Ethics in the Pediatric Emergency Department: When Mistakes Happen

An Approach to the Process, Evaluation, and Response to Medical Errors

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Abstract: The emergency department (ED) is an environment that is conducive to medical errors. The ED is a time-pressured environment where physicians aim to rapidly evaluate and treat patients. Quick thinking and problem-based solutions are often used to assist in evaluation and diagnosis. Error analysis leads to an understanding of the cause of a medical error and is important to prevent future errors. Research suggests mechanisms to prevent medical errors in the pediatric ED, but prevention is not always possible. Transparency about errors is necessary to assure a trusting doctor-patient relationship. Patients want to be informed about all errors, and apologies are hard. Apologizing for a significant medical error that may have caused a complication is even harder. Having a systematic way to go about apologizing makes the process easier, and helps assure that the right information is relayed to the patient and his or her family. This creates an environment of autonomy and shared decision making that is ultimately beneficial to all aspects of patient care.

Key Words: medical error, transparency, error disclosure, apology

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"All men make mistakes, but a good man yields when he knows his course is wrong, and repairs the evil. The only crime is pride."
— Sophocles, Antigone.

You are working the overnight shift in the pediatric emergency department (PED). A known 13-year-old patient with insulin dependent diabetes mellitus is brought in to the department. Her parents state that she has been complaining of abdominal pain all day, and approximately 4 hours ago, she started vomiting. Her finger stick test result on arrival in the emergency department (ED) is 456 mg/dL. You are concerned that her glucose level is elevated, so you place an intravenous line, send off laboratory work, and ask the nurse to hang a liter of normal saline while the laboratory tests are pending. After a conversation with the patient's endocrinologist, you return to the room to reevaluate the patient. You explain to the family that after further hydration and some observation she should be able to go home. Unfortunately, she does not seem any better and has already vomited 2 additional times despite the fact that the 1-L bag hanging at her bedside is practically empty. It is your practice to review the medications and fluids hanging by your patient's bedside and on doing so, you notice that the fluid hanging is D5NS not normal saline.

In 1999, the Institute of Medicine (IOM) began a campaign with the goal of understanding and decreasing medical errors. The initial report estimated that at least 44,000 people, and perhaps as many as 98,000, die in hospitals each year as a result of medical errors.[1] Recent reevaluation revealed that the number of Americans who die because of medical errors is actually much greater, with an estimation between 210,000 and 400,000 annually. Statistically, this suggests that medical errors are the third largest cause of death in the United States, behind cancer and heart disease.[2] The big question and goal is can this number be decreased and if so, how.

An understanding of what may have led to a medical error is important to prevent future errors. The IOM defines a medical error as the failure of a planned action to be completed as intended or the use of a wrong plan to achieve an aim. This can occur through commission, an active error, or omission, a passive error. An error of commission is similar to what occurred with the patient previously described; commission means that a wrong action or an improperly performed action was completed. Errors of omission occur when evidence-based guidelines are not followed; an example of this is if a provider forgets to administer or prescribe a necessary medication. Both errors of omission and commission may potentially result in negative consequences for the patient, yet an event is considered a medical error independent of whether a negative consequence occurred.

Medical errors can be further broken down into 3 categories: serious errors, minor errors, and near misses. A serious error is an error that has the potential to cause permanent injury or transient but potentially life-threatening harm. A minor error is an error that does not cause harm or have the potential to cause harm. A near miss is an error that could have caused harm but did not reach the patient because it was intercepted. Serious, minor, or near-miss errors are all considered preventable adverse events and can be caused by an error or systems failure.[3]

The ED is a time-pressured environment. The ED physicians aim to rapidly evaluate and treat patients; we rely on our quick thinking and often use heuristics to assist in making a diagnosis. This type of thinking can lead to medical errors.[4,5] Systems in the ED are meant to minimize errors. An understanding of the way these systems work can help prevent potential system errors, and being alerted to the possibility of cognitive errors or quick thinking may help prevent future errors.

Cognitive errors are now at the forefront of the IOM's exploration of medical errors. In the IOM's recent updated report, cognitive or diagnostic errors are considered. A diagnostic error is defined as the failure to establish an accurate and timely explanation of the patient's health problem or communicate that explanation to the patient.[6] This concept can also be translated as the concept of shared decision making — clinicians are encouraged to partner with their patients when creating a medical plan as well as to teach and encourage their patients to provide feedback.[7] These concepts are a step in the direction of error prevention. In the ED, these ideas along with other research aim to minimize errors.

Understanding the cause of error is the first step in fixing it. An analysis of errors in the ED reveals that most errors occur on

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evening and night shifts. Generally, errors are due to an incorrect dose of a medication or the wrong medication. The cause of these errors is often directly related to an incorrect recording of patient weights or the failure to note a drug allergy, so it is not unexpected that the most frequent cause of medication error in the PED is overdose.[8] The ED staff is often unfamiliar with the unique needs of pediatric patients. Medication errors have been shown to be multifactorial. Among the common causes are performance or knowledge deficits, miscommunication, computer entry error, or calculation error.

