

# High stakes and high emotions: providing safe care in Canadian emergency departments

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**Background:** The high-paced, unpredictable environment of the emergency department (ED) contributes to errors in patient safety. The ED setting becomes even more challenging when dealing with critically ill patients, particularly with children, where variations in size, weight, and form present practical difficulties in many aspects of care. In this commentary, we will explore the impact of the health care providers' emotional reactions while caring for critically ill patients, and how this can be interpreted and addressed as a patient safety issue.

**Discussion:** ED health care providers encounter high-stakes, high-stress clinical scenarios, such as pediatric cardiac arrest or resuscitation. This health care providers' stress, and at times, distress, and its potential contribution to medical error, is underrepresented in the current medical literature. Most patient safety research is limited to error reporting systems, especially medication-related ones, an approach that ignores the effects of health care provider stress as a source of error, and limits our ability to learn from the event. Ways to mitigate this stress and avoid this type of patient safety concern might include simulation training for rare, high-acuity events, use of pre-determined clinical order sets, and post-event debriefing.

**Conclusion:** While there are physiologic and anatomic differences that contribute to patient safety, we believe that they are insufficient to explain the need to address critical life-threatening event-related patient safety issues for both adults and, especially, children. Many factors make patient safety during critical medical events distinct from general patient safety issues, but it is, perhaps, this heightened high-stress, emotional climate that is the most distinct and important part of all. We believe that consideration of this concept is essential when discussing safety improvement in critical medical events.

**Keywords:** emergency department, pediatrics, patient safety, distress

## Background

High-stakes health conditions and their attendant care scenarios can lead to enhanced stress for all emergency department (ED) health care providers. Examples of such scenarios can include the care of critically ill children, cardiac arrest resuscitation, and dealing with family member death notification.<sup>1-4</sup> Critically ill children, in particular, seem to engender a strong emotional reaction; when children are sick or injured, the medical staff need to care not only for the child, but also the family.<sup>5</sup>

The high-paced, unpredictable environment of the ED can lead to increased general concerns regarding patient safety, and specifically, cognitive errors of omission and commission.<sup>6-8</sup> In fact, the ED has been described as a "natural laboratory for the study of error".<sup>9</sup> The unpredictable nature of the ED becomes even more challenging when dealing with the critically ill patient, particularly with children, where variations in

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size, weight, and form present practical difficulties for many aspects of care, including neuro-developmental assessment, intravenous access, and medication dosing.<sup>10,11</sup> This layers even more decision density to an already emotionally charged situation,<sup>12</sup> and the resulting high stress situation may affect critical decision making. In this commentary, we will explore the impact of health care providers' emotional reactions while caring for critically ill patients, and how this can be interpreted and addressed as a patient safety issue.

## Hypothetical case for discussion

Jane is a healthy two-year-old girl. She is brought by her parents after they witnessed multiple brief seizures at home. The convulsing recurs in the car, and she is actively seizing when she arrives in the ED. She looks ashen and cyanotic and has critically abnormal vital signs. Of the three nurses on duty, only one has previous pediatric experience. Jane's parents and sister arrive with her; the mother is wailing, the sister is white-faced and tense, and the father is pacing and frantically asking the care team to "do something, anything to save my little girl". During the resuscitation, there is delay and some confusion relating to the appropriate dose of benzodiazepine, and in the process of leaving the room to check and get the medications prepared, two nurses give the same dose independently, resulting in respiratory failure, and the need for urgent intubation.

