

Delivering the Promise to Healthcare:

***Improving Patient Safety and Quality of
Care through aviation-related
Crew Resource Management (CRM)
Training***

by

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Healthcare Team Training, LLC

Definition of CRM

The empowerment of all team members to promote safety and increase overall team performance.

Source: Taylor, T. PhD. ERAU 2005.

Organizational Culture

“The values, beliefs, and behaviors that are shared by members of groups.”

Source: Helmreich and Davies. Can J Anesth 2004/51:6

Delta Airlines Culture prior to CRM

“Captain’s Airline”

- ➔ Captains operated autonomously
- ➔ Captains were not standardized
- ➔ Subordinates did not know what to expect from one flight to the next
- ➔ Co-pilots took on a “go-with-the flow” mentality and were not assertive
- ➔ Lack of effective crew communication

Source: Byrnes and Black. Crew Resource Management. Weiner, Kanki, Helmreich, 1993.

“Captain as King”

Video

Resultant Pilot Behaviors

- ➔ No group decision-making
- ➔ Communication was top → down only
- ➔ Subordinate suggestions met with hostility
- ➔ Poor interpersonal diplomacy
- ➔ Inability to effectively manage resources
- ➔ 70% of errors were communication related
- ➔ Rule #1: Captain was always right
- ➔ Rule #2: See Rule #1

Source: Byrnes and Black. Crew Resource Management. Weiner, Kanki, Helmreich, 1993.

Summer of 1987

Series of Human Error Accidents and Near Misses “Our Sentinel Events”

- Took off on wrong runway
- Inadvertent complete in-flight engine shutdown
- Landed at the wrong airport
- Near miss with Continental over the North Atlantic
- Took off with the flaps up resulting in a crash (14 fatalities)

Source: National Transportation Safety Board Accident Database. www.nts.gov

Why did other Airlines need CRM?



CRM chosen to Transform Delta's Culture

Crew Resource Management (CRM) training developed to...

- ➔ Address specific attitudes
- ➔ Change related behavior
- ➔ Improve the performance of the cockpit crew

Steps used to Transform the Culture @ Delta

- ➔ Consultant facilitated process initially
- ➔ Identified Leader(s) for change
- ➔ Formed an internal CRM Team
- ➔ Established CRM Goals
- ➔ Used Error Reporting / Database(s) and measured pilot CRM Performance
- ➔ Customized the CRM Program

Source: Byrnes and Black. Crew Resource Management. Weiner, Kanki, Helmreich, 1993.

CRM Results

- ➔ Over 91% of participants felt CRM had improved their flight performance
- ➔ Over 85% of the participants believe that this training will improve flight safety
- ➔ There is recognition of the importance of the pre-flight briefing
- ➔ Flight attendants reported being treated with more respect after CRM and were made to feel more a part of the crew
- ➔ It is recognized that critique and debriefing are important

Source: Salas, E., et al Team Training in the Skies: Does Crew Resource Management Training Work? Human Factors 2001.

CRM Results

➔ Voluntary Reporting Rates Increased

- Greater than 95% of error reports are sole source

Source: Delta Airlines Safety May 2005.

➔ Accidents related to Crew Error Decreased

➔ Teamwork Improved

- CRM trained teams performed better improving across all team performance dimensions

