Is Communication the Cure for Human Error? CABG as a Testing Ground

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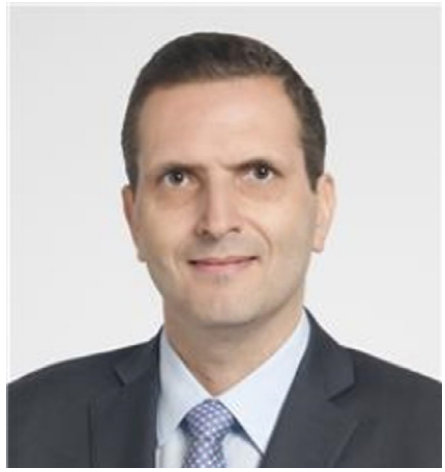
In 1999, the Institute of Medicine released a document, *To Err Is Human: Building a Safer Health System* that reported a shocking number of preventable hospital deaths caused by medical errors—"as many as 98,000" annually.[1] Since then many have sought to understand the complexity and nuances of the healthcare system to prevent error and improve patient safety. One popular model to portray human error is the Swiss cheese model, first described by psychologist James Reason.[2] In this model, adverse events are said to be the result of multiple "holes" or failures in the safeguards against harm. Analysis of each barrier leads to better understanding of the steps needed to "close the hole" and prevent error propagation. Interestingly, communication breakdowns are often cited as a common cause of adverse events in the hospital setting. In one study, Gawande et al.[3] conducted interviews with randomly selected surgeons from 3 teaching hospitals in Massachusetts to elucidate the factors associated with surgical error. They report that greater than 40% of all errors in the surgical setting can be attributed to communication breakdowns. In essence, lapses in communication have left large "holes" in the medical field's defense against error.

In recent decades, the culture of the operating room has undergone marked evolution. The acknowledgment of preventable errors caused by ineffective communication has shifted focus from the surgeon as a sole responsible operator to the surgical team whose collaboration is essential for efficiency and safety.[4] Many have realized that managing the extreme complexity of modern cardiac surgery is only possible within an atmosphere of multidisciplinary teamwork. Therefore, a thoughtful analysis of communication methods and practices is critical to understanding what actually works and identifying potential pitfalls.

In this study, van Wijngaarden et al.[5] propose a quality standard for verbal communication between surgeons, anesthesiologists, and perfusionists during coronary artery bypass grafting operations. Based on 6 video-recorded operations, a list of 64 events were identified as critical to verbalize. These videos were then analyzed to determine initiators, communication techniques, and quality of interactions. The authors present their work as an initial step for a quality standard for communication in cardiac surgery.

Others have worked to standardize intraoperative communication in cardiac surgery. Wadhera et al.[6] implemented a structured communication protocol for 8 defined critical events during cardiopulmonary bypass, which in a small case series led to decreased frequency of communication breakdown and possible reduction in adverse events. Tarola et al.[7] reported a feasibility test with a computer-assisted system that initiates preset algorithms based on voice commands to facilitate multidisciplinary communication. Such methods to improve communication have inherent limitations, but they are steps toward an admirable goal of coordinating team efficiency and preventing errors in the high-risk cardiac operating room.



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Central Message

Coronary artery bypass grafting (CABG) is a complex procedure conducted by a multidisciplinary team. Good communication between team members is essential for efficiency of care and patient safety. Efforts are underway to standardize and enhance the quality of communication between the stakeholders in the operating room.

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Cardiac surgery is a complex undertaking that demands timely and clear coordination. As such, proposed approaches to optimize communication must be thoroughly tested and validated. Until now, no technique for intraoperative communication has been implemented and prospectively validated on a large scale. In the preprocedural setting, however, there has been widespread acceptance of the surgical safety checklist, designed initially by the World Health Organization and then adapted by multiple surgical specialties, including cardiac surgery.[8,9] Now commonplace, these simple checklists have been shown to promote engagement, prevent errors, and improve outcomes.[10] One must consider whether a similar tool and process can be as effective and impactful in the intraoperative setting. In the current study, the authors provide a promising tool, and we anxiously await further research to demonstrate its utility and value.

The fruits of this study and future work on quality of intraoperative communication have important implications. An intraoperative tool to structuralize verbal interactions could translate into improved team dynamics and better surgical outcomes. With knowledge of robust communication techniques as well as obstacles to teamwork, surgical teams can be trained to function as well-oiled and reliable machines, minimizing adverse events and maximizing patient safety. This pilot study offers a glimpse into an exciting future of the next-generation operating room communication and improved coronary artery bypass grafting care.

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