



# Trauma-Informed Care for Violently Injured Patients in the Emergency Department

Kyle R. Fischer, MD, MPH\*; Katherine M. Bakes, MD; Theodore J. Corbin, MD, MPP; Joel A. Fein, MD, MPH; Erica J. Harris, MD; Thea L. James, MD; Marlene D. Melzer-Lange, MD

\*Corresponding Author. E-mail: [kfischer@som.umaryland.edu](mailto:kfischer@som.umaryland.edu), Twitter: @KBFischer.

Violent traumatic injury remains a common condition treated by emergency physicians. The medical management of these patients is well described and remains an area of focus for providers. However, violently injured patients disproportionately carry a history of physical and psychological trauma that frequently affects clinical care in the emergency department. The alteration of our clinical approach, taking into consideration how a patient's previous experiences influence how he or she may perceive and react to medical care, is a concept referred to as *trauma-informed care*. This approach is based on 4 pillars: knowledge of the effect of trauma, recognition of the signs and symptoms of trauma, avoidance of retraumatization, and the development of appropriate policies and procedures. Using this framework, we provide practical considerations for emergency physicians in the delivery of trauma-informed care for violently injured patients. [Ann Emerg Med. 2019;73:193-202.]

0196-0644/\$-see front matter

Copyright © 2018 by the American College of Emergency Physicians.

<https://doi.org/10.1016/j.annemergmed.2018.10.018>

## INTRODUCTION

An 18-year-old man is brought to the emergency department (ED) by private vehicle. He has a gunshot wound to the abdomen, with an open wound near the umbilicus, so he is taken directly to a trauma bay. The patient is clearly upset, telling the nurses and physicians that he was walking on the street when he was shot by someone he did not see. The patient says that he has been shot once before, and was taken to this same hospital, where he received bilateral chest tubes without any sedation. The physician nods, records in the medical record that the history was limited by the patient's lack of cooperation and agitation, and proceeds to intubate the patient in preparation for surgery. Shortly afterward, several of his friends and family members arrive, asking to see him.

## Background

Emergency physicians treat violent injury regularly and skillfully. However, many patients' injuries are preceded by unknown past traumatic experiences. These can consist of physical injury, abuse, neglect, sexual assault, or other similarly traumatizing events. Thus, the use of the word *trauma* to solely refer to physical injuries is incomplete. As defined by the Substance Abuse and Mental Health Services Administration, trauma is "an event, series of events, or set of circumstances that is experienced by an individual as physically or emotionally harmful or life threatening and that has lasting adverse effects on the individual's functioning and mental, physical, social, emotional, or spiritual well-being."<sup>1</sup>

In the ED, obtaining a complete history of traumatic experiences may not be possible or even appropriate. However, when present, these events may affect the patient-physician relationship and create pitfalls to derail it. Additionally, in the midst of an acute injury, patients can simultaneously exhibit psychiatric or behavioral responses in reaction to previous traumatic experiences. With this in mind, the optimal treatment for the injured patient goes beyond medical resuscitation, a concept known as *trauma-informed care*.

Trauma-informed care for violently injured patients is understood through a set of principles rather than a single definition. The word *trauma* in trauma-informed care does not refer to solely physical injuries but to any harmful physical, psychological, or emotional injuries a patient may have experienced. Accordingly, the Substance Abuse and Mental Health Services Administration recognizes 4 guiding principles for providing trauma-informed care: realize the widespread influence of trauma and understand potential paths for recovery; recognize the signs and symptoms of trauma in clients, families, staff, and others involved with the system; respond by fully integrating knowledge about trauma into policies, procedures, and practices; and actively seek to resist retraumatization.<sup>2</sup> Although this article uses "peer violence" to illustrate this concept, the approach can be applied to other scenarios, such as human trafficking<sup>3</sup> and intimate partner violence,<sup>4</sup> and to other at-risk populations.<sup>5</sup>

Research on trauma-informed practices is presently in early stages. Thus, some have argued existing data are

insufficient to promote trauma-informed care models above specific patient needs or social services.<sup>6</sup> Others note that resistance from some concerned misapplication could lead to a patronizing approach to patient care.<sup>7</sup> Still, early findings suggest that integration of trauma-informed principles into emergency care can improve bedside quality of care and long-term patient outcomes. This review will describe the Substance Abuse and Mental Health Services Administration's guiding principles in a manner that allows practitioners to understand the scope of trauma, recognize its signs and symptoms, and implement both clinical and systems-based responses.

## THE WIDESPREAD SCOPE OF TRAUMA

The Centers for Disease Control and Prevention estimates that 17,793 Americans died from homicide in 2015.<sup>8</sup> This number is dwarfed by the more than 1.5 million nonfatal assault injuries treated in the same year.<sup>8</sup> Interpersonal violence is not distributed evenly across the population; instead, it clusters geographically in socioeconomically disadvantaged urban neighborhoods.<sup>9-11</sup>

This pattern leads to significant health disparities. Overall, the rate of homicide among blacks is 665% higher than that of whites.<sup>12</sup> For injury survivors, data show that an assault is likely a symptom of a larger pattern, rather than a chance event. In a systematic review, Greene<sup>13</sup> identified 19 studies examining the prevalence of repeated violent injury. The median violent recidivism rate was 27.3% and the highest 61.5%.

These injuries create an enduring influence on physical and emotional health.<sup>14</sup> Acute stress disorder and posttraumatic stress disorder are common sequelae of all forms of injury.<sup>15</sup> One study of gunshot wound survivors found that more than 80% reported symptoms of moderate to severe posttraumatic stress, 39% with severe intrusive thoughts and 42% with severe avoidance behaviors.<sup>16</sup> These symptoms match those experienced after other forms of trauma, such as sexual assault,<sup>17</sup> highlighting the broad applicability of trauma-informed practices.