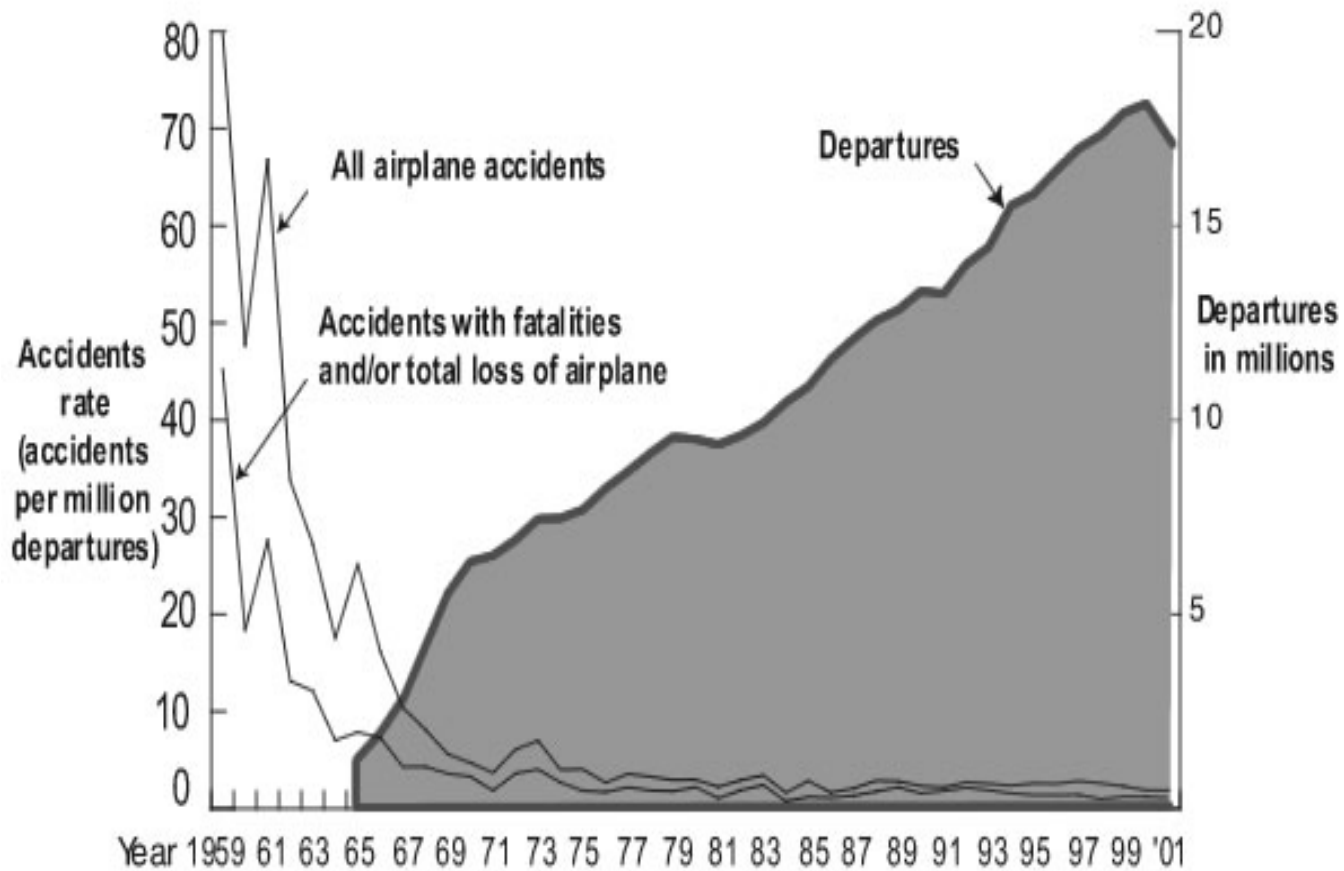
➔ Communication Improved

- 41% improvement in communication interaction

Source: Salas, E., et al Team Training in the Skies: Does Crew Resource Management Training Work? Human Factors 2001.

Aviation Mishap Trend

Source: National Transportation Safety Board.

