THE OHIO STATE UNIVERSITY
WEXNER MEDICAL CENTER

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

Today's Speakers

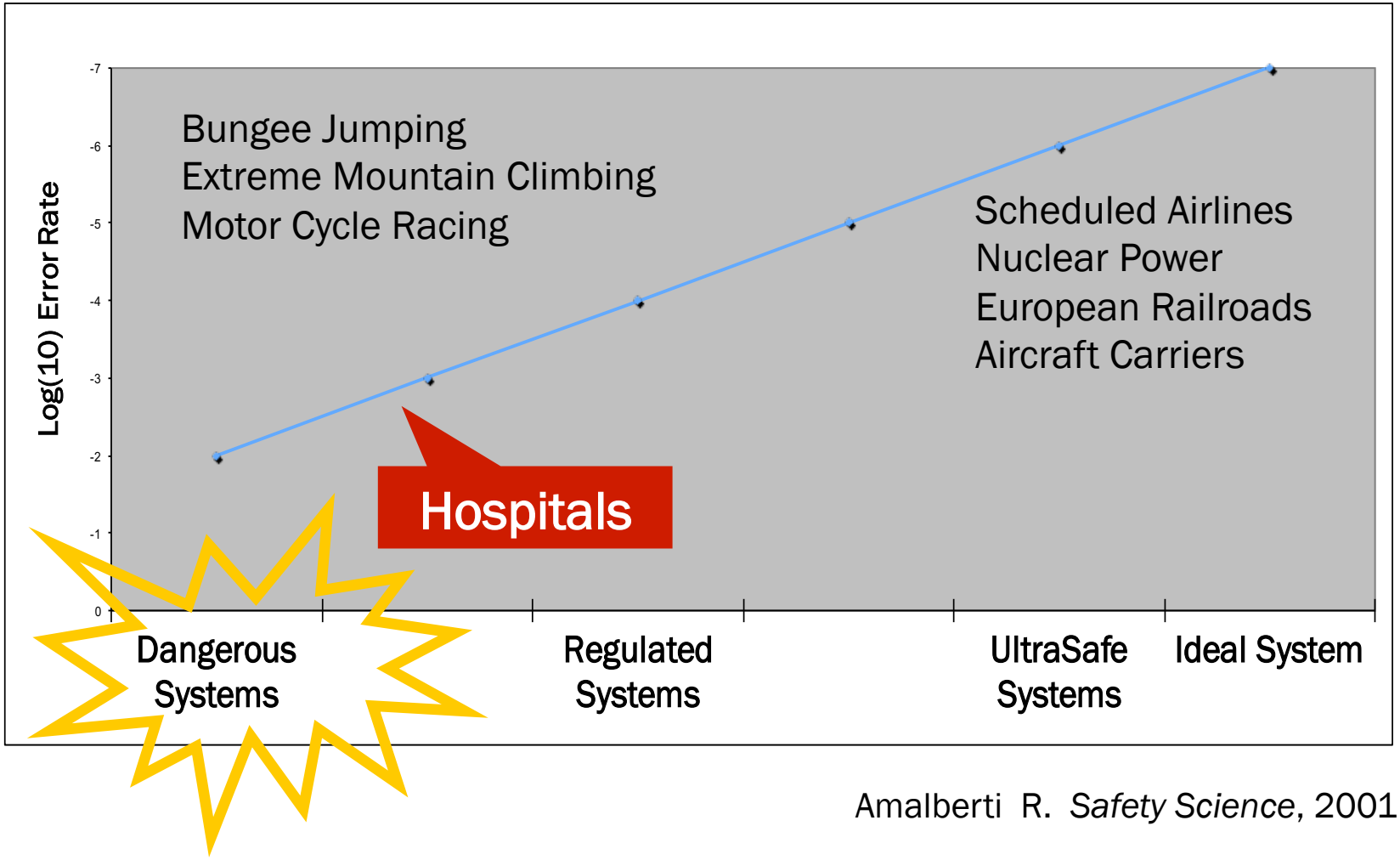
Susan Moffat-Bruce, MD, PhD, MBA
Chief Quality and Patient Safety Officer
The Ohio State University
Wexner Medical Center

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

What This Talk Will Cover

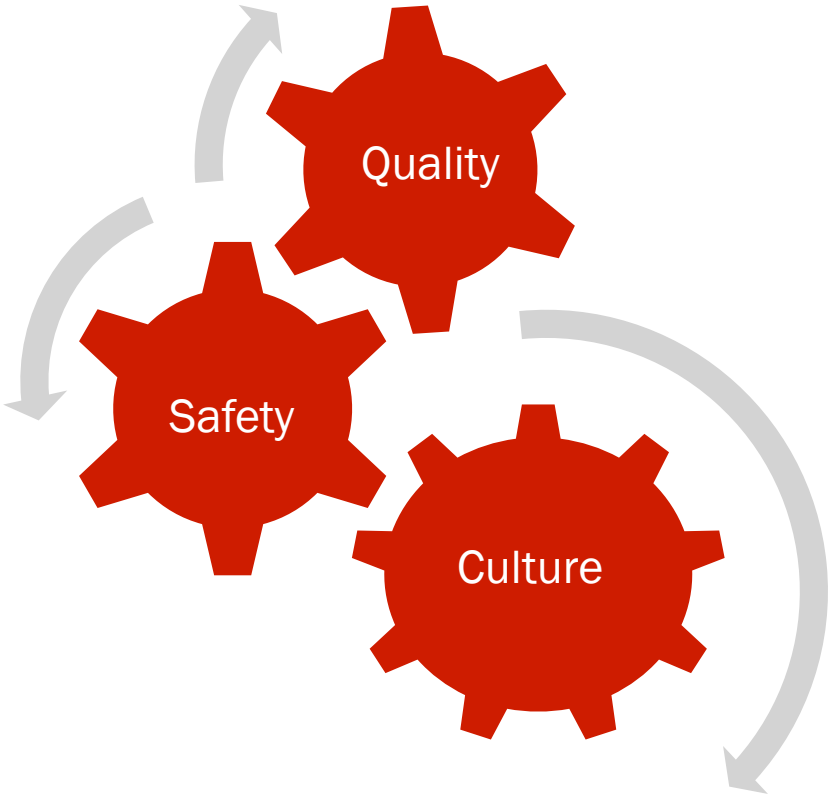
- Motivation and Strategy
- Process
- Tools
- ROI
- Q&A

Not So Safe Systems



Amalberti R. *Safety Science*, 2001

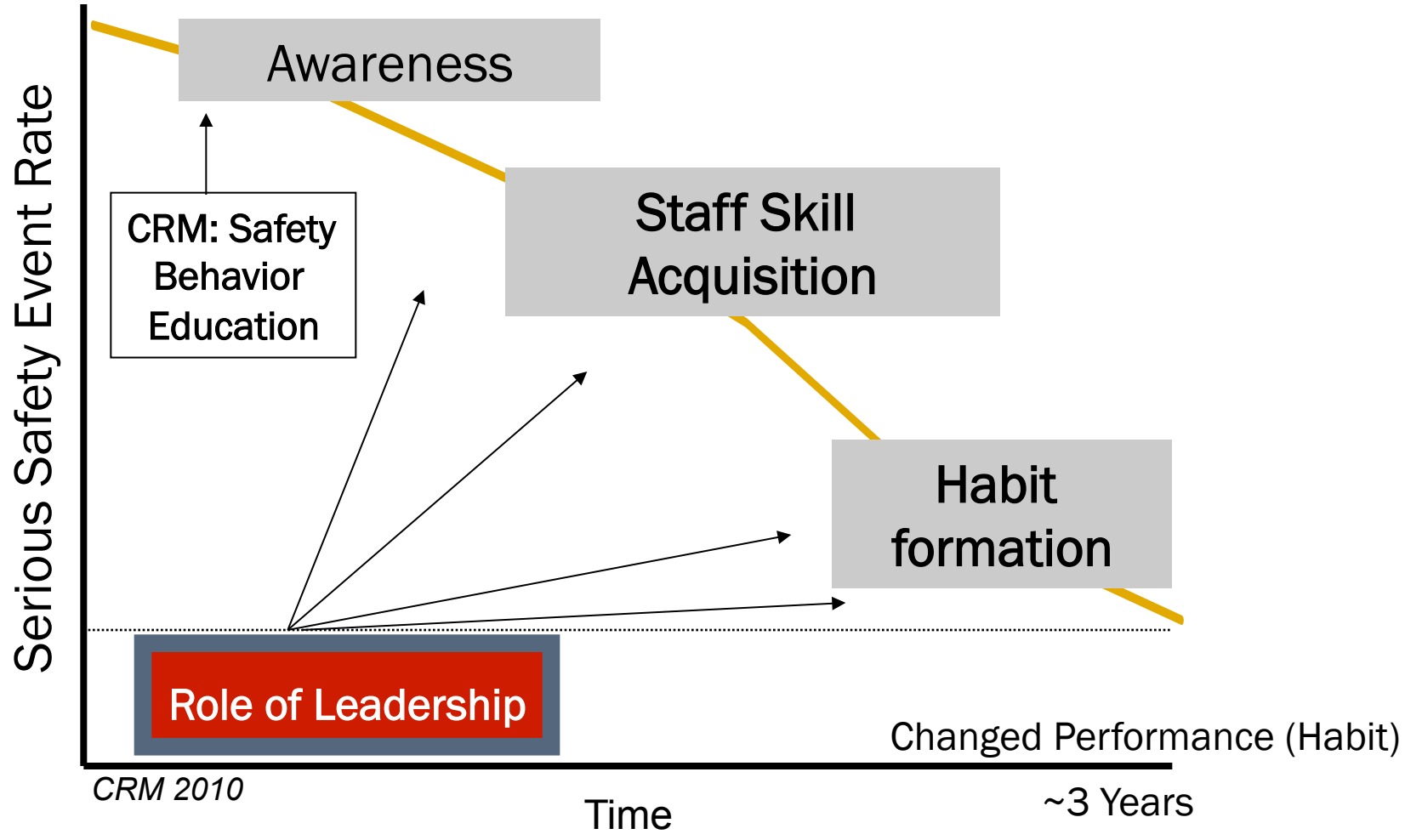
Why Safety? Why a Team Based Approach?