Recurrent trauma is magnified in many US communities. Research suggests blacks have a higher lifetime prevalence of posttraumatic stress disorder compared with other ethnic groups, even after controlling for socioeconomic, clinical, and social support factors.<sup>18</sup> One illustrative example from a predominantly black Detroit neighborhood showed that 87% of community members had been exposed to at least one traumatic event, and 17% met criteria for probable posttraumatic stress disorder.<sup>19</sup> For comparison, the annual prevalence of

posttraumatic stress disorder in the United States is approximately 2.5%.<sup>20</sup>

With recurrent trauma, the modern understanding of *posttraumatic* stress is less clear because individuals may not have a defined period “pre” and “post” trauma. One study of violently injured patients showed 50% with preinjury adverse childhood experience scores of 4 or greater, demonstrating a large burden of preexisting trauma.<sup>21</sup> Subsequent to the injury, the same patients risk repeated injury and other forms of trauma.

Despite this, disproportionately affected communities often lack access to psychiatric services, and those that are available are poorly tailored to their needs.<sup>22</sup> Frequently, this results in self-treatment of symptoms, particularly with alcohol or cannabis. Individuals with hyperarousal symptoms commonly use marijuana in an effort to diminish symptoms.<sup>23,24</sup> Similar usage is observed with individuals experiencing sleep difficulties.<sup>25</sup>

Emergency care providers experience trauma in their own lives as well. Unfortunately, this often occurs in the workplace. Providers commonly receive or witness verbal abuse, threats, or personal assault while delivering clinical care.<sup>26,27</sup> Such “vicarious trauma,” or “secondary traumatic stress,” can manifest as posttraumatic stress symptoms in a caregiver. Not surprisingly, a study of ED nurses demonstrated high levels of secondary traumatic stress symptoms, particularly arousal symptoms such as irritability and hypervigilance.<sup>28</sup>

Beyond secondary traumatic stress, providers risk developing compassion fatigue: diminished or lost ability to be compassionate in the clinical setting.<sup>29</sup> Research on the phenomenon is limited in emergency physicians.<sup>30,31</sup> However, physicians with compassion fatigue experience irritability with patients, a reduced level of care, and increased mistakes.<sup>30</sup> Some have found that access to mentorship, support from supervisors, and a positive departmental culture may mitigate compassion fatigue.<sup>29</sup> Planned debriefings after adverse outcomes have also been proposed.<sup>32</sup>

To ameliorate these risks, provider wellness should be prioritized, especially after patient deaths. Clinicians often experience grief themselves after the loss of a patient.<sup>33</sup> Occasionally, intense “breakthrough experiences” might occur as a result of unexpected, personalizing patient details; for example, the death of a young patient of similar age to the provider's child. Given the variability and unpredictability of grief, provider support should be personalized. In particular, medical students report “extremely inadequate support” after emotionally powerful deaths.<sup>34</sup> Among residents, 40% do not feel well prepared to manage their own feelings.<sup>35</sup> Thus, attending physicians

should consider their role in promoting the well-being of all care team members. Depending on the intensity of an individual's emotional response, helpful strategies could range from a debriefing, a brief break, or even consideration of activating an on-call colleague to take over the remainder of the shift.

One brief intervention is the use of a "pause" after traumatic patient care scenarios, such as an unsuccessful resuscitation. A pause allows the team to acknowledge the deceased patient and the team's feelings of loss. By taking a moment to think of the dead person as a brother, sister, or son and to consider the meaning of that person's life, team members have the opportunity to support one another and foster a caring culture.<sup>36</sup> Helpful phrases to use are found in Figure 1.

## RECOGNIZING THE SIGNS AND SYMPTOMS OF TRAUMA

Trauma causes neurobiologic changes and psychosocial effects in *all* victims.<sup>37-40</sup> This can manifest in a variety of ways that can be understood through the classically taught "fight or flight" response, with either positive (fight) or negative (flight) symptoms (Figure 2).<sup>41,42</sup> When physicians recognize behavioral manifestations of trauma as predictable responses to emotional pain, it allows the opportunity to counsel patients on their symptoms, communicate effectively, and better tailor the care plan. It also decreases the risk of inadvertently retraumatizing patients, which can threaten the patient-physician relationship and diminish the patients' feeling of safety.<sup>39</sup>

Acute stress symptoms often arise soon after the assault, demonstrated by a lack of focus and attention. This response can mimic symptoms of physical injury, such as acute brain injury.<sup>43</sup> Alternatively, emotional numbing can be interpreted as the patient's being uncooperative or avoidant. In either situation, considering the presence of acute stress symptoms may help physicians better develop communication and treatment strategies to navigate a frequently difficult clinical scenario.

Another common acute stress reaction is hyperarousal. This fight or flight response may result in "jumpiness," or overreaction. Often, it can lead to screaming, cursing, or

| Helpful Phrases During Debriefing                                                                                                            |
|----------------------------------------------------------------------------------------------------------------------------------------------|
| "I would like to take a brief moment for us to reflect on the loss of our patient."                                                          |
| "Even though we do not know him personally, he is a member of our community, with friends and family who will now grieve."                   |
| "Everyone should feel free to offer any words of remembrance if they'd like."                                                                |
| "We might all experience this death differently. Some might be sad. Some might be angry. Some might feel nothing. All reactions are normal." |
| "I'm available to offer support. Please let me know if you'd prefer to speak privately."                                                     |

**Figure 1.** Helpful phrases during debriefing.

## Signs and Symptoms of Trauma

### Positive Symptoms

Hyperarousal

Hypervigilance

Aggression

Anxiety

### Negative Symptoms

Withdrawal

Depression

Emotional Numbing

Loss of empathy

**Figure 2.** Signs and symptoms of trauma.

physical aggression, and careful de-escalation while protecting staff members from harm is imperative. Physicians should ensure that staff and patient safety is the top priority and public safety officers should be used when needed. Physicians should feel empowered to use their clinical judgment and always err on the side of caution with a safety-first response.