What are some methods that a PED might be able to use to limit medication error? Pediatric patients often cannot communicate for themselves, therefore parents should be encouraged to advocate for their child's needs. The use of oral syringes to accurately administer medication is not only helpful in the PED, but it teaches parents proper dosing methods, which can then be translated to home use. Limiting the dose strengths of medications and in particular high-alert medications available in the PED helps staff carefully and correctly calculate medication doses. Critically ill children should have a dosage calculation sheet attached to their bed or medical record. Development of preprinted medication order forms as well as clinical pathways to reflect standardized approaches help staff gain comfort with infrequently used medications or patient presentations. A pharmacist is a luxury in the ED, but in every hospital, a practitioner trained in pediatrics should be appointed to pharmacy committees.[9]

Even in the most accurate and cautious PED, errors occur. Transparency about errors is important to assure a trusting doctor-patient relationship. Physicians are often uncomfortable with this level of transparency. In one third of the cases reviewed, the family was not made aware of the error. This is a new expectation, and many physicians are not at ease with and have never been trained in error disclosure. The persona of the physician is as a paternalistic source of medical information and advice, therefore admitting to fault does not come easy. Physicians often presume that error disclosure will increase the risk of a malpractice lawsuit.[10] For this reason, the American Medical Association (AMA), American College of Emergency Physicians, and the Joint Commission (formerly known as JCAHO) all support or have policies that encourage medical error disclosure.[11,12]

The modern concept of ethics in the practice of medicine was shaped by Sir Thomas Percival. The AMA in 1847 used Percival's code of medical ethics as a significant source when their code of medical ethics was established. One of the concepts that Percival focused on was that of truth telling, transparency, and disclosure. “Let no self-deception be permitted in the retrospect; and if errors either of omission or commission are discovered, it behooves that they should be brought fairly and fully to the mental view. Regrets may follow, but criminality will thus be obviated.”[13] This clause is known as the Percival “forgive and remember principle.” The concepts of admitting, reviewing, and explaining a medical error are ingrained in hospital medicine's concept of morbidity and mortality rounds, yet taking this to the next level and assuring full disclosure to the patient (and/or his or her parent) is a newer idea in medicine.

The AMA's most recent revision of its code of medical ethics states that physicians need to inform patients so that patients can understand the error that has occurred. This allows the patient to participate in informed decision making about subsequent management of his or her health. Individual autonomy and self-determination are important in Western society. Involving an individual in his or her medical decision making or shared decision making has become inherent in medical care. Error disclosure goes hand in hand with shared decision making — the patient is not always familiar with the medical processes, and only through open and honest communication will the patient gain a better understanding and be an active participant in the decision-making process. Full disclosure will improve the doctor-patient relationship — the patient will gain a more trusting relationship through open and honest communication.[14] Shared decision making is also a way of offering nondisclosure. Some patients may express that they do not want to hear detailed information about a mistake. In this case, the patients' autonomy should be respected, and details should not be forced on them.

Physicians are used to being the guiding force in their patient's medical care, so when a mistake is made, it weighs heavily on the treating doctor. Unfortunately, medical errors, like all other human fallacies, are inevitable. Physicians cannot be expected to be perfect, yet studies show that when physicians use their emotions to cope with mistakes, they respond with fear, guilt, anger, embarrassment, and humiliation. To avoid these emotions, physicians tend to use a problem-focused coping mechanism rather than an emotional one.[15]

There are 6 basic steps that can help doctors accept and appropriately cope with their mistakes:

1. Accept responsibility
2. Discuss with colleagues
3. Disclose and apologize to the patient
4. Conduct an error analysis
5. Make changes in local practice to reduce future errors
6. Work at local and national level to change the culture of the medical profession with regard to mistakes

The first 2 steps often are the most helpful to the medical team. Errors occur, and through accepting and evaluating why they occurred, future mistakes can often be prevented. Approaching errors in this way is useful to all team members and with all aspects of medical errors.

What about disclosure and apology? Do physicians feel comfortable with this step? Do patients really want to hear about mistakes their doctor made? A survey of physicians done in 2006 measured what respondents would disclose in different situations: physicians were less inclined to disclose errors that would not be apparent to the patient unless health care workers pointed out the mistake. Yet, patients want to be informed about all errors, not just those that are harmful to them.[15] In the PED, this must be approached differently. Not all patients in the PED are developmentally capable of understanding a disclosure. Generally, medical errors should be disclosed to those who are developmentally appropriate; the exact age is a challenge, but generally, a mean age of 12 to 15 years coincides with the basic maturity to begin to understand these concepts. If a child seems within an applicable age range, the pediatrician and the patient's parents should decide together whether to disclose.[16] Each occurrence should be assessed individually, but general consensus is that even in the PED, error disclosure and apology is a must.

