10 Years After “To Err Is Human” Where Have We Come and Where Are We Going?

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A. Needs Assessment

- American Medical Association, Council on Ethical and Judicial Affairs, Report 2-I-08, "Quality."
- Improving patient safety in intensive care units in Michigan, Journal of Critical Care, (2008) 23, 2007-221.

Learning Objectives

- Upon completion of this lecture, the participants will be able to
  1. Recognize that high quality care is care which is safe, effective, efficient, patient centered, timely and equitable
  2. Engage with hospital medical staff and administration leaders to improve in-patient outcomes

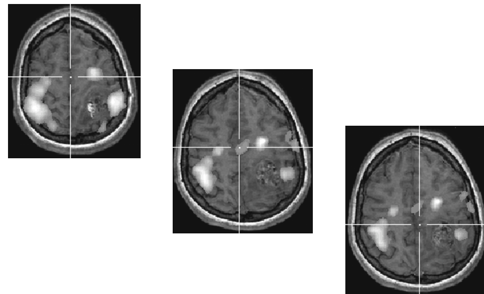
Learning Objectives

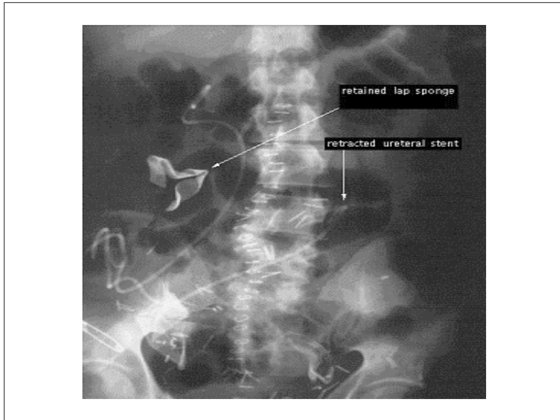
- Describe the design and lessons learned from implementing a large-scale patient safety collaborative
- To review the progress in improving safety over the last decade

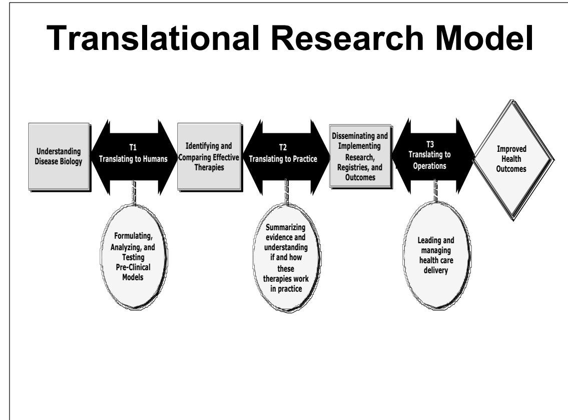
Learning Objectives

5. To explore a way to organize safety work within a hospital
6. To explore what is required to make substantial progress in improving safety