Safety, quality and culture are interconnected.

It must be a team sport.

Starting Point

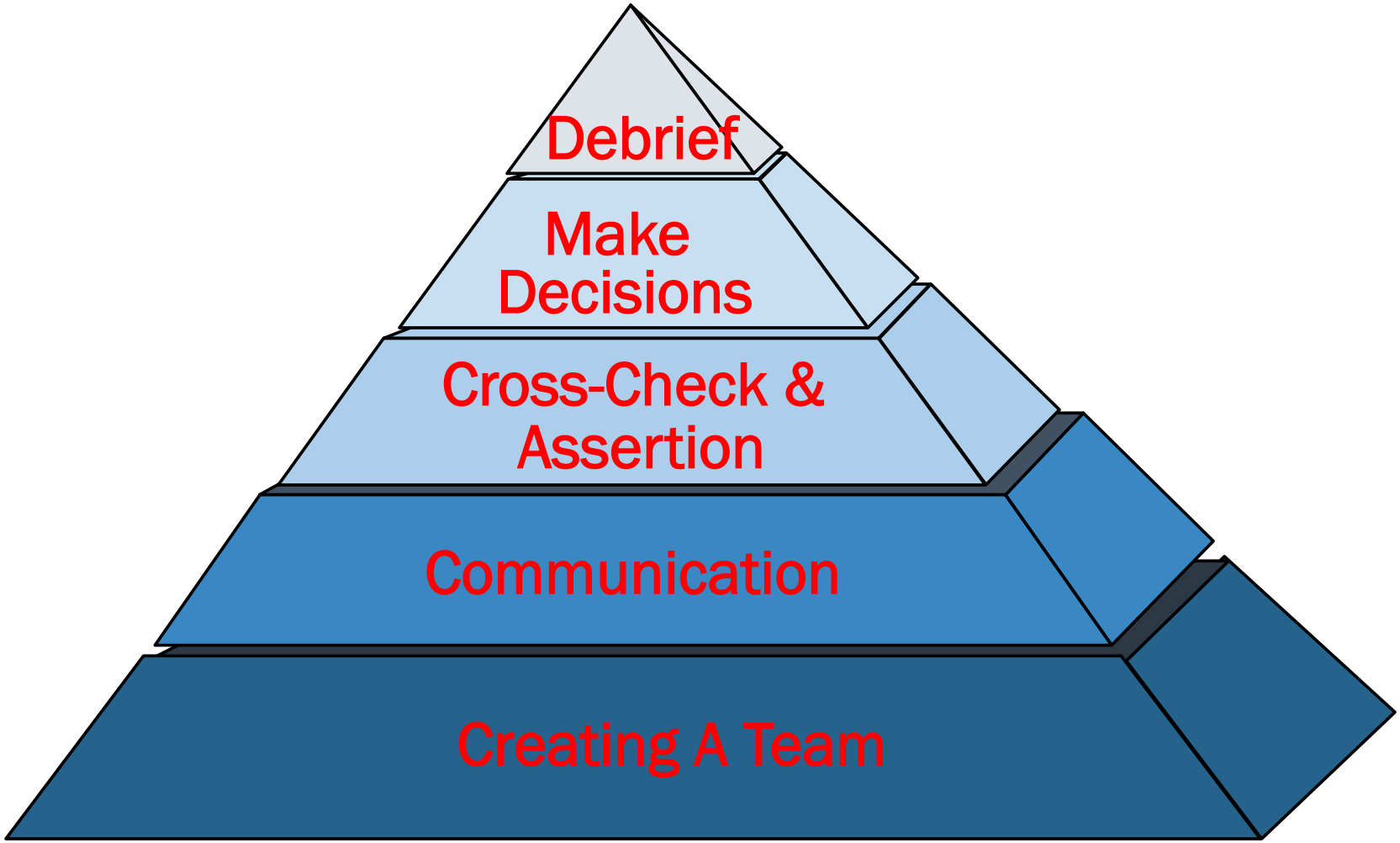


“You should not use an old map...

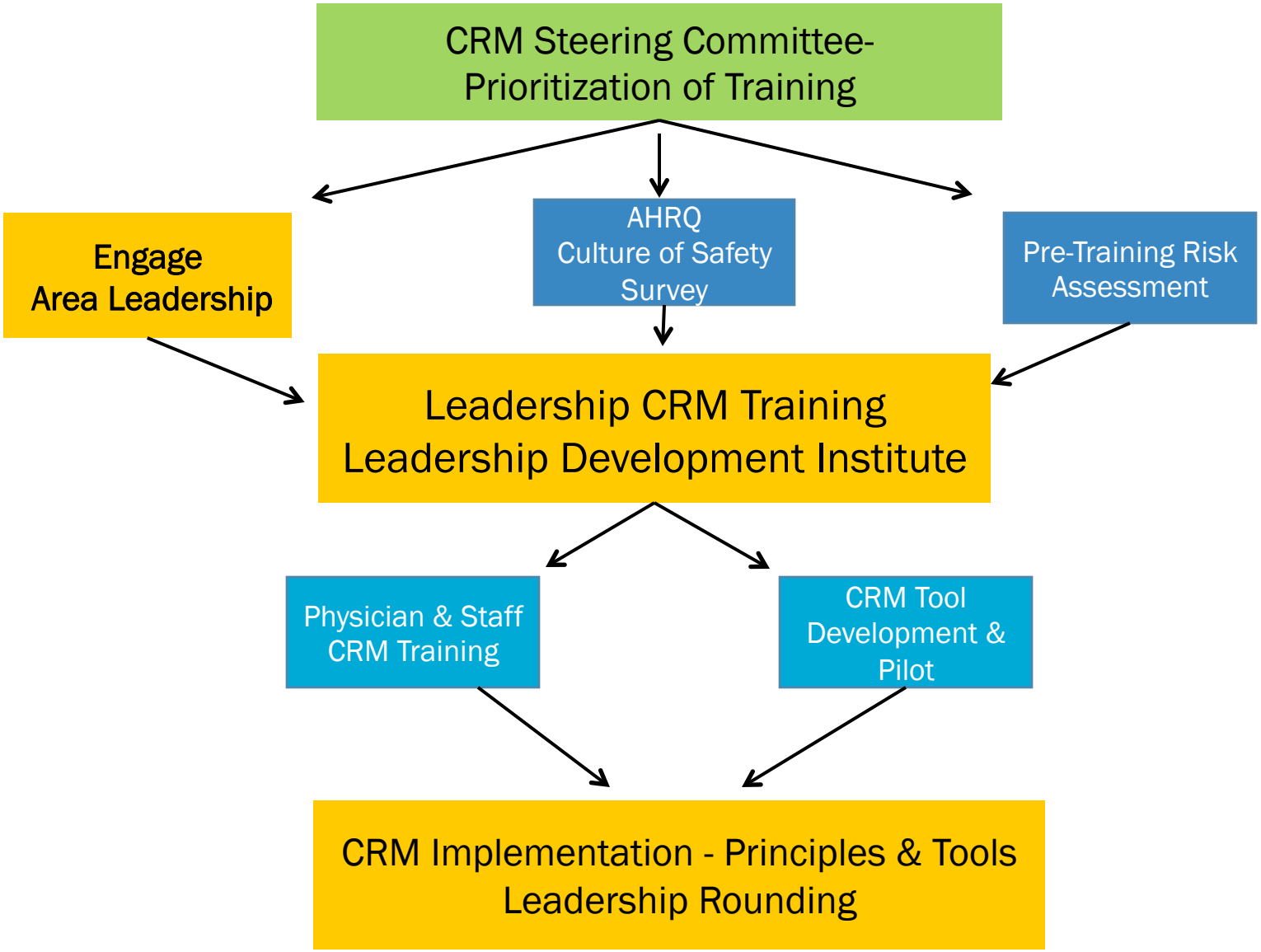
...to explore a new world. ”

