Best Practices in Patient Safety and Communication

Dana Im, MD, MPP, MPhil[a,*], Emily Aaronson, MD, MPH[b]

KEYWORDS

• Patient safety • Emergency medicine • Communication • Teamwork

KEY POINTS

- Emergency departments are high-risk practice environments, with a high rate of preventable adverse events.
- Teamwork and communication are key drivers for safe care.
- Best practices for improving patient safety can be framed around (1) cultivating safety culture, (2) implementing processes to improve patient safety, and (3) creating systems-based approaches to patient safety.

INTRODUCTION

The Institute of Medicine's (IOM) 1999 report, *To Err is Human: Building a Safer Health System*, increased awareness of medical errors in the United States, highlighting patient safety concerns as a serious public health issue. Based on 2 large retrospective studies, the report estimated 44,000 to 98,000 deaths per year in the United States occurring as a result of medical errors.[1]

- The Harvard Medical Practice Study, a population-based estimate of adverse events in hospitals in New York, found that adverse events occurred in 3.7% of hospitalizations, of which 27.6% were from negligence and 13.6% were fatal events.[2]
- The Colorado–Utah Study showed that adverse events occurred in 2.9% of nonpsychiatric hospitalizations. Of all the adverse events, 27.4% in Utah and 32.5% in Colorado were considered negligent adverse events. Approximately 9% of all negligent adverse events were fatal.[3]

Both studies reported that the emergency department (ED) had the highest proportion of adverse events caused by negligence.[2–4] Evidence suggests that between 6.0% and 8.5% of the patients who receive care in the ED experience an adverse

[a] Department of Emergency Medicine, Brigham and Women's Hospital, 75 Francis Street, NH-2, Boston, MA 02115, USA; [b] Massachusetts General Hospital, 55 Fruit Street, Bulfinch 290, Boston, MA 02114, USA
* Corresponding author.
E-mail address: dim@partners.org

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event.[5,6] The majority of adverse events occurring in the ED are believed to be preventable.[3,7] Caring for patients in the emergency setting is considered particularly prone to adverse events because of factors inherent to the task of delivering emergency care (summarized in **Table 1**). At all risk levels – provider, patient, and environmental levels—medical errors predominantly arise from system and process issues, rather than individual human failures.

Although the IOM report focused the attention of the US public on the magnitude of medical errors, it also created a window of opportunity to improve patient safety. Patient safety, defined as "the prevention of errors and adverse effects to patients associated with health care," has become a priority issue for health care professionals, policymakers, accrediting agencies, and patients and families.[20] Although medical errors can happen despite people's best efforts, health care professionals must be proactive about improving patient safety in the emergency care system.

FRAMEWORK FOR IMPROVING PATIENT SAFETY AND COMMUNICATION IN THE EMERGENCY DEPARTMENT

In this section, we propose a conceptual framework that describes the best practices for improving patient safety in the ED. The framework consists of 3 major domains: (1) cultivating safety culture, (2) implementing processes to improve patient safety, and (3) creating systems-based approaches to patient safety (**Fig. 1**).

Cultivating Safety Culture

Establishing safety culture is the basic foundation of achieving sustainable improvements in patient safety. Safety culture has been defined as "the product of individual and group beliefs, values, attitudes, perceptions, competencies, and patterns of behavior that determine the organization's commitment to quality and patient safety,"[21] with the goal of making patient safety everyone's highest priority.[22] The goal of a culture of safety is to make the ED a high reliability organization, an organization that can operate complex systems in a high-risk environment while maintaining very low rates of harm and errors.[23,24] High reliability organizations can strive for improvement in patient safety through a collective desire to achieve perfect while fostering mutual understanding among its members that a mishap can occur at any time, and that no one individual or organization is at fault when medical errors do occur.[23]

Table 1
Levels of risk factors associated with adverse events in the ED

Levels of Risks	Risk Factors
Provider level	Disrupted sleep cycle[8–12] Cognitive overload[13] Communication breakdowns with transfer of care/signout[11,14]
Patient level	Patient acuity and complexity, under unpredictable conditions[7] Language barriers[14,15] Medical illiteracy[14]
Environmental level	ED crowding[13,16] Inadequate post-ED care coordination[13,17] Frequent workflow interruptions[18] Time constraints[19]

Data from Refs.[8–19]

