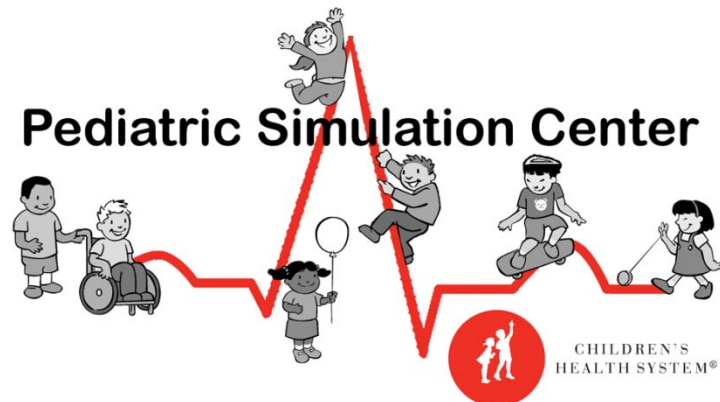


Simulation in Hospital – Improving Patient Safety with Team Training

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Objectives

- Recall the overall risk for medical errors in the hospital environment and the top 10 specific Sentinel Events by type.
- Recall the purpose of the 2009 (2010) Hospital National Patient Safety Goals.
- List the components necessary for an effective team training program.
- List the biggest challenges to implementing team training programs.

Patient Safety

- The avoidance, prevention, and amelioration of adverse outcomes or injuries stemming from the processes of health care. These events include “errors,” “deviations,” and “accidents.”

Source: Cooper JB, Gaba DM, Liang B, Woods D, Blum LN. National Patient Safety Foundation agenda for research and development in patient safety. *MedGenMed*. 2000;2(4)

HORSE!
© 2001
HEARST
CORPORATION
ALL RIGHTS RESERVED

OOPS!

WHAT
THE...?

DANG
IT!

MY
BAD!

UH-
OH...



HOSPITAL MEDICAL ERRORS KILL 98,000 AMERICANS EACH YEAR. -- HEARST NEWS INVESTIGATION

Patient Safety: Scope of the Problem

- 1 out of every 5 people says that they or a family member experienced a medical mistake
- 51% reported the error as serious
- 28-35% of admissions experience an event that causes HARM (IHI, Dec 2007, Global Trigger Tool, Roger, Resar, MD)

Source: Commonwealth Fund 2001 Health Care Quality Survey

Adverse Event

- Any injury caused by medical care.

EXAMPLES:

- pneumothorax from central venous catheter placement
- anaphylaxis to penicillin
- postoperative wound infection
- hospital-acquired delirium (or "sun downing") in elderly patients

Sentinel Event

- An adverse event in which death or serious harm to a patient has occurred; usually used to refer to events that are not at all expected or acceptable—eg, an operation on the wrong patient or body part.

Bromley Video

- <http://vimeo.com/970665>

Sentinel Event Setting	#	%
General hospital	4347	67.6%
Psychiatric hospital	687	10.7%
Psych unit in general hospital	319	5.0%
Emergency department	301	4.7%
Behavioral health facility	288	4.5%
Long term care facility	168	2.6%
Ambulatory care	166	2.6%
Home care	119	1.9%
Office-based surgery	21	0.3%
Clinical laboratory	10	0.2%
Health care network	2	0.0%

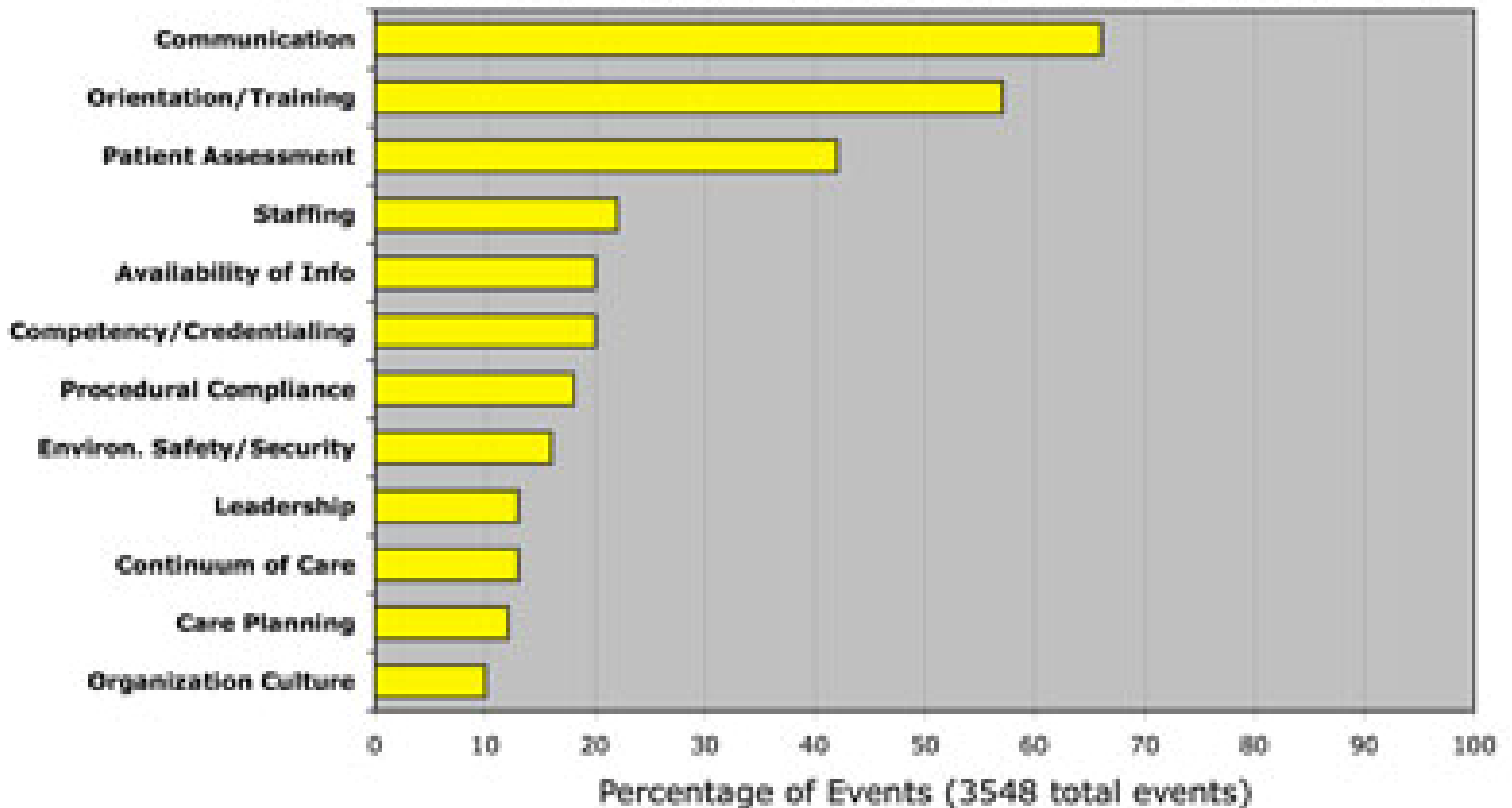
Source: The Joint Commission

2008: Top 10 Sentinel Events by Type

Event	# reviewed in 2008
Wrong-site surgery	116
Suicide	102
Delay in treatment	82
Unintended retention of foreign body	71
Patient fall	60
Op/post-op complication	63
Medication error	46
Assault/rape/homicide	41
Perinatal death/loss of function	32
Medical equipment-related	23

