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Perception of Communication Training Need Among Pediatric Trauma Team Members

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PERCEPTION OF COMMUNICATION TRAINING NEED

AMONG PEDIATRIC TRUAMA

TEAM MEMBERS

A Thesis

by

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ABSTRACT

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The purpose of this study is to use the APRC (Assessment of Pediatric Resuscitation Communication) as a guide to determine if trauma nurses and surgeons believe communication training is necessary. Many trauma team members have not received team communication effectiveness training in pediatric trauma settings. As a result, miscommunication between team members leads to medical errors during pediatric trauma activations. Thus, it is important to discover whether or not trauma team members believe communication training will help trauma teams improve the overall effectiveness of pediatric trauma activations. The present study provides a descriptive analysis that illustrates nurses' and trauma surgeons' perceptions of the need for trauma team communication training in the pediatric setting. Specifically, participants were asked to complete a questionnaire that assessed their perceptions of the importance of communication training for trauma team members who routinely participate in pediatric trauma activations.

DEDICATION

The completion of my masters program would not have been possible without the love and support of my family and friends, Cristina Mercado, Genaro Mercado, Timothy Mottet, Alejandro Santibanez & Michell Godinez, who have wholeheartedly inspired, motivated and supported me by all means to accomplish this degree. Thank you for your love and patience.

I would also like dedicate this thesis to my younger brother, my nieces, and nephews. I hope that I have inspired you to be the best you can be. I will always love and support you.

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CHAPTER 1

INTRODUCTION

Pediatric Trauma activations require that team members communicate with each other to quickly identify and assess any life threatening injuries as well as the medical status of the patient as soon as possible. For example, when a child is injured and rushed to the hospital, they are taken to a trauma bay where a team of trauma specialists evaluate the injuries of the child for further treatment. The trauma team is comprised of 8-11 healthcare providers with particular specializations in their field, including but not limited to: emergency physician, trauma surgeon, anesthesiologists, emergency and critical care nurses, respiratory therapists, and x-ray technicians (Cicala & Murphy, 1993).

Many of the degrees and certification programs for trauma team members require students to take improvement skills courses during and after certification of their field of study (Baker, Gustafson, Beaubien, Salas & Barach, 2005). In fact, trauma team members have endured much training to enhance technical skills and patient satisfaction (Baker, Gustafson, Beubien, Salas & Barach, 2005). For example, in 1999 the Institute of Medicine recommended anesthesiologists to use crisis management trainings used in aviation trainings to increase patient safety (Kohn, Corrigan, & Donaldson, 1999; Grogan, Stiles, France, Speroff, Morris, Nixon, Gaffney, Seddon & Pinson, 2004). Nurses have also been involved in much training to create more effective patient interactions (Mayer, Cates & Falls Church, 1998). Many will argue that there are never enough improvement trainings for trauma team members (Blum, Raemer,

Carroll, Dufresnes, & Cooper, 2005; Ostergaard, Ostergaard & Lippert, 2004).

There are many trainings and educational courses available for trauma team member technical improvements and these have advanced exponentially in the past decades (Baker, Gustafson, Beaubien, Salas & Barach, 2005; Brown, Boles, Mullooly & Levinson, 1999; Chiu, Scalea & Rotondo, 2005). Some of these trainings are specifically oriented for various skill sets for trauma team members, such as team-oriented trainings on skill development (Baker, Gustafson, Beubien, Salas & Barach, 2005), patient-centered trainings (Brown et al., 1999; Evans, Stanley & Burrows, 1992) and individual specialization training (Davies, 2005; Grogan, Stiles, France, Speroff, Morris, Nixon, Gaffney, Seddon & Pinson, 2004). These trauma members have undergone several years of education and simulation experience before becoming part of a trauma team.

However, there is little training that focuses on team and leadership communication effectiveness (Ostergaard, Ostergaard, & Lippert, 2004). Most trainings emphasize solely team and technical effectiveness and, like mentioned before, the improvement of specific technical skills for anesthesiologists, radiologists, and surgeons and nurses (Awad, Fagan, Bellows, Albo, Freen-Rashad, De La Garza & Berger, 2005; Baker, Gustafson, Beaubien, Salas & Barach, 2005; Davies, 2005; Mayer et al, 1998).

To date, trauma team members have not been trained exclusively on communication competencies that are included in the APRC (Assessment of Pediatric Resuscitation Communicaiton), which are: team dynamic, team turn taking, team space negotiation, noise management, team support, team listening, leader preview, leader support, leader delegation, leader credibility, and lastly, leaders' trust in team members (Raley & Mottet, 2009). These competencies have been noted to be vital to communication effectiveness during trauma

activations (Bergs, Rutten, Tadros, Krijnen & Schipper, 2005; Ostergaard et al, 2004; Sutcliffe, Lewton & Rosenthal, 2004). For example, an increase in team turn taking awareness can also increase team cooperation and decrease time in the trauma activation (Ostergaard et al, 2004; Raley & Mottet, 2009).

The lack of communication training in pediatric trauma settings may lead to an increase of miscommunication among team members and leaders during a trauma activation (Bergs et al, 2005). Miscommunication has been linked to medical mishaps (Sutcliffe, Lewton & Rosenthal, 2004), as well a decrease of optimal patient care in emergency medicine (Eisenberg, Murphy, Stucliffe, Wears, Schenkel, Perry & Vanderhoef, 2005). Medical mishaps have also been shown to be highly associated with preventable deaths of patients as well as a huge loss of money from the hospital and/or individual healthcare providers (Leape, Lawthers, Brennan & Johnson, 1993; Russell, 2009).

Many cases where communication errors occur in a trauma bay have resulted in the death of a patient. In fact, the root cause of death for 67% of trauma patients has been miscommunication (Joint Commission Sentinel, 2010). One study reported that an average of 195,000 people die in the U.S. each year due to preventable in-hospital medical errors due to miscommunication, which makes this one of the leading killers in the U.S, (HealthGrades, 2004). Additionally, a greater number of deaths occur due to in-hospital medical errors than deaths from breast cancer, car accidents and AIDS (Divorchik, Gaynes, Hubbard, Kirk, Kobayshi, Sokol & Frankl, 2000). Another study reports that fatal errors in the trauma setting are 2 to 4 times more likely to occur than in other departments within hospitals (Stahl, Paliteo, Schulman, Wilson, Augenstein, Kiffin, McKenney, 2009).

Medical mishaps and preventable errors are not only problematic for patients and their

families, but they are also costly for healthcare providers. The U.S. alone spends $55.6 billion per year on medical liability costs due to preventable errors (Reid, 2010). Some health insurers are also refusing to pay hospitals an average of $27 billion a year due to preventable errors (Finch, 2008).

To know how to fix a problem, one must acknowledge that a problem is present. Medical training literature states that the first step to an effective training is to assess a need for training amongst the healthcare providers that will be receiving training (Ostergaard et al, 2004). As such, it is important to first determine if trauma team members believe there is a problem with the communication that goes on during trauma activations before they receive communication training. An agreement among the trauma team members that proper training will improve communication effectiveness during pediatric trauma activations will increase the process of transferring skills learned in the training to the trauma activations (Ostergaard et al, 2004).

Determining trauma team members' perceptions of team communication effectiveness training will help researchers understand if healthcare providers believe training is necessary. Understanding the perceptions of trauma team members will also help researchers and consultants develop a training that is adaptable to all trauma members. In turn, communication training may help trauma team members improve their communication effectiveness and ultimately reduce medical errors that occur during pediatric trauma resuscitations.

Thus, the purpose of the present study is to determine if trauma nurses, clinical assistants, and surgeons perceive team communication effectiveness training is necessary for trauma team members who are routinely involved in pediatric trauma activations.

LITERATURE REVIEW

Trainings

Although trauma team members do not currently receive team communication effectiveness training they are routinely involved in team skills training, individual specialization training, and patient centered training that all focus on job effectiveness (Baker et al, 2005). Each of these trainings are distinct and have been developed for specific purposes. Team skills trainings are designed to focus on job effectiveness and how to increase patient safety. Individual specialization trainings serve the same purpose; however, these trainings attempt to combat the same issues by training only certain groups of healthcare professions, such as nurses, surgeons, and anesthesiologists at a time. For example, individual profession training for anesthesiologists may focus on more efficient administration of anesthesia, while team skills training may focus on understanding diversity or hierarchy in a trauma activation. Patient centered trainings often are designed for child life specialists and nurses and their communication with patients, and not all trauma team members, since they spend more time with patients and families compared to other healthcare providers involved in trauma activations (Krebel, Clayton, & Graham, 1996).

Team Skills Training

There are many team skills trainings that have been developed recently in response to the patient safety crisis that was stressed by the Institute of Medicine in 1999 (Baker et al., 2005; Kohn, Corrigan & Donaldson, 1999). The patient safety crisis was a claim that reported many alarming statistics of medical errors in emergency care (Kohn et al., 1999), as well recommended the implementation of a crew resource management program. Team skills trainings focus on job effectiveness and patient safety but fail to focus on the communication skills of team members that may contribute to errors during trauma activations. The current team skills trainings

available for trauma teams include Team-Oriented Medical Simulation, MedTeam training, Medical Team Management, Dynamic Outcomes Management, and Geriatric Interdisciplinary Team Training (Baker et al, 2005). Although these programs have been successful at training healthcare providers of proper usage of technical components in trauma activations, they lack the instruction of methods to increase soft skills usage among other team members.

Team-Oriented Medical Simulation. The Team-Oriented Medical Simulation was a training developed at the University of Basel/Kantsonsspital in Switzerland by Helmreich, Schaefer and Davies in 1994 (Baker et al, 2005; Helmreich & Davies, 1996). They used the Operating Room Management Attitudes Questionnaire (ORMAQ) developed in 1993 to determine which competencies the TOMS training would address. Trauma members reported the following themes as constituents of effective emergency care: Leadership, confidence, understanding surrounding roles, importance of briefing and debriefing with members, awareness of stress and negative performance (Helmreich & Davies, 1996). Many of these competencies are included in Raley and Mottet's (2009) Assessment of Pediatric Resuscitation Communication (APRC). However, the TOMS training fails address specific communication behaviors that occur during trauma activations. It simply assesses the participants' attitudes of their own performance in a trauma activation.