It would be expected that such a clinical scenario would induce stress in the health care providers involved. This health care provider stress, and, at times, distress, and its potential contribution to medical error, is underrepresented in the current medical literature. A large proportion of emergency care in Canada is delivered in community based EDs. Health care providers working in these EDs may infrequently encounter critically ill patients and rarely treat children with severe, life threatening pediatric emergencies.<sup>13</sup> These high-stakes situations, their potential rarity, and the requirement for highly protocolized care was one of the reasons that initiatives such as the Advanced Trauma Life Support and Pediatric Advanced Life Support programs were developed. These programs advocate for a series of consistent steps that decrease the decision density during these stressful medical events.<sup>14,15</sup>

Health care providers' emotional response to a patient may also influence medical decision-making in high-stakes scenarios, a type of cognitive decision making bias Croskerry has termed "visceral bias".<sup>12</sup> He states "when our viscera are aroused we do not make good decisions", and suggests that health care providers need to monitor their affective state as a matter of professional responsibility. Croskerry warns

that health care providers' emotional reactions to a patient can lead to adverse clinical outcomes. We contend that the caregiver's emotional state in high-stress care situations is, in and of itself, likely contributing to error, and that this is rarely addressed in health care provider training. In a medical error and stress study of the attitudes of nurses, residents, and attending physicians, 70% of all medical respondents agreed that "my decision making ability is as good in medical emergencies as in routine situations".<sup>16</sup> In general, only a minority of respondents openly recognized the effects of stress on performance, despite its effects on performance being well-recognized in both the aviation and medical world.<sup>16</sup> Put another way, there is a disconnect between health care providers' perceived ability to provide consistent care, and the greater rates of error seen in higher stress situations compared to those that are less emergent.<sup>17</sup>

Most patient safety research is limited to error reporting systems, especially medication-related ones. In our hypothetical case, it would be quite possible to label the double-dosing of the benzodiazepine as a simple medication dosing error, but this would be ignoring the effects of health care provider stress as a source of error that could be mitigated. This approach limits our capacity to fully learn from this event. Recognizing the role of emotions and stress on clinical decision making and performance may lead to the consideration of other relevant mitigating strategies. Examples of such strategies might include limits on shift duration, consideration of shift timing and team composition, and basic awareness training for providers on the impact of emotion on information processing.<sup>17,18</sup>

The overarching context of our hypothetical case is the high-stakes, emotionally stressful climate of emergency care. This is further exemplified in the emergency treatment of children, in particular. This high-stakes, emotionally stressful climate is comprised of the responsibility for sick or injured children felt by both parents and professionals; the knowledge that acute care given to children can affect their lives for decades to come (ie, 'life lost'); and the fact that children are often accompanied to the ED by family members who may, themselves, be experiencing significant anxiety and distress. In child health care, "the parents are entrusting the doctor with the wellbeing of their most cherished and precious possession".<sup>5</sup> An indelible characteristic of providing health care to children is the inherent trust placed in those who deliver it.

There are some possible ways to mitigate the clinicians' high stress in these cases. Two Canadian studies have shown that the use of a preprinted, dedicated order sheet is associated with a decrease in the risk of error in critical care

provision.<sup>19,20</sup> Secondly, there is a role for simulation-based education and outreach to help prepare providers for high acuity, relatively infrequent events.<sup>21,22</sup> Simulation likely plays an important role in such training, not only for the acquisition of medical skills and knowledge, but also for learning teamwork and communication strategies that may help prevent errors from occurring. Finally, this case raises the importance of debriefing after such incidents, as this type of critical incident can have lasting effects on the health care team members.<sup>23,24</sup>

## Conclusion

The general patient safety literature already includes analysis of factors such as patient size variation, pediatric differences from adult anatomy, and potential complications involving both equipment size and administration of medications. Conjoined with these variables is the specificity of clinical knowledge required to address them routinely. These are the physiologic and anatomic differences that contribute to patient safety; however, we believe that they are insufficient to explain the need to address critical life-threatening event-related patient safety for both adults and, especially, children. Many factors make patient safety during critical medical events distinct from general patient safety issues, but it is, perhaps, this heightened high-stress, emotional climate that is the most distinct and important. We believe that consideration of this concept is essential when discussing safety improvement in critical medical events. Further qualitative research to understand the impact of emotions and stress on medical decision making, and the testing of preventative interventions such as clinical decision tools and simulation training are necessary steps in improving safe care in the acute care setting.

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## Disclosure

The authors report no conflicts of interest in this work.

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