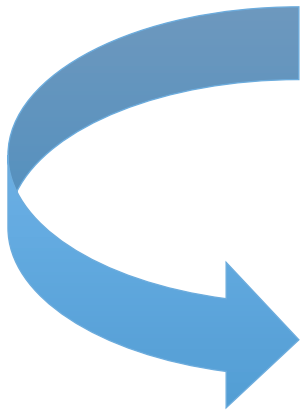
Administrative Lead

**Process Improvement Facilitator**

*Frontline MD's and RN's*

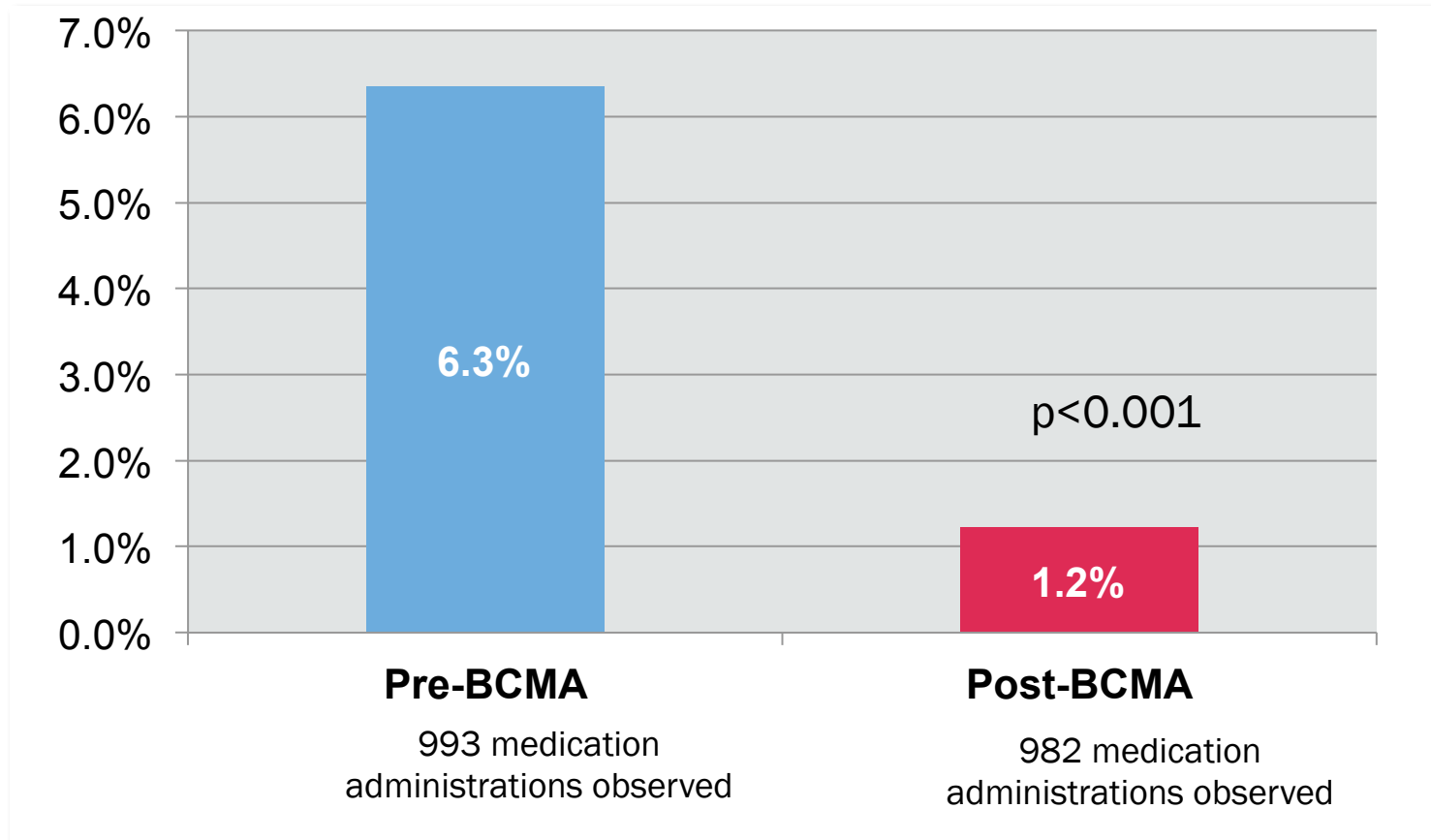
*Pharmacy, PT, OT, etc.*

*Case Management & Social work*



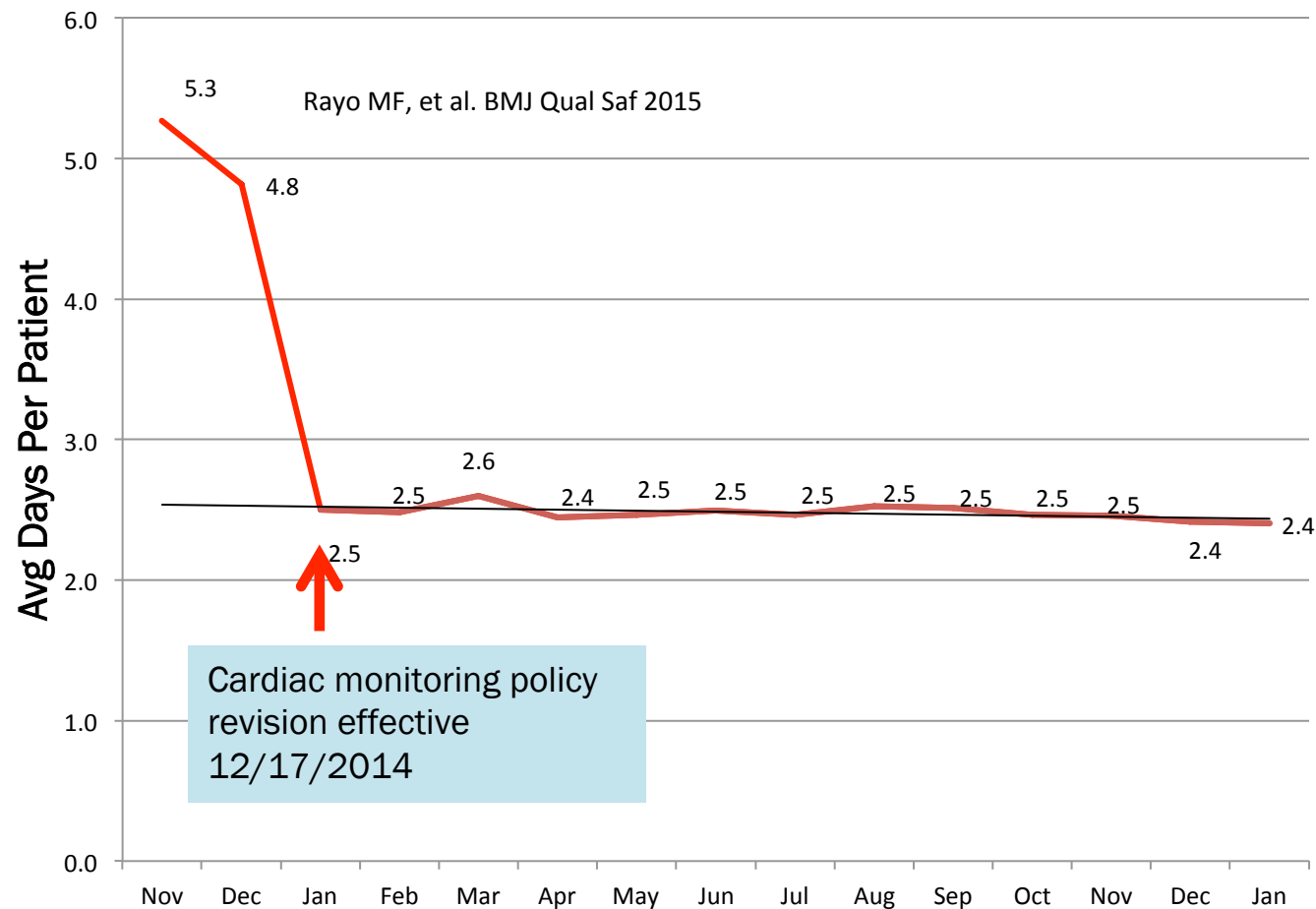
**Facilitator:** →Dedicated team member  
→Lean and Six Sigma training  
→**DATA ACCESS** and support

## ED “Post” Results\*



**Improving Medication Administration  
Safety in Solid Organ Transplant  
Patients Through Barcode-Assisted  
Medication Administration**