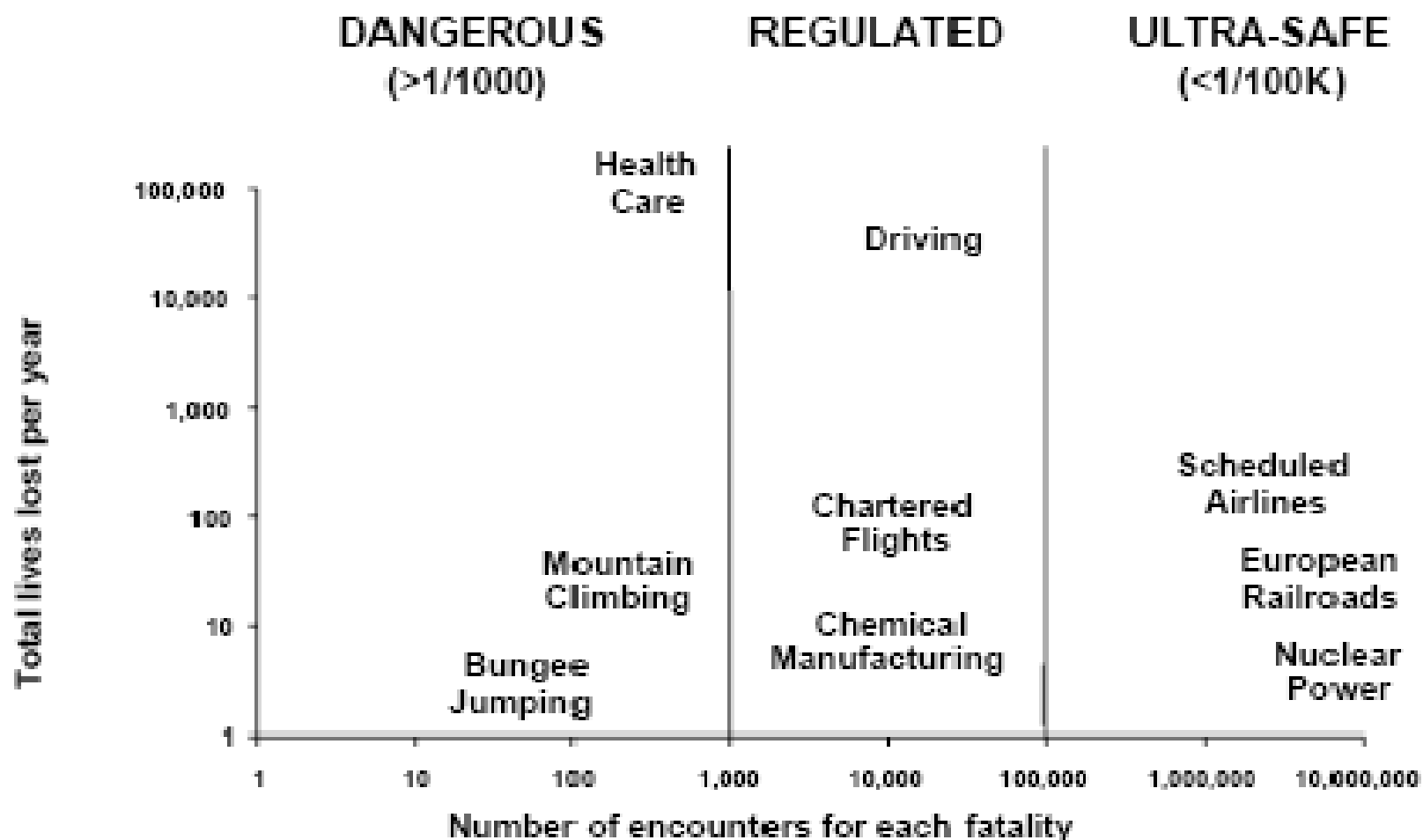
Source: The Joint Commission; Accessed 5/15/2010 http://www.jointcommission.org/NR/rdonlyres/67297896-4E16-4BB7-BF0F-5DA4A87B02F2/0/se_stats_trends_year.pdf

Root Causes of Sentinel Events (JCAHO 1995-2005)