Bilateral Cued Finger Movements

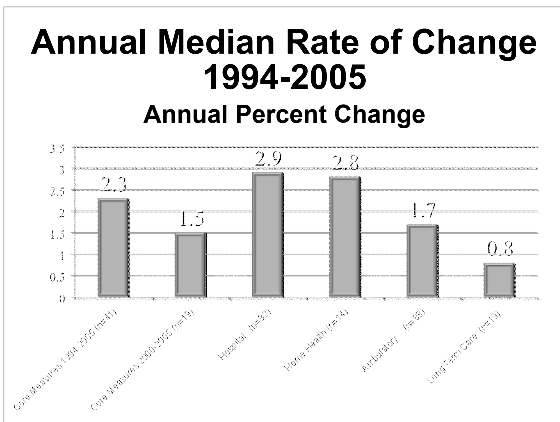


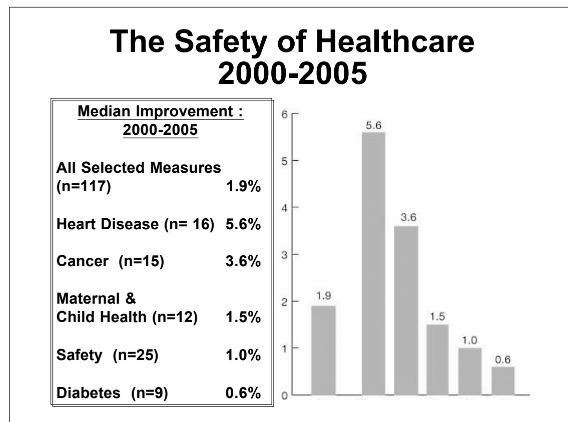




Exercise

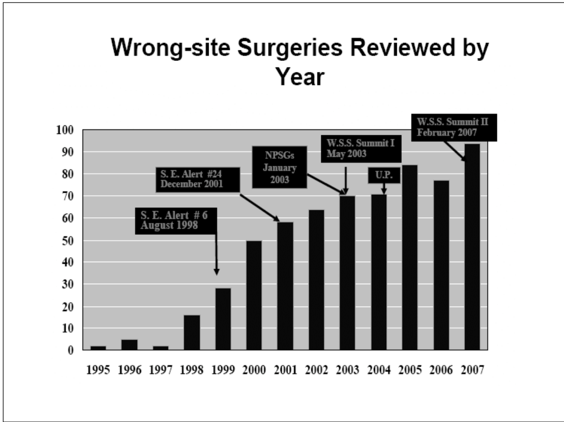
- Answer each question with a score of 1 to 5, 1 being below average, 3 average, and 5 above average
  - How smart am I?
  - How hard do I work?
  - How kind am I?
  - How tall am I?
  - How good is the quality of care we provide?

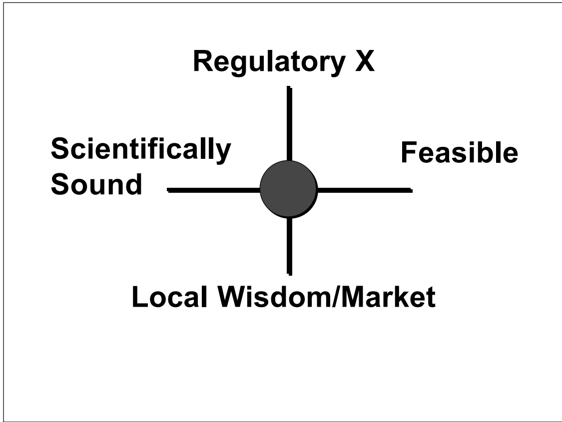




The Safety of Healthcare 2000-2005

Median Improvement : 2000-2005	
All Selected Measures (n=117)	1.9%
Heart Disease (n= 16)	5.6%
Cancer (n=15)	3.6%
Maternal & Child Health (n=12)	1.5%
Safety (n=25)	1.0%
Diabetes (n=9)	0.6%





Organizing Safety Work With Healthcare Organizations

- Evaluating Progress in Patient Safety
- Identifying and mitigating hazards
- Improving culture and communication
- Translating evidence into practice (TRIP)
- Linking Organizational characteristics to patient safety
- Reducing diagnostic errors

Keystone ICU Safety Dashboard

	2004	2006
How often did we harm (BSI)?	2.8/1000	0
How often do we do what we should?	66%	95%
How often did we learn from mistakes?	100s	100s
Have we created safe culture? % Needs improvement in safety climate Teamwork climate	84% 82%	43% 42%

Comprehensive Unit-Based Safety Program (CUSP)

1. Educate staff on science of safety http://www.safetyresearch.jhu.edu house staff orientation
2. Identify defects
3. Assign executive to adopt unit
4. Learn from one defect per quarter
5. Implement teamwork tools

Science of Safety

- Understand system determines performance
- Use strategies to improve system performance
  - Standardize
  - Create Independent checks for key process
  - Learn from Mistakes