In making this decision, physicians should consider how a "show of force" could have benefits and risks like other medical interventions. Particularly in patients with previous trauma, this technique can exacerbate a patient's feeling of fear, hopelessness, and vulnerability, paradoxically escalating traumatic stress symptoms.<sup>39</sup> A first step in these situations is to assess whether a patient is truly uncooperative and threatening versus manifesting signs of trauma. The threatening patient will likely require security personnel, whereas one who is emotionally distressed may be amenable to de-escalation.

As a general rule for agitated patients, to avoid contributing to psychological trauma, use of the least restrictive measures possible is recommended.<sup>44</sup> That said, an important factor in this decision is a physician's comfort in patient de-escalation. Some aspects of de-escalation are relatively uncomplicated, such as maintaining a safe, nonthreatening physical distance from the patient, using simple language, and offering patients choices. However, other aspects are more complex, 10 domains of the process having been identified (Figure 3).<sup>45</sup> This suggests de-escalation is a skill that can be improved with education and practice.

Of course, de-escalation will not always be successful. If a patient demonstrates escalating hostility or disrespect, the provider may need to step out for advice, remove himself or herself from the situation, or use security personnel. When

**10 Domains of De-Escalation**

1. Respect personal space
2. Do not be provocative
3. Establish verbal contact
4. Be concise and repeat yourself
5. Identify wants and feelings
6. Listen closely to the patient
7. Agree or agree to disagree
8. Set clear limits
9. Offer patient choices
10. Debrief the patient and staff

**Figure 3.** Ten domains of de-escalation.

this occurs, providers should receive positive emotional support because they might see the interaction as a sign of their own inadequacy rather than the symptom of a greater social dynamic.

Physicians should set positive examples of compassionate trauma-informed care and consciously set expectations for the entire team. They have the opportunity to set the tone for ideal patient care, as well as break any myths or unhelpful behaviors that may have been modeled by earlier teachers. It is likely that many staff members are unaware of the behavioral and psychological signs and symptoms of trauma, making education and open communication necessary. This awareness is critical because any team member can potentially relieve or exacerbate traumatic experiences.

Intersecting with chronic traumatic stress and violent injury is the reality that violent acts are inherently unlawful, bringing attitudes in regard to police and the justice system into the ED. Liebschutz et al<sup>46</sup> studied black male victims of violence and found that they have a blurred perception of the lines between health care providers and police officers. In communities that mistrust law enforcement officers, by association, victims of urban violence can hold similar feelings toward health care institutions.

Perhaps as a result of police distrust, some communities have adopted a culture of self-policing. Many victims of violence live in urban areas where the “code of the streets” dictates how one must respond to threats of aggression.<sup>47</sup> Fundamental to this code is respect, to which personal assault represents a significant violation. An aggressive response after assault helps the individual regain respect; failure to do so, or “allowing yourself to be disrespected,” is thought to risk revictimization.<sup>48</sup> As a result, patients may arrive in the

ED primed to perceive interactions as signs of additional disrespect. In response, they might assume aggressive postures in an attempt to regain the feeling of physical or psychological safety, increasing the importance of providers’ maintaining a calm, empathetic demeanor.

The code might also influence information that is shared during the clinical history. For example, explicitly asking the perpetrator’s identity is unlikely to yield an answer. A response of “some dudes I don’t know” is common because patients probably believe answering this line of questioning truthfully would be a form of “snitching” (ie, acting as an informant against the perpetrator).<sup>49</sup> People who snitch often face retaliation and are at risk of violence or community ostracization. If the physician misinterprets this dynamic as poor cooperation or hostility, it can lead to interrogation-style questioning that will impede the therapeutic relationship.

**CLINICAL CARE IN TRAUMA**

For patients, the ED experience can seem fragmented and chaotic. There are large teams with new faces, confusing medical jargon, and perhaps the fear of being judged. Some patients will be confronted with past negative experiences: the illness or death of a loved one, visits for violent injuries, or negative interactions with staff or police. The sights, sounds, smells, and procedures can all precipitate stress reactions. Thus, in addition to appropriately treating physical symptoms, clinicians and staff must use a deliberate trauma-informed approach to promote a culture of empathy and safety for all.

Given the relative infancy of trauma-informed care in emergency medicine, it is likely that many concepts will be new or even in contradiction to lessons taught or observed in medical training. For example, providers might recall instances of unprofessional behavior or rude comments targeting violently injured patients. Stereotypes such as the “knife and gun club” of trauma centers is one such example.<sup>50</sup> Simple reflection on past experiences allows providers to reassess the utility of previously learned behaviors and practices.

Insensitive behaviors can be rooted in both implicit and explicit biases held by members of the health care team. All human beings hold some biases, either known or unconscious. Thus, providers should reflect on the attitudes and judgments they bring to different individuals and clinical scenarios because these factors affect patient interactions. We recommend that staff members participate in self-assessments to bring unconscious biases to light.<sup>51</sup> Online tools such as Project Implicit<sup>51</sup> are freely available for this purpose.

One bias facing injured patients is that those with gunshot or stab wounds may be stigmatized as “bad people.” Although it is true that there is some overlap between violently injured patients and those who have previously committed violent behaviors,<sup>52</sup> it is not universal and reinforces the need for professionalism in all patient encounters. Patients might perceive the presence of bias if they overhear language considered to be “labeling,” such as the term *gangbanger*. This situation creates obvious impediments to the therapeutic relationship. Physicians should model patient-centric language and provide feedback to other staff members as appropriate. Sensitive modeling is paramount to guiding the entire ED team toward trauma-informed care.