Source: The Joint Commission

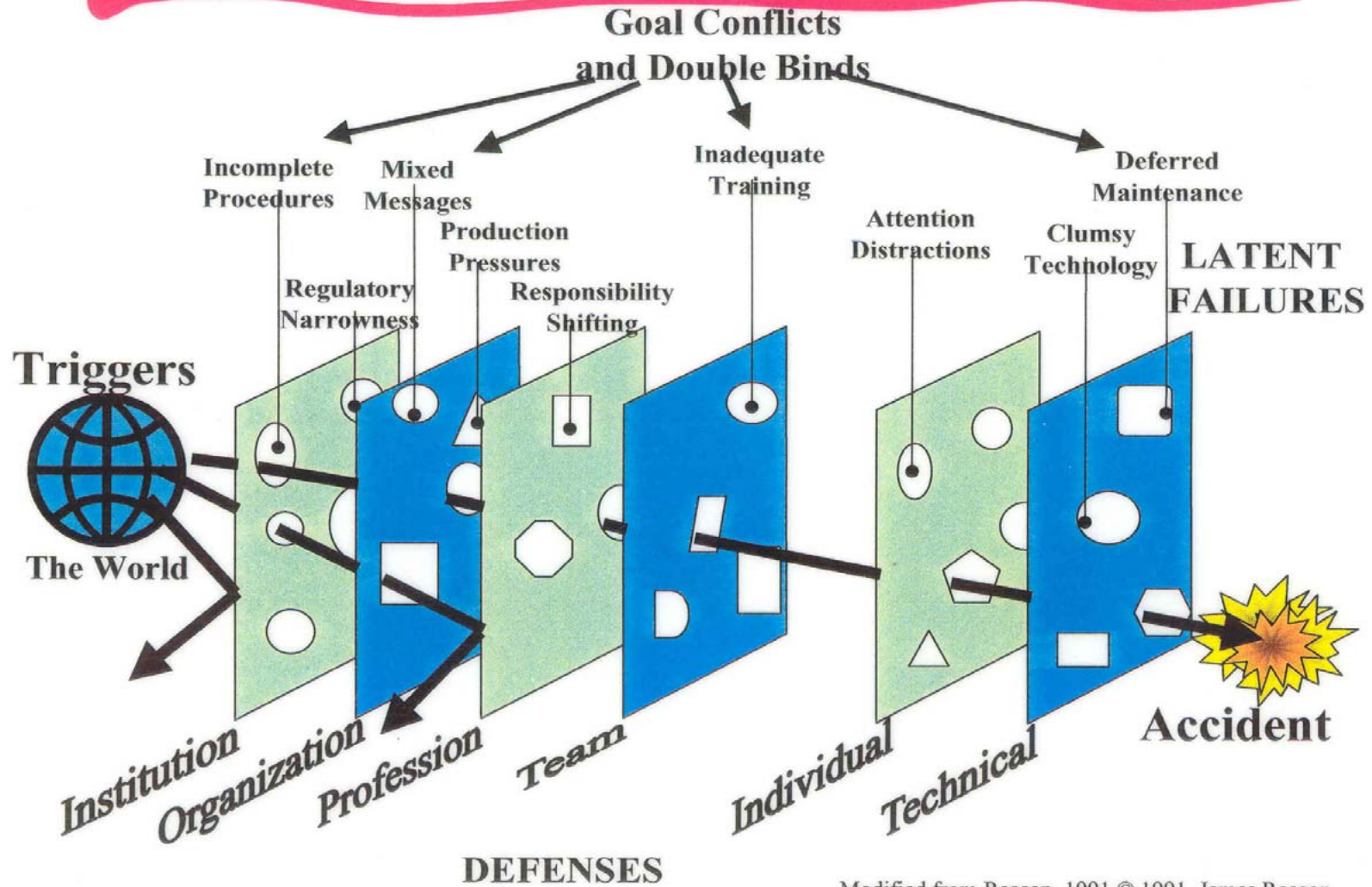
How hazardous is health care?



Note: both dimensions are logarithmic scales

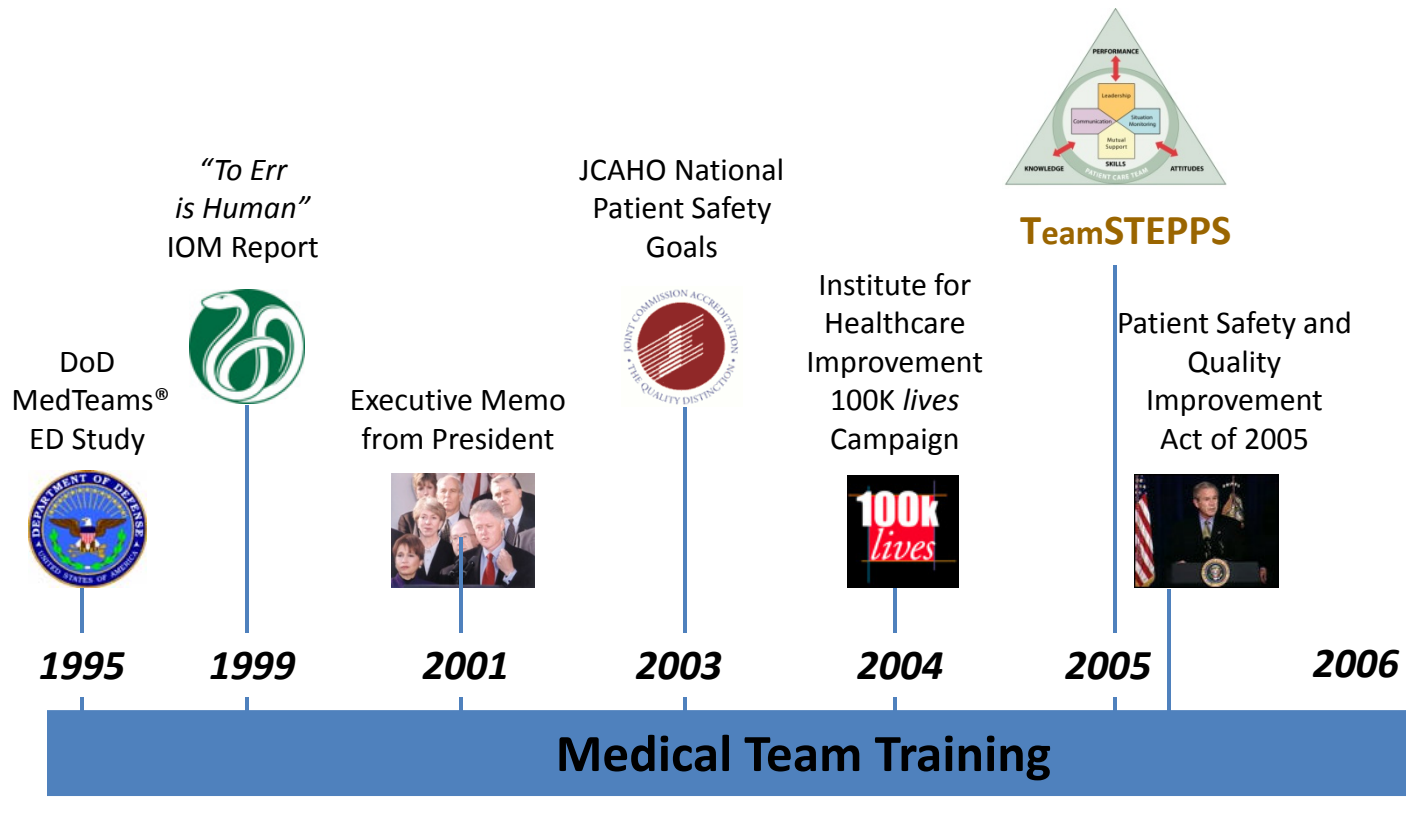
c/o Dr. Rene Amalberti

Swiss Cheese Model



Modified from Reason, 1991 © 1991, James Reason

Patient Safety Movement



Purpose of National Patient Safety Goals

- A method by which JCAHO promotes and enforces major changes in patient safety in thousands of participating organizations around the world.
- Often target very specific areas such as infections or falls, other times they have a wider focus.