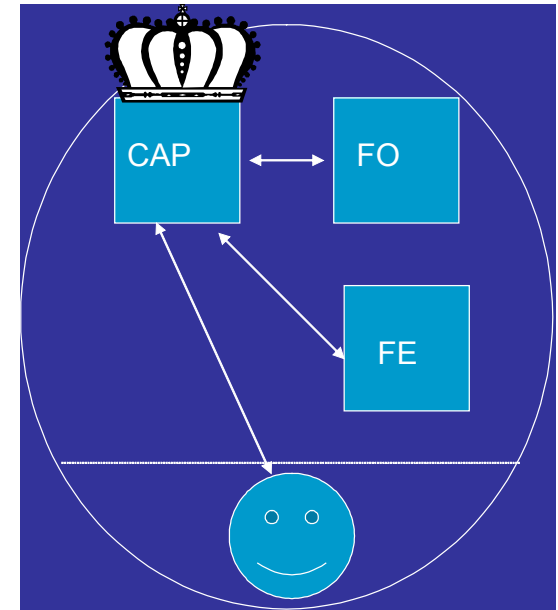
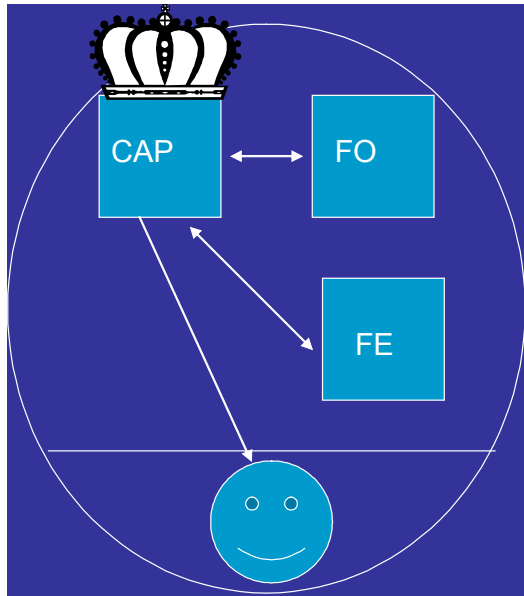
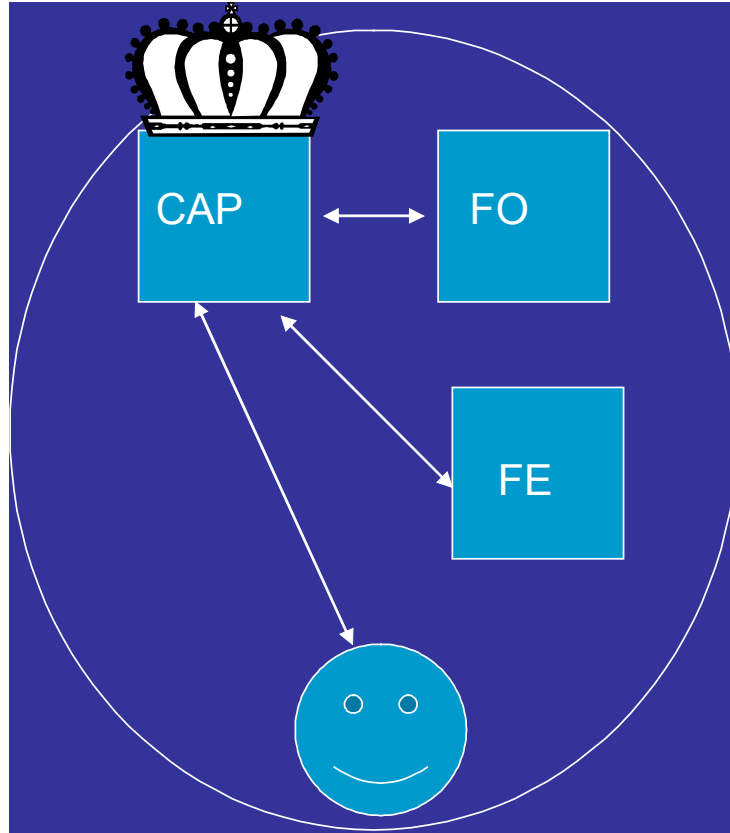
