

The Role of Communication During Trauma Activations: Investigating the Need for Team and Leader Communication Training

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OBJECTIVE: Fatal errors due to miscommunication among members of trauma teams are 2 to 4 times more likely to occur than in other medical teams, yet most trauma team members do not receive communication effectiveness training. A needs assessment was conducted to examine trauma team members' miscommunication experiences and research scientists' evaluations of live trauma activations. The purpose of this study is to demonstrate that communication training is necessary and highlight specific team communication competencies that trauma teams should learn to improve communication during activations.

DESIGN: Data were collected in 2 phases. Phase 1 required participants to complete a series of surveys. Phase 2 included live observations and assessments of pediatric trauma activations using the assessment of pediatric resuscitation team assessments (APRC-TA) and assessment of pediatric resuscitation leader assessments (APRC-LA).

SETTING: Data were collected at a southwestern pediatric hospital. Trauma team members and leaders completed surveys at a meeting and were observed while conducting activations in the trauma bay. Trained research scientists and clinical staff used the APRC-TA and APRC-LA to measure trauma teams' medical performance and communication effectiveness.

PARTICIPANTS: The sample included 29 healthcare providers who regularly participate in trauma activations. Additionally, 12 live trauma activations were assessed Monday to Friday from 8 AM to 5 PM.

RESULTS: Team members indicated that communication training should focus on offering assistance, delegating duties, accepting feedback, and controlling emotional

expressions. Communication scores were not significantly different from medical performance scores. None of the teams were coded as effective medical performance and ineffective team communication and only 1 team was labeled as ineffective leader communication and effective medical performance.

CONCLUSIONS: Communication training may be necessary for trauma teams and offer a deeper understanding of the communication competencies that should be addressed. The APRC-TA and APRC-LA both include team communication competencies that could be used as a guide to design training for trauma team members and leaders. Researchers should also continue to examine recommendations for improved team and leader communication during activations using in-depth interviews and focus groups. (J Surg Ed ■■■■-■■■. © 2016 Association of Program Directors in Surgery. Published by Elsevier Inc. All rights reserved.)

KEY WORDS: needs assessment, communication, assessment, trauma, team, leader

COMPETENCIES: Interpersonal and Team Communication, Professionalism, Quality Improvement

INTRODUCTION

Miscommunication in the trauma setting has been linked to medical mishaps¹ and decreases in patient care.² Medical mishaps are associated with preventable deaths as well as a significant loss of money for hospitals and healthcare providers.^{3,4} The vast majority of these errors occur in highly specialized interdisciplinary teams communicating in risky environments.⁵

It has been reported that the root cause of preventable death for 67% of trauma patients is miscommunication.⁶

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Similarly, a review of 54 malpractice suits referencing emergency departments demonstrated that 8 of 12 deaths were deemed to be preventable if effective teamwork was used.⁷

Miscommunication in emergency settings can come in a variety of forms both verbal and nonverbal. Team interactions may be aggressive or emotionally charged. Team members may appear apprehensive, incompetent, or untrustworthy, fail to respond to requests and fail to yield to one another at the bedside. Environmental noise such as side conversations, equipment noise, or family/patient noise may not be managed. Additionally, emergent leadership may be lacking so team members are failing to instruct each other, delegate roles, ask questions, or compensate for weaker team members.

No matter what type of communication errors occur, poor teamwork may compromise patient safety. The patient safety literature is compiled with accounts of human error in the trauma setting contributing to patient injury.⁸ Trauma teams are 2 to 4 times more likely to commit medical errors than any other medical teams in hospitals.⁹ Therefore, effective team communication is especially important in trauma departments.

Although most trauma centers have standardized guidelines for trauma activations, few evaluate their performance by looking at their teams' abilities to communicate effectively with one another during trauma resuscitations.¹ There is a lack of research investigating the communication competencies interdisciplinary team members must master to communicate effectively during emergency team procedures.¹⁰ As a whole, a lack of education exists for healthcare providers that emphasize the significance of effective team communication in emergency teams.

The purpose of this study is threefold. First, researchers determined whether trauma team members believe miscommunication during activations is a problem. Second, a needs assessment highlighted communication skills that should be included in trauma team communication training and demonstrated that trauma team members believe communication training is necessary in their department. Third, trauma teams' medical performance and communication effectiveness were evaluated during live activations to determine if team communication effectiveness scores differed from medical performance scores.

MATERIALS AND METHODS

Phase 1 Procedures

Data for this study were collected in 2 different phases. All portions of this project were approved by the institutional review board at University of Texas Pan American and Seton Medical Center. A convenience sample was recruited to participate in a needs assessment. The sample contained team members and leaders routinely involved in trauma

activations employed at a pediatric hospital in the southwest.

Team members and leaders were notified about the study via email. The email included a description of the study and the informed consent. Participants completed the needs assessment survey at a monthly staff meeting that was required for all surgeons who participate in pediatric trauma care.

Needs Assessment Survey

The needs assessment survey ([Appendix A](#)) was developed using the communication competencies included in the assessment of pediatric resuscitation communication team assessment (APRC-TA) and assessment of pediatric resuscitation communication leader assessment (APRC-LA; [Appendices B and C](#)). Both APRC-TA and APRC-LA were recently found to have acceptable levels of interrater reliability.¹⁰⁻¹² These assessments were developed by communication researchers after several years of observing trauma teams in action. The APRC-TA and APRC-LA tools were used as a foundation during the design of the needs assessment survey as the tools were created to identify team communication errors during trauma activations. Additionally, the APRC-TA and APRC-LA are the only tools available in the literature that measure specific communication competencies as an indication of effective teamwork. Using these 2 tools as the basis for the needs assessment enabled us to tap into team members' perceptions about communication effectiveness during trauma activations instead of routinely focusing on medical performance or patient outcomes.

Once the needs assessment survey ([Appendix A](#)) was finalized, it was used to assess participants' perceptions of team communication effectiveness, leader communication effectiveness, need for team communication training, and need for leader communication training. In total, the needs assessment survey includes 34 items and 3 open-ended questions. The first 14 questions (items 1-14) assess the following: team dynamics, team turn taking, team space negotiation, noise management, team support, and team listening. The range for the team measure is 14-70, with a midpoint of 42, and a Cronbach coefficient $\alpha = 0.88$. Items 15-28 assess the following: leader support, leader delegation, perception of leader credibility, and leader's ability to trust team members. The range for the leader measure is 14-70, with a midpoint of 42, and a Cronbach coefficient $\alpha = 0.80$.

The team training measure (items 29, 31, 32, and 34) assess team members' beliefs about the need for team communication training in their organization. The range for the scale is 4-20, with a midpoint of 12, and Cronbach coefficient $\alpha = 0.87$. The leader training measure (items 30 and 33) was used to assess team members' beliefs about the need for leader communication training in their

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