2010 Hospital National Patient Safety Goals

IDENTIFY PATIENTS CORRECTLY	Use two identifiers
	Make sure the correct patient gets the correct blood type during a transfusion
IMPROVE STAFF COMMUNICATION	Quickly get important test results to the right staff person
USE MEDICINES SAFELY	Label all medications
	Take extra care with patients on blood thinners
PREVENT INFECTION	Follow hand cleaning guidelines
	Use proven guidelines to prevent infections that are difficult to treat
CHECK PATIENT MEDICATIONS	Find out what medicines patients are taking. Check for interactions
	Give a list of medications to the next caregiver.
Source: www.jointcommission.org	Give a list of medications to the patient and their family.

High Reliability Organizations

- Preoccupation with failure—the acknowledgment of the high-risk, error-prone nature of an organization’s activities and the determination to achieve consistently safe operations.
- Commitment to resilience—the development of capacities to detect unexpected threats and contain them before they cause harm, or bounce back when they do.
- Sensitivity to operations—an attentiveness to the issues facing workers at the frontline..
- A [culture of safety](#), in which individuals feel comfortable drawing attention to potential hazards or actual failures without fear of censure from management.

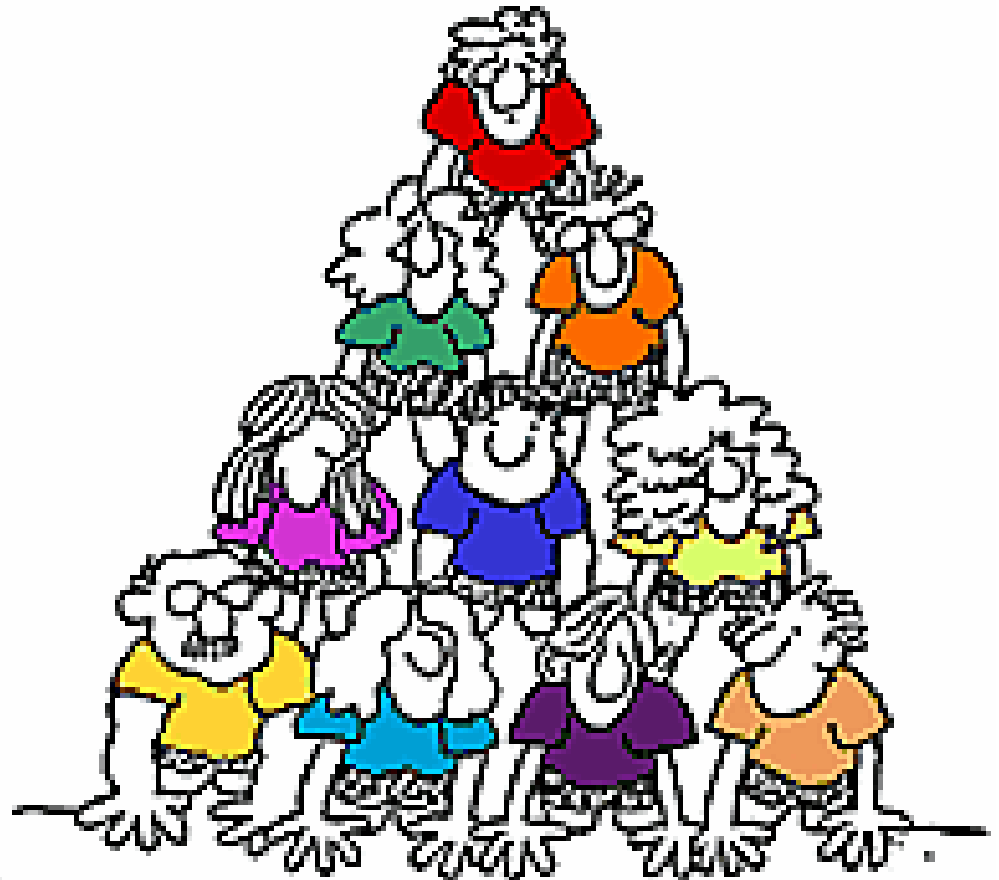
Human Factors

- The science of understanding the properties of human capability.

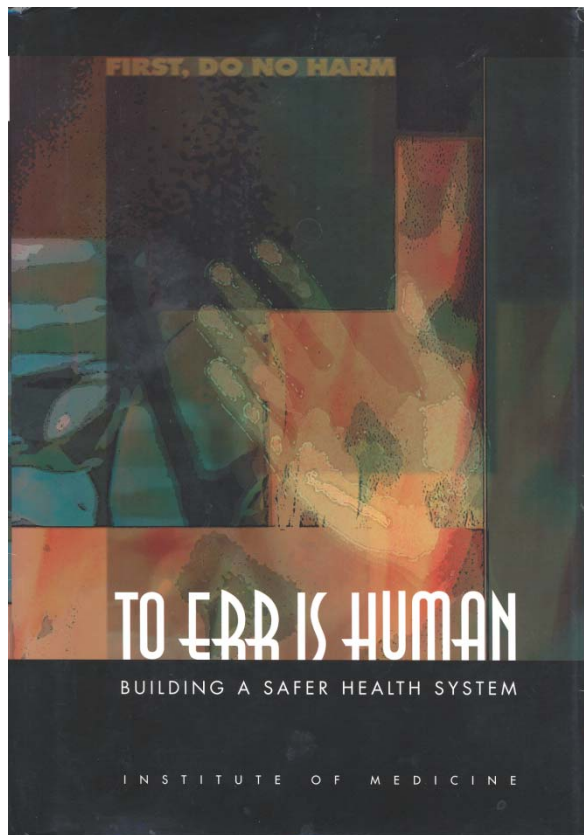
~ Elias Porter, Ph.D

Team

“A distinguishable set of two or more people who interact dynamically, interdependently, and adaptively toward a common and valued goal/objective/mission who have each been assigned specific roles or functions to perform.” (Salas '00)