The Operating Room Management Attitudes Questionnaire (ORMAQ) asks the team members to assess statements such as "The senior surgeon should be in charge of the OR team during surgery." Although the authors understand the importance of leadership in emergency care, the questionnaire is not specific in what effective leadership behaviors should look like during an activation. People may have different interpretations of good leadership.

The ORMAQ also assesses the attitudes of the team members, which in some cases is not

necessary since attitudes do not always determine behaviors. One study suggests that behavior should receive more attention than attitude when dealing with difficult situations or social pressure (Wallace, Paulson, Lord, & Bond, 2005). The Operating Room Management Attitudes Questionnaire assesses statements such as, "I try to be the person with whom others enjoy working," as opposed to Raley and Mottet's APRC (2009), which assesses teams behaviors of cohesion, such as "team members offered praise to each other."

MedTeams. The MedTeams training, also used to reduce medical errors, was developed by Morey, Salisbury and the Dynamics Research Corporation in 2002 (Baker et al, 2005; Morey, Simon, Jay, Wears, Salisbury, Dukes, Berns, 2002). The training consists of learning skills for eight hours that have emerged from a needs-analysis data, as well as a four-hour practicum, where the members would team up and practice the learned skills under the supervision of a trained instructor (Baker et al, 2005).

Some of the skills that MedTeams enforces participants to learn are maintaining team structure and climate, problem-solving skills, execution of plans and management of work load, communication skills, team improvement skills, knowledge of the components of teamwork, and situational awareness (Baker et al., 2005; Morey et al., 2002).

Unlike the TOMS training, MedTeams is efficient in assessing team behaviors during emergency care (Baker et al, 2005). However, MedTeams relied heavily on observing medical errors that were sole technical mistakes of certain individual healthcare professions and not the entire team or soft skills, such as a nurse's oversight of exposing a patient to a toxic agent (Morey et al, 2002).

Medical Team Management. Medical Team Management (MTM) is a training program developed by the Air Force in 2002, after an incident occurred at an Air Force facility where

poor teamwork left a newborn neurologically impaired (Baker et al, 2005). The training program discourages individual attention and allows participants to work as a team to create more effective technical communication (Baker et al, 2005; Kohsin, Landrum & Merchant, 2002). The program reinforces providers to communicate efficiently to get the job done right. The program has not undergone formal evaluation to determine its effectiveness (Baker et al, 2005).

Very similar to the MedTeams program, the Medical Team Management is aimed to improve the technical skills as well as the communication to get the task at hand accomplished with little risk. Medical Team Management breaks down the team assessment into three different competencies: teamwork-related knowledge, teamwork-related skills, and teamwork-related attitudes.

The team-work related knowledge competency ensures that each team member understands, which tasks and roles are assigned to which member before an activation occurs, as well as a teammates, strengths, weaknesses, and tendencies (Kohsin et al., 2002).

Although, the skills competency resembles the APRC, there is a lack of specificity in the assessment model. MTM only contained one item to assess effective leadership, as opposed to the APRC, which contains five competencies to measure leader effectiveness. MTM's leadership item states that leaders should have the "ability to direct/coordinate team members, assess team performance, allocate tasks, motivate subordinates, plan/organize, and maintain a positive team environment (Kohsin et al., 2002)."

The last competency in MTM is the attitudes competency also resembles the APRC, but like the previous competency, its ambiguity is to question. MTM assesses team dynamics, team support, and team listening, three separate competencies in the APRC, under the same competency in the MTM. For example, an item in the teamwork-related attitudes is "The

collective forces that influence members to remain part of a group; an attraction to the team concept as a strategy for improved efficiency (Kohsin et al., 2002)."

Dynamic Outcomes Management. Dynamic Outcomes Management was developed by Rivers, Swain and Nixon in 2003. The program was influenced by an aviation program that has been frequently used in the medical industry because of its adaptability in the emergency medical field (Awad et al, 2005; Baker et al, 2005; Rivers, Swain & Nixon, 2003).

It includes an eight-hour classroom training, where participants first engage in role playing, discussion, assessments, and case studies. Then CTI instructors, which are former pilots, coach participants through several strategies, including conflict management, decision-making skills, feedback performance, and methods to avoid fatigue a team.

Similar to the APRC (Raley & Mottet, 2009), the DOM includes a "challenge and response checklist" of principles that participants of the training are required to use during medical operations (Baker et al, 2005). DOM also assesses and informs team members of effective team behaviors. However, similar to most of the trainings discusses, the DOM fails to include many of the competencies found in the APRC. DOM's general purpose is to train trauma team members on how to manage stressful situations as well as conflict. Although highly successful in those two areas (Rivers et al., 2003), DOMS focuses on technical aspects of activations, and is not well versed in soft skills training and team support.

Geriatric Interdisciplinary Team Training. The Geriatric Interdisciplinary Team training also focuses on developing a team of well-trained medical staff, including physicians, nurses, nurse practitioners, social workers, pharmacists, therapists, and administrators. Unlike the other team development trainings, GITT is designed to increase geriatric patient safety, which is the care for elderly patients (Baker et al, 2005; JAHF).

Similar to the other trainings, GITT includes a full day team assessment/ self-evaluation and team development training (Baker et al, 2005). The team fitness training self-assessment, which is given at the beginning of the training, assesses the teams dynamic, cohesion, and equality. After the assessment, team members are trained on team development, leadership, and conflict management. After a year from the training, a short refresher training is given to the group.

Unlike the APRC team communication effectiveness training, this training does not focus on emergency care, nor does it focus on conflicts and team support that are occurring in the trauma bay (Baker et al, 2005; Raley & Mottet, 2009).

Individual Specialization Training

Although research has indicated that the inclusion of all team members in team effectiveness trainings is vital, many team trainings are often specific to a medical profession (Baker et al, 2005; Ostergaard et al., 2004). Individual specialization trainings are valued because it gives the trainers the opportunity to train individual professions on the technical skills required for medical effectiveness. According to the Stanford School of Medicine (2011), there was a large gap in the literature on how to effectively train Anesthesiologists to manage a crisis as well as effectively manage a variety of resources (2011). The Anesthesia Crisis Resource Management program was a influential method to increase technical skills as well as patient safety.

Anesthesia Crisis Resource Management. Also serving to increase patient safety, the ACRM was developed for anesthesiologists under the influence of aviation group trainings (Blum, Raemer, Carroll, Dufresnes, & Cooper, 2005). In the trainings the anesthesiologists were asked to participate in a simulated medical environment, where they performed tasks that they

were normally asked to do during patient care. Other members, who are regularly part of an activation team, including a physician, surgeon, nurses and clinical assistants were asked to participate in the simulated activation, but were not being trained. After the simulations, the team of anesthesiologists was asked to complete a questionnaire that assessed the information gathered in the scenario. Questions such as "were you aware that the patient had a steering wheel mark on his chest?" After the questionnaire, a trained faculty member facilitated a debriefing and educated trainees on the importance of information-sharing (Blum et al., 2005).

Much of the information given to trainees in ACRM is similar to the trainings information given in the Crew Resource Management training, since both trainings apply effective aviation group skills in the medical setting (Blum et al., 2005; Grogan, Stiles, France, Speroff, Morris, Nixon, Gaffney, Seddon, & Pinson, 2004).

Although the training has been reported to be effective in the aviation setting, (Awad et al., 2005; Baker et al., 2005; Blum et al., 2005; Grogan et al., 2004) the training has not been supported improve information sharing in emergency care (Blum et al., 2005). A potential reason for the ACRM training being ineffective in enhancing team communication is that not every emergency care medical personnel typically involved in trauma activations was trained on how to deal with conflicts in the same manner that the Anesthesiologists did (Baker et al., 2005; Blum et al., 2005). Research has supported the notion that medical trainings are most effective when the trainings involve the participation of the entire medical team, not only part of it (Ostergaard et al., 2004).

Another reason that the ACRM may not have been as effective as anticipated is that the training does not train on all aspects which cause communication errors in emergency care (Baker et al., 2005; Blum et al., 2005; Ostergaard et al., 2004). The ACRM primarily

concentrates on information disclosure, which according to the APRC, created by Raley and Mottet (2009) is only one of the many communication aspects vital in emergency care, specifically in trauma activations. Implementing only partial strategies and not taking into consideration all of the critical issues, will not be as effective if all critical issues are accounted for in the training (Fielding & Llewelyn, 1987).

Patient-Centered Training

Patient-Centered communication has been focused on the most in medical team development research (Brown, Boles, Mullooly, & Levinson, 1999). There are a larger number of trainings that improve patient-centered communication than any training classification. Similar to the individual specialization training, the patient-centered trainings are often offered to certain medical professions, such as nurses and child-life specialists. This may be because nurses and child-life specialists seem to have more interaction with patients and their families than other medical team members in emergency care (Byrne, & Heyman, 1997; Krebel et al., 1996).

Skills learned in patient-centered trainings may not always be applicable to team communication in trauma activations. Many of the communication errors that are occurring in hospitals are due to miscommunication between medical staff with different specializations, such as a physician communicating with a radiologist or a nurse (Davies, 2005). Some nurses have reported having difficulties speaking up, and that many times, disagreements are not always resolved (Thomas, Sexton, & Helmreich, 2003). Although implementing an effective teamwork training for medical teams can be challenging (Ostergaard et al., 2004), doing so can significantly improve patient safety and reduce the number of errors in emergency care (Baker et al., 2005; Ostergaard et al., 2004).

After reviewing the team training programs that are available, it has become apparent that

although all of them call for more effective communication many of these trainings tap into the communication required in hard or technical skill effectiveness. The APRC (Raley & Mottet, 2009) Team Communication Effectiveness Training is a program that aims to also reduce medical errors but addresses the issues by strengthening soft skills. For example, many of the trainings discussed assessed the team members attitudes towards their job performance during activations, and the APRC assesses the behaviors such as leader assigning and delegating roles and tasks before activation occurs, and team members offering praise to one another during activation. Although those items are not vital to an individual's job performance, they are necessary soft skills for team success (Raley & Mottet, 2009).