Vocabulary and body language matter greatly when providers care for injured patients who have experienced previous trauma. Sincere, empathetic communication is critical. Even subtle phrases can be retraumatizing, and well-intentioned statements can easily be misinterpreted. For example, an offhand question such as “What’d you get yourself into today?” could lead patients to assume that the provider blames them for their own injury. On the other hand, saying, “I am sorry this happened to you. Can you tell me how it happened?” confers a sense of advocacy and engenders trust.

In a more difficult situation, a provider might respond to an agitated patient with a flippant response, such as “You’re not so tough.” This exchange highlights the patient’s vulnerability and perception of incapacitation, risking confrontation and increased aggression rather than a compliant response. Subtle gestures are equally important. For example, providers should not force patients to look them in the eye when speaking. Patients often avoid eye

contact as a protective mechanism or to show deference, rather than intending aggression or disrespect. Forced eye contact can be perceived as an act of dominance or aggression.<sup>53</sup>

In general, trauma-informed communication requires reflection on how previous experiences influence the way patients and staff interact. Physicians should be attentive to patients’ triggers, focusing on their demeanor, speech, and even pulse rate. As appropriate, these observations should be shared with others on the care team. Because communication is bidirectional, clinicians should take time to understand their own triggers. Overall awareness of these factors will provide additional tools for effective communication despite limited knowledge of a patient’s previous trauma.

It is paramount for clinicians to create a safe and trusting environment. Patients and families who experience unanticipated, threatening injuries feel helpless and uncharacteristically out of control. Although the expectation of safety is assumed by physicians, it may be helpful to have an explicit conversation that expresses the ED as a secure location, protected from the assailant(s) and anyone else involved in the violent incident.

A number of well-studied approaches have been developed to ameliorate traumatic stress symptoms during and subsequent to the ED visit. In addition to medical and surgical care, the overall strategy to decrease the immediate stress response and prevent the development of posttraumatic psychological symptoms can be found in psychological first aid: connectedness, calmness, safety, structure, self-efficacy, and hope.<sup>54,55</sup> Examples of how psychological first aid may be used are provided in the [Table](#).

**Table.** Examples of psychological first aid in the ED.

| Goals         | Useful Statements or Actions                                                                                                                                                                                                                                                                                                                                                                                                                         |
|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Connectedness | Assign a single team member to be the primary source of communication with the patient: “I am going to stay and help you with everything you go through here.”<br>For pediatric patients, if feasible, allow parental presence and support.                                                                                                                                                                                                          |
| Calmness      | Minimize presence of nonparticipatory members of the care team.<br>Avoid excess noise/chatter.<br>Encourage the patient to perform slow breathing exercises.                                                                                                                                                                                                                                                                                         |
| Safety        | Provide patient a simple reminder that he or she has been removed from the site of injury: “You are in the safest place you could be right now.”                                                                                                                                                                                                                                                                                                     |
| Self-efficacy | Discuss care plan with patient to diminish sense of loss of control.<br>Use language that acknowledges rather than undermines the patient’s defense mechanisms; for example, “You are going through a tough situation” rather than “Tough it out.”<br>If feasible, allow patients to provide input into decisions about care.<br>Identify resources (eg, case management, community organizations) that can facilitate recovery after stabilization. |
| Hope          | Avoid statements that may exacerbate patient feelings of self-blame.<br>Provide realistic statements of expected positive outcomes: “It will not be easy or fast, but I expect you will recover from your injuries.”                                                                                                                                                                                                                                 |

Finally, beyond its role in standard clinical care, adequate pain control after acute injury helps prevent the development of traumatic stress symptoms.<sup>56,57</sup> Addressing and reassessing pain throughout a patient’s stay both maximizes comfort and provides the opportunity to build trust through concrete examples of empathetic care. Furthermore, research suggests that blacks are less likely to receive prompt analgesia compared with other ethnic groups.<sup>58</sup> Because this same group is disproportionately victimized by violent injury, pain control may be a simple, tangible area in which to improve patient care.

Although a historical context helps explain why violent injuries occur disproportionately in urban communities, there is no standard required medical curriculum about the social determinants of health.<sup>59,60</sup> Additionally, this training gap may be magnified by cultural barriers when ED teams do not demographically represent the communities they serve. This may be more pronounced in specific vulnerable subpopulations. For example, immigrants and undocumented patients may face language barriers and fear bias or even deportation.<sup>61</sup> Hospital and ED leaders can improve patient care by thoughtfully identifying gaps in knowledge and undertaking deliberate efforts to create a diverse, culturally sensitive workforce (Figure 4).<sup>62</sup>

Hospital culture and policies often interact with patients’ previous traumatic experiences. For example, ED policies express various degrees of support for parents, significant others, family, and friends to accompany patients.<sup>63</sup> Often-cited reasons include safety, crowd control, or request by police for investigations. These well-intended policies may backfire by limiting visitors who can provide emotional support for the patient. Furthermore, if the policies are not universally enforced, patients or their families may notice discrepancies and view them as evidence of bias.

Given that police officers are called to scenes involving intentional injuries, they can complicate care for violently injured patients. If a patient has an unrelated outstanding

arrest warrant or undergoes questioning, he or she can exhibit fear or distrust. Similarly, personnel might be uncomfortable balancing confidentiality and law enforcement request for patient access. In other scenarios, physicians have a legal duty to contact law enforcement or social service agencies for suspicious injuries or other mandatory reporting requirements.