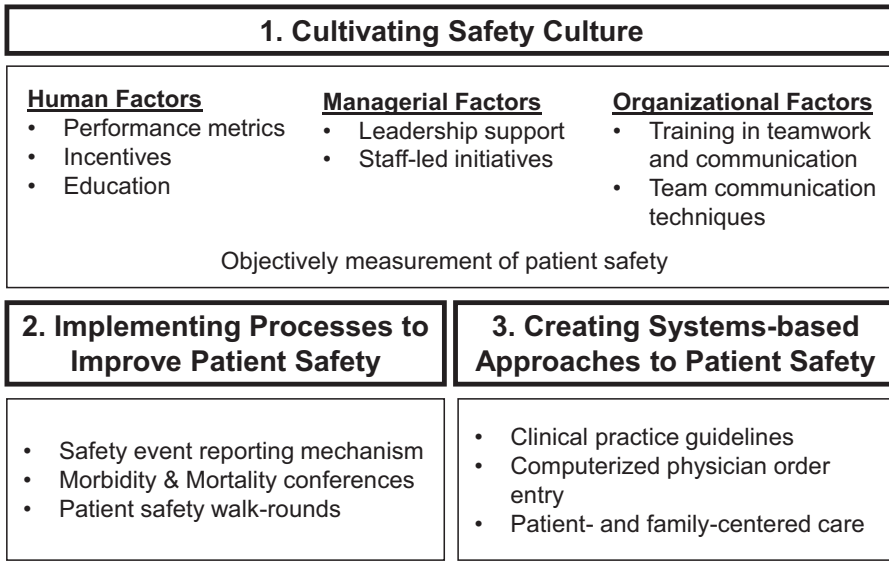

Fig. 1. Framework for improving patient safety in the ED.

A recent systematic review of the literature on safety culture in the ED revealed 3 main factors influencing safety culture: (1) human factors, (2) managerial factors, and (3) organizational factors.[25] By breaking down how safety culture in the ED is shaped by these 3 factors, we can develop strategies to cultivate safety culture.

Human factors include perception of the ED staff toward patient safety and the systems in place to prevent errors.[25] It is thought that individual factors such as job title, motivation, and number of years at work affect safety culture in the ED.[25,26] An effective way to enhance the perception of patient safety at the individual level is to provide performance metrics and incentives related to patient safety for all clinical and administrative ED staff.[23] Combined with tracking safety metrics and incentivizing improvements in patient safety, ED staff should be provided with education on core patient safety concepts and topics at orientation and through ongoing safety conferences or grand rounds.[23,25]

Managerial factors include leadership support and prioritization of patient safety.[25] Selecting a discussion of patient safety issues as the first agenda item at the health care organization governance meetings and department leadership meetings is one way to highlight the organization's prioritization of patient safety.[23] However, a top-down approach may be insufficient in strengthening the organization's culture of safety. A study comparing 2 approaches to improving patient safety culture—one led by the ED physicians and another led by external facilitators from the hospital leadership—showed that the ED staff-led initiative correlated with higher patient safety rating, as well as staff engagement and support.[27]

Organizational factors include the formal processes and structures that are specifically designed to promote patient safety and prevent errors.[25] Training in teamwork and communication is one concrete way to improve patient safety culture in the ED. When the team leader models mutual respect and emphasizes psychological safety, team members report a safer environment for patients.[28,29] Communication within the ED can encompass many domains, including handoff communication between services, communication within the ED between teammates, and communication between patients and families.

Handoff has been a time that has been noted to be particularly high risk in emergency medicine.[30–32] System factors, such as those related to the clinical environment and the interprofessional relationships, as well as personal factors and training all likely play a role in exacerbating these challenges.[33] As such, opportunities to improve communication at the time of transition exist through both formal trainings and the new frameworks.[33] Among handoff communication frameworks that have been piloted in the ED are IPASS, the Targeted Solutions Tool, and the SBAR (situation, background, assessment, and recommendation).[34,35] These tools provide a framework for sharing critical information in a standard format (**Box 1**).[23,28,36] Interestingly, although many of the proposed communication tools stress the importance of verbal communication, there have also been exclusively electronic models of pass off proposed.[37] These asynchronous patient handoff processes are supported by structured electronic tools and offer a promising solution in the setting of ED overcrowding to ensure both efficiency and safety.

Communication between colleagues within the ED is also recognized as critical for patient safety. Examples of training curriculums that have been shown to be successful are Crisis Resource Management and Team Strategies and Tools to Enhance Performance and Patient Safety (TeamSTEPPS).[38] TeamSTEPPS used a 4-week training program designed to educate staff on how to communicate safety concerns and report errors and systems failures.[25,39,40] The program also focused on improving communication skills by facilitating group discussion with video vignettes to illustrate good communication skills and barriers to communication in the ED.[40] The implementation of TeamSTEPPS had a positive impact on perceived safety culture, decreased the number of communication-associated adverse events in the ED, and increased ED staff satisfaction and morale.[25,39,41] Another training program evaluated by Patterson and colleagues[42] incorporated a multidisciplinary simulation-based training module, which used video-based simulations to techniques to prevent medical errors, develop resilience and situational awareness, and master closed loop communication. This training module led to a statistically significant increase of patient safety knowledge among ED staff.[40,42] (see **Box 1**).