Hard Skills and Soft Skills

Hard skills and soft skills are words used by medical students to describe the contrasting nature of skills learned (Crosbie, 2005). Skills and information that are not seen as auspicious such as communication, history and philosophy are considered soft skills and information that are seen as more fundamental, such as biology, medicine, and mathematics are considered hard skills (Crosbie, 2005).

A hard skill that a heart surgeon may learn in medical school is the ability to perform open-heart surgery on a patient. Some may even refer to a hard skill as an actual profession. For example, undergoing instruction and schooling to understand the chemistry behind anesthesia will most likely result in landing a job as an anesthesiologist.

A soft skill is the ability to effectively communicate interpersonally or in a group setting. It is also referred to as the ability to have emotional intelligence, which is to communicate feelings appropriately and effectively (Hampson & Junor, 2011). Some believe that soft skills are "easy and feminine," but many scholars have assessed its influence in employability and job

effectiveness (Crosbie, 2005; Hampson et al, 2011)

Although many may perceive hard skills as vital to the workforce, a study reports that 85% of why people are hired for a job, can retain a job, or advance in a job are accounted for the amount soft skills a person possesses, and technical skills only account for 15% (Crosbie, 2005). The study reported that participants considered team collaboration, effective communication skills, leadership ability, personal effectiveness, and planning and organizing as part of the soft skills necessary for workforce success (Crosbie, 2005).

Each of the trainings discussed above are distinct and developed to focus on job effectiveness and patient safety. Many of them, however, fail to focus on the communication skills, or soft skills, of team members that may contribute to errors during trauma activations. Although these programs have been successful at training healthcare providers' proper usage of technical components in trauma activations, they lack the instruction to increase soft skills usage among other team members. Consequently, team communication effectiveness training has yet to be implemented for trauma team members, researchers have created an assessment that measures team and leader communication effectiveness during pediatric trauma activations.

Assessment of Pediatric Resuscitation Communication

The APRC is an instrument developed by communication researchers, Raley and Mottet, in 2009 to assess the communication in pediatric trauma activations. The assessment includes a total of three components: Resuscitation Activation Information, Team Assessment, and Leader Assessment. The first component, the Resuscitation Activation Information, is a sheet comprised of 24 items of information that could later be used as control variables. Some of the items included on the sheet are coder name, estimated age of patient, patient sex, responsiveness of patient, type of trauma, number of people in the room at the beginning and end of activation,

whether family members were present during activation, and arrival time of surgeon and E.D. physician. The second component of the APRC, the Team Assessment (APRC-TA) includes a total of six communication competencies: Team Dynamics, Team Turn Taking, Team Space Negotiation, Noise Management, Team Support, and Team Listening. Below each competency are three behavioral sub-competencies and one overall score, that are assessed using a 4-point Likert-type scale with 1=Poor, 2=Fair, 3=Good, 4=Excellent. Scores above 60 are considered to have effective team communication, and scores below 60 are considered to have ineffective team communication (See Appendix A). The last component of the APRC, the leader assessment, includes a total of five competencies: Leader Preview, Leader Support, Leader Delegation, Leader Credibility, and Leader Trust Team Members. Below each competency are three behavioral sub-competencies and one overall score, that are assessed using a 4-point Likert-type scale with 1=Poor, 2=Fair, 3=Good, 4=Excellent. Scores above 60 are considered to have effective leader communication and scores below 50 are considered to have ineffective leader communication (See Appendix B).

The APRC also includes a codebook used to train coders on how to use the APRC instrument. The codebook is divided into three sections: Definitions and Coder Instructions, Team Competencies, and Leader Competencies (See Appendix C).

This study aims to determine if the need for trauma team communication effectiveness training identified in the literature is consistent with trauma team members' perceptions. Specifically, do trauma team members believe that communication between team members and leaders during activations could be improved? If so, do they believe that communication training is necessary? In order to answer these questions, it is important to conduct a needs assessment to become aware of trauma team members' perceptions of communication effectiveness during

activations.

Needs Assessment

A needs assessment is an organized and systematic procedure to identify and address the gaps or needs, as well as the previous knowledge, of desired and effective behaviors in an organization (Beebe, Mottet, & Roach, 2004; Ostroff & Ford, 1989). It is an important and primal stage in the training process because it gives trainers and researchers a better understanding of which skills are deficient amongst trainees (Beebe et al., 2004; Ostergaard et al., 2004; Wright, Williams & Wilkinson, 1998). Furthermore, needs assessments in medical teams are vital to ensure that trainings are adapted in the appropriate manner for teams of medical staff. Assessments also serve as verification for the trainer so that information or skills that are not needed in the particular team are not reiterated in communication trainings (Beebe et al., 2004).

Importance of Training Need Assessment

Assessing the perceptions of communication in trauma activations is vital in determining if trauma team members feel there is a need for communication training. The instructional systems design model, which illustrates and supports an effective design for training and consulting, views needs assessment as the critical first step in training design (Roberson, Kulik, & Pepper, 2003; Goldstein, 1991). Although studies report a high amount of miscommunication in trauma activations (Sutcliffe et al., 2004; Bergs et al., 2005), which have caused inadvertent effects on patient safety, the perceptions of communication among trauma team members is still unclear. A needs assessment will help researchers identify and understand trauma team members' perceptions about what communication errors are occurring in pediatric trauma activations, what training is needed, and who needs the training (Roberson et al., 2003).

Needs Assessment Model

There are several needs assessment models that researcher may follow to effectively develop a suited needs assessment for different organizations (Watkins, Leigh, & Kaufman, 1998). This current study closely reflects the Rothwell and Kazanas' Needs Assessment for Planning Model (Rothwell & Kazanas, 1992; Watkins, Leigh, & Kaufman, 1998).

The Rothwell and Kazanas' Needs Assessment is essentially based on two assumptions. The first is that the expected application of skills will transfer from individual to small group (Rothwell & Kazanas, 1992; Watkins, Leigh, & Kaufman, 1998). The second is that the training goals acquire the rigor that is necessary for several skill sets including, decision-making, which will consequently disperse from individual to small group to the organization and lastly, to society (Rothwell & Kazanas, 1992; Watkins, Leigh, & Kaufman, 1998).

The needs assessment developed for this study measures individual team members' perceptions of the communication that occurs within the trauma team during an activation, team members perceptions of leader communication, and perceptions of communication training need. The findings of this study will help researchers develop an effective and adapted communication training program for trauma teams and leaders. Like the Rothwell and Kazanas' Needs Assessment model, the needs assessment will bring awareness of communication errors that may occur during activations and positively alter behaviors from an individual which will transmit to the entire trauma team (Rothwell & Kazanas, 1992). The assumptions of the Rothwell and Kazanas' model suggest that if a team member understands the importance and significance of the desired behavior, it will help the team change overall. In doing so, these changed behaviors will most likely diffuse into society. If the teams become more effective because of communication awareness, Rothwell and Kazanas propose that those behaviors would affect

other areas, such as hospitals and society (Rothwell & Kazanas, 1992). These changes may occur in several forms, such as a decrease in lawsuits and surgical procedures, which could also be costly. Society may also have more faith and trust in the hospital.

Team Members' Perception of Communication in Trauma Activations

Although there is an overall understanding of importance of having effective communication in trauma activations, many team members do not have the same idea of the communication in activations. Effective team trainings are vital to establish a common ground with other team members. Many trauma team members have reported not having an ideal team structure among team members (Undre, Sevdalis, Healey, Darzi, & Vincent, 2006). Interestingly, a study reported surgeons having a perception of a better organizational culture, better communication and teamwork, than nurses and anesthesiologists (Mills, Neily, & Dunn, 2008).

Nurses and team members in trauma activations have begun to verbalize their concerns. One study reports that although physicians perceive high collaboration with nurses, only 33% of nurses rated the quality of collaboration and communication with physicians as high or very high (Thomas, Sexton, & Helmreich, 2003). Nurses and clinical assistants are apprehensive to speak up to physicians and feel that they should have a voice during the decision making process since nurse input is not well received, and, most importantly, conflict is not properly resolved (Thomas et al., 2003).

Many nurses and physicians have also taken note of the fact that communication training can improve patient safety and reduce the number of errors (Baggs, Schmitt, Mushlin, Mitchell, Eldredge, Oakes, & Hutson, 1999). They understand the significance effective communication can have on patients as well as hospitals.

A study conducted in 2004 reports that 95% of trauma team members felt that communication training would reduce the amount of errors in trauma activations (Grogan et al., 2004), and in fact it would. Team communication training has been associated with an increase in self-efficacy, group cohesion, and a dramatic decrease in errors (Ammentorp, Savroe, Kofoed, & Mainz, 2007; Brown et al., 1999; Grogan et al., 2004; Ostergaard et al., 2004; Morey, Simon, Jay, Wears, Salisbury, Dukes, & Berns, 2002). Another study reports that a team training course increased the self-efficacy of participants by 37% (Ammentrop et al., 2007). To determine if trauma team members and leaders perceptions align with findings in the literature, the following research questions were put forth:

RQ1: Do healthcare providers perceive that effective communication occurs among team members during pediatric activations?

RQ2: Do healthcare providers perceive that effective communication occurs among team members and leaders during pediatric activations?

RQ3: What communication skills do healthcare providers perceive should be taught in communication effectiveness training?

RQ4: Do healthcare providers perceive communication training is necessary for trauma team members who participate in pediatric activations?

RQ5: Do healthcare providers perceive communication training is necessary for trauma leaders who participate in pediatric activations?

RQ6: Do clinical assistants and nurses perceive less effective communication occurs among team members during activations than surgeons?

RQ7: Do clinical assistants and nurses perceive less effective communication occurs among team members and leaders during activations than surgeons?

CHAPTER II

METHOD

Participants

Participants for the study were selected through a convenience sample at a southwest hospital. The sample included nurses (n=18), clinical assistants (n=2), ER technicians (n=2), and pediatric surgeons (n=7) who are over the age of 18 and participated in at least one Category I or II trauma activation prior to participation of this study. Nurses, clinical assistants, and surgeons who had not participated in at least one Category I or II trauma activation prior to participation in this study were exempt from participation.

There were 20 female participants and 9 male participants. The average age of participants is 39 years. The average year of experience in trauma teams of participants is 10 years. Participants reported participating in an average of 25 resuscitations in one year.