Science of Safety

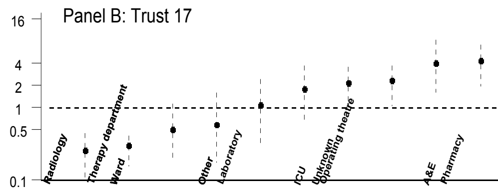
- Apply strategies to both technical work and team work
- Recognize that teams make wise decisions with diverse and independent input

Panel A: Trust 14

16, 4, 2, 1, 0.5, 0.1

GYN/OB	JHOC	Medicine	Neurosciences	Oncology	Ophthalmology
FAC: Fetal Assessment Center/OB Ultrasound	GSS - Shared Specialty Suite	Asthma & Allergy - Allergy & Clinical Immunology	BRU	GSS - Medical Oncology	GSS - Wilmer 110
GSS - GYN/OB 420	JHOPC - Express Testing	Asthma & Allergy - Pulmonary	EMU	IPOP Clinic - HIPOP Location	GSS - Wilmer Laser Center
GSS - GYN/REI	JHOPC - OR	Asthma & Allergy - Rheumatology	JHOPC Neurosciences	IPOP Clinic - IPOP Location	WECP & ER
HAL-2	JHOPC - PACU	Blalock 4 - Endoscopy	MEY 8 (12)	Weinberg OPD - 1st Floor	Wilmer OR
JHOPC GYN/OB	WM - Shared Specialty Suite	Blalock 5 Echo Lab (2)	MEY 9 (5)	Weinberg OPD - 2nd Floor	Wilmer PACU
MCE		Cardiac CT	NCCU7	WGA 5 (5)	Wilmer White Marsh
NEL-2 Nursery		CCP-5 (5)		WGB 5	Wilmer: Other - E Balt Divisions
NEL-2 Obstetric OR		CCU-5 (7)		WGC-5 (3)	Wilmer: Other - Satellites
NEL-2 PACU		CVC		WGD 5	
Nelson Harvey 2		CVIL- CardioVascular Interventional Lab			
OSL-2		Dialysis Unit			
OSL-3 Nursery		GSS - Internal Medicine			
OSL-3		HAL-5 (5)			

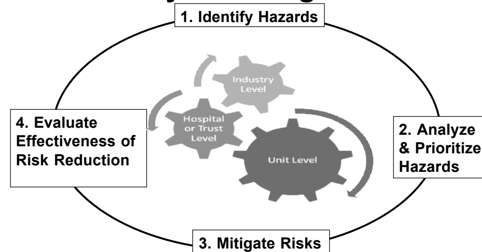
Variation By Work Areas in Trust 17



Learning from Mistakes

- What happened?
- Why did it happen (system lenses)
- What could you do to reduce risk
- How to you know risk was reduced
  - Create policy/process/procedure
  - Ensure staff know policy
  - Evaluate if policy is used correctly

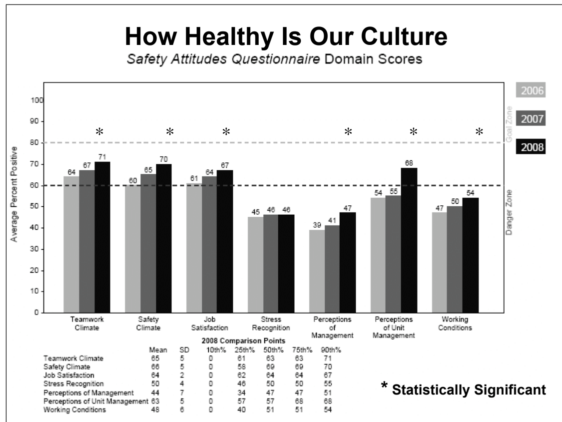
Patient Safety Learning Communities



Patient safety learning communities relate to each other in a gear like fashion: as the identified hazards require stronger levels of intervention to achieve mitigation, the next learning community is engaged in action, eventually feeding back to the group that provided the initial thrust. Each group (unit, hospital, industry) follows the same four-step process, but they engage unique matrices of stakeholders to mitigate hazards that are within their locus of control.