Interventions that prevent and ameliorate posttraumatic stress symptoms are being recognized increasingly by clinicians, researchers, and medical organizations such as the American College of Surgeons and the American College of Emergency Physicians (ACEP). The American College of Surgeons’ publication *Resources for Optimal Care of the Injured Patient* states that “[e]arly screening and referral for psychotherapy and pharmacologic treatment of posttraumatic stress disorder and related comorbid depression following injury have the potential to improve symptomatic and functional outcomes. The incorporation of routine trauma center–based screening and intervention for posttraumatic stress disorder and depression is an area that could benefit from the ongoing integration of emerging data and evolving expert opinion.”<sup>64</sup>

Hospital-based violence intervention programs use a public health approach to provide equitable trauma-informed care to patients and families affected by violence. These programs originated in the 1990s, and they have since proliferated, with 34 programs currently recognized worldwide as part of the National Network of Hospital-based Violence Intervention Programs.<sup>65</sup> These programs serve as models for trauma-informed systems.

Hospital-based violence intervention programs are founded on the premise that violence must be treated simultaneously through 2 lenses: the biomedical model and the public health model. The biomedical model recognizes the chronicity of trauma, whereas the public health model aims to reduce upstream risk factors while enhancing protective factors. With this in mind, a central tenet of hospital-based violence intervention programs is that a violent injury offers the opportunity to capitalize on a teachable moment, when patients recognize the consequences of risky behaviors and are amenable to considering healthier life choices.<sup>66</sup>

Data bear out this concept: as many as 95% of violently injured patients agree to participate in hospital-based interventions.<sup>67</sup> Although hospital admission may facilitate engagement with these interventions, the majority of at-risk patients are not admitted to the hospital.<sup>68,69</sup> Given that violent injury is itself a risk factor for recurrent trauma, the ED is a critical location to begin intervention.<sup>69,70</sup> Severity of illness and logistic issues often limit the intensity of initial engagement in the ED. However, hospital-based

| Trauma-informed Systems                                                                                   |
|-----------------------------------------------------------------------------------------------------------|
| <b>Education</b>                                                                                          |
| Incorporate education on the social determinates of health into medical school and residency training     |
| Incorporate trauma-informed care into continuing medical education offerings                              |
| Provide deescalation training to medical and non-medical support staff (nursing, security personnel, etc) |
| <b>Patient Care</b>                                                                                       |
| Develop routine screening protocols for PTSD/ASD in violently injured patients                            |
| Ensure longitudinal patient care using hospital-based violence intervention programs                      |
| Develop action plans to support providers experiencing vicarious trauma                                   |
| Ex: Planned debriefs, supported breaks from patient care, "on-call" activation for severe grief reactions |
| <b>Institutional</b>                                                                                      |
| Examine hiring practices if hospital and community demographics are malaligned                            |
| Ensure visitation policies balance security with patient support                                          |
| Ensure visitation policies are consistent (ex: medical vs trauma floors)                                  |
| Establish clear guidelines for staff interaction with law enforcement officers                            |

**Figure 4.** Trauma-informed systems. PTSD/ASD, Posttraumatic stress disorder/acute stress disorder.

violence intervention programs strive to begin the intervention as early as possible, and all programs can use the ED for patient screening and enrollment. An illustrative example is the Healing Hurt People program in Philadelphia, which maintains a robust ED presence.

At its core, the structure of hospital-based violence intervention programs is simple. A multidisciplinary team cares for patients beginning at their arrival to the ED and continues the care longitudinally to comprehensively address the patient's medical, psychological, and social needs.<sup>66</sup> The team typically consists of an emergency physician, trauma surgeon, or both; case manager; social worker; mental health professional; and a culturally competent violence intervention specialist.

Violence intervention specialists are typically individuals who have community credibility and are trained to provide trauma-informed crisis intervention and long-term case management.<sup>69,71</sup> Their work is critical to quickly establish patient trust and secure program participation. During the initial bedside intervention, they identify any risk of imminent danger from retaliatory violence. This risk can be reduced through a range of strategies from de-escalation procedures to detailed safety planning and case management. Additionally, intervention specialists act as trusted connections between the patient and the medical team. This enhances communication and increases the ability to address concerns for the patient and family.

After a phase of crisis management and safety planning, patients receive a comprehensive needs assessment, often revealing a diversity of needs. During a 10-year period, one program found that the most frequently needed services were for mental health (51%), victim-of-crime compensation (48%), employment (36%), and housing (30%).<sup>72</sup> In addition to facilitating access to these services, intervention specialists are often trained in posttraumatic stress disorder, motivational interviewing, and basic cognitive behavioral therapy.

Early research shows promising results that hospital-based violence intervention programs have the potential to prevent repeated violent injuries. One ED-based randomized controlled trial found that 8.1% of participants were subsequently violently reinjured compared with 20.3% of controls.<sup>73</sup> One review found similarly encouraging results in the areas of reinjury, retaliation, and substance use postinjury.<sup>74</sup> However, further research is necessary because the existing literature is limited. Several evaluation challenges exist, including long-term patient follow-up, intervention funding, and ethical challenges surrounding study designs.<sup>75</sup> Still, programs continue to undergo rigorous evaluations.<sup>76</sup> If future research confirms the utility of hospital-based violence intervention programs,

physicians will still need to advocate program funding. Although preliminary research suggests hospital-based violence intervention programs to be cost-effective over time, start-up costs of approximately \$350,000 will likely remain a barrier.<sup>77</sup>

## CONCLUSION

Emergency physicians are at the forefront of the violence epidemic and can be powerful voices to ensure all patients receive equitable care. Here, we provide a framework for providing high-quality, trauma-informed care and highlight opportunities for the ED to promote physical and emotional healing. To do so, providers must recognize the widespread effect of trauma, model empathetic nonjudgmental care, and advocate culturally appropriate and equitable institutional policies.<sup>1</sup>