Procedure

Procedure for recruitment of participants

The researchers worked closely with Emergency Department (ED) nursing leadership as well as surgeon leadership to obtain permission to: 1) Notify surgeon and nursing/CA staff of an upcoming anonymous survey of communication needs via an email and flyers posted in key locations throughout the ED; 2) Attend a surgeon and nursing/CA monthly staff meeting for the purposes of survey distribution and onsite data collection; and 3) Provide surgeon and nursing/CA staff with the survey results upon study analysis.

Procedure for obtaining informed consent

Surgeons, nurses and CA staff were notified of the survey via email and in person. The email included a copy of the survey, a description of the study, and the informed consent. The survey itself contained an introductory statement that explains the purpose of the anonymous study survey, the voluntary nature of it, and that by electing to participate in the survey they are agreeing to allow their anonymous data to be used for research and educational program planning purposes.

Research Protocol

Prior to meeting, participants received an informational email describing the project, the survey, and the anonymous, voluntary nature of the study. Participants attend their monthly nursing/CA staff meeting and if they so chose, they completed a 37-item APRC needs assessment (cronbach's alpha= .87) during a 15-minute period. The measure consisted of 34 interval level items and three open-ended questions. Surgeons were given the same assessment via email and were asked to fill out the survey on their own and give the survey directly to an affiliate in the research team. Study results were provided to ED surgeon and nursing/CA leadership for the purposes of educational program planning.

Measures

To conduct the study, two surveys were developed that closely reflected Raley and Mottet's APRC (Assessment for Pediatric Resuscitation) (Appendix D & E). Appendix D reflects the survey given to nurses and clinical assistants. Appendix E reflects the survey given to the surgeons. Each survey contained 34 quantitative items, not including demographics, and 3 qualitative questions. The surveys contained four measures, which assessed for team communication effectiveness, leader communication effectiveness, team training need, and

leader training need. The survey yielded a reliability analysis of .87.

Team Communication Effectiveness Measure

The team communication effectiveness measure(Items 1-14 on Appendix D & E) was used to address research questions 1 & 6. The range for the team communication effectiveness measure is 14-70, with a midpoint range of 42, and a reliability of .88.

Leader Communication Effectiveness Measure

The leader communication effectiveness measure (Items 15-28 on Appendix D & E) was used to address research questions 2 & 7. The range for the measure is 14-70, with a midpoint range of 42, and a reliability of .80.

Team Training Need Measure

The team training need measure (Items 29, 31, 32, & 34 on Appendix D & E) was used to address research questions 4. The range for the scale is 4-20, with a midpoint range of 12, and a reliability of .87.

Leader Training Need Measure

The leader training need measure (Items 30 & 33 on Appendix D & E) was used to address research question 5. The range for the measure is 2-10, with a midpoint range of 6, and a reliability of .85.

CHAPTER III

RESULTS

Research question one asked if healthcare providers perceived that effective communication occurs among team members during pediatric activations. Results from a descriptive analysis indicate that healthcare providers perceive that effective communication occurs among team members during pediatric trauma activations. Healthcare providers (*N*=29) mean of perception of effective communication is 54.48 (*SD*=5.99), range for the perceived team communication effectiveness scale is 14-70 with a midpoint range of 42. In the team communication effectiveness scale, 93% of participants scored above the midpoint range, 3.45% of participants scored below, and 3.45% of the participants were at the midpoint range. Additionally, 3.45 % of those who scored below the midpoint range were clinical assistants.

Research question two asked if healthcare providers perceive that effective communication occurs among team members and leaders during pediatric activations. Results of a descriptive analysis indicate that healthcare providers perceive that effective communication occurs among team members and leaders during pediatric trauma activations. Healthcare providers (*N*=29) mean of perception of effective communication between team members and leaders is 53 (*SD*=5.65), range for the perceived leader communication effectiveness scale is14-70 with a midpoint range of 42. In the leader communication effectiveness scale, 97% of participants scored above midpoint range, and 3% scored below the midpoint range. Furthermore, of the participants who scored below midrange on the leader communication

effective scale, 100% of them are clinical assistants.

Research question three asked about healthcare providers' perceptions of communication skills that should be taught in communication training. Table 1 and Table 2 include descriptions and frequencies of perceived communication skills need during communication training to answer research question three.

Table 1: Surgeons Perception of Communication Skills Need

Description	**Frequency**
"Speak[ing] up if [team members] have a question or concern. We are [more effective] if everyone is thinking and catching mistakes/problems."	1
"How to regain control of the team" in an unstable and emotional situation.	2
"Lead[ing] a team without appearing condescending."	1
"Getting members on the same page."	1
"Defin[ing] roles.	1
Importance of being a "good communicator," and how to "set expectations in an activation.	1

Table 2: Clinical Assistant Perception of Communication Skills Need

Description	**Frequency**
"paying attention" to nonverbal messages "to anticipate team members' needs."	1
"More organization"	1
"Controlling a trauma"	1
"Efficient and defined roles."	3
Closed-loop communication	3
"Appropriate responses when repeating instructions"	1
"What to say, when to say it, how to respond."	2
Listening Skills	1
Approach question that doesn't undermine leader	1
"Respectful communication [and] validation of team members input"	1
"Calling name of who you want to perform a task"	1
"Feedback from person documenting, how to help person documenting things better"	4

Research question four asked if healthcare providers perceive communication training as necessary for trauma team members. Results of a descriptive analysis indicate that healthcare providers perceive communication training as necessary for trauma team members. Healthcare providers (*N*=29) mean of perception of communication training for team members is 16.59 (*SD*=2.67), range for team communication training scale is 4-20 with a midpoint range of 12. For the team training scale, 90% of participants scored above the midpoint range, 7% of the participants scored below the midpoint, and 3% of the participants scored at the midpoint. Of the participants who scored below the midpoint, 100% of them are surgeons.

Research question five asked if healthcare providers perceive communication training as necessary for trauma team leaders. Results of a descriptive analysis indicate that healthcare providers perceive communication training is necessary for trauma team leaders. Healthcare providers (*N*=29) mean of perception of communication training for team leaders is 7.86 (*SD*=1.79), range for the leader communication training scale is 2-10 with a midpoint range of 6. In the leader training scale, 83% of participants scored above the midpoint, 7% of participants scored below, and 10% of participants scored at the midpoint. Of the participants who scored below midpoint, 100% of them are surgeons.

Research question six asked if nurses and clinical assistants perceive less effective communication occurs among team members during activations than surgeons. Results from a one-way ANOVA indicate no significant differences between the two groups $F(1,27)= .161$, $p=.7$.

Research question seven asked if nurses and clinical assistants perceive less effective communication occurs among team members and leaders during activation than surgeons.

Results for a one-way ANOVA indicate no significant differences between the two groups $F(1,27)= .111$, $p=.74$.

Exploratory Analysis

While the study did not yield any significant differences between surgeons and clinical assistants' perceptions of communication effectiveness overall, there were certain items that did reflect close to significant differences between the two groups. Specifically, when the participants were asked if team members offered praise to each other (item 10) (Appendix D &E), the clinical assistants and nurses responded more positively (M=3.82, SD=.8) than the surgeons (M=3.29, SD=.95). Overall, the clinical assistants and nurses perceived that praise occurs more often the surgeons do $F(1,27)=2.17$, $p=.15$. When they were asked if the trauma leaders ask or solicit questions (item 19), the clinical assistants and nurses perceived that the leaders ask questions more often (M=3.68, SD=.71) than the surgeons think they do (M=3, SD=1) Overall, the clinical assistants perceive leaders more positively than surgeons perceive themselves, when it comes to leaders asking or soliciting questions $F(1,27)=3.97$, $p=.06$.

Additionally, there were certain differences that may be important for trauma leaders about their teams' perceptions of them. The surgeons perceived themselves as appearing more competent to the team (M=4.57, SD=.53) than the nurses and clinical assistants perceived them (M=4.27, SD=.63) $F(1,27)=1.27$, $p=.27$. The surgeons also perceived themselves as more composed(M=4.43, SD=.79) than the rest of the team(M=4.05, SD=.58) perceived them to be, $F(1,27)=1.97$, $p=.17$. Overall, the surgeons had a more positive response of their competence than the clinical assistants had of the trauma leaders Additionally, the surgeons perceive themselves as able to retain the big picture (M=4.29, SD=.49), while the clinical assistants had a

less positive perception (M=3.91, SD=.53). In general, surgeons perceived themselves to retain the big picture, more than the clinical assistants perceived them $F(1,27)=2.81$, $p=.11$. Most important, the highest significant difference was yielded when participants were asked if trauma leaders accept feedback from trauma team members $F(1,27)=10.22$, $p=.004$. Like the open-ended responses, clinical assistants have a less positive perception of feedback acceptance from leaders (M=3.64, SD=58) than the surgeons do (M=4.43, SD=.54).

When it comes to communication training, surgeons and nurses had different views. Nurses and clinical assistants were more receptive to team communication training (M=17.23, SD=2.21) than surgeons (M=14.57, SD=3.15). Clinical assistants responded more positively to the team training than surgeons did $F(1,27)=6.26$, $p=.019$. The nurses perceived that they could benefit from the training and would be willing to attend trainings. Nurses and clinical assistants also had a more positive perception of leader communication training (M=8.27, SD=1.16) than surgeons (M=6.57, SD=2.76). Overall, nurses and clinical assistants were more receptive to the concept of leader training than surgeons were $F(1,27)=5.60$, $p=.025$. Nurses and clinical assistants perceived that leaders could benefit from training and would be supportive of the idea of communication training.

Many of these similarities and differences between the nurses, clinical assistants and surgeons, may help researchers and clinicians have a deeper understanding of communication errors during trauma activation, as well as receptiveness to communication training. The healthcare providers are aware and understand the importance of effective communication during trauma activations.

Discussion

The present study attempted to unveil healthcare providers' perceptions of communication effectiveness during trauma activations. Although the majority of participants have positive perceptions of communication in trauma activations among surgeons and clinical assistants, there is still room for improvement. Consequently, the majority of trauma team members perceive communication training is necessary and are willing to attend it.