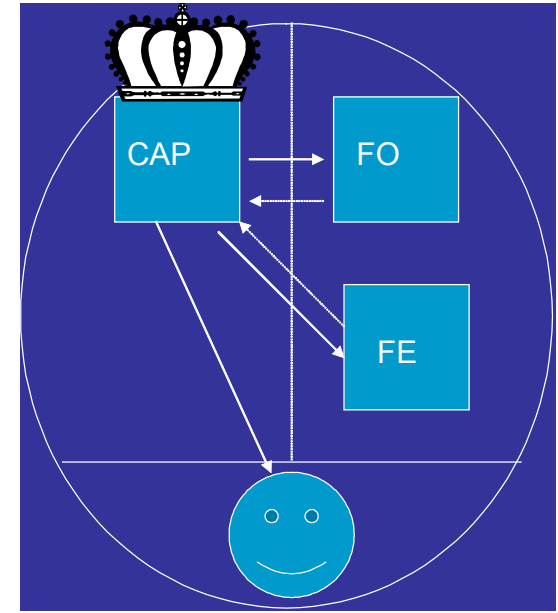
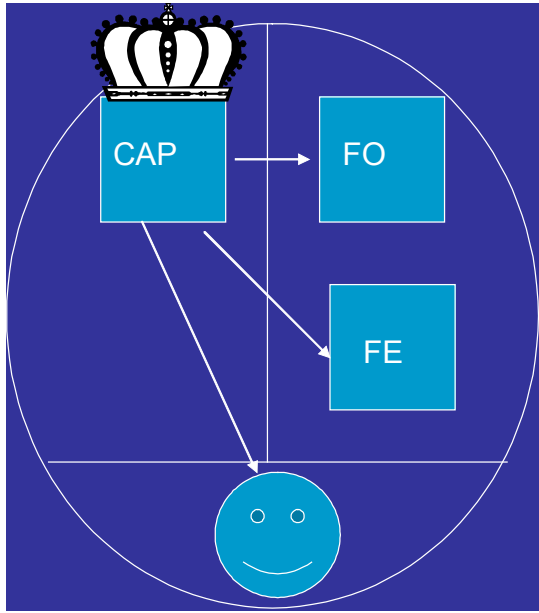


