Crew resource management (CRM) is a communication methodology that focuses on team-centered decision making and was adopted by the aviation industry in 1979.\(^1\)\(^2\) When CRM is applied to healthcare, particularly for patients in complex environments, such as intensive care units, emergency departments, and ORs, the communication requirements resemble that of an aircrew engaged in complicated flight operations.\(^3\) CRM focuses on developing team-based behaviors and collaboration, which help each “crew” function more efficiently, and particularly, more safely. CRM realizes the Institute of Medicine’s rule that states, “Clinicians and institutions should actively collaborate and communicate to ensure an appropriate exchange of information and coordination of care.”\(^4\)

Studies have identified communication failures as the cause of 80% of OR sentinel events and 77% of wrong-site surgeries and other errors in the OR.\(^5\) The use of CRM has resulted in organizations achieving a:

- 10-fold reduction in wrong surgeries
- 53% reduction in adverse outcomes
- 55% reduction in observed errors
- 50% reduction in surgical count errors.\(^6\)

A combination of factors

Crew resource management methodologies do not assume that communication alone is adequate to mitigate the potential for failure in complex processes but support a combination of complementary components including optimal communication techniques, strategic use of technology, and efficient process changes.\(^7\) It is all about shared knowledge and the free flow of information. CRM’s primary building blocks include reduced hierarchy; backup systems; and team communication and coordination, including monitoring and cross-checking, briefings and debriefings, resource management, system knowledge, personal readiness planning, correction of known problems and issues, and management support.\(^8\)

To implement CRM behaviors, first identify any existing team strengths in communication and interactions that are consistent with behavioral safeguards against error and accidents. Identify clinical champions who are passionate leaders that model CRM behaviors.\(^9\) Acquire sustained support from senior leaders who understand that their decisions powerfully influence frontline human performance and who are willing to drive toward a reduced hierarchical culture.\(^10\) All members of the team should be allowed to speak freely with equal, nonjudgmental acceptance of information and ideas. This process creates reliable teams that are organized around highly functioning individuals who develop overlapping roles and task knowledge. Such teams enable individual team members to exercise joint accountability for all elements of a process or procedure. Conflict resolution becomes an objective process in which decisions regarding workload assignments and contingency planning for technology and process failures or emergency intervention are made with input from any member of the team. Execution becomes a complex matrix of team monitoring, cross-checks, workload management, vigilance, and automation management. Concept alignment in the CRM model provides a measurable process to affect human factor issues.\(^11\) An example is the process of surgeon, patient, and nurse alignment regarding “right side” for a surgical procedure. If at any point there is a difference in opinion among any members of the team
regarding the right side for the procedure, the team must seek additional information to resolve the disagreement.

**Situational awareness**

In CRM, ground rules for communication and interaction focus on structured interactions that desensitize rank, facilitate team-building, promote objectivity in decision making, create synergy, and drive optimal patient outcomes. SBAR and readbacks are two common CRM tools. SBAR stands for situation (what is the event that I am concerned about), background (history of the event, assessment (description of findings), and recommendation (what actions or behaviors are needed to resolve the event). This tool is an approach to structuring communication to achieve a shared situational awareness among personnel engaged in interrelated work.

Situational awareness (SA) is a common, synergistic understanding of what’s expected to occur and how it should occur. This understanding can be particularly challenging for surgical teams, when they are composed of healthcare providers who haven’t worked together consistently, have little understanding of each other’s strengths or weaknesses, and are challenged by each patient’s unique needs. SA can best be achieved through briefing or time-outs that are focused on creating a shared understanding, contingency plans and tolerances, monitoring and backup, and on adaptive action unique to the particular patient.

The Johns Hopkins Medical Institutions have created an excellent OR briefing checklist that’s used before every surgical procedure. These preoperative discussions take 1 to 2 minutes and set the stage for open communication during the procedure. Discussion is initiated after all members are in the OR suite and the patient is anesthetized. Briefings require the full attention (all activity stops) and participation of all members of the OR team. It includes the following flow of information: introduction of team members and their responsibilities, and discussion and clarification of critical information regarding the patient such as name, procedure, site, and medications.5

Barriers to SA are called red flags and are indications that something is potentially wrong. They trigger additional communication to manage risks and prevent errors. Red flags include: when things just don’t feel right, communication failures, confusion or task fixation from a member of the team, deviations from operational or clinical norms, and feelings of being overwhelmed or rushed.12

Debriefings occur at the end of any procedure and review the individual, team, task, technical, and organizational performance during the procedure. Any potential hazards and error-provoking conditions are identified, and necessary care transitions are established.13 Care transitions are particularly important to achieving optimal patient outcomes and involve the information and knowledge flow necessary for transition not only between clinical units but also between providers and during turnover. It is also important to note during debriefing who has the responsibility and authority for each aspect of the patient’s care across the healthcare continuum. OR

REFERENCES


Linda K. Kosnik is chief nursing officer, Overlook Hospital, Atlantic Health, Summit, N.J., and Jeff Brown is principal scientist, Klein Associates Division, ARA, Paramus, N.J.