Overall, the healthcare providers had corresponding views of the communication behaviors in trauma activations. Both the surgeons and the clinical assistants perceived that the team and leader communication in trauma activations was effective. There were also no differences between the groups on communication effectiveness training and leadership training. Both groups perceived that communication effectiveness training for all team members is important. Additionally, there were behaviors where the clinical assistants, nurses and surgeons had entirely equal views of communication. For example, when the healthcare providers were asked if team members paid attention to each other, there was no difference between the groups. The providers perceived that the team almost always pays attention; they did however note in the open-ended questions that the team could learn to pay more attention and listen to one another.

Also, when asked if the trauma leaders name tasks to be completed, almost all of the participants agreed that leaders almost always name the tasks that need to be completed; however, in the open-ended questions, participants reported that leader could do a better job at delegating tasks to the team members. Lastly, when participants were asked if the leader was able to let go of control, they reported that leaders almost always let go of control; yet reported in the open-ended questions that leaders can also learn more effective methods do to so. The nurses

and clinical assistants perceived that leaders could give the team more autonomy during resuscitations.

Some of the noteworthy findings of this study were the differences between the team and the leader. Although only one of the items was statistically significant, there were still interesting findings. For example, the leaders reported to be less receptive to communication training, though they did perceive that the rest of the trauma team could benefit from training. Additionally, the leaders perceived themselves as more confident and composed than the rest of the team viewed them. It may be that because leaders view themselves and confident and composed in their leadership abilities they perceive that communication training wouldn't be as beneficial to them as opposed to a leader who does not perceive themselves in the same way.

Similar to previous research, the leaders perceived the communication in trauma activations more positively than the clinical assistants (Mills, Neily & Dunn, 2008). Moreover, leaders perceived less of a need for communication training than clinical assistants. However, Mills et al, (2008) suggest that formal team training can address these discrepancies, which can ultimately identify the underlying communication issues in activations.

Another difference between the two groups is the skills that they expect and would like to learn in potential communication effectiveness training. More than two surgeons reported that they would like to learn how to regain and maintain control of a team as a leader. A couple of emerging themes that appeared in the clinical assistants' responses were the role of the recording nurse, the roles in a resuscitation, and ensuring that closed-loop communication occurs during resuscitations. Closed-loop communication basically confirms to team members that the message that was sent is also received to the respective members. Because of these themes it can be

assumed that clinical assistants perceive that the messages they send off to other team members may not be heard or understood.

In brief, it is important to note that team members and team leaders perceive that effective communication does occur during pediatric trauma activations. Because communication errors have been associated with preventable death (Wheatley & Cass, 1990), it is important to bring light to this disturbing issue. This study has brought awareness to a group of trauma team members and leaders on communication effectiveness.

Limitations

Although the study was descriptive and unveiled important information, there were several limitations to this study. The first was the number of participants in the study. Having a larger amount of participants could have yielded more significant results. There was an uneven balance of leaders and nurses/clinical assistants. Obtaining more leader participants could have allowed for a more accurate interpretation of leaders' perceptions of communication errors and training.

Second was the length of the assessment. Although healthcare providers have excelled at multitasking, the amount of items on the needs assessment was too lengthy. Reducing the number of items would probably have yielded more participants. If the questionnaires were shorter, more participants would have been willing to fill it out.

Additionally, the sizeable amount of items on the survey could have contributed to the insignificant results. Participants were given only a small amount of time to fill in the survey. They also had to pay attention to the information that was being exchanged in the meeting. Having a smaller amount of items on the survey would have granted more deep thought per item.

Another important factor to point out is that these findings were solely based on perceptions of the team members in the activations. Testing for perceptions may not accurately depict the actual communication that occurred among trauma teams and leaders in activations. Examining perceptions is a subject method to analyze the communication that occurs in trauma activations (Metts, Sprecher, & Cupach, 1991).

Lastly, although a factor analysis should have been conducted for the four measures used in this study, due to the strong alphas, researchers did not find it imperative at the moment to conduct one. Future research may want to conduct an analysis for each of the four measures.

Future Research

Future researchers examining the communication among healthcare providers during trauma activations may want to have a couple of considerations while conducting a similar study:

First is uncover reasoning behind why leaders are less receptive to communication training? As mentioned above, because of the close to significant findings, there may be a strong negative association between perceived confidence, composure and interest in communication training. If leaders perceive themselves as effective communicators, they may not see the importance of attending communication training. Understanding how perceived confidence may have an effect on the team during an activation can be important in team maintenance and development.

Also, future researchers may want to continue developing communication effectiveness training. Because this study examined the perceived communication need among healthcare providers assessment portion of training development, there may be a deeper understanding of exactly what needs should be addressed in such trainings. Researchers can continue to examine

those needs with focus groups and pilot studies. After a training has been developed researchers can generate an additional study using a pretest posttest control group design, to test the effectiveness of the communication training.

Future examiners can also take a closer look at items on the questionnaire that were close to significant. Although the majority of the survey was answered similarly, there was disagreement on certain items, which may reveal potential communication errors that occur during resuscitations.

REFERENCES

Ammentrop, J., Sabroe, S., Kofoed, P., & Mainz, J. (2007). The effect of training in communication skills on medical doctors' and nurses' self-efficacy: a randomized controlled trial. *Patient Education and Counseling, 66*, 270-277.

Awad, S. S., Fagan, S. P., Bellows, C., Albo, D., Green-Rashad, B., De La Garza, M., Berger, D. H., (2005). Bridging the communication gap in the operating room with medical team training. *The American Journal of Surgery, 190*, 770-774.

Baggs, J. G., Schmitt, M. H., Mushlin, A., Eldredge, D. H., Oakes, D., & Hutson. (1999). Association between nurse-physician collaboration and patient outcomes in three intensive care units. *Critical Care Medicine.*

Baker, D. P., Gustafson, S., Beaubien, J. M., Salas, E., & Barach, P. (2005). Medical team training programs in health care. *Advances in Patient Safety, 4*, 253-267.

Beebe, S. A., Mottet, T. P., & Roach, K. D. (2004). *Training and Development: Enhancing Communication and Leadership Skills*. Boston, MA: Allyn and Bacon.

Bergs, E., Rutten, F., Tadros, T., Krijnen, P., Schipper, I. B. (2005). Communication during trauma resuscitation: do we know what is happening? *Injury, 36*, 905-911.

Blum, R. H., Raemer, D. B., Carroll, J. S., Dufresne, R. L., & Cooper, J. B. (2005). A method for measuring the effectiveness of simulation-based team training for improving communication skills. *Technology, Computing, and Simulation*, 1376-1380.

Brown, J. B., Boles, M., Mullooly, J. P., & Levinson, W. (1999). Effect of clinician communication skills training on patient satisfaction. *Annals of Internal Medicine, 131*, 822-829.

Byrne, G. & Heyman, R. (1997). Understanding nurses' communication with patients in accident & emergency departments using a symbolic interactionist perspective. *Journal of Advanced Nursing, 26*, 93-100.

Chui, W. C., Scalea, T. M., & Rotondo, M. F. (2005). Summary report on current clinical trauma care fellowship training programs. *The Journal of Trauma: Injury, Infection, and Critical Care, 58*, 605-613.

Cicala, R.S., & Murphy, M.T. (1993). Trauma centers, systems, and plans. In C.M. Grande (Ed.), *Textbook of trauma anesthesia and critical care.* 56-70.

Crosbie, R. (2005). Learning the soft skills of leadership. *Industrial and Commercial Training, 37*, 45-51.

Davies, J. M. (2005). Team communication in the operating room. *ACTA Anasesthesilogica Scandinavica, 49*, 898-901.

Divorchik, B. H. Gaynes, B. I., Hubbard, J. W., Kirk, J. K., Kobayashi, K., Sokol, G. H. & Frankl, W. S. (2000). American college of clinical pharmacology response to the institute of medicine report "to err is human: building a safer health system." *Journal of Clinical Pharmacology, 40*, 1075-1078.

Eisenberg, E. M., Murphy, A. G., Sutcliffe, K., Wears, R., Schenkel, S., Perry, S., & Vanderhoef, M. (2005). Communication in emergency medicine: implications for patient safety. *Communication Monographs, 72*, 390-413.

Evans, B. J., Stanley, R. O., & Burrows, G. D. (1992). Communication skills training and patients' satisfaction. *Health Communication, 4,* 155-170.

Fielding, R. G., & Llewelyn, S. P. (1987). Communication training in nursing may damage your health and enthusiasm: some warnings. *Journal of Advanced Nursing, 12*, 281-290.

Finch, D. (2008). Health insurers to stop paying hospitals for medical mishaps. (2008). *NHPR News*.

Goldstein, I. L. (1991). Training in work organizations. In M. D. Dunnette & L. M. Hough (Eds.), *Handbook of Industrial and Organizational Psychology: Vol. 2* (pp. 507-602). Palo Alto, CA: Consulting Psychologists Press.

Grogan, E. L., Stiles, R. A., France, D. J., Speroff, T., Morris, J. A., Nixon, B., Gaffney, F. A., Seddon, R., & Pinson, C. W. (2004). *The American College of Surgeons, 199*, 843-848.

Hampson, I., & Junor, A. (2011). 'Employability' and the substance of Soft skills. Unpublished Manuscript. University of New South Wales. Industrial Relations Research Centre.

HealthGrades. (2004). In hospital deaths from medical errors at 195,000 per year USA. *Medical News Today*, Retrieved from http://www.medicalnewstoday.com/articles/11856.php.

Helmreich, R. L., & Davies, J. M. (1996). Human factors in the operating room: interpersonal determinants of safety, efficiency and morale. *Bailliere's Clinical Anaesthesiology, 10,* 277-295.

John A. Hartford Foundation. (n.d.) Geriatric Interdisciplinary Team Training Prepares Students in the Health Professions to Care for Older Patients.

The Joint Commission. (2010). *Sentinel event statistics as of: June 30, 2010*. Retrieved from http://www.jointcommission.org/NR/

Kohn, L. T., Corrigan, J. M, & Donaldson, M. S. (Eds.) (1999). To err is human: building a safer health system. *Institute of Medicine*. Washington, D. C.: National Academy Press.