Aviation Mishap Trend

**In the years 2002-2003, there were
only
19 fatalities on major airlines in the
United States.**

Source: National Transportation Safety Board.

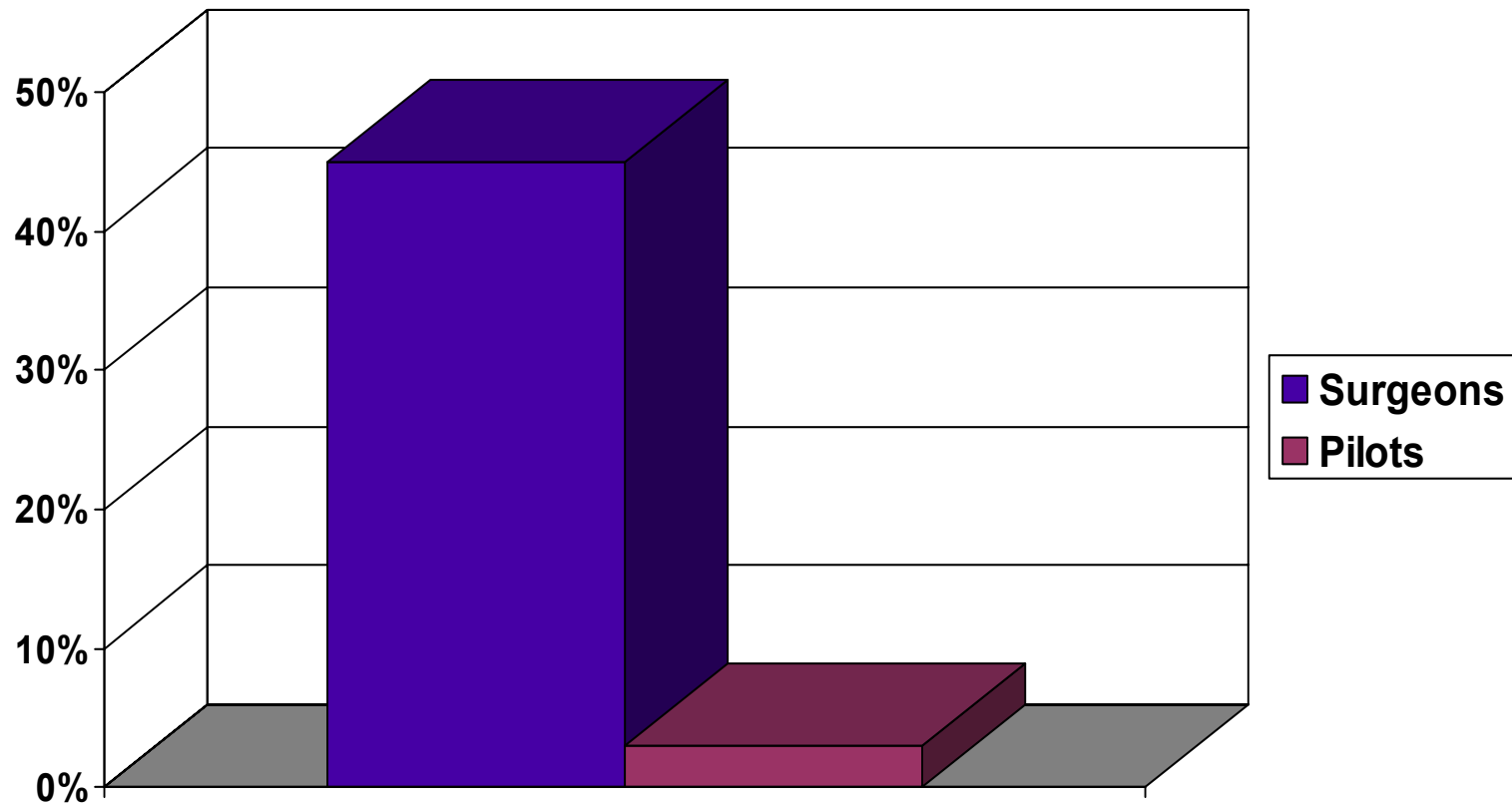
CRM CULTURAL EVOLUTION



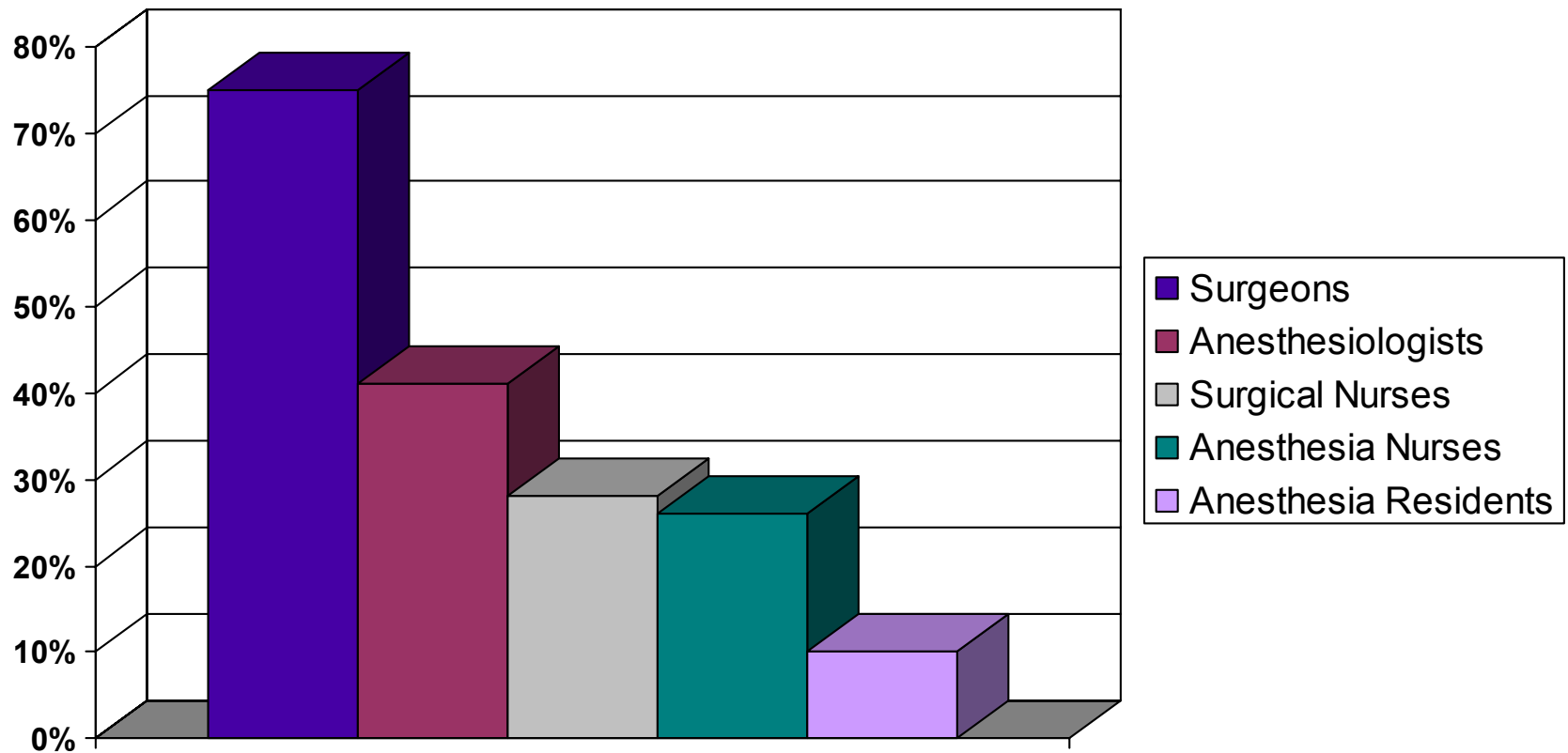


**Why Medicine needs
*CRM?***

Junior staff should not question senior staff decisions?



Teamwork Level Rated “High”



More Healthcare Perceptions

- ➔ **Greater than 50% of doctors and nurses find it difficult to discuss errors due to:**
 - Personal Reputation (76%)
 - Threat of Malpractice (71%)
 - Egos of other Team Members (60%)
- ➔ **Only 33% of medical staff believe errors are handled appropriately in their hospital**

Sound Familiar?



Steps needed to Transform the *Healthcare Culture*

- ➔ Identify Leader(s) for change
- ➔ Use an experienced CRM Consultant
- ➔ Form an internal CRM Team
- ➔ Establish CRM Goals
- ➔ Use your Error Reporting System / Database(s) and CRM Team Performance Metrics
- ➔ Customize the CRM Program to Align with your Organization's Goals

Find a Leader

Dr. John Bookwalter, MD,FACS

Chief of Surgery, Brattleboro Memorial

Inventor of Codman “Bookwalter” Retractor

Video

Form an Internal CRM Team

- ➔ CEO and Senior Management
- ➔ Patient Safety Committee
- ➔ Quality/ Performance Improvement
- ➔ Risk Management
- ➔ Data Services
- ➔ Education
- ➔ Change Agents (Doctors, Nurses, Staff)
- ➔ Experienced CRM Consultants

Establish CRM Goals

- ➔ Enhance patient safety through **optimized** team performance
- ➔ Promote team development, individual non-technical skills and personal growth
- ➔ Increase job satisfaction, decision-making and communication skills
- ➔ Modify the corporate “shell”
- ➔ Remediate problem behaviors

Create a Database

- ➔ Enterprise wide non-punitive voluntary reporting system
- ➔ Benchmarking capabilities
- ➔ Feedback loop across departments and to the individual reporter
- ➔ Near-miss data collection
- ➔ Drill down capabilities to identify threats and create solutions before they become an adverse event
- ➔ Measure team performance

Customize the CRM Program

Use all collected data to determine...