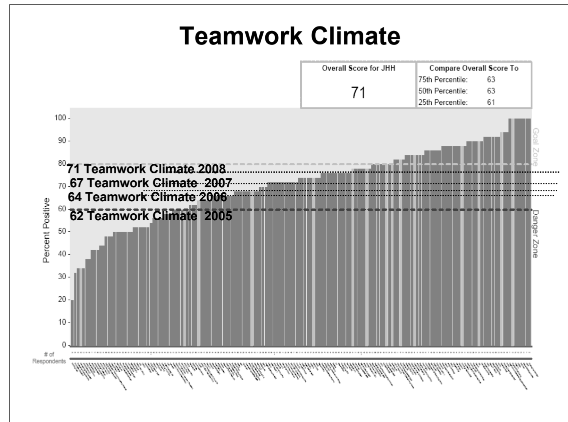
Teamwork Tools

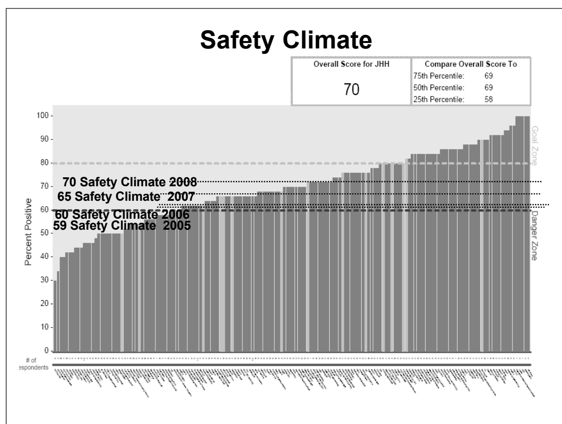
- Daily Goals
- AM briefing
- Shadowing
- LEEN
  - Listen actively, Empathize, Explain, Negotiate
- Culture check up