IOM Report 1999



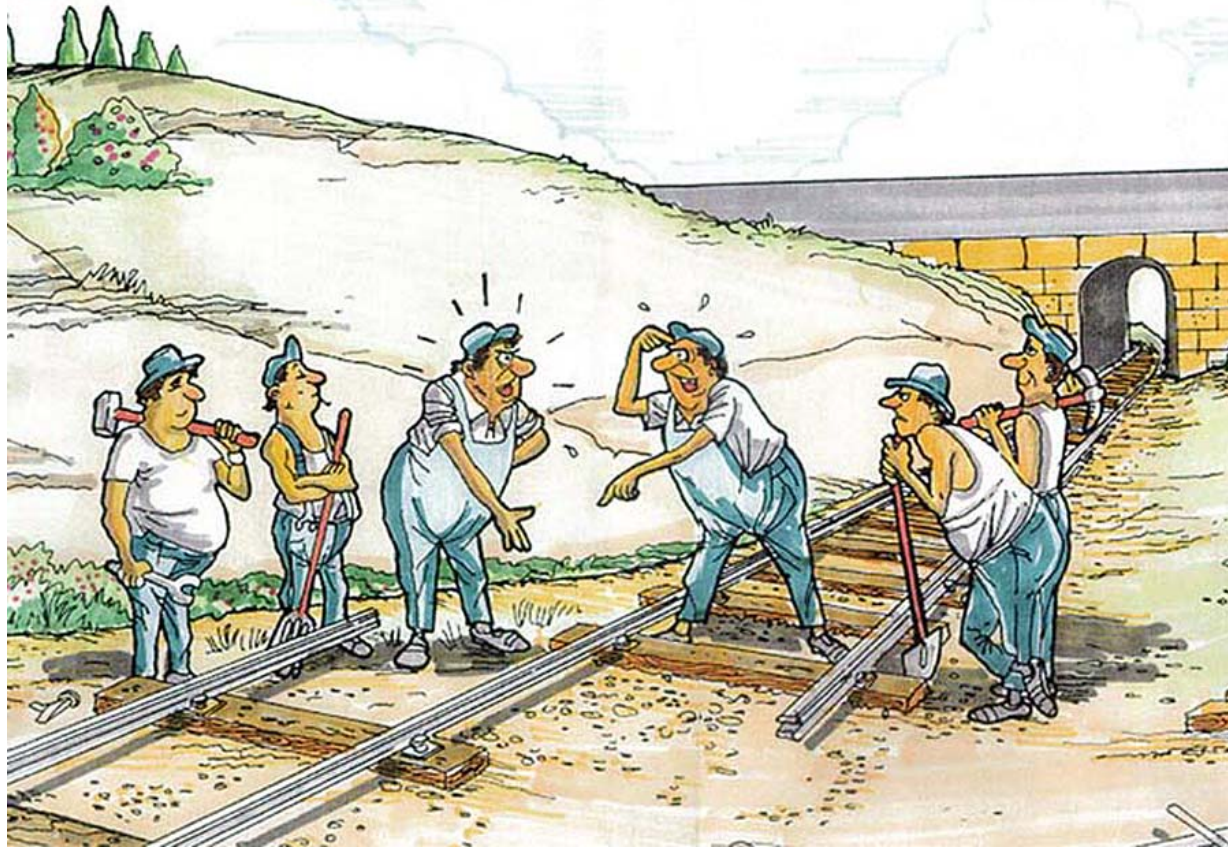
- **Recommended:** Safety programs should... establish interdisciplinary team training programs for providers that incorporate proven methods of team training such as simulation

Team Training

- The application of instructional strategies based on well-tested tools (e.g., simulators, lectures, videos) to a specific set of competencies.

Source: <http://www.ahrq.gov/qual/medteam/medteam2.html>

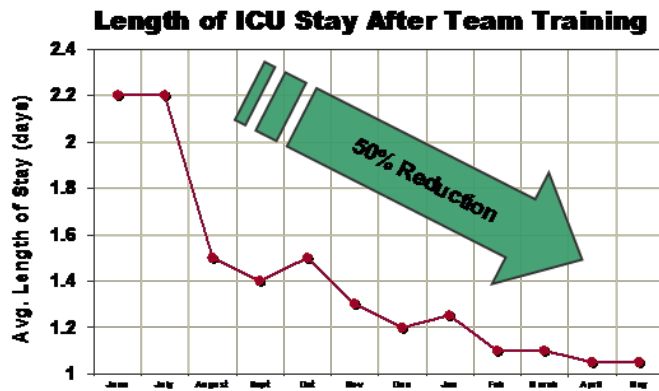
Team Work



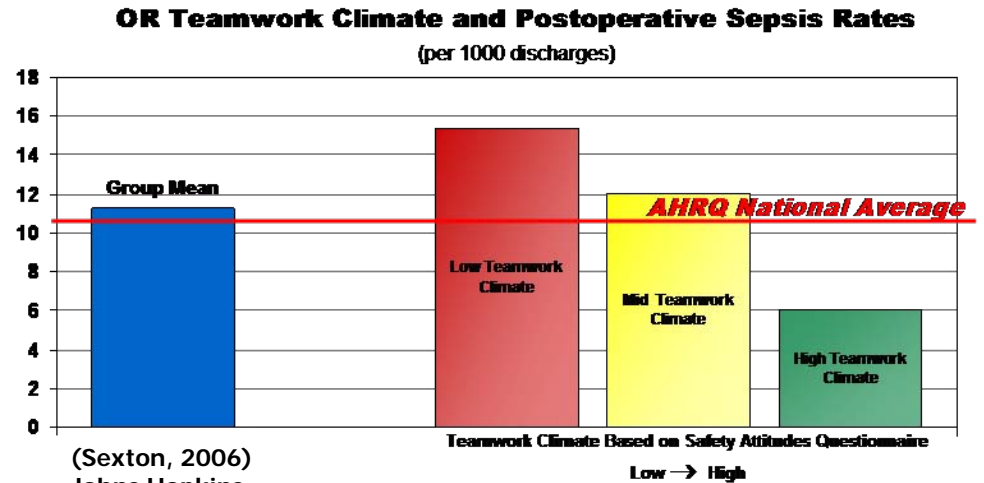
What is the Evidence?

- Teamwork is a key initiative within patient safety that can transform the culture within health care
 - 27% reduction in nurse turnover (Dimeglio, 2005)
 - 31% to 4% decrease in clinical error (Morey, 2002)
- Communication & other teamwork skills are essential to prevent & mitigate medical errors and harm
 - 50% Less Adverse Outcomes (Mann 2006)
 - 50% Less Post-Op sepsis (Sexton 2006)

RESULTS OF TEAMWORK IN THE HEALTHCARE ENVIRONMENT

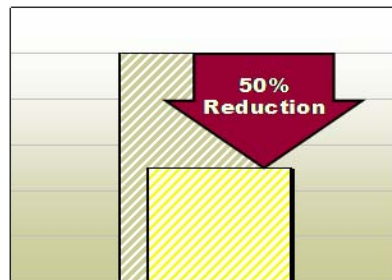


(Pronovost, 2003)
Johns Hopkins
Journal of Critical Care Medicine



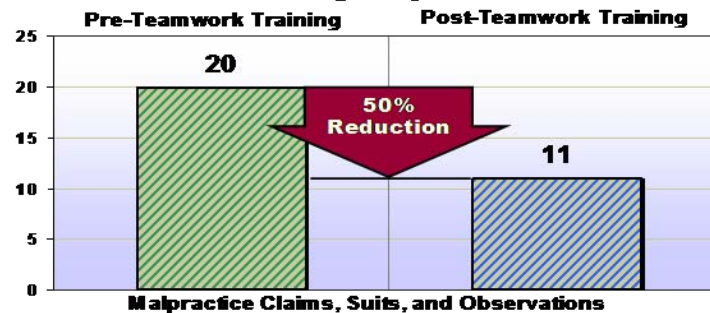
(Sexton, 2006)
Johns Hopkins

Adverse Outcomes



(Mann, 2006)
Beth Israel Deaconess Medical Center
Contemporary OB/GYN

Indemnity Experience





(COURTESY KTLA)

