

Multidisciplinary Team Training and the Art of Communication

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Crew resource management has been effectively used for more than 20 years to reduce error and improve communication in the aviation industry. The healthcare industry began to investigate aviation crew resource management after an Institute of Medicine report recommended that medicine adopt aviation's approach to safety and error management. Effective teamwork training uses several key techniques and methods that can be used to actively engage all members of the healthcare team. This article describes these methods including briefings, checklists, and communication techniques that can foster an environment of mutual respect, particularly as they apply to "hand-offs" in care.

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It is 2:30 AM, seven and a half hours into the emergency department (ED) shift and five hours from its end when a 15-month-old girl is brought for care by her parents. The child lies quietly in her mother's arms and cries when you touch her abdomen. It is the third time in a week that the child has been to a healthcare provider. Her heart rate is 170, respiratory rate 34, and her rectal temperature 100.6°F. An intravenous line is established, laboratory studies are obtained, a fluid bolus is given, and the child's vital signs stabilize. The child is more alert and awake. The labs are normal, but based on your clinical exam, you are concerned about the child and arrange for admission to the hospital. You "sign out" the child to the oncoming physician and report that the child's workup is complete and that you are "just waiting for a bed." Your colleague completes morning rounds on the other patients. At 8:00 AM, the nurse calls the admitting floor to check on bed status and then enters the child's room to perform the final assessment before transport to the floor. She finds the child unresponsive with a fast heart rate and increased respirations. The child is successfully resuscitated and transferred to the pediatric intensive care unit. When you return that evening at 7:00 PM, your colleague angrily approaches you and states that you did not tell her how sick the child was and describes the series of events.

The ED is a high-risk, highly complex environment to work in. Physicians, nurses, and other emergency clinicians and staff must be ready to provide a tremendous array of services 24 hours a day, 7 days a week to a population of patients that varies widely in age, clinical acuity, emotional state, and physical and medical needs. Emergency departments across the country face a growing volume of patients, although many find themselves with fewer staff and resources to support the increased workload. The combination of these factors leads to an increased risk of medical errors and a need for a constant vigilance and focus on the part of the emergency care team to prevent harm to patients.

The ED environment is similar in many ways to other high-risk industries, such as aviation and nuclear power. Research initiated in naval aviation as far back as the 1950s has demonstrated that errors and mishaps can be

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prevented and lives can be saved through diligent efforts to design safety into systems and through the implementation of safety training programs such as crew resource management (CRM).

The CRM is a training model that focuses on communication and human behavior. This model is based on the recognition that complex systems sometimes break down, not because of flaws in engineering but rather because the people working in the system failed to interact in a manner that ensures safety and good outcomes. Observations of flight crews in the 1970s helped researchers understand the impact of communication and human behavior on outcomes or mishaps. For example, they found that often somebody on the team was aware of a potential problem before the mishap but failed to speak up. Recordings of flight crews revealed efforts of copilots who tried to speak up about an impending safety hazard, but their indirect comments were not heard or acknowledged by pilots. Based on these observations, researchers and leaders of the airline industry determined that several major changes were necessary to improve the safety of the crew and passengers. They suggested, for example, that the hierarchy of the airline culture should be flattened, and that junior members of the flight team were needed to be empowered to speak up about any safety concerns they had. Senior members of the team (especially the team leader, ie, the captain) need to listen to members of the team and accept their questions as signs of sincere concern rather than as insubordination or doubt about the leader's ability.

Specific tools and training methods were found to be successful in effecting a change in the behavior of team members, and many of these tools and methods have recently been applied to the healthcare industry. Leaders in patient safety have suggested that an approach such as teamwork training and CRM can help improve the safety of patients. Indeed, the Institute of Medicine report, published in 1999, specifically suggested that hospitals and healthcare agencies should implement formal teamwork training as one means of reducing medical error.

Effective teamwork training uses several key techniques and methods that can be used to actively engage all members of the healthcare team: physicians, nurses, physician assistants, respiratory therapists, clinical pharmacists, and so on. These include briefings, checklists, and communication techniques that can foster an environment of mutual respect.

Briefings

Briefings before flights provide an opportunity for members of the flight crew to work together to accomplish routine tasks and to prepare for unexpected problems. For example, a pilot flying an aircraft usually

completes a preflight brief, whereas another pilot listens and asks questions or adds missing information if any items are omitted. This will serve the crew well in the event of an engine failure during the takeoff roll that requires immediate action and coordination to ensure a safe outcome for the crew and the passengers.