Patient safety culture should be measured objectively to assess its baseline and to monitor progress. One recommended tool for measuring patient safety in the ED is the validated Agency for Healthcare Research and Quality Survey on Patient Safety Culture.[43] The Agency for Healthcare Research and Quality Hospital Survey on Patient Safety Culture was developed using an iterative expert-based process with a review of the literature and other existing safety culture surveys.[44] Its survey items have demonstrated validity and reliability.[43] The survey includes a total of 51 items, measuring 12 composites that provides a level of detail that helps organizations

Box 1
SBAR (Situation, Background, Assessment, Recommendation) framework for communication between members of the health care team

S (Situation): Provide a concise statement of the problem

B (Background): Share pertinent information about the situation

A (Assessment): Articulate the analysis of the problem

R (Recommendation): Provide recommendations and actions required

Data from Institute for Healthcare Improvement (IHI). SBAR: Situation-Background-Assessment-Recommendation. Boston MA; 2017.

identify their areas of strengths and areas of improvement (Box 2). The survey is free and easily accessible, designed to be administered to all types of staff, including clinical and nonclinical staff in the ED. Health care organizations can voluntarily submit their survey data to the Agency for Healthcare Research and Quality Surveys on Patient Safety Culture Databases, which serves as central repositories and allows comparisons of survey results.

Implementing Processes to Improve Patient Safety

Safety culture is bolstered by nonpunitive processes that are designed to encourage approaching patient safety systematically. These processes are implemented to standardize continuous improvement in patient safety.

A well-studied process is a voluntary safety event reporting mechanism for staff to share their concerns.[45,46] The main purpose of safety event reporting is to learn from experience by analyzing adverse or near-miss events, leading to systematic change to prevent recurrences. Moreover, an aggregate voluntary reporting system can identify trends or recurrence of errors, thereby prompting the development of best practices to decrease future risks.[47] For a voluntary safety reporting system to be effective, it should be readily accessible and easy for staff to use to increase participation. An incident reporting program in the ED that implemented a campaign describing the importance of reporting while emphasizing the possibility of anonymous reporting, 24 hours/7 days a week open telephone reporting service, and feedback on analysis findings to all ED staff resulted in a statistically significant increase in reporting by the ED staff.[40,48] Feedback to the reporter is important for addressing concerns with potential solutions and for encouraging future reporting.[23] Developing a clearly stated and timely process for addressing safety event reports is important. In addition, a voluntary

Box 2
Twelve composites of the Agency for Healthcare Research and Quality Hospital Survey on Patient Safety Culture

1. Communication openness
2. Feedback and communication about error
3. Frequency of events reported
4. Hospital handoffs and transitions
5. Hospital management support for patient safety
6. Nonpunitive response to error
7. Organizational learning—continuous improvement
8. Overall perceptions of safety
9. Staffing
10. Supervisor/manager expectations and actions promoting patient safety
11. Teamwork across hospital units
12. Teamwork within units

Adapted from Sorra J, Gray L, Streagle S, et al. AHRQ Hospital Survey on Patient Safety Culture: User's Guide. Rockville, MD: Agency for Healthcare Research and Quality; January 2016. https://www.ahrq.gov/sites/default/files/wysiwyg/professionals/quality-patient-safety/patientsafetyculture/hospital/userguide/hospitalusersguide.pdf. Accessed September 29, 2019. With permission.

safety reporting system should prioritize the standardization of structured analysis and a nonpunitive peer review process of incident reports. A study that evaluated the effectiveness of a standardized, nonpunitive peer review process of incident reports showed that the monthly frequency of reporting increased over time, when compared with an analysis of incident reports by a single reviewer.[49] It is also recommended that information reported to internal and external review groups should not be discoverable in civil or legal actions.[23]

Morbidity and mortality conferences (M&M) are an important forum for formal debriefing and review of medical errors and quality issues in patient care in a systematic manner.[50] M&M also foster professional growth and responsibility while influencing practice change. M&M are perceived as important didactic tools in emergency medicine residency and are an Accreditation Council for Graduate Medical Education requirement.[51] A key to successful M&M is to create a supportive, inclusive environment that encourages opportunities to debrief challenging events.[44] Rather than focusing on individual performance and minimizing fear of blame or criticism, M&M should increase participants' comfort with openly discussing medical errors and brainstorm systematic approaches to decrease risks and avoid similar adverse events. Some of the elements of emergency medicine M&M that foster a strong culture of safety include the use of nonpunitive methods for case review, formal debriefing with staff involved in presented cases, conference formats that use anonymous case reporting, and follow-up of concrete actions taken to address systems issues.[52,53]