# Cardiac Monitoring Days



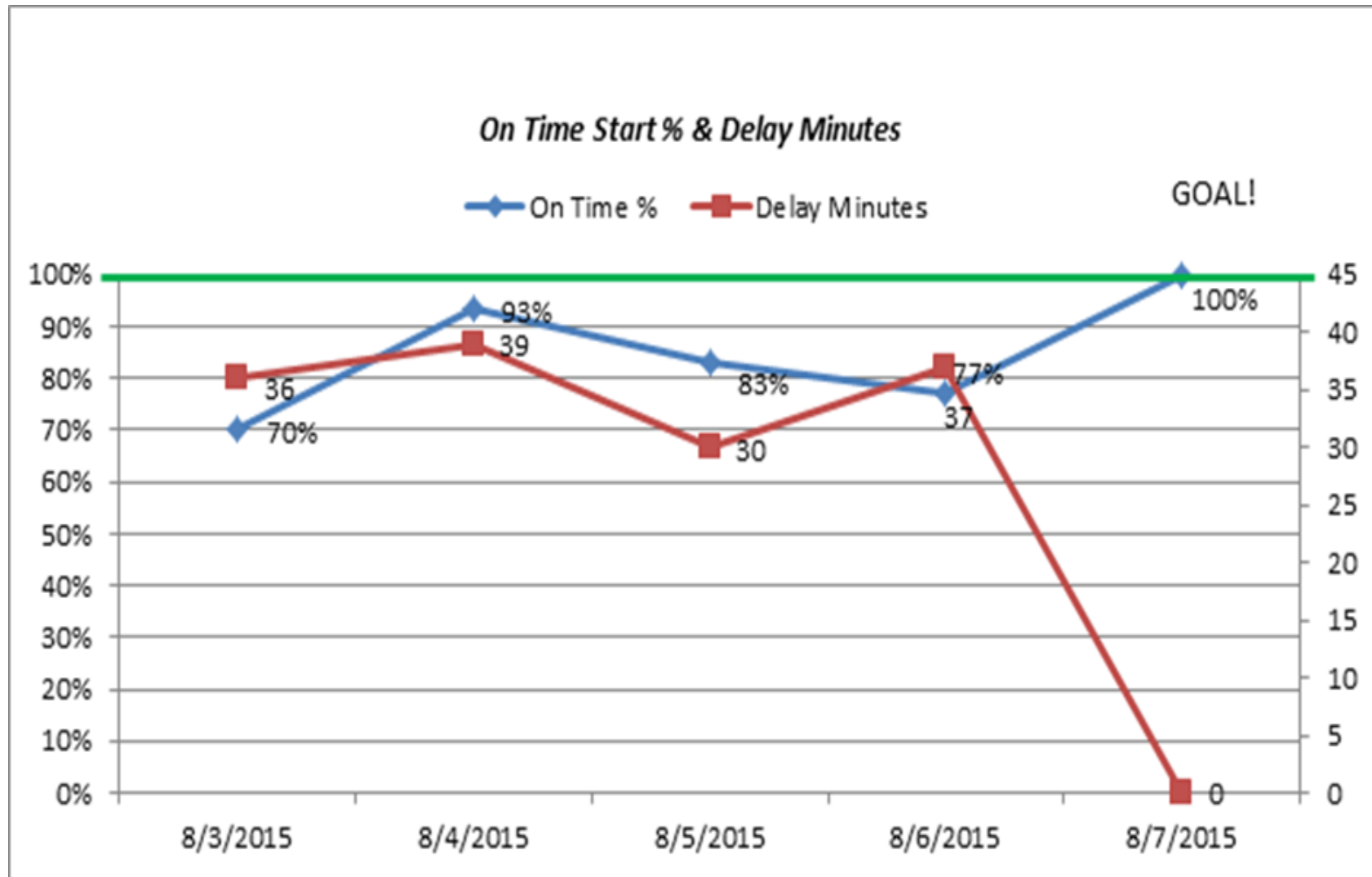
**BMJ Quality & Safety**

**Alarm system management: evidence-based guidance encouraging direct measurement of informativeness to improve alarm response**