Albert Einstein

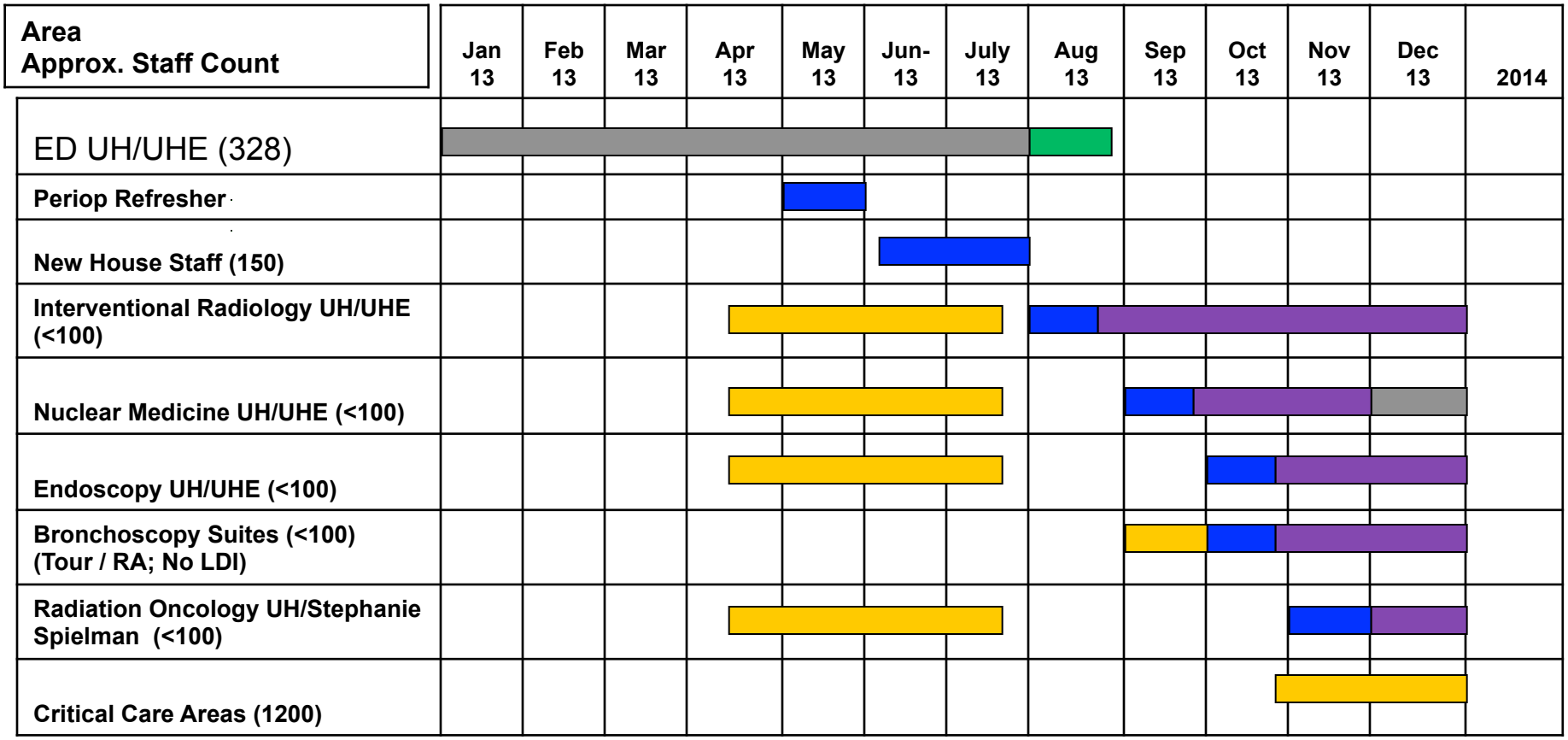
Reduced Errors, Increased Safety & Quality Care



CRM Implementation Process



Implementation Gant Chart



Area 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?

V6 CRMTool.11 Susan Moffatt-Bruce, MD, PhD
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PLEASE SPEAK UP WITH QUESTIONS AND CONCERNS

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CRM Theme of the Month

The Ohio State University Wexner Medical Center

Red Flags

November

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

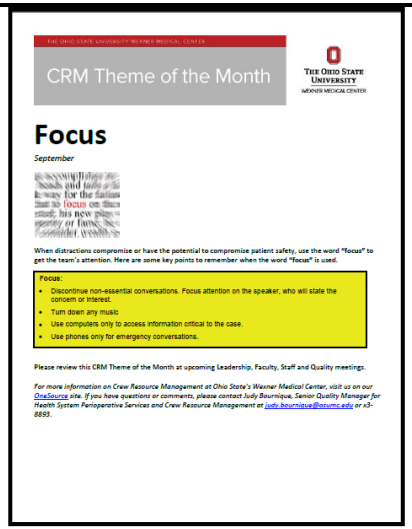
Red Flags are warning signs of situations that may be leading to an undesirable outcome. Examples include conflicting inputs, distractions, confusion, not communicating, violation of a policy or procedure, fatigue and stress.

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 red 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 OneSource site.

If you have questions or comments, please contact Judy Bournique, Senior Quality Manager for Health System Perioperative Services and Crew Resource Management at judy.bournique@osumc.edu or x3-8893.
See it



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CRM Theme of the Month

The Ohio State University Wexner Medical Center

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 interest.
- Turn down any music
- Use computers only to access information critical to the case.
- Use phones only for emergency conversations.

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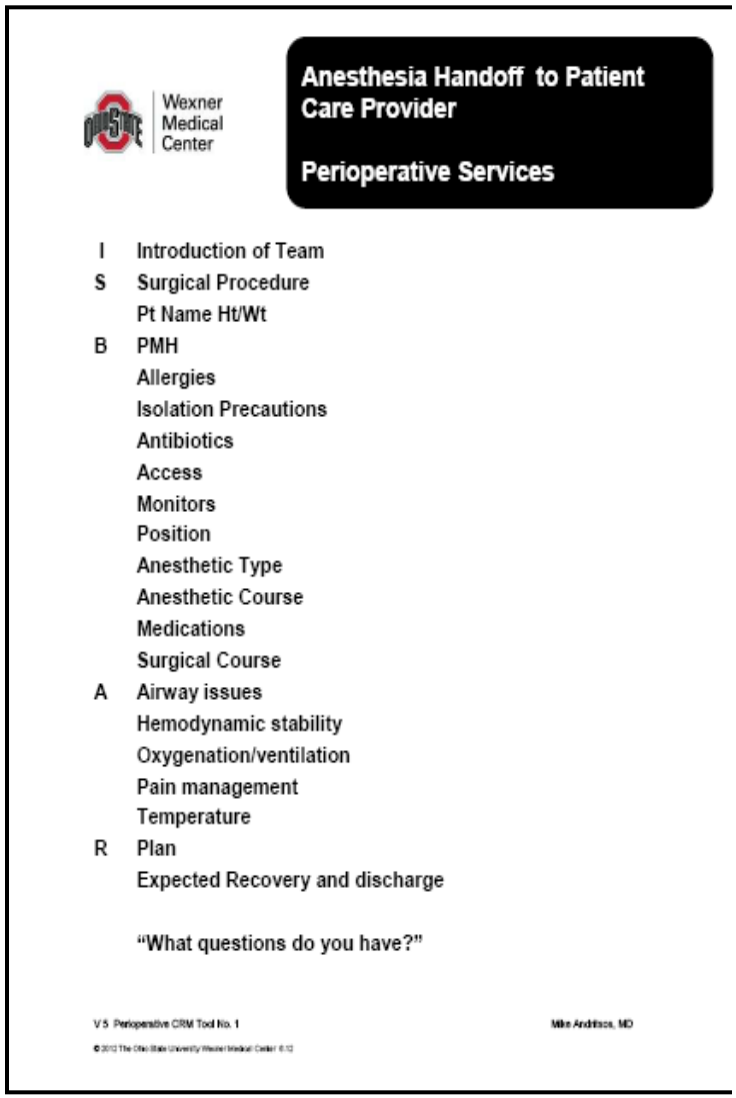

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Anesthesia Handoff to Patient Care Provider

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?"