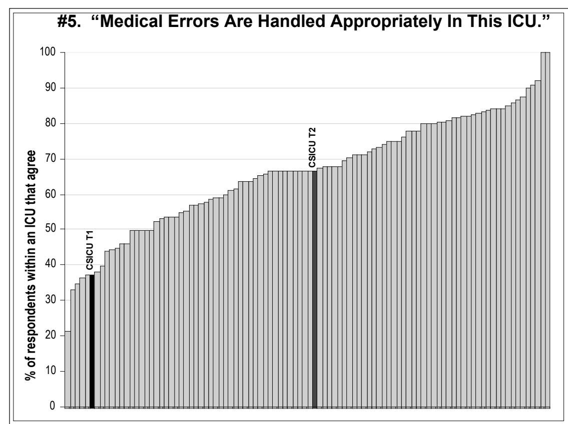


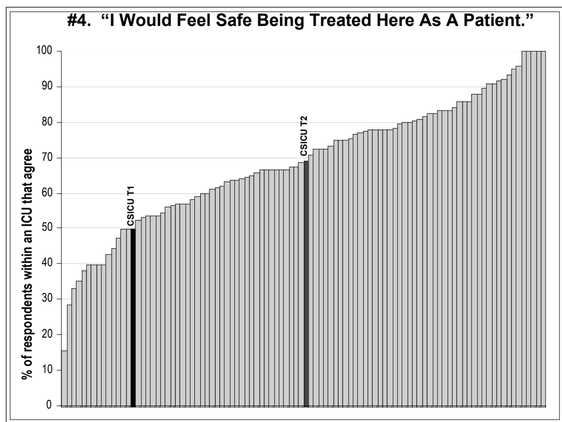
2008 Comparison Points

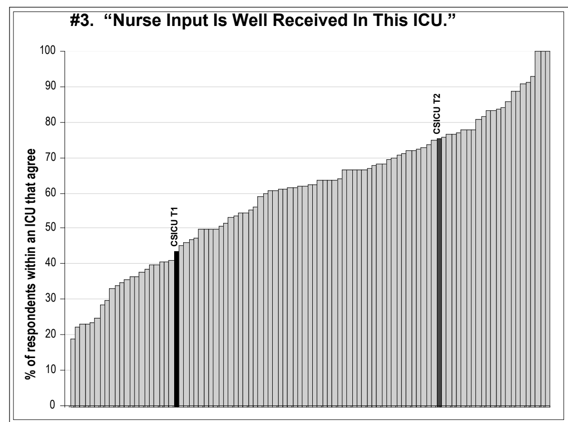
	Mean	SD	10th%	25th%	50th%	75th%	90th%
Teamwork Climate	65	5	0	61	63	63	71
Safety Climate	66	5	0	58	69	69	70
Job Satisfaction	64	2	0	62	64	64	67
Stress Recognition	50	4	0	46	50	50	55
Perceptions of Management	44	7	0	34	47	47	51
Perceptions of Unit Management	63	5	0	57	57	68	68
Working Conditions	48	6	0	40	51	51	54

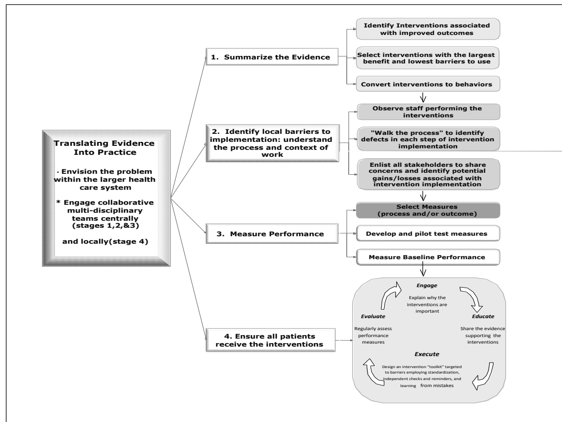












Interventions to Prevent Blood Stream Infections: 5 Key "Best Practices"

- Remove Unnecessary Lines
- Wash Hands Prior to Procedure
- Use Maximal Barrier Precautions
- Clean Skin with Chlorhexidine
- Avoid Femoral Lines

Ensure Patients Reliably Receive Evidence

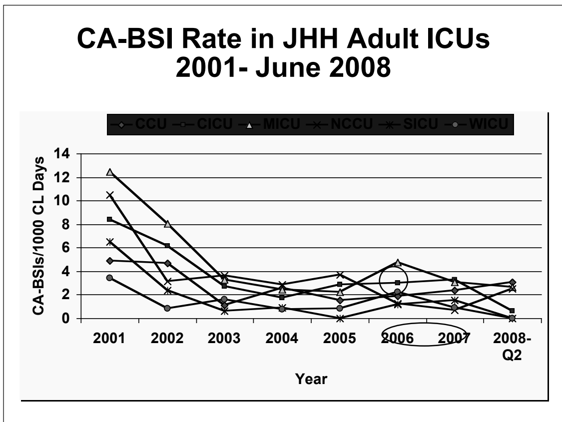
	Senior leaders	Team leaders	Staff
Engage	How does this make the world a better place?		
Educate	What do we need to do?		
Execute	What keeps me from doing it? How can we do it with my resources and culture?		
Evaluate	How do we know we improved safety?		