Implementation of patient safety walk-rounds (PSWs) has been shown to create a culture in which every team member feels comfortable to speak up about safety concerns. PSWs were originally developed to create open lines of communication about patient safety concerns and to help health care organization leaders to learn from front-line staff how to decrease the risk of medical errors.[54] On PSWs, clinical and operational leaders walks around care areas and talk directly with staff from all disciplines. In 1 study, PSWs implemented in the ED, performed by a physicians and 2 staff nurses, were found to be effective in increase in medication near-miss incident reports (44% increase) and in hand hygiene compliance within the ED (23% increase).[55] The experience of regular PSWs is thought to help bridge the gap between ED leadership and front-line staff perspectives on patient safety.[23,55]

Creating Systems-Based Approaches to Patient Safety

The last domain of the patient safety framework involves creating structural mechanisms to support a systems-based approaches to patient safety. This approach acknowledges that health care providers can make mistakes and their limitations should be accounted for in the design of the health care system.

To limit clinical practice variability in areas for which best practice has been defined on the basis of scientific evidence and expert consensus, the ED can develop and implement multidisciplinary evidence-based clinical practice guidelines for emergency care. The IOM defines clinical practice guidelines as "statements that include recommendations intended to optimize patient care that are informed by a systematic review of evidence and an assessment of the benefits and harms of alternative care options."[56] The implementation of clinical practice guidelines also can be tied with quality improvement initiatives as evidence-based recommendations form the basis of measurable standards for patient care. When considering the implementation of clinical practice guidelines, strategies to encourage the use of guidelines need to be considered. A review of 59 published evaluations of clinical practice guidelines showed that providing patient specific advice at the time of decision making, such

as at the time of entering orders, is the most effective way to increase provider engagement and compliance.[57] Clinical practice guidelines must be reviewed and updated when new evidence suggests the need for consideration of clinically important recommendations.[56]

Electronic health records that integrate a computerized physician order entry (CPOE) system can also help to decrease errors. CPOE refers to the process of health care providers entering and sending patient care orders using a computer application.[58] A CPOE can serve as a platform that incorporates clinical practice guidelines. It can also provide timely clinical decision support that can provide treatment advice and automatically check for medication allergies, drug interactions, and other potential medical errors.[23,58] Studies examining the impact of CPOE implementation on patient safety showed that medication delivery error can be minimized by up to 80%.[59,60]

Last, the ED should prioritize integration of patient- and family-centered care. There are many barriers to forming partnerships with patients and families in the ED, such as the acute nature of medical needs, overcrowding, and the lack of a previous relationship between the patient and health care professionals. To overcome these myriad challenges, several training curriculums and core tenants of communication in the ED have been discussed in the literature that have focused on standardized introductions, fostering collaboration through empathy, acknowledgment of patients' emotions, reflective listening, and expectation setting.[61,62]

In addition, language barriers can prohibit health care providers from providing patient- and family-centered care while putting patients at a significantly increased risk for adverse events.[15] A study in 2014 found that the 3 common causes for medical errors related to language barriers were when (1) family members, friends, or nonqualified staff serve as interpreters, (2) cultural beliefs and traditions influence health care delivery, and (3) clinicians with insufficient language proficiency try to communicate without qualified interpreters.[59] Medication reconciliation, patient discharge, and informed consent were situations in which adverse events were mostly likely to occur owing to language barriers. The risk for adverse events can be decreased by providing patients and emergency care providers with timely access to qualified language translation support.[15]

SUMMARY

The ED is a complex environment, prone to risky decisions and medical errors, but staffed by dedicated professionals who strive to provide high quality care and improve patient safety. Since the IOM report in 1999, much has been learned about medical errors and how they are shaped by factors at the level of the provider, patient, and environment.

As more specialty boards incorporate quality improvement into maintenance of certification programs, health care professionals now understand and accept their role in proactively incorporating safety into their practice. The American Board of Emergency Medicine now requires clinically active American Board of Emergency Medicine-certified physicians to complete 2 "patient care practice improvement" activities every 10 years.[63] Furthermore, emergency physicians are uniquely positioned to analyze the challenges in patient safety throughout health care systems and to lead multidisciplinary efforts in patient safety improvement.

The proposed framework in this review provides a roadmap that stakeholders can use to develop strategic plans for improving safety culture and patient safety in the ED, and strategies for engaging health care professionals in patient safety culture. Through collaborative efforts and strategies that incorporate evidence-based

practices, emergency physicians can take a leading role in improving patient care from the ED to the greater health care delivery system.

DISCLOSURE

The authors have nothing to disclose.

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