V 5 Perioperative CRM Tool No. 1 Mike Andritsos, MD

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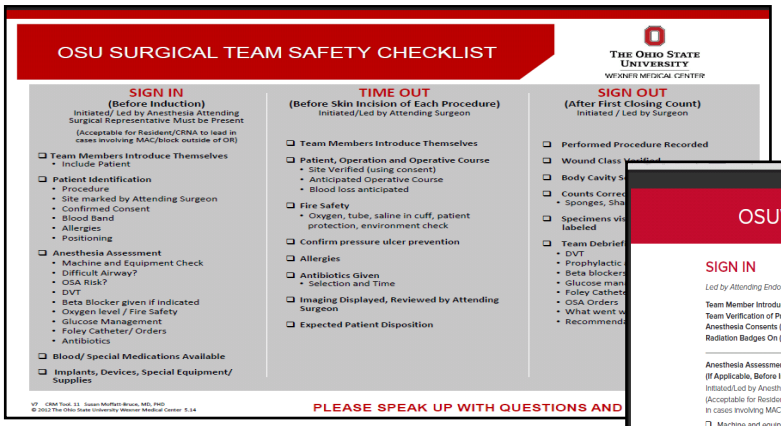
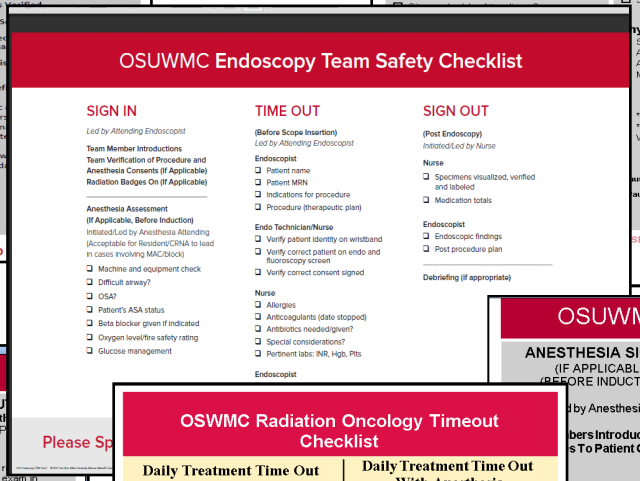
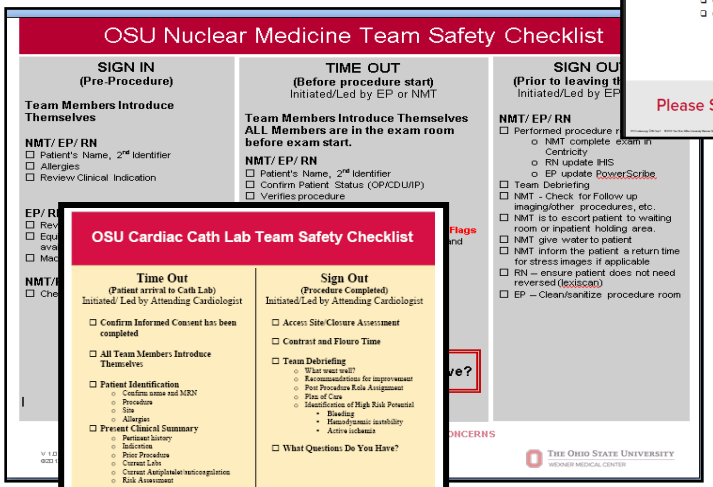
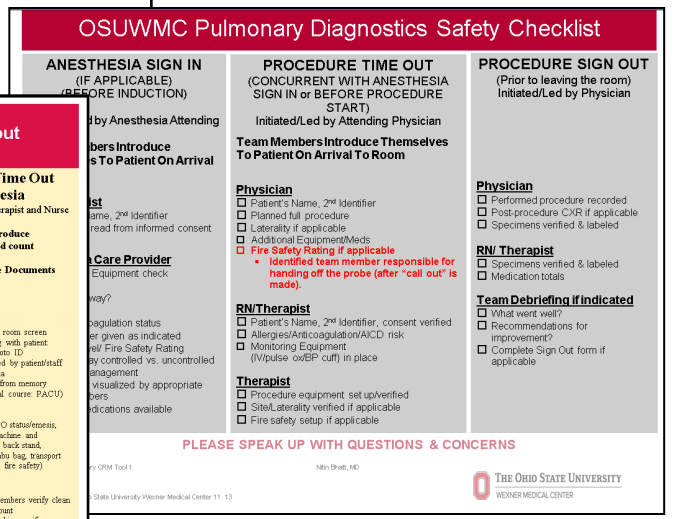
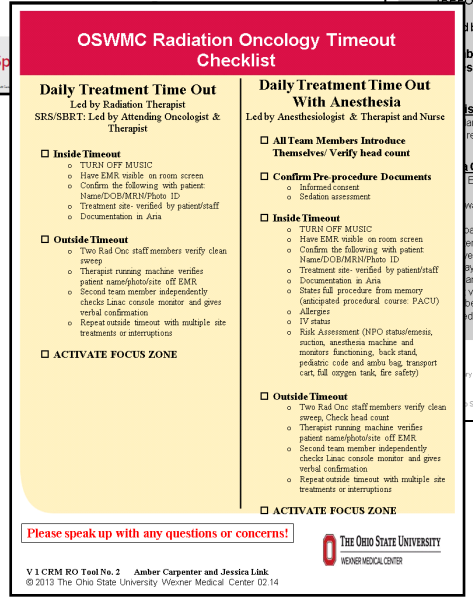
Customized Standardization











CRM Resource -Themes of the Month

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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

Judy Bournique, 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.

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293-8893

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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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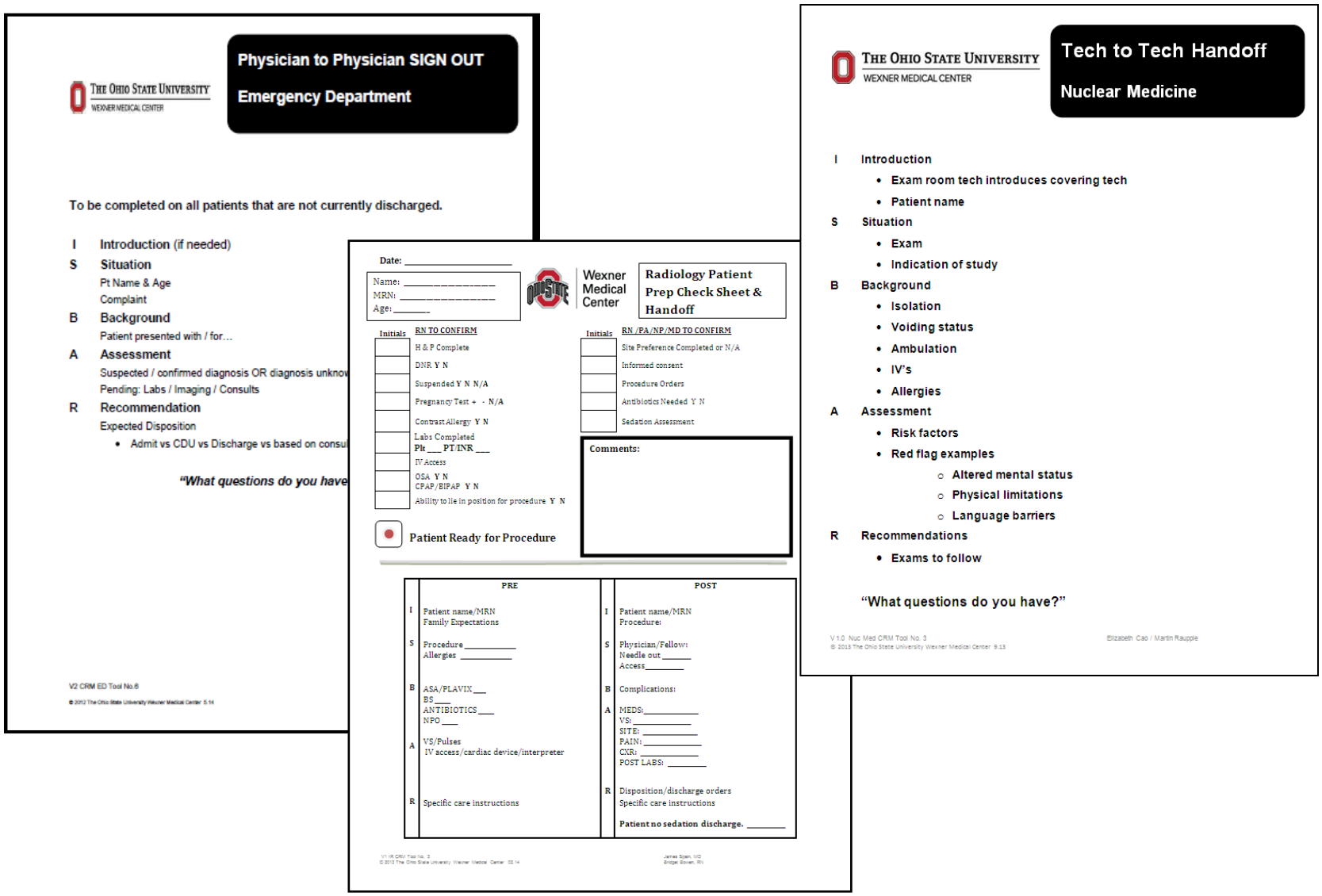
Handoff Communication Tools