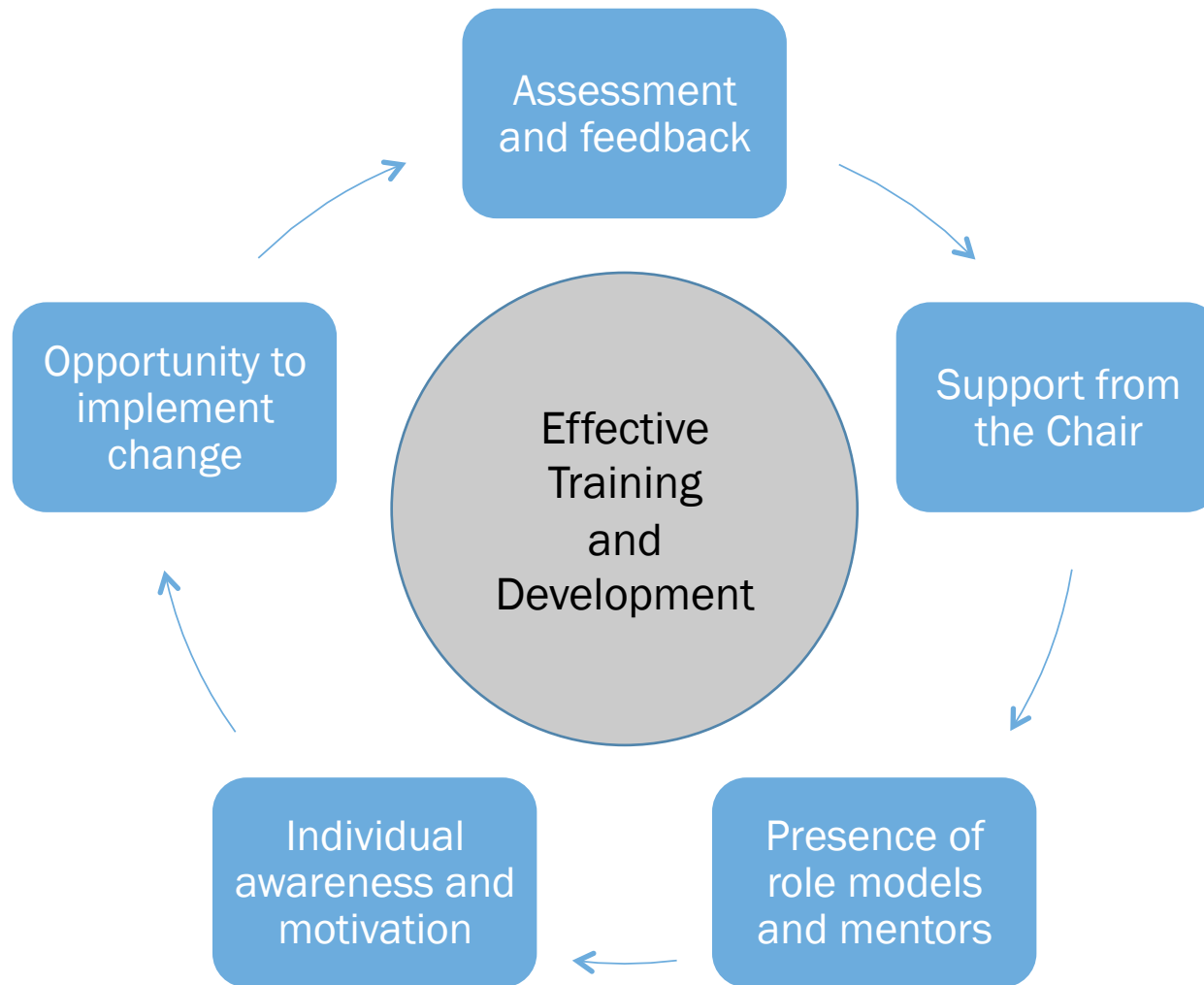
Michael F Rayo<sup>1</sup>, Susan D Moffatt-Bruce<sup>2</sup>