When confronted with the concept of apology, physicians often balk. Significant concerns exist. Physicians worry that apology will tarnish their reputation and increase their risk of malpractice law suits. In fact, the likelihood of being sued falls by 50% when an apology is offered as soon as a mistake is noticed.[17] Historically, error disclosure and specifically apology became standard medical practice many years ago. In 2001, the Joint Commission began to require disclosure of unanticipated outcomes. The National Quality Forum endorsed full disclosure of unanticipated outcomes in 2006. Seven states now mandate disclosure of unanticipated outcomes, and 36 states have enacted laws that preclude some or all information used in a practitioner's apology from being used in a malpractice lawsuit.[18]

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Apologies are always hard. Apologizing for a significant medical error that may have caused a complication is even harder. Having a systematic way to go about apologizing makes the process easier, and helps assure that the right information is relayed to the patient and his or her family. Begin your discussion with regret; an expression of regret tells the patient and parents that you recognize their fear, anxiety, and pain. It could go something like this: "I am sorry this happened. It is not what either of us wanted or expected, and I need to tell you how sorry I am."

Next is acceptance of responsibility. It falls to the attending physician to accept responsibility for errors made by any of his or her team members. This includes medical learners such as medical students and residents as well as other team members such as nurses. Conveying that you are responsible for your patient's care and that you will get to the bottom of how this error happened while working to ensure that it does not happen again composes part of that leadership role. This is important to patients and their families and helps them recognize that the situation is being taken seriously.[19]

The development of root cause analysis has given physicians an understanding of how hospital systems deal with medical error occurrence. Yet, immediately after an error, it is often unclear when the failure occurred or what systems may have contributed to error. For medical providers, delaying judgment or deferring to administration may seem the natural response, but whether patients or their families will demonstrate the same thoughtful restraint cannot be assumed. When confronted with a medical error, patients and their families may feel unsafe. Providers may be tempted to reassure patients through a demonstration of mastery of the situation and attempt to explain what exactly had gone wrong. At this early stage, physicians must be cautious about attempting to identify specific cause to the patient. Premature explanations can contain incorrect information, and such an action could seriously harm team dynamics and violate patient trust in the care team as inconsistencies between a physician's reassurances and reality come out. Statements to the effect of "we are working hard to identify how this happened" or "all levels of what happened here will be closely investigated to get to the bottom of this error," are both reassuring and do not overreach the knowledge or comfort level of the emergency physician.

The concept of remedy often comes up as the next step. This element includes discussing both medical and financial remedies. It is often important to contact other hospital staff members such as an administrator and risk management before beginning this aspect of the discussion with the patient and his or her family. Familiarity with your hospital or institution's policy in such situations cannot be overstated because often, these questions will arise in the same conversation as disclosure. For example, "Please do not worry about your condition or the expenses associated with whatever care you need. The hospital will take care of you and any consequences of this event." Evidence is mounting that when the patient does not face a financial burden after a medical error, he or she is less likely to seek compensation in the courts.

Finally, the medical team must remain engaged. Too often after an adverse event, complication, or medical error, the providers want to disengage from the patient and the family. The patient must not feel abandoned by the provider. Providers must understand that apologizing and accepting responsibility for the patient is distinct from an admission of guilt, both from the perspective of the law and in its effect on the patient-doctor relationship. Your presence as the patient's provider is paramount to his or her interpretation of his or her stressful experience with medical error. Being easily accessible and making the time you spend with the patient and his or her family convey as much connectedness as possible will serve to strengthen the patient-doctor relationship at the time it is most threatened. Techniques such as sitting down in the room, maintaining comfortable eye contact, and speaking with the patient at a level of complexity he or she is familiar and comfortable with are effective tools and are increasingly recognized as educational milestones for the training of medical professionals.[20,21] This can be particularly difficult for the emergency physician whose scope of care ends at the ED doors or on transition to inpatient care. Communication with the floor team or phone calls to the family or patient to check on progress are important.[22]

Back to the Case

You recognize the error and begin by stopping the D5NS. Without leaving the room, you sit down and explain the incorrect fluids and their possible role in the patient's state. You express your apologies. Immediately, they demand to know how this could happen, and an air of accusation for their daughter's prolonged symptoms dominates the conversation, but with your reassurance and clear expression of the plan to alleviate her symptoms, they accept your apology for now. You alert your administrator on call and round up the ED staff, explaining the error and emphasizing careful actions until an official departmental debrief can occur. You check on your patient and her family frequently throughout the rest of her stay and explain to them there will be an analysis to prevent such an error from occurring again. Her repeat finger stick test results stabilize in the normal range, and she feels ready to go home. As you return to the room to discharge her and remove her intravenous line she and her parents apologize for their initial reaction and thank you for your transparency and availability.

The ED is the third most likely site for significant errors to occur, second only to the operating room and the patient's hospital room. Compared with the total time spent in each arena, the risk of harm in the ED is disproportionate to the other settings.[23,24] Reducing error is a priority for all members of the medical field; however, error cannot be eliminated. Avoidable and unavoidable mistakes will naturally occur in the course of care in any setting, and the PED is no exception. Mistakes by the medical team can occur at any stage, and practicing physicians must act fittingly to best represent the face of health care immediately after an event. Physician response can be both calculated and heartfelt to initiate a positive course for both the patient's and physician's recovery — through methodical coping mechanisms and maintaining a strong patient-doctor connection with disclosure, apology, administrative support, and transparency.

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