Commercial Aviation Disasters

- December 29, 1972 Eastern Airlines New York to Miami
- March 27, 1977 KLM and Pan Am, Tenerife (Nova Video)

Crew Resource Management

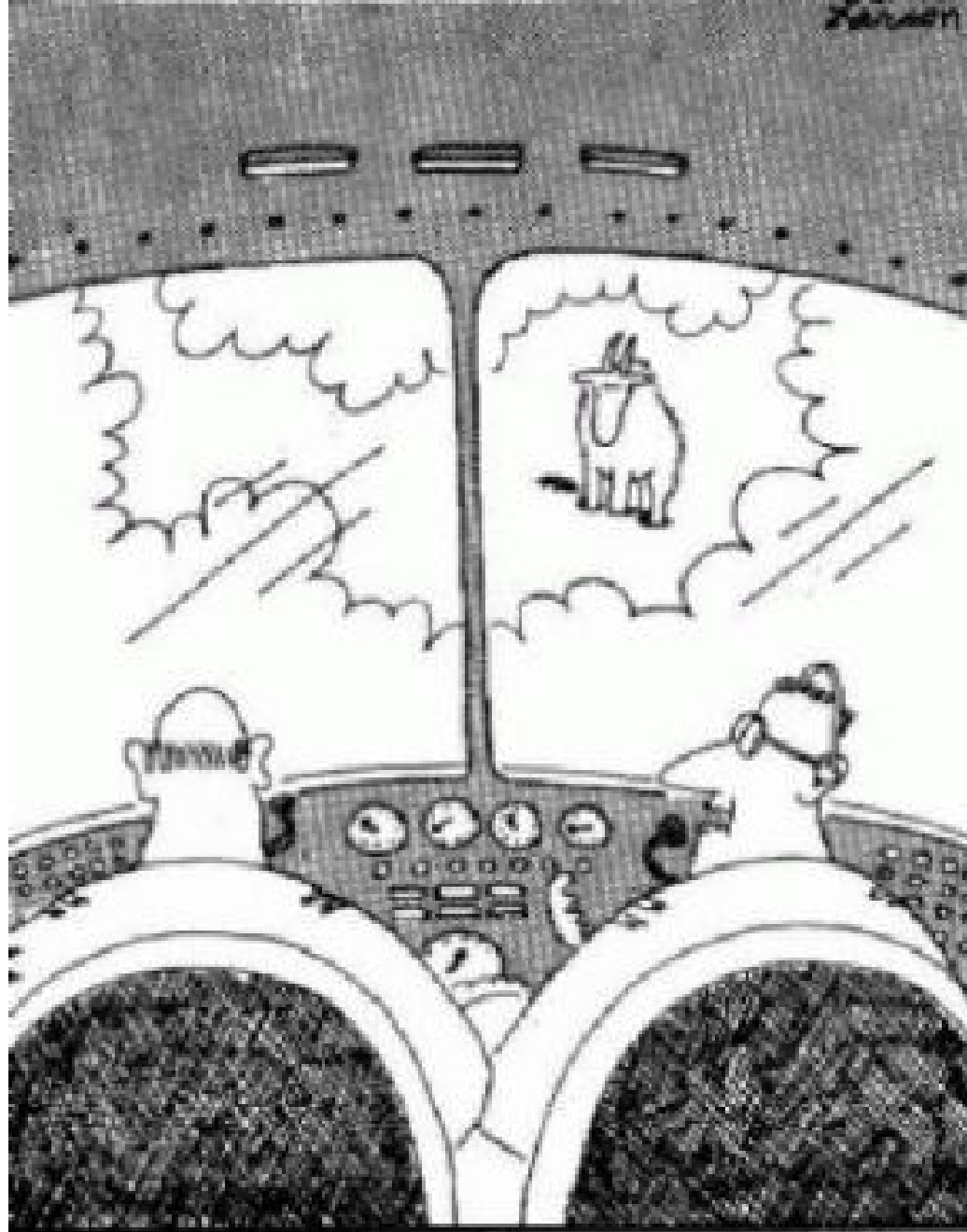
- encompasses a range of approaches to training groups to function as teams, rather than as collections of individuals
- emphasizes the role of "human factors"
 - the effects of fatigue, expected or predictable perceptual errors (such as misreading monitors or mishearing instructions)
 - the impact of different management styles and organizational cultures in high-stress, high-risk environments.

Situational Awareness

- Situational awareness refers to the degree to which one's perception of a situation matches reality.
 - awareness of fatigue and stress among team members (including oneself),
 - environmental threats to safety
 - appropriate immediate goals
 - the deteriorating status of the crisis (or patient)

