

Crew Resource Management in Healthcare



Creating a Culture of Safety

Capt. Sarah Bobnick
United States Air Force
RAMS-NATO STO Technical Course
NATO Unclassified

What is Crew Resource Management

- ☞ Crew Resource Management (CRM) was developed to improve air safety by focusing on the cognitive and interpersonal skills needed to make optimal use of resources
- ☞ Core functions of CRM are to manage
 - ☞ Tasks
 - ☞ Resource
 - ☞ Workload of the crew

Crew Resource Management



- ❧ The goal is to achieve situational awareness and effectively manage the workload distribution
- ❧ CRM is dependent on several factors
 - ❧ Interpersonal atmosphere of the cockpit
 - ❧ Crew expectations
 - ❧ Available information
 - ❧ The ability of the crewmembers to stay situationally aware (“ahead of the airplane”)

Communication

- bidirectional communication
- Briefing
- Assertion

Situational Awareness Management

- Monitor
- Vigilance
- Anticipation
- Analysis

Decision Making

- Decision
- Action
- Critique

CRM Skills

Workload Management

- Planning
- Prioritizing
- Distribution

Team Building & Maintenance

- Leadership
- Climate
- Conflict resolution

CRM Examples



- ✧ In August 2013, a Capt. and first officer on a British long-haul commercial airliner reported that they had both unintentionally-and simultaneously-fallen asleep midflight
- ✧ The systems approach of the airline industry to human error encourages such reporting without repercussion
- ✧ 6-Sigma safety level industries

What do These Entities Have in Common

- ❧ A **preoccupation with failure** and therefore engrain a culture of systemic vigilance
- ❧ Endorse and promote mechanisms of blame-free reporting
- ❧ Accept that human error is both ubiquitous and inevitable
- ❧ Systems approach to error

Most Common Types of Errors



1. Violation of standard operating procedure (SOP) –most common error
2. Procedural
3. Communication
4. Proficiency
5. Decision errors

How do We Approach Human Error in Medicine



- ❧ Historical reluctance to acknowledge occurrence of errors
- ❧ Resistance to transparency regarding details and circumstances because of a **personal approach** to human error
- ❧ Error is considered a shortcoming of a person or a group of individuals with whom responsibility is deemed to rest
- ❧ Blame is implied, if not stated

How do We Approach Human Error in Medicine



- ❧ Online search for *air accidents* revealed the phrase “pilot error” mostly commonly, whereas searches for *surgical errors* revealed headlines such as “scandals” “bungling surgeons” “botched operations” and “baby killers”
- ❧ Personal approach to human error is satisfying in that; failures are “contained” and accounted for
- ❧ It provides easy and direct causation for colleagues, patients, and their family

Application of CRM in Healthcare



- ❧ Doctors are not pilots and patients are not planes
- ❧ CRM concepts lend themselves especially well to high stakes emergency or surgical settings
- ❧ Sensory and cognitive senses become highly distorted in situations of extreme stress or fear and behavior becomes unpredictable
- ❧ Skills such as role allocation, task prioritization, and resources utilization can be taught and rehearsed

Examples of CRM Interventions in Healthcare



- ❧ CRM training of team leaders prior to a CPR scenarios showed a significant increase in
 - ❧ quality of communication (direct orders, planning, and task assignments)
 - ❧ adherence to guidelines as compared to those who received additional life support training only

Examples of CRM Interventions in Healthcare



- ❧ Multidisciplinary performance rounds
- ❧ Every child on the congenital heart surgery service surgical journey is reviewed, depicted in a graphical display which shows unexpected clinical deviations and escalations in risk
- ❧ Clinical events categorized as threats, errors, or unintended clinical states
- ❧ Links drawn between events

Examples of CRM Interventions in Healthcare



- ☞ Observed results of performance rounds:
1. Reinforces sense of individual accountability
 2. Rapid resolution of problems and development of action plans
 3. Reinforces collective memory for future clinical guidance
 4. Dramatic reduction in “corridor gossip” about complications
 5. Strong educational component with inclusion of imaging, photos or lit reviews
 6. Improved cohesion and team-building

Creating a Culture of Safety

- ∞ Accept that human error is inevitable
- ∞ Shift from a personal approach to error to a systems based approach
- ∞ Focusing on preventing, predicting, reorganizing, and rescuing anticipated errors
- ∞ Endorse and promote mechanisms of blame-free reporting

Creating a Culture of Safety

- ❧ Develop shared mental models within teams through practice and regular performance review
- ❧ Add training in CRM for team leaders
- ❧ Addition of a non-threatening assessments of cognitive workload and task saturation may help improve team function in high-acuity situations

Works Cited



- ❧ Bracco, F et al. (2018 15:439). Crisis Resource Management in the Delivery Room: Development of Behavioral Markers for Team Performance in Emergency Simulation. *International Journal of Environmental Research and Public Health*.
- ❧ Castelao, E. et al. ((2015) 116). Effect of CRM team leader training on team performance and leadership behavior in simulated cardiac arrest scenarios: a prospective, randomized, controlled study. *BMC Medical Education*.
- ❧ Dorneich, M. Et. al. (2017). Evaluation of the Display of Cognitive State Feedback to Drive Adaptive Task Sharing. *Frontiers in Neuroscience*, 1-12.
- ❧ Haffner, L et al. ((2017) 17:7). Improved recognition of ineffective chest compressions after a brief Crew Resource Management (CRM) training: a prospective, randomised simulation study. *BMP Emergency Medicine*.
- ❧ Hickey, E. et. al. (2017). Chasing the 6-sigma: Drawing lesions from the cockpit culture. *The Journal of Thoracic and Cardiovascular Surgery*, 690-696.

Questions?



Capt. Sarah Bobnick

Sarah.B.Bobnick.mil@mail.mil