In healthcare, teams of clinicians should also plan for a procedure by using a briefing that reviews the tasks of each team member and provides an opportunity to discuss contingency plans should an unexpected circumstance arise. For example, in the operating suite, a universal protocol or a briefing such as a "time-out" is used to address tasks and team requirements that ensure that the correct surgical procedure is being performed on the correct location for the correct patient [1]. Hospitals that have adopted these preprocedure briefings have reduced the incidence of wrong site surgeries [2]. A recent study also demonstrated that teams that perform a preprocedure briefing can positively impact the workplace environment and improve the culture of safety. This was evidenced by improved staff perceptions of safety and teamwork and increased self-reporting of near misses by staff members so that others could learn from their mistakes. Teams that regularly briefed before surgical procedures reduced nurse staffing turnover rates by 50% over teams that seldom briefed [3].

Use of Checklists and Best Practices

Leaders of EDs who aspire to improve patient safety should closely examine the systems-based approach to safety used by the aviation and nuclear power industries. This systems-based approach acknowledges that human beings and their limitations must be accounted for in the design of the system. By proactively designing a system that takes into account the strengths and limitations of individual healthcare providers, the ED team can improve the safety of patients and minimize the risk of harm. Examples of this approach include the standardization of processes, the use of best practices, and the use of checklists.

Many emergency care providers are required to complete training in various life-support courses such as Pediatric Advanced Life Support and Advanced Trauma Life Support before starting to work in the ED. A standard "ABC" approach to initial stabilization is taught in these courses in an attempt to help clinicians prioritize and carry out interventions for the treatment of critical illness or injury. For example, standardized algorithms developed by the American Heart Association guide clinicians to the correct plan of care for patients experiencing cardiac or respiratory abnormalities. By following a decision tree checklist of "airway open—yes or no, the clinician is led to the next portion of the

decision tree (“is the patient breathing—yes or no”), and early interventions are then recommended [4].

Just as a checklist (such as a time-out) is used in the operating room before a procedure being performed, procedures in the ED should be performed only after a checklist is reviewed, whenever this is possible based on the acuity of the situation. The purpose of conducting a time-out is not simply to follow a policy but to truly accept responsibility to do all we can to prevent harm. Given the many interruptions, hectic environment, and numerous hand-offs that are common to the ED, checklists are an important tool that can offset the limitations we have as humans: lapse of memory and slips we are likely to make in such an environment.

Communication: Fostering an Environment of Mutual Respect

When the physician, as team leader, sets a tone of mutual respect and “psychological safety” by calling each member of the team by name and inviting their input, staff satisfaction improves, staff turnover decreases, and team members report a safer environment for patients [5]. All too often, wrong-site procedures occur when one member of the care team is aware of the error but is unable to communicate this to the physician. Staff can be taught communication skills that will help avoid this type of situation, such as critical language techniques. A consistent phrase can be used by all team members to signal an impending adverse event without disrupting the care environment. When such a phrase is used (such as “I need clarity”), the message communicated to the team leader is that he or she must stop and listen to the team member who has a concern for the patient’s safety. Additional communication techniques, such as Situation, Background, Assessment, Recommendation, provide staff with a tool to facilitate the exchange of pertinent and important clinical information by using a standard format [5]. The use of communication techniques such as this is critically important at times of hand-off in care. In our opening scenario, patient safety is threatened by a failure to adequately communicate between patient care team members during a transition in care or a hand-off. Healthcare providers are not the only ones who are aware of this phenomenon, as Laura Landro of *The Wall Street Journal* calls hospital hand-offs “the Bermuda Triangle of healthcare” [6]. Errors or omissions that lead to patient harm can occur in the gap when a patient

moves from the supervision or responsibility of one healthcare provider to another either during or at the end of a shift.

To enhance communication between caregivers, the Department of Defense has developed a Patient Safety Health Care Team Coordination training program that enables military health system teams to use communication tools such as Situation, Background, Assessment, Recommendation, call-outs, check-backs, team huddles, and debriefs. These tools are part of an extensive multiunit, multidisciplinary team training program that creates a structured environment with common communication methods for the entire hospital. This curriculum has been developed through a grant from the Agency of Healthcare Research and Quality and is expected to be released in the public domain in 2006 [7].

Summary

Enhancing communication techniques between healthcare providers is a critical component of a comprehensive approach to patient safety. By developing, implementing, and evaluating standardized procedures and checklists, as well as teamwork training that foster an environment of mutual respect, we move forward in our efforts to further reduce harm to our patients.

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