Situational Awareness in Action

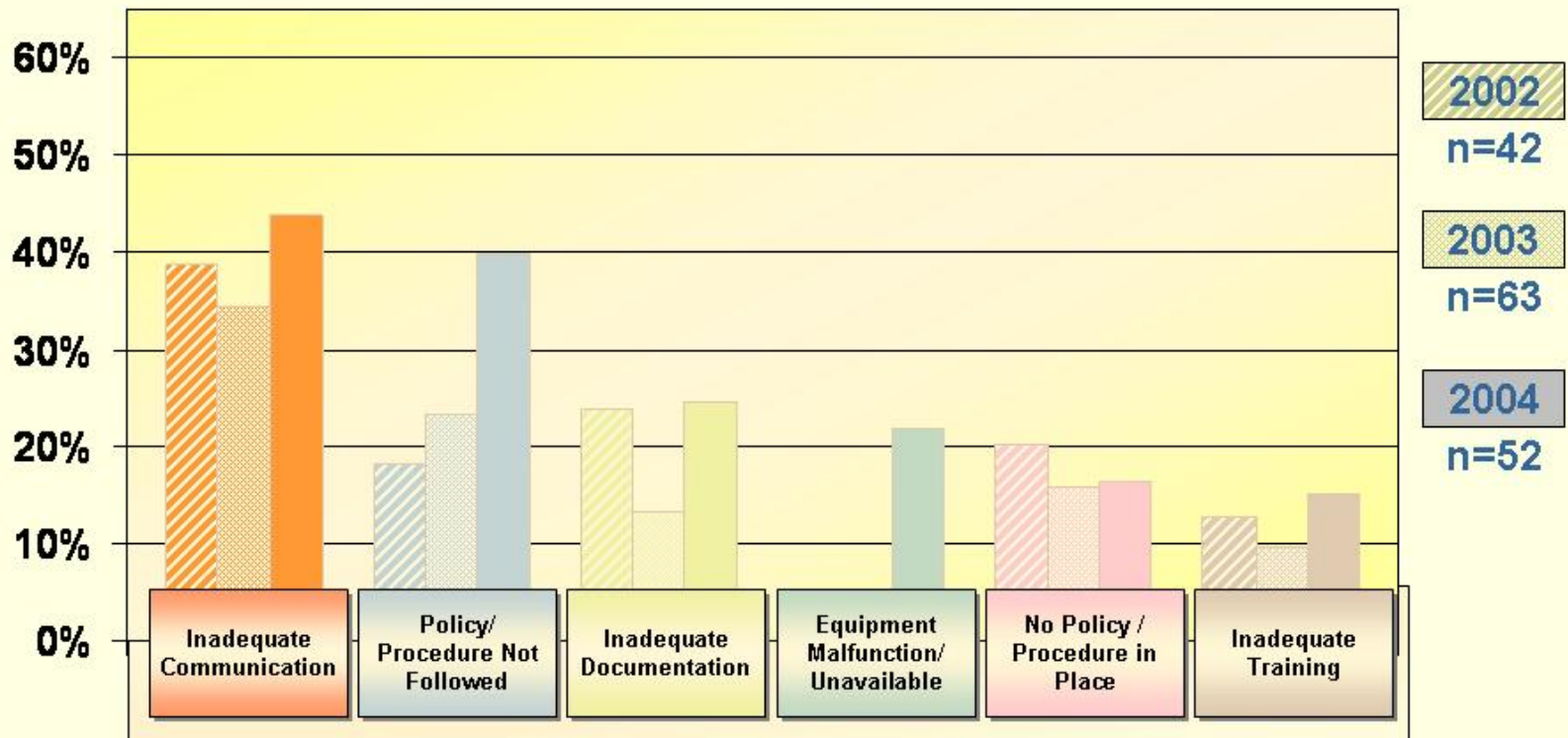
- <http://www.youtube.com/watch?v=ICXrEhSQ7co&feature=related>



"Say . . . What's a mountain goat doing way up here in a cloud bank?"

COMMUNICATION

Top Contributing Factors of Sentinel Events from RCAs, FY02 – FY04



Source: TeamSTEPPS curriculum

Components of Team Training

- Align team training objectives with organizational goals
- Elicit organizational support (\$\$\$)
- Get frontline care leaders on board (BUY-IN)
- Preparation
- Determine resources and time commitment
- Facilitate application of acquired skills on the job.
- Measure the effectiveness
- Report your successes

Source: Salas et. al. What are the critical success factors for team training in health care? Jt. Comm J Qual Patient Saf. 2009 Aug; 35(8):398-405.

Critical principles for team training (1/2)

1. Identify critical teamwork competencies
2. Emphasize teamwork over taskwork
3. One Size Does Not Fit All
4. Exposure is not enough ... provide hands-on practice

Critical principles for team training (2/2)

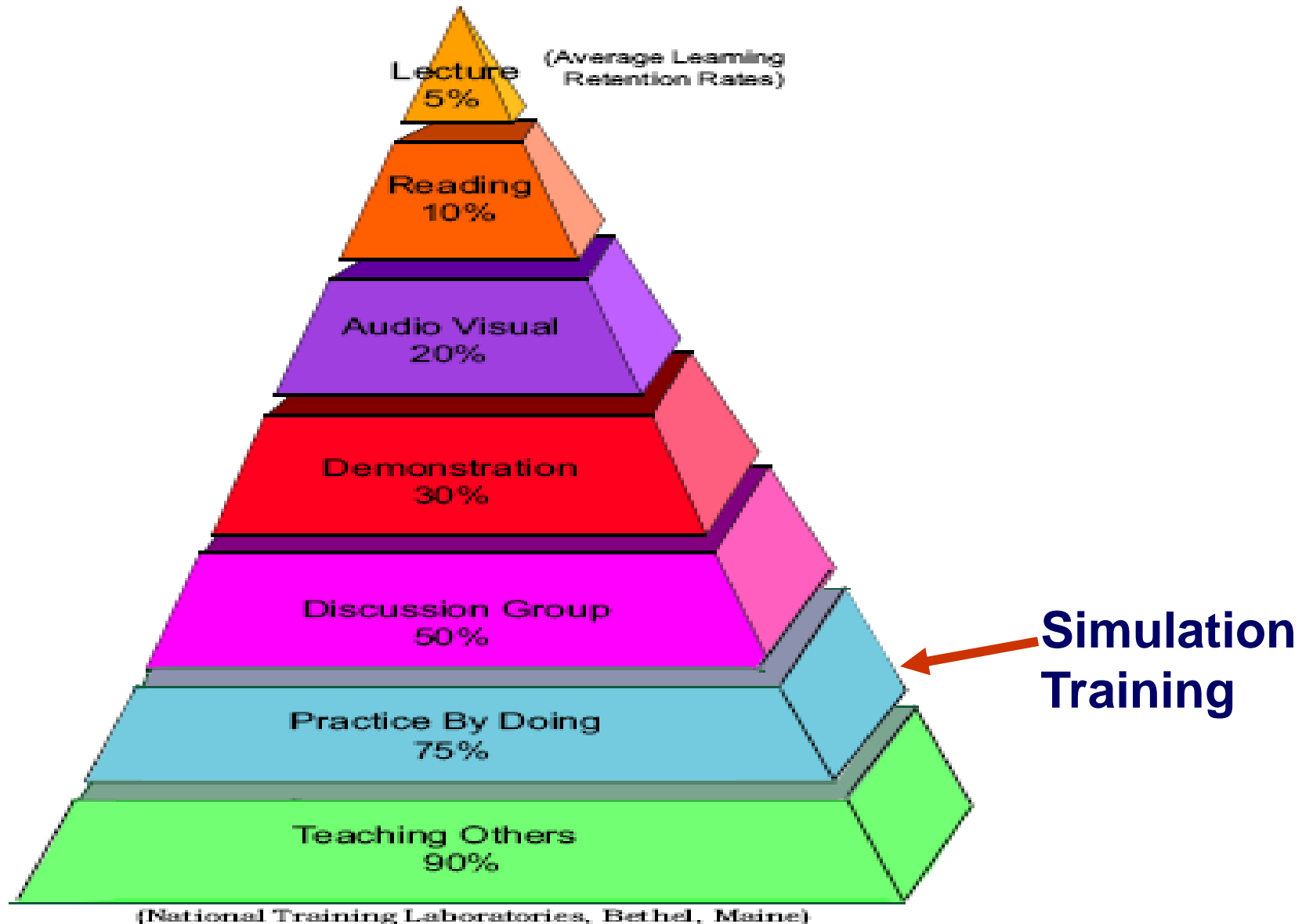
5. Create realistic scenarios that could be encountered by trainees
6. Feedback is critical – make it behavior-based
7. Evaluate on multiple levels – reactions, knowledge, behavior and results
8. Reinforce desired teamwork behaviors

Insights (1/2)

- Build team training on the foundation of the science of training and adult learning ... and then recognize that all teams in health care are not created equal.
- Make team training practice-based
 - Include opportunities for active learning.
 - Expose trainees to both ideal scenarios and provide examples of bad teamwork.