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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 unknow
Pending: Labs / Imaging / Consults

R **Recommendation**
Expected Disposition
- Admit vs CDU vs Discharge vs based on consul

"What questions do you have

V2 CRM ED Tool No.6

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Date: _____

Name: _____
MRN: _____
Age: _____

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Radiology Patient Prep Check Sheet & Handoff

Initials	RN TO CONFIRM
	H & P Complete
	DNR Y N
	Suspended Y N N/A
	Pregnancy Test + - N/A
	Contrast Allergy Y N
	Labs Completed Plt ___ PT/INR ___
	IV Access
	OSA Y N CPAP/BIPAP Y N
	Ability to lie in position for procedure Y N

Initials	RN /PA/NP/MD TO CONFIRM
	Site Preference Completed or N/A
	Informed consent
	Procedure Orders
	Antibiotics Needed Y N
	Sedation Assessment

Comments:

Patient Ready for Procedure

	PRE	POST
I	Patient name/MRN Family Expectations	Patient name/MRN Procedure:
S	Procedure _____ Allergies _____	Physician/Fellow: Needle out _____ Access_____
B	ASA/PLAVIX___ BS___ ANTIBIOTICS___ NPO___	Complications:
A	VS/Pulses IV access/cardiac device/interpreter	MEDS:_____ VS: _____ SITE: _____ PAIN: _____ CXR: _____ POST LABS: _____
R	Specific care instructions	Disposition/discharge orders Specific care instructions **Patient no sedation discharge.** _____

V1 IR CRM Tool No. 3
© 2013 The Ohio State University Wexner Medical Center 03.14

James Spain, MD
Bridget Bowen, RN

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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?"

V 1.0 Nuc Med CRM Tool No. 3
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Elizabeth Cao / Martin Raupple

Can We Calculate a Return on Investment?

Cost of CRM implementation

Avoidable Adverse Events

Mortality Reduction

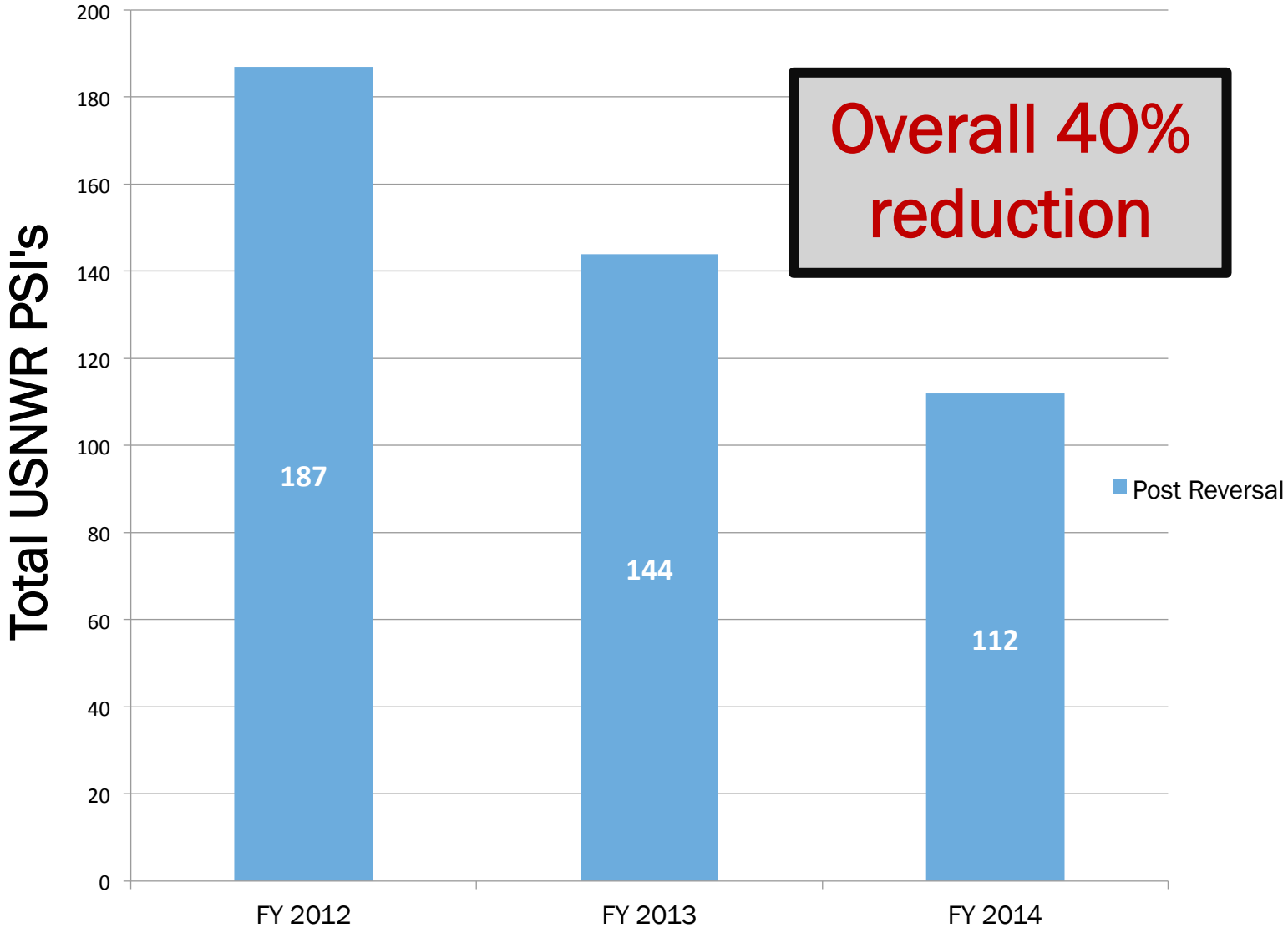
Reduced Patient Safety Indicators

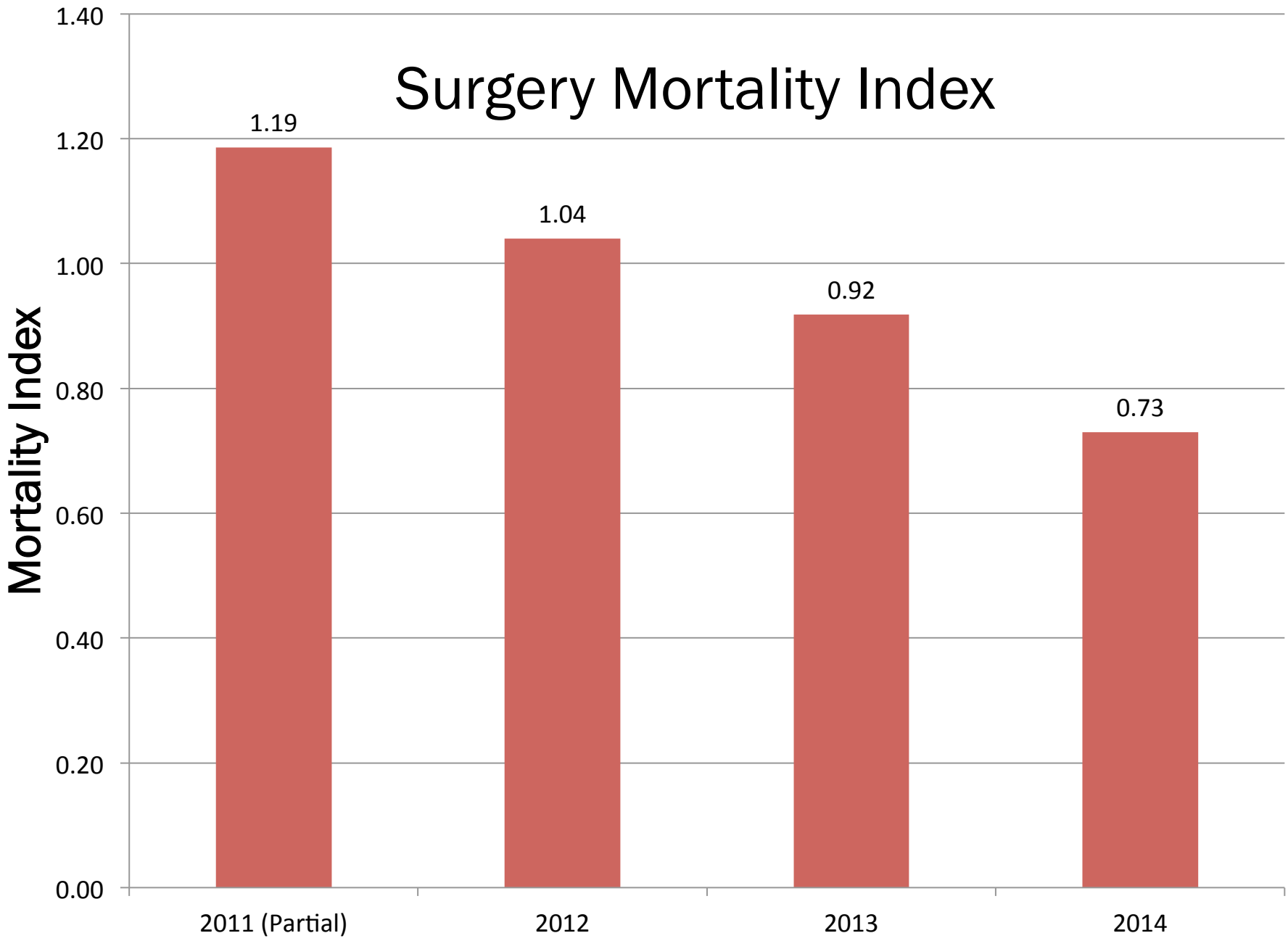
Reduced Claims

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
Total Potentially Avoidable Events