In their roles, emergency personnel witness the cycle of violence and experience its psychological consequences.<sup>78</sup> As victims themselves, emergency staff can experience significant burnout that can lead to mental health crises, high staff turnover, and poor patient experience.<sup>79,80</sup> Thus, a robust response to trauma requires a focus on both patients and providers. One promising approach is the use of hospital-based violence intervention programs as a venue to share trauma-informed practices to help patients and staff alike. Intervention specialists can assist staff in communicating effectively with victims of violence, helping providers feel more positive about these patient interactions while delivering culturally sensitive care.<sup>81</sup>

Overall, emergency physicians should seek to understand trauma in the context of each patient's life story while also recognizing the effect of their own trauma on the care they provide. Physicians can elevate the care of violently injured patients by becoming skilled trauma-informed providers, advocating resources to address trauma in their communities, and developing local systems, such as hospital-based violence intervention programs, that increase patient access to critical mental health and social services.

An alternative course of the case vignette we presented might be this: An 18-year-old man is brought to the ED by private vehicle. He has a gunshot wound to the abdomen and is taken directly to a trauma bay. The patient is upset, telling the nurses and physicians that he was walking on the street when he was shot by someone he did not see. The physician listens to the patient's concerns and verbalizes that feeling anger is normal, but he is now in a safe environment: the ED. The patient states his only medical history is a previous gunshot wound and that he occasionally uses alcohol and marijuana. Physical examination reveals a wound near the umbilicus and scars consistent with previous

chest tubes. During the assessment, the physician orders an appropriate dose of opioid analgesia. The patient is informed that his injury will require surgery, and the physician asks whether he has any questions or concerns before sedation. The patient requests that his family be informed of his condition and states he is ready to proceed. Intubation is successful, and the patient proceeds to the operating room. After a successful operation, the patient enrolls in a hospital-based violence intervention program. In the program, the patient recognizes symptoms of posttraumatic stress disorder and begins treatment for substance abuse and posttraumatic stress.

*The authors acknowledge Linda J. Kesselring, MS, ELS, for copyediting the article.*

*Supervising editor:* Megan L. Ranney, MD, MPH

*Author affiliations:* From the Department of Emergency Medicine, and University of Maryland School of Medicine, Baltimore, MD (Fischer); the Department of Emergency Medicine, University of Colorado School of Medicine, Denver, CO (Bakes); the Department of Emergency Medicine, Drexel University College of Medicine, Philadelphia, PA (Corbin); the Departments of Pediatrics and Emergency Medicine, Perelman School of Medicine, University of Pennsylvania, Philadelphia, PA (Fein); the Department of Emergency Medicine, Einstein Medical Center Philadelphia, Philadelphia, PA (Harris); the Department of Emergency Medicine, Boston Medical Center/Boston University School of Medicine, Boston, MA (James); and the Department of Emergency Medicine, the Medical College of Wisconsin, Milwaukee, WI (Melzer-Lange).

All authors attest to meeting the four [ICMJE.org](https://www.icmje.org) authorship criteria: (1) Substantial contributions to the conception or design of the work; or the acquisition, analysis, or interpretation of data for the work; AND (2) Drafting the work or revising it critically for important intellectual content; AND (3) Final approval of the version to be published; AND (4) Agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

*Funding and support:* By *Annals* policy, all authors are required to disclose any and all commercial, financial, and other relationships in any way related to the subject of this article as per ICMJE conflict of interest guidelines (see [www.icmje.org](https://www.icmje.org)). The authors are members of the National Network of Hospital-based Violence Intervention Programs. Dr. Fischer reports receiving consulting fees from Youth ALIVE!

*Publication dates:* Received for publication May 4, 2018. Revision received October 8, 2018. Accepted for publication October 11, 2018. Available online November 28, 2018.