Kohsin, B. Y., Landrum-Tsu, C., & Merchant, P. G. Medical team management workbook (Version 3). Unpublished training materials. U.S. Air Force Medical Operations Agency. Washington, D. C.: Bolling Air Force Base.

Krebel, M. S., Clayton, C., Graham, C. (1996). Child life programs in the pediatric emergency department. *Pediatric Emergency Care, 12*, 13-15.

Leape, L. L., Lawthers, A. G., Brennan, T. A., & Johnson, W. G. (1993). Preventing medical injury. *Quality Review Bulletin, 19*, 144-149.

Mayer, T. A., Cates, R. J., Mastorovich, M. J. & Royalty, D. L. (1998). Emergency department patient satisfaction: customer service training improves patient satisfaction and ratings of physician and nurse skill. *Journal of Healthcare Management, 43*, 427-440.

Metts, S., Sprecher, S., & Cupach, W. R. (1991). Retrospective self-reports. In B. M. Montgomery & S. Duck (Eds.), *Studying interpersonal interaction* (pp. 162-178). New York: Guilford Press.

Mills, P., Neily, J., & Dunn, E. (2008). Teamwork and communication in surgical teams: implications for patient safety. *Journal of American College of Surgeons, 206*, 107-112.

Morey, J. C., Simon, R., Jay, G. D., Wears, R. L., Salisbury, M., Dukes, K. A., & Berns, S. D. (2002). Error reduction and performance improvement in the emergency department through formal teamwork training: evaluation results of the MedTeams project. *Health Services Research, 37*, 1553-1581.

Ostergaard, H., Ostergaard, D., & Lippert, A. (2004). Implementation of team training in medical education in Denmark. *Quality of Safety Health Care, 13*, 91-95.

Ostroff, C., & Ford, J. K. (1989). Assessing training needs: critical levels of analysis. In I. L. Goldstein (Ed). Training and Development in Organizations, San Francisco: Jossey-Bass Publishers.

Raley, J., & Mottet, T. P. (2009). The development and validation of the Assessment of Pediatric Resuscitation Communication (APRC) Instrument.

Reid, P. (2010). Malpractice lawsuits and the national debt. Retrieved from http://www.cbsnews.com/8391-503544_162-20024628-503544.html.

Rivers, R. M., Swain, D., & Nixon, W. R. (2003). Using aviation safety measures to enhance patient outcomes. *AORN, 77*.

Roberson, L., Kulik, C. T., & Pepper, M. B. (2003). Using needs assessment to resolve controversies in diversity training design. *Group & Organization Management, 28* (1),

148-174.

Rothwell, W. J., & Kazanas, H. C. (1992). *Mastering the Instructional Design Process: A Systematic Approach*. San Francisco: Jossey-Bass Publishers.

Russell, R. (2009). Malpractice claims on the rise. *Accounting Today*. Retrieved from http://www.accountingtoday.com/ato_issues/2009_11/-50989-1.html?pg=2.

Stahl, K., Palileo, A., Schulman, C. I., Wilson, K., Augenstein, J., Kiffin, C., & McKenney, M. (2009). Enhancing patient safety in the trauma/surgical intensive care unit. *Journal of Trauma-Injury Infection & Critical Care, 67*, 430-435.

Stanford School of Medicine (2011). Anesthesia Crisis Resource Management: Development of the ACRM Concept. Retrieved from http://med.stanford.edu/VAsimulator/acrm/.

Sutcliffe, K. M., Lewton, E., Rosenthal, M. M. (2004). Communication failures: an insidious contributor to medical mishaps. *Academic Medicine, 79*, 186-194.

Thomas, E. J., Sexton, J B. & Helmreich, R. L. (2003). Discrepant attitudes about teamwork among critical care nurses and physicians. *Critical Care Medicine, 31*, 956-959.

Undre, S., Sevdalis, N., Healey, A. N., Darzi, S. A., & Vincet, C. A. (2006). Teamwork in the operating theatre: cohesion or confusion? *Journal of Evaluation in Clinical Practice, 12*, 182-189.

Wallace, D. S., Paulson, R. M., Lord, C. G., & Bond, C. F. (2005). Which behaviors do attitudes predict? Meta-analyzing the effects of social pressure and perceived difficulty. *Review of General Psychology, 9*, 214-227.

Watkins, R., Leigh, D. And Kaufman, R. (1998). Needs assessment: a digest, review, and comparison of needs assessment literature. *Performance Improvement Journal, 37*(7), 40-53.

Wheatle y, J. & Cass, D. T. (1989). Traumatic deaths in children: the importance of prevention. *Med. J. Aust., 150*, 72-78.

Wright, J., Williams, R., & Wilkinson (1998). Development and importance of health needs assessment. *British Medical Journal, 316*, 1310-1313.

APPENDIX A

APPENDIX A

ASSESSMENT OF PEDIATRIC RESUSCITATION COMMUNICATION (APRC-TA) TEAM ASSESSMENT

						Total	Observation Notes
Team Dynamic		**Poor**	**Fair**		**Good**	**Excellent**	
	The team's emotional control was. . .	1	2		3	4	
	The team's ability to collaborate was. . .	1	2		3	4	
	The team's level of organization was. . .	1	2		3	4	
	The team's overall dynamic was. . .	1	2		3	4	
Team Turn Taking		**Poor**	**Fair**		**Good**	**Excellent**	
	The team's ability to let others speak without interruption was. .	1	2		3	4	
	The team's ability to use regulatory cues was. . .	1	2		3	4	
	The team's ability to not talk over each other was. . .	1	2		3	4	
	The team's overall turn taking ability was. . .	1	2		3	4	

Team Space Negotiation		**Poor**	**Fair**		**Good**	**Excellent**		
	The team's ability to yield to each other was. . .	1	2		3	4		
	The team's ability to not hover over each other was. . .	1	2		3	4		
	The team's ability to get-in/get-out when tending to patient was.	1	2		3	4		
	The team's overall ability to negotiate space was. . .	1	2		3	4		
Noise Management		**Poor**	**Fair**		**Good**	**Excellent**		**Observation Notes**
	The team's ability to manage environmental noise was. . .	1	2		3	4		
	The team's ability to manage team member noise was. . .	1	2		3	4		
	The team's ability to manage interpersonal noise was. . .	1	2		3	4		
	The team's overall ability to manage noise was. . .	1	2		3	4		
Team Support		**Poor**	**Fair**		**Good**	**Excellent**		
	The team's ability to offer assistance to each other was. . .	1	2		3	4		

	The team's ability to offer praise to each other was. . .	1	2		3	4	
	The team's ability to avoid defensiveness was. . .	1	2		3	4	
	The team's overall ability to support of each other was. . .	1	2		3	4	
Team Listening		**Poor**	**Fair**		**Good**	**Excellent**	
	The team's ability to pay attention to each other was. . .	1	2		3	4	
	The team's ability to understand each other was. . .	1	2		3	4	
	The team's ability to respond to each other was. . .	1	2		3	4	
	The team's overall ability to listen to each other was. . .	1	2		3	4	
Scoring	**Performance Factors**	**Total**					**Observation Notes**

	1. Team Dynamic		
	2. Team Turn Taking		
	3. Team Space Negotiation		
	4. Noise Management		
	5. Team Support		
	6. Team Listening		
	Team APRC Total		
	Scale Range = 24 – 96; Midpoint = 60 > 60 = Effective Team Communication < 60 = Ineffective Team Communication		

APPENDIX B

APPENDIX B

ASSESSMENT OF PEDIATRIC RESUSCITATION COMMUNICATION (APRC-LA) LEADER ASSESSMENT

							Total	**Observation Notes**
Preview		**Poor**	**Fair**		**Good**	**Excellent**		
	The leader's ability to set expectations was. . .	1	2		3	4		
	The leader's ability to define roles was.	1	2		3	4		
	The leader's ability to implement a plan was. . .	1	2		3	4		
	The leader's overall ability to preview was. . .	1	2		3	4		
Support		**Poor**	**Fair**		**Good**	**Excellent**		
	The leader's ability to offer praise was. .	1	2		3	4		
	The leader's ability to solicit questions was. . .	1	2		3	4		
	The leader's ability to reduce defensiveness was. . .	1	2		3	4		
	The leader's overall ability to support team members was. . .	1	2		3	4		

Delegation		**Poor**	**Fair**		**Good**	**Excellent**		
	The leader's ability to offer anticipatory cues was. . .	1	2		3	4		
	The leader's ability to name tasks to be completed was. . .	1	2		3	4		
	The leader's ability to assign team members to specific task was. . .	1	2		3	4		
	The leader's overall ability to delegate was. . .	1	2		3	4		
Credibility		**Poor**	**Fair**		**Good**	**Excellent**		
	The leader's ability to act competently was. . .	1	2		3	4		
	The leader's ability to act confidently was. . .	1	2		3	4		
	The leader's ability to remain composed was. . .	1	2		3	4		
	The leader's overall credibility was. .	1	2		3	4		
Trust Team Members		**Poor**	**Fair**		**Good**	**Excellent**		**Observation Notes**
	The leader's ability to let go of control was. . .	1	2		3	4		
	The leader's ability to retain big picture was. . .	1	2		3	4		
	The leader's ability to accept feedback was. . .	1	2		3	4		
	The leader's overall ability to trust team members was. . .	1	2		3	4		
Scoring	**Performance Factors**	**Total**						
	1. Leader Preview							

	2. Leader Support					
	3. Leader Delegation					
	4. Leader Credibility					
	5. Leader Trust Team Members					
	Leader APRC Total					
	Scale Range = 20 – 80; Midpoint = 50 > 50 = Effective Leader Comm < 50 = Ineffective Leader Comm					

APPENDIX C

APPENDIX C

ASSESSMENT OF PEDIATRIC RESUSCITATION COMMUNICATION (APRC) CODEBOOK AND ADMINISTRATION MANUAL

Introduction

The Assessment of Pediatric Resuscitation Communication (APRC) is an instrument designed to assess the communication effectiveness of healthcare providers during a pediatric trauma resuscitation. Specifically, the instrument assesses the communication effectiveness of both the leader and the team members. The instrument was developed to ensure that pediatric healthcare providers receive proper instruction and develop competency in effective team and leader communication.