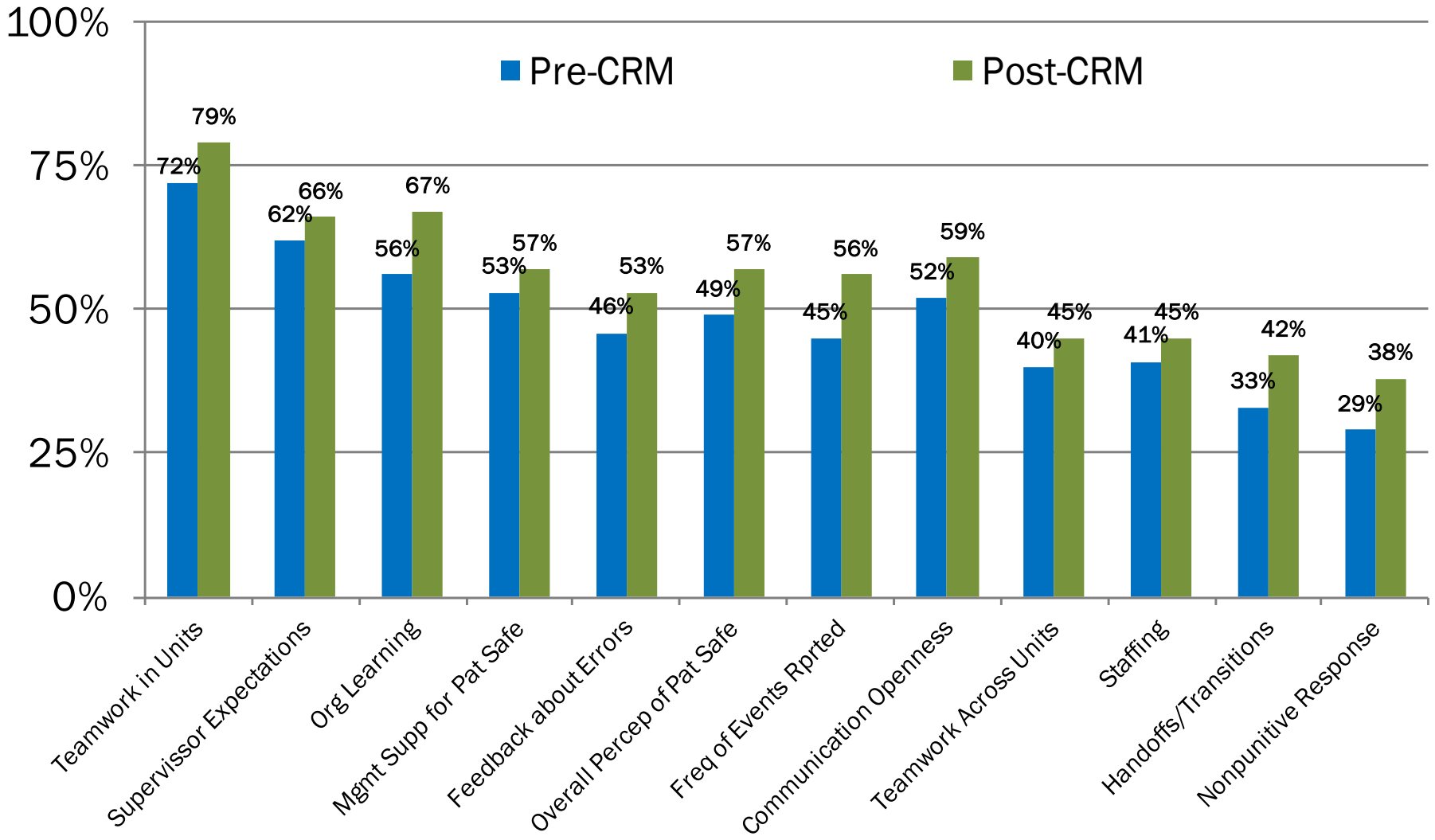
USNWR PSI Volume




Surgery Mortality Index
Mortality Index
1.40
1.20
1.00
0.80
0.60
0.40
0.20
0.00
1.19
1.04
0.92
0.73
2011 (Partial)
2012
2013
2014

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

Moffatt-Bruce S, McAlearney AS, Aldrich A, Latimer T, Funai E. 2014

Operations Councils

Nurse Lead

Physician Lead

Administrative Lead

Process Improvement Facilitator

Frontline MD's and RN's

Pharmacy, PT, OT, etc.