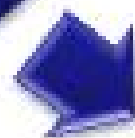
Salas et. al. Sounding the Call for Team Training in Health Care: Some Insights and Warnings” *Academic Medicine*, 84:10 (S128-131).

Learning Pyramid



Experiential Learning - Kolb

Simulation



Debriefing



Practicing



Relating to actual situations, developing rules, algorithms

Insights (2/2)

- Merge simulation with any team training strategy
 - Use your own location's examples
 - Craft scenarios based on learning objectives
 - Create opportunities for assessing and diagnosing individual and team performance
- Incorporate timely and diagnostic feedback.
 - Consider postaction debriefings

Salas et. al. Sounding the Call for Team Training in Health Care: Some Insights and Warnings" *Academic Medicine*, 84:10 (S128-131).

Warnings

- Team training won't solve all your safety problems.
- Need institutional buy-in that team training is important.
- MDs must think of themselves as part of the team.
- The patient must be considered part of the team.
- Team training should be rigorously evaluated.



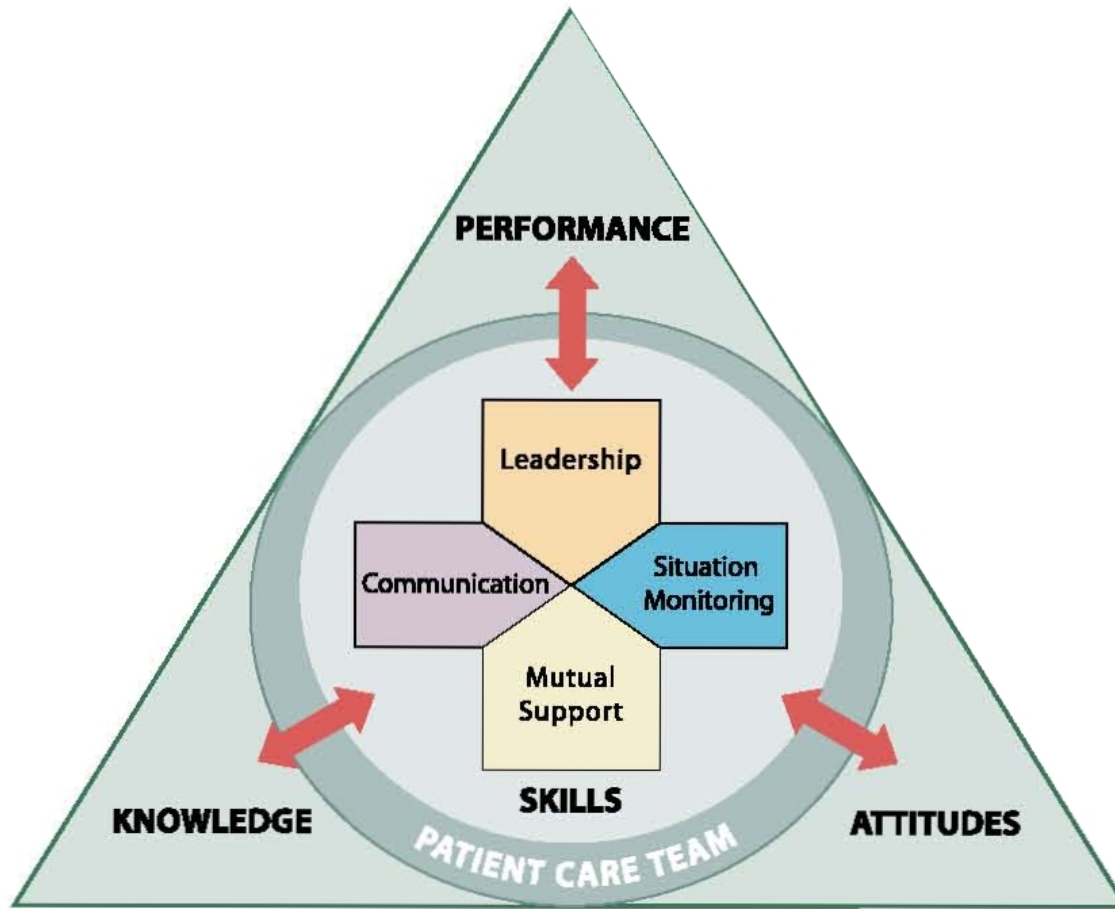
Change is hard



- Create a sense of urgency
- Pull together the guiding team
- Develop the vision and change strategy
- Communicate for understanding and buy-in
- Empower others to act
- Produce short-term wins
- Don't let up
- Create a new culture

John Kotter, *Our Iceberg is Melting*

TeamSTEPPS





BARRIERS

- Inconsistency in Team Membership
- Lack of Time
- Lack of Information Sharing
- Hierarchy
- Defensiveness
- Conventional Thinking
- Complacency
- Varying Communication Styles
- Conflict
- Lack of Coordination and Follow-Up with Co-Workers
- Distractions
- Fatigue
- Workload
- Misinterpretation of Cues
- Lack of Role Clarity

TOOLS and STRATEGIES

Brief
Huddle
Debrief
STEP
Cross Monitoring
Feedback
Advocacy and Assertion
Two-Challenge Rule
CUS
DESC Script
Collaboration
SBAR
Call-Out
Check-Back
Handoff

OUTCOMES

- Shared Mental Model
- Adaptability
- Team Orientation
- Mutual Trust
- Team Performance
- *Patient Safety!!*

Other center's experience

- ED staff who had recently received didactic training in the Emergency Team Coordination Course (ETCC) also received an 8 hour intensive experience in an ED simulator in which three scenarios of graduated difficulty were encountered. A comparison group, also ETCC trained, was assigned to work together in the ED for one 8 hour shift.
- The experimental team showed a trend towards improvement in the quality of team behavior ($p = 0.07$); the comparison group showed no change in team behavior during the two observation periods ($p = 0.55$).

Challenges in implementation

- STAFFING
- ENVIRONMENT
- TECHNICAL
- BEHAVIORS
- PATIENT

Objectives

- Recall the overall risk for medical errors in the hospital environment and the top 10 specific Sentinel Events by type.
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