Competencies were developed for both trauma team members and leaders. These competencies are in turn assessed using a 4 point scale. Team competencies include team dynamics, team turn taking, team space negotiation, noise management, team support, and team listening. Leader competencies include preview, support, delegation, credibility, and trust of team members. Within each competency, four communication behaviors are measured resulting in one score for each competency. For the team, six competencies are examined that include 24 communication behaviors. The total score can range from 24-96 with a midpoint of 84. Scores above 84 indicate effective team communication. For the leader, five competences are examined which in turn includes 20 communication behaviors. The total score can range from 20-80 with a midpoint of 50. Scores above 50 indicate effective leader communication.

The instrument was developed by three communication researchers based on current communication literature that was adapted to this specific context. Contextual information was obtained from focus group participants, in-depth interviews, and videos of actual pediatric trauma resuscitations.

Instructions for APRC Coders:

Before using the Assessment of Pediatric Resuscitation Communication (APRC) instrument coders must first read the codebook, key terms, and coder notes to become familiar with the different competencies and communication behaviors included in the APRC instrument. Once these materials are reviewed coders can assess the communication effectiveness of trauma team members and leaders using the APRC instrument either by viewing a live or a recorded pediatric trauma resuscitation.

Key Terms:

APRC = Assessment of Pediatric Resuscitation Communication

Competencies = There are 6 team competencies and 5 leader competencies included in the APRC. Each competency is an umbrella term or construct that represents the first three communication behaviors included under each competency name.

Global Assessment = The fourth communication behavior under each team and leader competency.

Communication Behaviors = The first three subcategories included under each team and leader competency.

Descriptor = Excellent, Good, Fair, Poor

Rating = 1, 2, 3, 4

Total APRC Team Score = sum of all 6 team competency ratings

Total APRC Leader Score = sum of all 5 leader competency ratings

Effective Team Communication Score = 84 or higher

Effective Leader Communication Score = 50 or higher

Verbal communication = written or spoken language that creates meaning for someone (Beebe, Beebe, & Ivy, 2008)

Nonverbal communication = communication other than written or spoken language that creates meaning for someone such as a person's use of posture, movement, gestures, eye contact, space, or vocal tone (Beebe, Beebe, & Ivy, 2008)

Coder Notes:

- Do not restrict coding to examples given in codebook. Other instances or examples may occur that are not specified in the codebook descriptions.
- Competencies are in no particular order.
- The APRC can be completed during or after viewing a live or videotaped pediatric trauma resuscitation.
- Feel free to take notes on the APRC while watching the pediatric trauma resuscitation.

How to Use the APRC:

1. Review the codebook and key terms to make sure you understand the communication behaviors and competencies.
2. Make sure a trauma activation number is assigned to the assessment form.
3. Indicate what type of leader is being assessed trauma surgeon or emergency medicine physician.

4. Indicate if family is present.

5. When assigning a rating for the first three communication behaviors under each competency establish a valence. Ask yourself is the communication behavior negative (i.e., poor or fair) or positive (i.e., good or excellent)?

6. After you have decided on a valence for the first three communication behaviors under each competency circle the rating under the descriptor that best reflects the performed communication behavior.

7. In order to circle a rating for the fourth communication behavior under each competency you must make a global assessment of each competency. To do this ask yourself overall how did the team or leader perform the competency? [1]

8. After assigning a rating for all communication behaviors and global assessments add your scores. You should have one team communication effectiveness score and one leader communication effectiveness score. Write the score in the blank at the bottom of each assessment form and indicate if the score reflects effective or ineffective team and leader communication.

APRC Ratings:

Excellent = Team members or Leaders exceeded expectations

Good = Team members or Leaders met expectations

Fair = Team members or Leaders somewhat met expectations

Poor = Team members or Leaders did not meet expectations

Intercoder Agreement:

To properly assess team member and leader communication effectiveness during pediatric trauma resuscitations coders must be completely separated when using the APRC.

Coders must come together and check intercoder agreement after every five APRC assessments have been independently completed. Intercoder agreement is calculated by obtaining the number of agreements (Na) divided by the number of agreements (Na) and disagreements (Nd), all multiplied by 100 as follows: [Na ÷ (Na +Nd)] × 100. Coders must obtain a minimum of 80% agreement during each intercoder agreement check.

If coders fail to reach the appropriate percentage of agreement they should go back and reread the codebook, key terms, and coder notes in order to clarify the points of disagreement.

CODEBOOK

Competency 1	**TEAM DYNAMIC** Refers to the team's ability to manage the emotional, relational, and organizational climate in the ED. Team members are able to remain emotionally controlled, foster a collaborative approach, and retain an organized structure throughout the trauma resuscitation.
	Team Emotional Control Team members used verbal messages that were normal in tone, volume, and rate for the ED. Their nonverbal messages were not overly exaggerated, extreme, abrupt, or clipped. Team members did not appear to be behaving in a nervous, uneasy, apprehensive, or fearful manner, nor were they acting aggravated, annoyed, or upset.
	Team Collaboration Team members were responsive and cooperative with each other. They maintained fluidity and cohesiveness.
	Team Organization Team members performed their roles with ease. There was little hesitation as to who was to perform a certain task. When team members needed a particular person to complete a task, they used the person's name and stated the task to be completed. For example, a team member may have said Jessica put a central line in instead of someone get me a central line.
Competency 2	**TEAM TURN TAKING** Refers to the team's ability to take turns making requests and providing patient descriptions by refraining from interruptions or talking over one another and attempting to use regulatory cues.
	Team Members Refrained from Interruption

	Team members refrained from cutting others off in mid-sentence. Instead, they used verbal or nonverbal messages to indicate to other team members they needed to speak when important requests or patient descriptions needed to be communicated.
	Team Members Used Regulatory Cues Team members used nonverbal behaviors to control the flow of requests and patient descriptions given during the resuscitation. They used eye contact, posture, gestures, facial expressions, and body position that indicated when team members should make requests, provide patient descriptions, or listen to others.
	Team Members Refrained from Talking Over Each Other Team members refrained from beginning another important request or patient description while another team member was communicating a request or patient description.
Competency 3	**TEAM SPACE NEGOTIATION** Refers to the team's ability to share the limited space around the bedside of the patient by negotiating when they should move in and do their job and when they should yield to their teammates in order to avoid unnecessary hovering or crowding.
	Team Members Yielded to Each Other Team members were willing to step back from the bed to give their colleagues sufficient space to move in and assist the patient.

	Team Members Refrained from Hovering Team members refrained from crowding their colleagues or violating personal space needs when assisting the patient.
	Team Members Got in/Got out Team members assumed their position by the patient in order to complete their task and then stepped aside without lingering.
Competency 4	**NOISE MANAGEMENT** Refers to the presence of messages or sounds that may interfere with communication between team members.
	Team Management of Environmental Noise Team members managed noise made from machines used to assist the patient (i.e. beeping, ringing, suctioning, etc.) so that it did not interfere with the team's ability to communicate with one another.
	Team Management of Team Noise Team members refrained from side conversations or discussions both around the bedside of the patient and in the background that could interfere with team communication during the resuscitation. All communication between members was task oriented.
	Team Management of Interpersonal Noise Team members managed any patient noise (i.e. screaming, crying, thrashing, seizing, etc.) and

	family member communication (i.e. soothing the patient, asking questions, making requests, etc.) so that it did not interfere with the team's ability to communicate with one another.
Competency 5	**TEAM SUPPORT** Refers to the amount and quality of support, assistance and encouragement given by a team member to others. It also refers to how members react to one another when suggestions and comments are made or tasks are executed.
	Team Members Offered Assistance Team members communicated their willingness to help or assist others either verbally or nonverbally. For example, team members asked what can I do to help or volunteered to help with the execution of a particular task.
	Team Members Offered Praise Team members offered positive feedback and praised each other when a team member provided an idea or executed a task. Team members verbally or nonverbally offered recognition for a job well done by patting a colleague on the back, smiling and nodding, or simply saying well done, nice job, thank you, or great work.
	Team Members Avoided Defensiveness Team members refrained from exhibiting defensive behaviors such as verbal attacks or rolling of the eyes when tasks were executed or requests were made.

Competency 6	**TEAM LISTENING** Refers to the amount and quality of listening that takes place among team members. Listening takes place when directions, suggestions or comments are made.

	Team Members Paid Attention to Each Other Team members exhibited attentiveness when listening to another member. Attentiveness is acknowledging and not ignoring the comments of others. Attention can be exhibited through verbal and non-verbal manifestations such as through words or nodding of the head.
	Team Members Understood Each Other Refers to the level of understanding to the messages provided by team members. Team members exhibited understanding by carrying out instructions, repeating comments for clarification or requesting additional clarification.
	Team Members Responded to Each Other Refers to whether team members responded to and/or acknowledged the messages provided by other team members. Acknowledgement can be provided in words or through nonverbal manifestations such as nodding the head, etc.
Competency 1	**PREVIEW** This competency deals with leadership effectiveness prior to the arrival of the patient and the administration of the resuscitation. Leader meets with team and discusses patient condition and provides a course of action.
	Leader Set Expectations Leader provided information on the case prior to the patient's arrival and reviewed the condition of the patient and what team members were expected to do on arrival.
	Leader Defined Roles

	Prior to patient's arrival, leader explained the course of action needed to be taken and provided clear instructions on who is to do what.
	Leader Implemented A Plan Prior to patient's arrival, leader outlined and/or discussed a course of action or process to be taken with patient.
Competency 2	**SUPPORT** Leader provides a positive emotional climate for team members by offering praise, soliciting questions, and reducing defensiveness.
	Leader Offered Praise Leader offered positive verbal feedback to team members (i.e., good job, nice work, way to go, etc.) or positive nonverbal feedback (i.e., smiling and eye contact, patting on the back, head nods, etc.) in recognition of a job well done.
	Leader Remained Open Leader remained approachable. He/she seemed open to questions or feedback and/or checked in with team members either nonverbally (i.e. hand on back, eye contact, or gestures) or verbally (i.e. you ok or how are you doing).
	Leader Reduced Defensiveness

	Leader provided constructive criticism and feedback that was helpful for team members using a calm voice and refrained from personal attacks. Actions and decisions were criticized but team members were not. The leader did not utter profanities or lose his/her temper when providing team members with criticism or feedback.
Competency 3	**DELEGATION** Refers to the leader's ability to recognize what tasks need to be completed and clearly articulate who should complete which task by using both verbal and nonverbal messages.
	Leader Offered Anticipatory Cues The leader used verbal cues (i.e., first, second, next, etc.) or nonverbal cues (i.e., gestures, touch, eye contact, etc.) to prompt team members to complete particular tasks during the resuscitation.
	Leader Named Tasks to be Completed The leader provided specific directions by naming and/or describing the task that needed to be completed.
	Leader Assigned Team Members To Specific Tasks The leader asked a specific team member to complete a specific task. For example, the leader may have said Jessica put a central line in instead of someone get me a central line.
Competency 4	**CREDIBILITY** Refers to the leader's ability to appear competent, confident, and composed throughout the resuscitation even when important tasks are not completed or team members become anxious or frustrated.