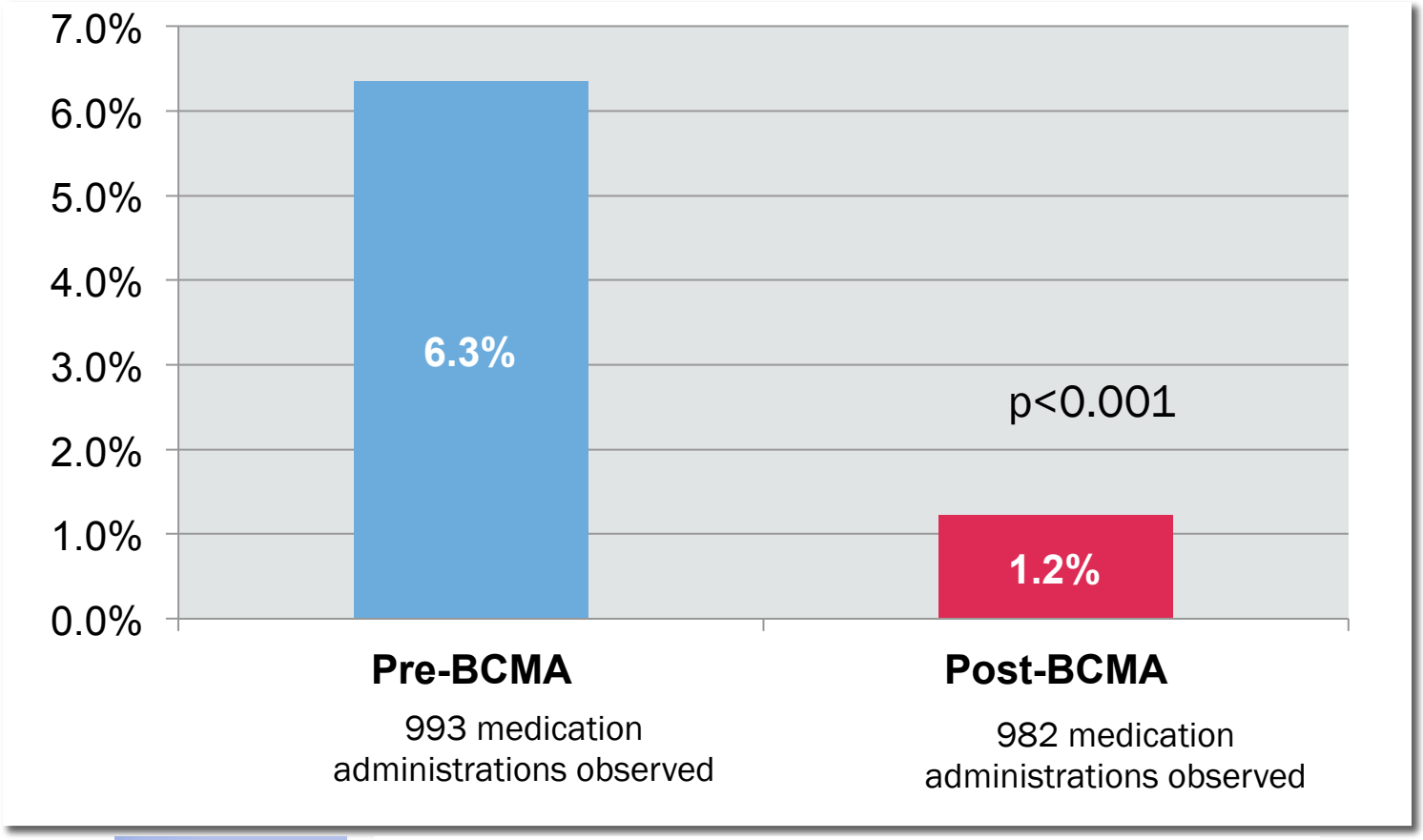
Case Management & Social work

Facilitator: →Dedicated team member

→Lean and Six Sigma training

→**DATA ACCESS** and support

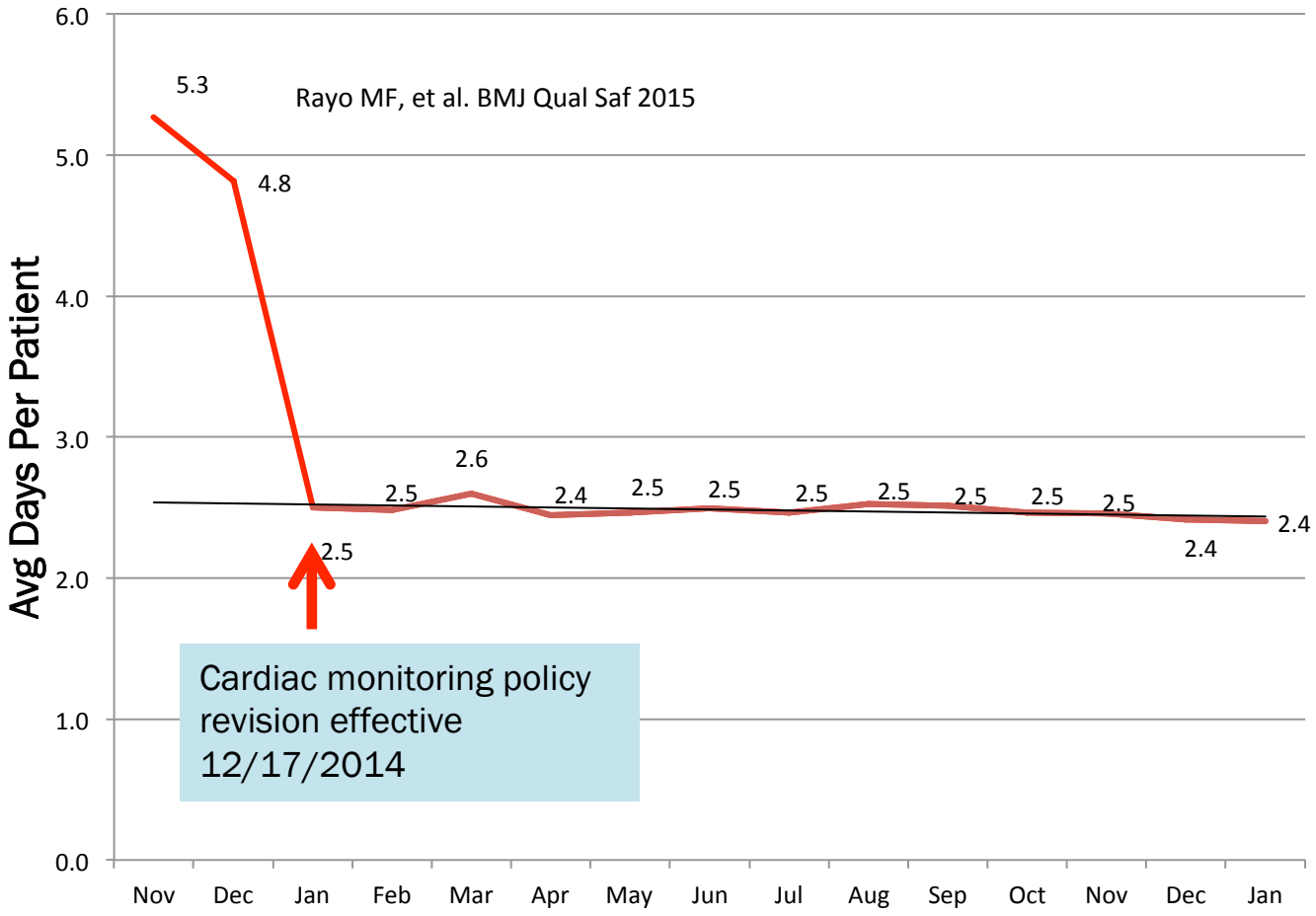
ED “Post” Results*



AMERICAN JOURNAL of MEDICAL QUALITY

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

Cardiac Monitoring Days

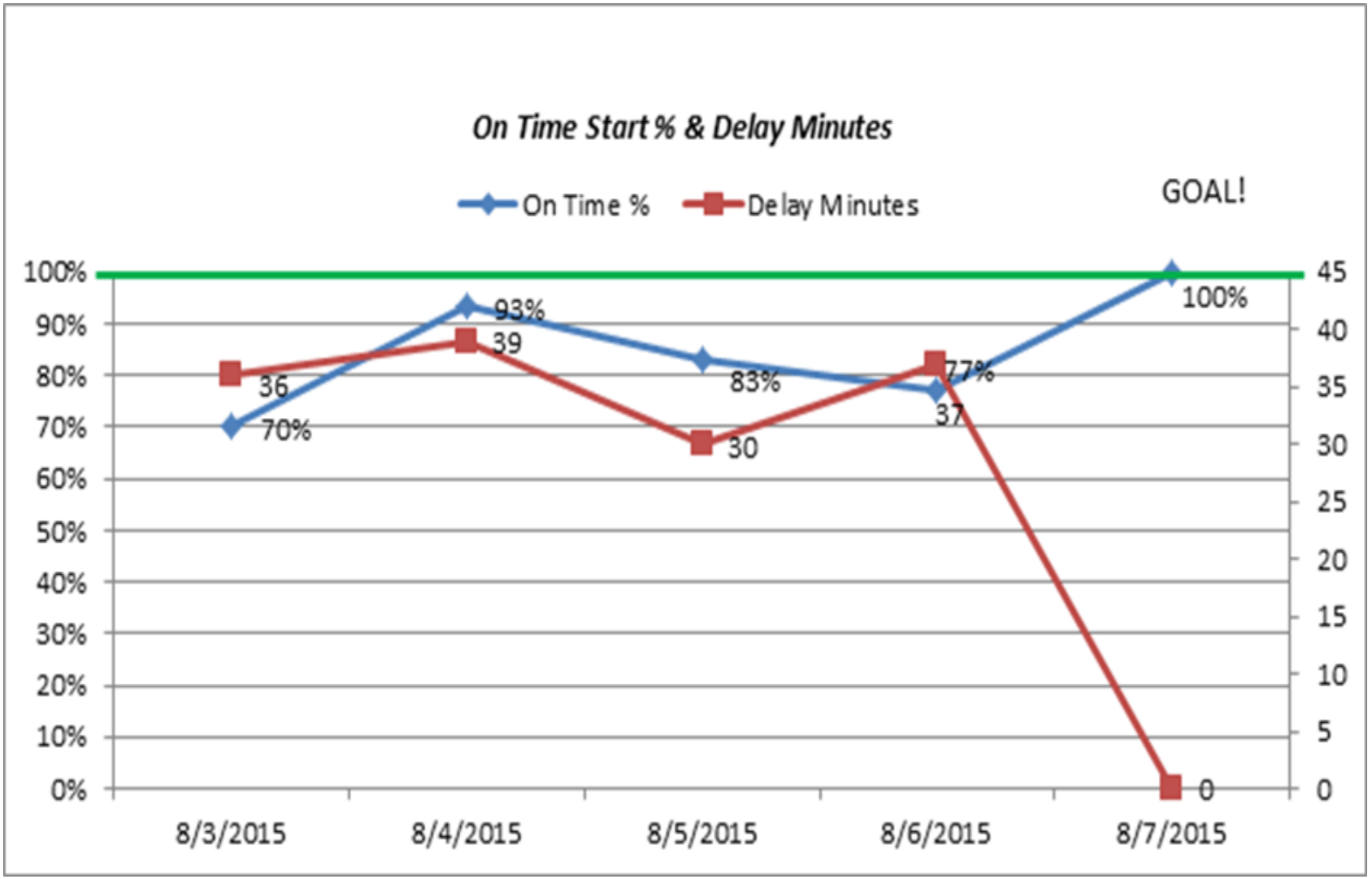


BMJ Quality & Safety

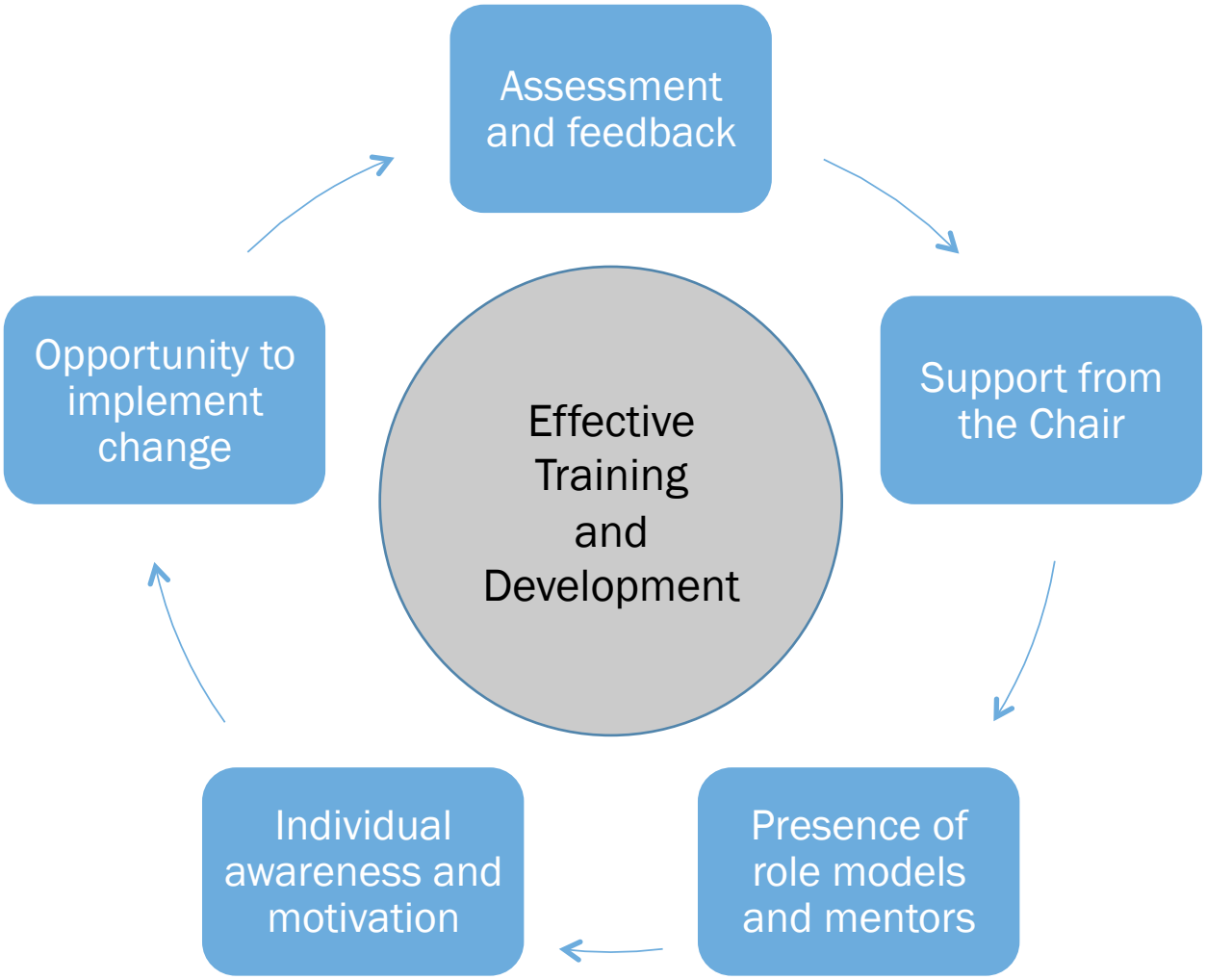
Alarm system management: evidence-based guidance encouraging direct measurement of informativeness to improve alarm response

Michael F Rayo[1], Susan D Moffatt-Bruce[2]

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)

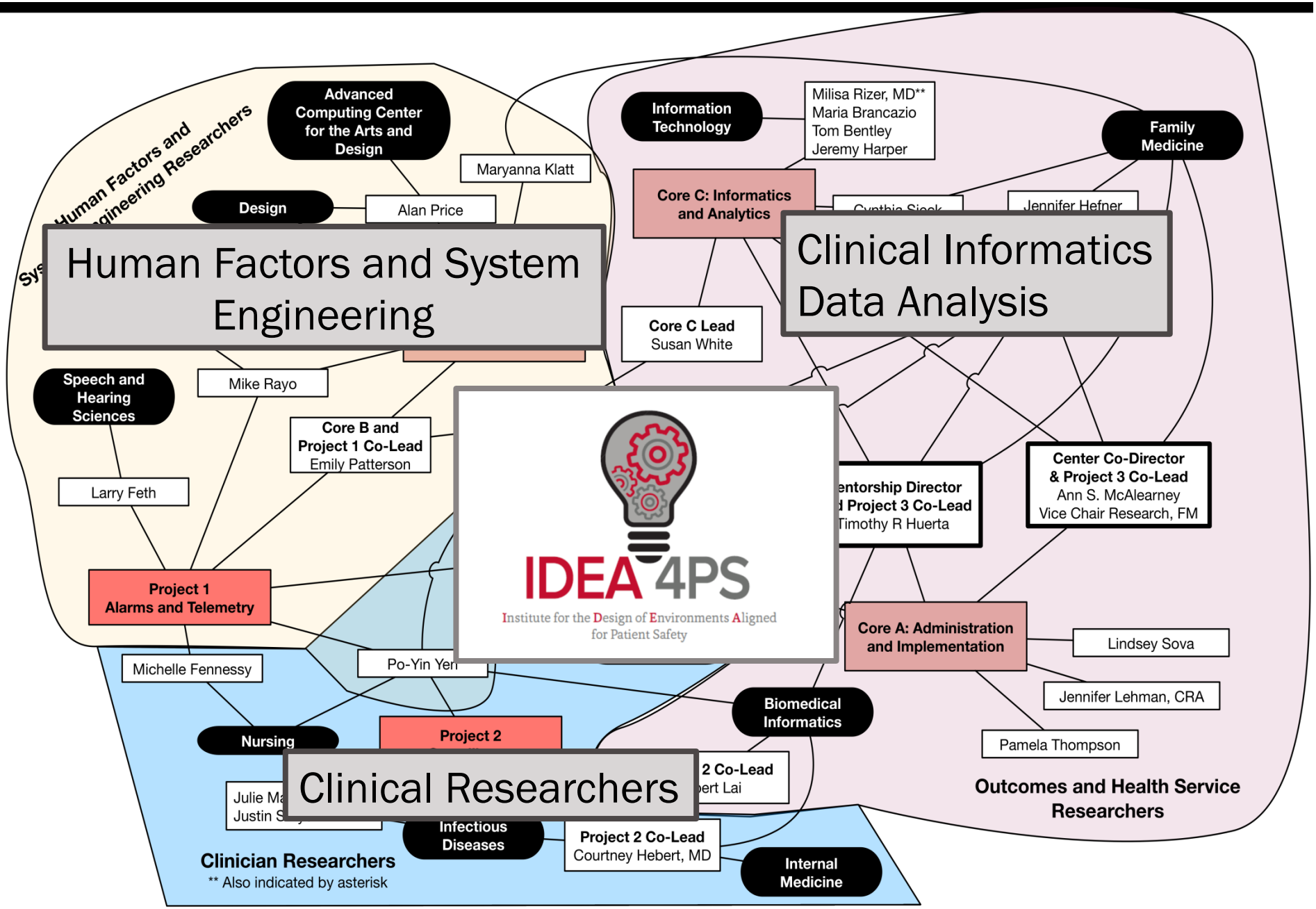
Proposed as an approach to identify and explore how feedback of information can be used to inform the development of robust practices that lead to improved patient safety.

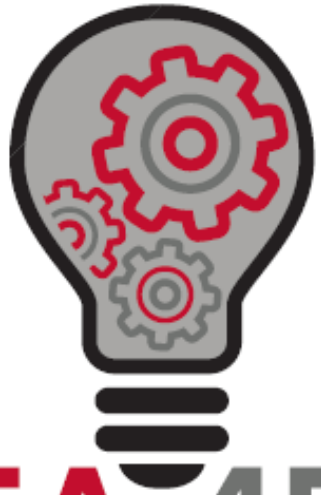
Improve clinical practice by designing, testing and exploring the type and kind of information flows that result in adaptation of the health care work environment.

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.


Human Factors and Engineering Researchers
Advanced Computing Center for the Arts and Design
Maryanna Klatt
Design
Alan Price
Human Factors and System Engineering
Information Technology
Milisa Rizer, MD**
Maria Brancazio
Tom Bentley
Jeremy Harper
Family Medicine
Core C: Informatics and Analytics
Jennifer Hefner
Clinical Informatics Data Analysis
Core C Lead
Susan White
Speech and Hearing Sciences
Mike Rayo
Core B and Project 1 Co-Lead
Emily Patterson
Larry Feth
IDEA 4PS
Institute for the Design of Environments Aligned for Patient Safety
Center Co-Director & Project 3 Co-Lead
Ann S. McAlearney
Vice Chair Research, FM
Project 1
Alarms and Telemetry
Timothy R Huerta
Core A: Administration and Implementation
Lindsey Sova
Jennifer Lehman, CRA
Pamela Thompson
Michelle Fennessy
Biomedical Informatics
Nursing
Project 2
Clinical Researchers
Outcomes and Health Service Researchers
Infectious Diseases
Project 2 Co-Lead
Courtney Hebert, MD
Internal Medicine
Clinician Researchers
** Also indicated by asterisk



IDEA 4PS

Institute for the Design of Environments Aligned 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