## REFERENCES

1. Substance Abuse and Mental Health Services Administration. Trauma and violence. Available at: <https://www.samhsa.gov/trauma-violence>. Accessed December 1, 2017.
2. Substance Abuse and Mental Health Services Administration. Trauma-informed approach and trauma-specific interventions. Available at: <https://www.samhsa.gov/ntic/trauma-interventions>. Accessed May 4, 2018.
3. Hemmings S, Jakobowitz S, Abas M, et al. Responding to the health needs of survivors of human trafficking: a systematic review. *BMC Health Serv Res*. 2016;16:320.
4. Anyikwa VA. Trauma-informed approach to survivors of intimate partner violence. *J Evid Inf Soc Work*. 2016;13:484-491.
5. Marsac ML, Kassam-Adams N, Hildenbrand AK, et al. Implementing a trauma-informed approach in pediatric health care networks. *JAMA Pediatr*. 2016;170:70-77.
6. Scheeringa M. The myth of trauma-informed care. *Psychology Today*. Available at: <https://www.psychologytoday.com/blog/stress-relief/201803/the-myth-trauma-informed-care>. Accessed September 26, 2018.
7. Isobel S. Trauma informed care: a radical shift or basic good practice? *Australas Psychiatry*. 2016;24:589-591.
8. Centers for Disease Control and Prevention; National Center for Injury Prevention and Control. Web-based Injury Statistics Query and Reporting System (WISQARS). Available at: <http://www.cdc.gov/injury/wisqars>. Accessed September 30, 2017.
9. Ingram DD, Chen L-H. Age-Adjusted Homicide Rates, by Urbanization of County of Residence-United States, 2004 and 2013. 2015. Available at: <https://www.cdc.gov/mmwr/preview/mmwrhtml/mm6405a7.htm>. Accessed November 19, 2018.
10. Cusimano M, Marshall S, Rinner C, et al. Patterns of urban violent injury: a spatio-temporal analysis. *PLoS One*. 2010;5:e8669.
11. Newgard CD, Schmicker RH, Sopko G, et al. Trauma in the neighborhood: a geospatial analysis and assessment of social determinants of major injury in North America. *Am J Public Health*. 2011;101:669-677.
12. Centers for Disease Control and Prevention. CDC Health Disparities & Inequalities Report, US 2013 Fact Sheet. 2013. Available at: <https://www.cdc.gov/minorityhealth/chdiereport.html>. Accessed November 19, 2018.
13. Greene MB. Repeat injuries, variability and recommended research guidelines. Presented at: Healing Justice Alliance National Conference; August 22, 2016; Baltimore, MD.
14. Van der Kolk BA. *The Body Keeps the Score: Brain, Mind, and Body in the Healing of Trauma*. New York, NY: Penguin Books; 2015.
15. Wiseman T, Foster K, Curtis K. Mental health following traumatic physical injury: an integrative literature review. *Injury*. 2013;44:1383-1390.
16. Greenspan AI, Kellermann AL. Physical and psychological outcomes 8 months after serious gunshot injury. *J Trauma*. 2002;53:709-716.
17. Bisson JI, Cosgrove S, Lewis C, et al. Post-traumatic stress disorder. *BMJ*. 2015;351:h6161.
18. Alegría M, Fortuna LR, Lin JY, et al. Prevalence, risk, and correlates of posttraumatic stress disorder across ethnic and racial minority groups in the United States. *Med Care*. 2013;51:1114-1123.
19. Goldmann E, Aiello A, Uddin M, et al. Pervasive exposure to violence and posttraumatic stress disorder in a predominantly African American urban community: the Detroit Neighborhood Health Study. *J Trauma Stress*. 2011;24:747-751.
20. Karam EG, Friedman MJ, Hill ED, et al. Cumulative traumas and risk thresholds: 12-month PTSD in the World Mental Health (WMH) surveys. *Depress Anxiety*. 2014;31:130-142.
21. Corbin TJ, Purtle J, Rich LJ, et al. The prevalence of trauma and childhood adversity in an urban, hospital-based violence intervention program. *J Health Care Poor Underserved*. 2013;24:1021-1030.
22. Alegría M, Alvarez K, Ishikawa RZ, et al. Removing obstacles to eliminating racial and ethnic disparities in behavioral health care. *Health Aff (Millwood)*. 2016;35:991-999.
23. Buckner JD, Jeffries ER, Crosby RD, et al. The impact of PTSD clusters on cannabis use in a racially diverse trauma-exposed sample: an analysis from ecological momentary assessment. *Am J Drug Alcohol Abuse*. 2018;44:532-542.