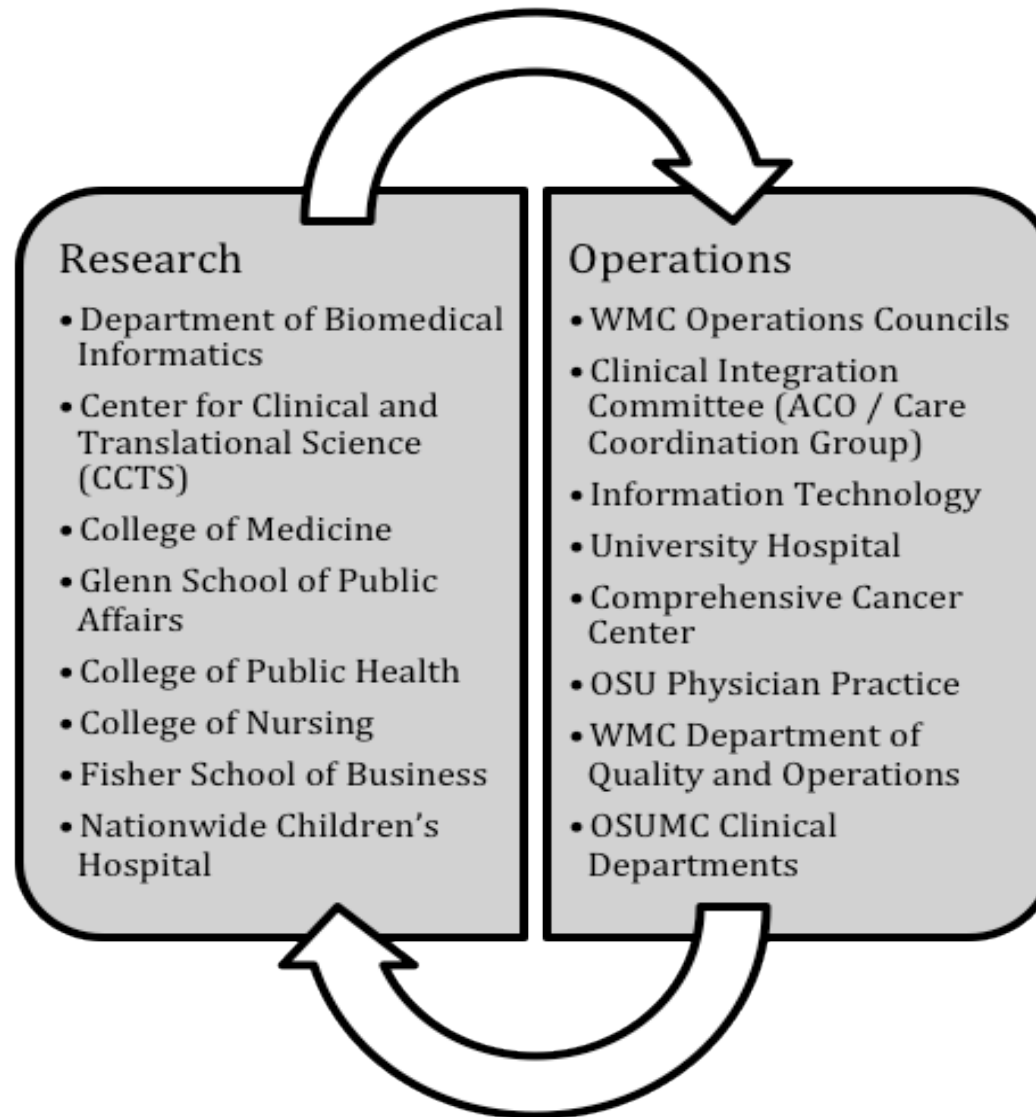
# Weekly Rollup: UH



# How to Build an Effective Improvement Environment



# Integrating Research and Operations for Clinical Transformation



# Institute for the Development of Environments Aligned for Patient Safety (IDEA4PS)

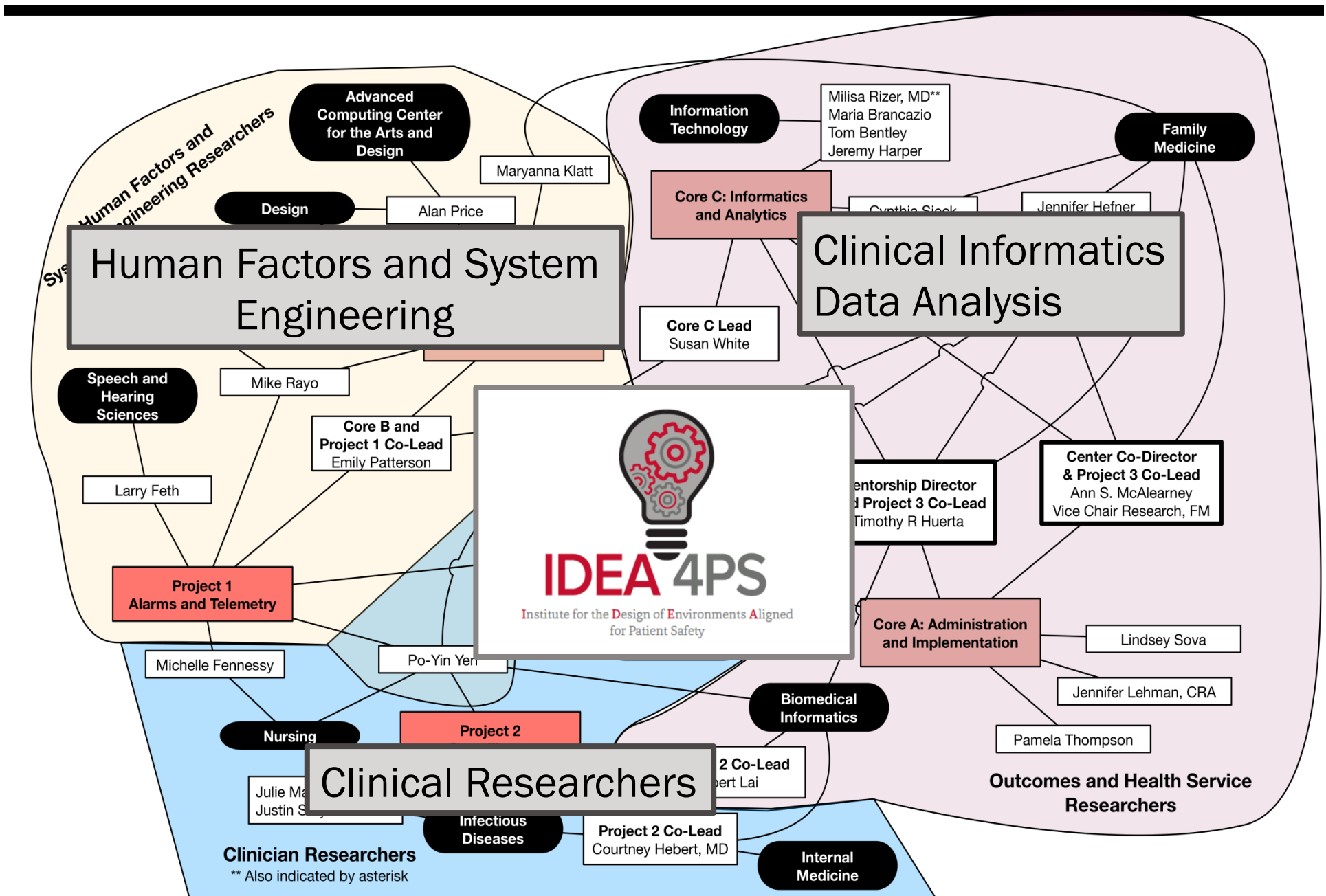
Proposed as an approach to identify and explore how feedback of information can be used to inform the development of robust practices that lead to improved patient safety.

Improve clinical practice by designing, testing and exploring the type and kind of information flows that result in adaptation of the health care work environment.

**Project 1: Telemetry and Alarms:** Focusing on the manner in which information is provided to clinicians, focus on the the signal to noise problem experienced leading to an improvement in the safety and care quality.

**Project 2: Surveillance:** This project focuses specifically on hospital safety events to allow for real time recognition and problem solving: **digit hot spotting**.

**Project 3: Crew Resource Management and Inpatient Information:** impact of new information flows coming from the inpatient records to patients and how CRM can be used to escalate concerns.





**IDEA** 4PS

Institute for the **D**esign of **E**nvironments **A**ligned  
for Patient Safety

# To Learn More

**Cultural Transformation After Implementation of Crew Resource Management: Is It Really Possible?**

<http://journals.sagepub.com/doi/pdf/10.1177/1062860616655424>

**What Is the Return on Investment for Implementation of a Crew Resource Management Program at an Academic Medical Center?**

<http://www.saferpatients.com/wp-content/uploads/2016/06/ROI-for-CRM.pdf>

**Alarm system management: evidence-based guidance encouraging direct measurement of informativeness to improve alarm response**

<http://qualitysafety.bmj.com/content/early/2015/03/02/bmjqs-2014-003373.abstract>

**Improving medication administration safety in solid organ transplant patients through barcode-assisted medication administration**

<http://journals.sagepub.com/doi/abs/10.1177/1062860613492374>