- ➔ Who should participate:
 - All clinical and non-clinical staff who have direct patient contact
- ➔ Key elements of the program:
 - Leadership, Teamwork, Communication
- ➔ Specific curriculum elements:
 - Human Factors didactic sessions, role plays, case studies
 - Workplace Observations
 - Simulation

CRM-based Successes in Healthcare

➔ Beth Israel Deaconess

- OB/GYN results: Adverse outcomes reduced by 53%

➔ Hopkins ICU

- ICU average length of stay reduced by one full day resulting in estimated cost-savings \$2M annually

➔ Methodist Memphis Hospital

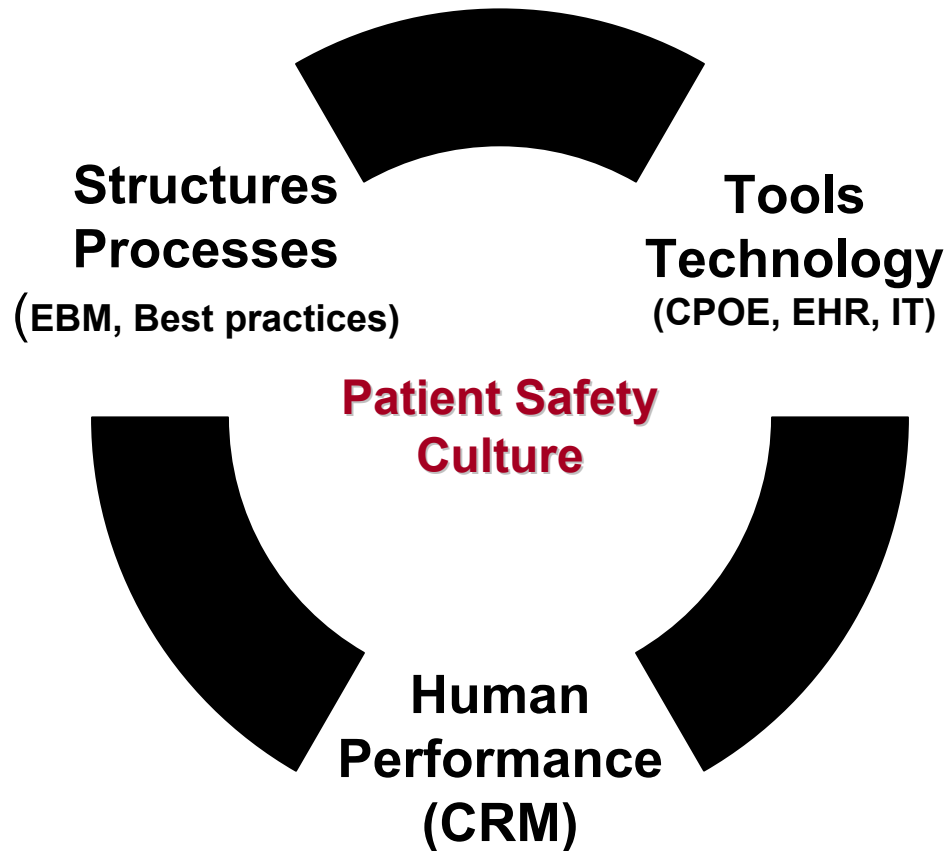
- 50% reduction in surgical count errors in the OR

➔ Kaiser Permanente Oakland, CA

- Nurse turnover reduced by 16%
- Team satisfaction improved by 19%

Patient Safety Culture

Process Results



Future Developments

- ➔ “Medicine needs to expand Virtual and Simulated Training opportunities to enhance not only technical skills, but also interpersonal, small group and interdisciplinary skills.”
- ➔ “Medical and nursing schools must address CRM training at the earliest stages of clinical training.”
- ➔ As medicine becomes even more complex, non-technical and interpersonal skills become increasingly important.

Future of CRM in Healthcare

NBC Video

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