	Leader Competency The leader appeared to be effective. He/she commanded a positive and helpful presence and engaged team members in a controlled manner.
	Leader Confidence The leader refrained from communicating uncertainty by asking questions about resuscitation procedures or using nonverbal such as eye contact, facial expressions, posture, or gestures that communicate hesitation, doubt, and indecision.
	Leader Composure The leader was emotionally controlled. His/her verbal messages were normal in tone, volume, and rate for the ED. His/her nonverbal messages were not overly exaggerated, extreme, abrupt, or clipped. He/she did not repeat questions and/or directions using an aggravated or frustrated tone.
Competency 5	**TRUST TEAM MEMBERS** Refers to leader's ability to relinquish control and appear open and approachable.
	Leader Let Go Of Control The leader allowed team members to do their job without verbal interference (i.e., do it this way, why are you doing it that way, you are doing it wrong, etc.) or nonverbal interference (i.e., reaching in doing a team members job, slapping a team members hand away, taking control of a task, etc.)
	Leader Retained Big Picture

	Leader physically positioned himself/herself in order to have a clear visual of the entire trauma team and electronic monitors. Leader also physically distanced himself/herself from the patient and minimized touch to the patient.
	Leader Accepted Feedback Leader remained open to constructive criticism or feedback and fostered a collaborative team approach by asking for help, advice, or opinions.

APPENDIX D

APPENDIX D

Training Need Questionnaire

When answering the following questions, please keep in mind that team members involved in a trauma activation at Dell Children's Hospital could include pharmacist, airway physician, respiratory therapist, assessment/procedural nurse, recording nurse, social worker, ED clinical technician, and IV/Med nurse.

During pediatric trauma activations I participate in:	**Never (1)**	**Almost Never (2)**	**Sometimes/ Occasionally (3)**	**Almost Always (4)**	**Always (5)**
1. Team members are emotionally controlled.	1	2	3	4	5
2. Team members collaborate.	1	2	3	4	5
3. Team members are organized	1	2	3	4	5
4. Team members speak without interrupting others.	1	2	3	4	5
5. Team members refrain from talking over each other.	1	2	3	4	5
6. Team members yield to one another.	1	2	3	4	5
7. Team members refrain from hovering over one another.	1	2	3	4	5
8. Team members are able to manage noise.	1	2	3	4	5
9. Team members offer assistance to each other.	1	2	3	4	5
10. Team members offer praise to each other.	1	2	3	4	5
11. Team members refrain from using defensive language.	1	2	3	4	5

During pediatric trauma activations I participate in:	**Never (1)**	**Almost Never (2)**	**Sometimes/ Occasionally (3)**	**Almost Always (4)**	**Always (5)**
12. Team members pay attention to each other.	1	2	3	4	5

13. Team members understand each other.	1	2	3	4	5
14. Team members respond to each other.	1	2	3	4	5

When answering the following questions, please keep in mind that the leader of a trauma activation at Dell Children's Hospital could be a trauma surgeon or until the trauma surgeon arrives, the emergency medicine physician.

During pediatric trauma activations I participate in:	**Never (1)**	**Almost Never (2)**	**Sometimes/ Occasionally (3)**	**Almost Always (4)**	**Always (5)**
15. The team leader sets expectations.	1	2	3	4	5
16. The team leader defines roles.	1	2	3	4	5
17. The team leader reviews a plan of action prior to patient arrival.	1	2	3	4	5
18. The team leader offers praise.	1	2	3	4	5
19. The team leader asks or solicits questions.	1	2	3	4	5
20. The team leader refrains from using defensive language.	1	2	3	4	5
21. The team leader names tasks to be completed.	1	2	3	4	5
22. The team leader assigns team members to specific tasks.	1	2	3	4	5
23. The team leader is competent.	1	2	3	4	5
24. The team leader is confident.	1	2	3	4	5
25. The team leader is composed.	1	2	3	4	5
26. The team leader is able to let go of control.	1	2	3	4	5
27. The team leader retains the big picture.	1	2	3	4	5
28. The team leader accepts feedback.	1	2	3	4	5

When answering the following questions, please keep all trauma activations that you have participated at Dell Children's Medical Center or any other hospital in mind.

As a participant in pediatric trauma activations I believe:	**Strongly Disagree (1)**	**Disagree (2)**	**Neutral (3)**	**Agree (4)**	**Strongly Agree (5)**
29. Trauma team members could benefit from receiving communication effectiveness training.	1	2	3	4	5
30. Trauma team leaders could benefit from receiving communication effectiveness training.	1	2	3	4	5
31. I would attend a training focused on communication effectiveness during pediatric trauma activations.	1	2	3	4	5
32. Trauma team members would support the idea of a training focused on communication effectiveness during pediatric trauma activations.	1	2	3	4	5
33. Trauma team leaders would support the idea of a training focused on communication effectiveness during pediatric trauma activations.	1	2	3	4	5
34. What I learn during communication effectiveness training could be implemented during live pediatric trauma activations.	1	2	3	4	5

1. What do you think a trauma team member should learn in communication effectiveness training?

2. Do you feel you and other trauma team members (e.g. physicians, pharmacists, respiratory therapists, radiology techs, etc.) would benefit from communication training? If so, please specify which types of trauma members you believe would benefit from the training. *Please do not include individual team members' names in your response.*

3. What do you think are the most important attributes in a trauma team leader?

APPENDIX E

APPENDIX E

Training Need Questionnaire

When answering the following questions, please keep in mind that team members involved in a trauma activation at Dell Children's Hospital could include pharmacist, airway physician, respiratory therapist, assessment/procedural nurse, recording nurse, social worker, ED clinical technician, and IV/Med nurse.

During pediatric trauma activations I participate in:	**Never (1)**	**Almost Never (2)**	**Sometimes/ Occasionally (3)**	**Almost Always (4)**	**Always (5)**
1. Team members are emotionally controlled.	1	2	3	4	5
2. Team members collaborate.	1	2	3	4	5
3. Team members are organized	1	2	3	4	5
4. Team members speak without interrupting others.	1	2	3	4	5
5. Team members refrain from talking over each other.	1	2	3	4	5
6. Team members yield to one another.	1	2	3	4	5
7. Team members refrain from hovering over one another.	1	2	3	4	5
8. Team members are able to manage noise.	1	2	3	4	5
9. Team members offer assistance to each other.	1	2	3	4	5
10. Team members offer praise to each other.	1	2	3	4	5
11. Team members refrain from using defensive language.	1	2	3	4	5

During pediatric trauma activations I participate in:	**Never (1)**	**Almost Never (2)**	**Sometimes/ Occasionally (3)**	**Almost Always (4)**	**Always (5)**
12. Team members pay attention to each other.	1	2	3	4	5
13. Team members understand each other.	1	2	3	4	5

14. Team members respond to each other.	1	2	3	4	5

When answering the following questions, please keep yourself in mind as a leader of a trauma activation at Dell Children's Medical Center, either as an Emergency Medicine Physician or Trauma Surgeon.

During pediatric trauma activations I participate in:	**Never (1)**	**Almost Never (2)**	**Sometimes/ Occasionally (3)**	**Almost Always (4)**	**Always (5)**
15. I sets expectations for trauma team members	1	2	3	4	5
16. I define roles	1	2	3	4	5
17. I review a plan of action prior to patient arrival.	1	2	3	4	5
18. I offer praise.	1	2	3	4	5
19. I ask or solicit questions.	1	2	3	4	5
20. I refrain from using defensive language.	1	2	3	4	5
21. I name tasks to be completed.	1	2	3	4	5
22. I assign team members to specific tasks.	1	2	3	4	5
23. I portray myself as competent.	1	2	3	4	5
24. I portray myself as confident.	1	2	3	4	5
25. I portray myself as composed.	1	2	3	4	5
26. I am able to let go of control.	1	2	3	4	5
27. I retain the big picture.	1	2	3	4	5
28. I accept feedback from trauma team members.	1	2	3	4	5

When answering the following questions, please keep all trauma activations that you have participated at Dell Children's Medical Center or any other hospital in mind.

As a participant in pediatric trauma activations I believe:	**Strongly Disagree (1)**	**Disagree (2)**	**Neutral (3)**	**Agree (4)**	**Strongly Agree (5)**

29. Trauma team members could benefit from receiving communication effectiveness training.	1	2	3	4	5
30. Trauma team leaders could benefit from receiving communication effectiveness training.	1	2	3	4	5
31. I would attend a training focused on communication effectiveness during pediatric trauma activations.	1	2	3	4	5
32. Trauma team members would support the idea of a training focused on communication effectiveness during pediatric trauma activations.	1	2	3	4	5
33. Trauma team leaders would support the idea of a training focused on communication effectiveness during pediatric trauma activations.	1	2	3	4	5
34. What I learn during communication effectiveness training could be implemented during live pediatric trauma activations.	1	2	3	4	5

1. What do you think a trauma team member should learn in communication effectiveness training?

2. Do you feel you and other trauma team members (e.g. physicians, pharmacists, respiratory therapists, radiology techs, etc.) would benefit from communication training? If so, please specify which types of trauma members you believe would benefit from the training. *Please do not include individual team members' names in your response.*

3. What do you think are the most important attributes in a trauma team leader?

BIOGRAPHICAL SKETCH

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