Ideas for Ensuring Patients Receive the Interventions

- Engage: stories, show baseline data
- Educate staff on evidence
- Execute
  - Standardize: Create line cart
  - Create independent checks: Create BSI checklist

Ideas for Ensuring Patients Receive the Interventions

  - Empower nurses to stop takeoff
  - Learn from mistakes: review infections
- Evaluate
  - Feedback performance
  - View infections as defects

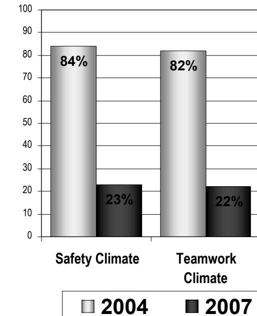


2 Year Results From 103 ICUs

Time Period	Median CRBSI Rate	Incidence Rate Ratio
Baseline	2.7	1
Peri Intervention	1.6	076
0-3 Months	0	0.62
4-6 Months	0	0.56
7-9 Months	0	0.47
10-12 Months	0	0.42
13-15 Months	0	0.37
16-18 Months	0	0.34

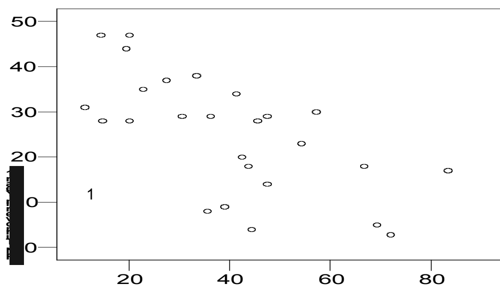
"Needs Improvement" Statewide Michigan CUSP ICU Results

- Less than 60% of respondents reporting good safety climate ="needs improvement"
  - Statewide in 2004 84% needed improvement, in 2006 41%
  - Non-teaching and Faith-based ICUs improved the most
  - Safety Climate item that drives improvement: "*I am encouraged by my colleagues to report any patient safety concerns I may have*"



RN Turnover and Teamwork Climate: 26 Keystone ICUs Reporting

RNs who left the ICU



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Organizing for Patient Safety

- Hospital Level
- Department Level
- Unit Level
- Need to create plumbing for an efficient knowledge market

Where Do We Need to Go on National Level? Why Did MI Not Spread?

- Create SEC for healthcare
- Create CAST for healthcare
- Create institute of health systems research
- Set clear goals with public engagement
- Develop collaborative strategy
- Create accountability ; transparency and P4P

Focus and Execute

References

- Measuring Safety
- Pronovost PJ, Goeschel CA, Wachter RM. The wisdom and justice of not paying for "preventable complications". JAMA. 2008; 299(18):2197-2199.
- Pronovost PJ, Miller MR, Wachter RM. Tracking progress in patient safety: An elusive target. JAMA. 2006; 296(6):696-699.
- Pronovost PJ, Sexton JB, Pham JC, Goeschel CA, Winters BD, Miller MR. Measurement of quality and assurance of safety in the critically ill. Clin Chest Med. 2008; in press.
- Pronovost P, Weast B, Rosenstein B, et al. Implementing and validating a comprehensive unit-based safety program. J Pat Safety. 2005; 1(1):33-40.

References

- Pronovost P, Berenholtz S, Dorman T, Lipsett PA, Simmonds T, Haraden C. Improving communication in the ICU using daily goals. J Crit Care. 2003; 18(2):71-75.
- Pronovost PJ, Weast B, Bishop K, et al. Senior executive adopt-a-work unit: A model for safety improvement. Jt Comm J Qual Saf. 2004; 30(2):59-68.
- Thompson DA, Holzmueller CG, Cafeo CL, Sexton JB, Pronovost PJ. A morning briefing: Setting the stage for a clinically and operationally good day. Jt Comm J Qual and Saf. 2005; 31(8):476-479.
- Translating Evidence into Practice
- Pronovost PJ, Berenholtz SM, Needham DM. Translating evidence into practice: A model for large scale knowledge translation. BMJ. 2008; 337:a1714.

References

- Pronovost P, Needham D, Berenholtz S, et al. An intervention to decrease catheter-related bloodstream infections in the ICU. NEJM. 2006; 355(26):2725-2732.
- Pronovost PJ, Berenholtz SM, Goeschel C, et al. Improving patient safety in intensive care units in michigan. J Crit Care. 2008; 23(2):207-221.