24. Earleywine M, Bolles JR. Marijuana, expectancies, and post-traumatic stress symptoms: a preliminary investigation. *J Psychoactive Drugs*. 2014;46:171-177.
25. Bonn-Miller MO, Babson KA, Vandrey R. Using cannabis to help you sleep: heightened frequency of medical cannabis use among those with PTSD. *Drug Alcohol Depend*. 2014;136:162-165.
26. Lau JBC, Magarey J, Wiechula R. Violence in the emergency department: an ethnographic study (part II). *Int Emerg Nurs*. 2012;20:126-132.
27. Taylor JL, Rew L. A systematic review of the literature: workplace violence in the emergency department. *J Clin Nurs*. 2011;20:1072-1085.
28. Dominguez-Gomez E, Rutledge DN. Prevalence of secondary traumatic stress among emergency nurses. *J Emerg Nurs*. 2009;35:199-204; quiz 273-274.
29. Hamilton S, Tran V, Jamieson J. Compassion fatigue in emergency medicine: the cost of caring. *Emerg Med Australas*. 2016;28:100-103.
30. Dasan S, Gohil P, Cornelius V, et al. Prevalence, causes and consequences of compassion satisfaction and compassion fatigue in emergency care: a mixed-methods study of UK NHS consultants. *Emerg Med J*. 2015;32:588-594.
31. Belloio MF, Cabrera D, Sadosty AT, et al. Compassion fatigue is similar in emergency medicine residents compared to other medical and surgical specialties. *West J Emerg Med*. 2014;15:629-635.
32. Schmidt M, Haglund K. Debrief in emergency departments to improve compassion fatigue and promote resiliency. *J Trauma Nurs*. 2017;24:317-322.
33. Sansone RA, Sansone LA. Physician grief with patient death. *Innov Clin Neurosci*. 2012;9:22-26.
34. Rhodes-Kropf J, Carmody SS, Seltzer D, et al. "This is just too awful; I just can't believe I experienced that...": medical students' reactions to their "most memorable" patient death. *Acad Med*. 2005;80:634-640.
35. Sullivan AM, Lakoma MD, Block SD. The status of medical education in end-of-life care: a national report. *J Gen Intern Med*. 2003;18:685-695.
36. Bartels JB. The pause. *Crit Care Nurse*. 2014;34:74-75.
37. Wlassoff V. How does post-traumatic stress disorder change the brain. Available at: <http://brainblogger.com/2015/01/24/how-does-post-traumatic-stress-disorder-change-the-brain>. Accessed May 4, 2018.
38. Bremner JD. Traumatic stress: effects on the brain. *Dialogues Clin Neurosci*. 2006;8:445-461.
39. US Department of Health and Human Services, Substance Abuse and Mental Health Services Administration. *Trauma-Informed Care in Behavioral Health Services. Treatment Improvement Protocol (TIP) Series 57*. Rockville, MD: U.S. Department of Health and Human Services, Substance Abuse and Mental Health Services Administration, Center for Substance Abuse Treatment; 2014. HHS Publication No. (SMA) 13-4801.
40. Purtle J, Adams-Harris E, Frisby B, et al. Gender differences in posttraumatic stress symptoms among participants of a violence intervention program at a pediatric hospital: a pilot study. *Fam Community Health*. 2016;39:113-119.
41. Corbin TJ, Rich JA, Bloom SL, et al. Developing a trauma-informed, emergency department-based intervention for victims of urban violence. *J Trauma Dissociation*. 2011;12:510-525.
42. James TL, Bibi S, Langlois BK, et al. Boston Violence Intervention Advocacy Program: a qualitative study of client experiences and perceived effect. *Acad Emerg Med*. 2014;21:742-751.
43. Testa A, Giannuzzi R, Sollazzo F, et al. Psychiatric emergencies (part I): psychiatric disorders causing organic symptoms. *Eur Rev Med Pharmacol Sci*. 2013;17(suppl 1):55-64.
44. Abraham MK, Aquino PR, Kuo DC. Special considerations in trauma patients. *Emerg Med Clin North Am*. 2015;33:853-861.
45. Fishkind A. Calming agitation with words, not drugs: 10 commandments for safety. *Curr Psychiatr*. 2002;1:32-39.
46. Liebschutz J, Schwartz S, Hoyte J, et al. A chasm between injury and care: experiences of black male victims of violence. *J Trauma*. 2010;69:1372-1378.
47. Anderson E. *Code of the Street: Decency, Violence, and the Moral Life of the Inner City*. New York, NY: W W Norton & Co; 2000.
48. Rich JA, Grey CM. Pathways to recurrent trauma among young black men: traumatic stress, substance use, and the "code of the street. *Am J Public Health*. 2005;95:816-824.
49. Asbury BD. Anti-snitching norms and community loyalty. *Oregon Law Rev*. 2010;89:1257-1312.
50. Conniff R. UBI in the Knife and Gun Club. 2009. Available at: <https://www.smithsonianmag.com/arts-culture/ubi-in-the-knife-and-gun-club-140493319>. Accessed November 19, 2018.
51. Project Implicit. Available at: <https://implicit.harvard.edu/implicit/index.jsp>. Accessed April 8, 2018.
52. Cooper C, Eslinger DM, Stolley PD. Hospital-based violence intervention programs work. *J Trauma*. 2006;61:534-537; discussion 537-540.
53. Steuwe C, Daniels JK, Frewen PA, et al. Effect of direct eye contact in PTSD related to interpersonal trauma: an fMRI study of activation of an innate alarm system. *Soc Cogn Affect Neurosci*. 2014;9:88-97.
54. Pynoos RS, Nader K. Prevention of psychiatric morbidity in children after disaster. In: Shaffer D, Philips I, Enzer NB, eds. *OSAP Prevention Monograph-2: Prevention of Mental Disorders, Alcohol & Other Drug Use in Children & Adolescents*. Washington, DC: U.S. Government Printing Office; 1989:225-271.
55. Hobfoll SE, Watson P, Bell CC, et al. Five essential elements of immediate and mid-term mass trauma intervention: empirical evidence. *Psychiatry*. 2007;70:283-315.
56. Saxe G, Stoddard F, Courtney D, et al. Relationship between acute morphine and the course of PTSD in children with burns. *J Am Acad Child Adolesc Psychiatry*. 2001;40:915-921.
57. Stoddard FJ Jr, Sorrentino EA, Ceranoglu TA, et al. Preliminary evidence for the effects of morphine on posttraumatic stress disorder symptoms in one-to-four-year-olds with burns. *J Burn Care Res*. 2009;30:836-843.
58. Meghani SH, Byun E, Gallagher RM. Time to take stock: a meta-analysis and systematic review of analgesic treatment disparities for pain in the United States. *Pain Med*. 2012;13:150-174.
59. World Health Organization. About social determinants of health. Available at: [http://www.who.int/social\\_determinants/sdh\\_definition/en/](http://www.who.int/social_determinants/sdh_definition/en/). Accessed October 13, 2017.
60. Braveman P, Gottlieb L. The social determinants of health: it's time to consider the causes of the causes. *Public Health Rep*. 2014;129(suppl 2):19-31.
61. Portes A, Fernández-Kelly P, Light DW. Life on the edge: immigrants confront the American health system. *Ethn Racial Stud*. 2012;35:3-22.
62. Richardson LD, Babcock Irvin C, Tamayo-Sarver JH. Racial and ethnic disparities in the clinical practice of emergency medicine. *Acad Emerg Med*. 2003;10:1184-1188.
63. O'Malley P, Brown K, Mace SE. American Academy of Pediatrics Committee on Pediatric Emergency Medicine; American College of Emergency Physicians Pediatric Emergency Medicine Committee. Patient- and family-centered care and the role of the emergency physician providing care to a child in the emergency department. *Pediatrics*. 2006;118:2242-2244.
64. Rotondo MF, Cribari C, Smith RS. *Resources for Optimal Care of the Injured Patient*. Chicago, IL: American College of Surgeons; 2014.
65. National Network of Hospital-based Violence Intervention Programs. Available at: <http://nnhvip.org/>. Accessed March 22, 2018.
66. Karraker N, Cunningham RM, Becker MG, et al. Violence Is Preventable: A Best Practices Guide for Launching & Sustaining a Hospital-Based Program to Break the Cycle of Violence. 2011. Available at: <https://www.ncjrs.gov/App/Publications/abstract.aspx?ID=260856>. Accessed December 1, 2017.
67. Johnson SB, Bradshaw CP, Wright JL, et al. Characterizing the teachable moment: is an emergency department visit a teachable

- moment for intervention among assault-injured youth and their parents? *Pediatr Emerg Care*. 2007;23:553-559.
68. Snider CE, Lee JS. Emergency department dispositions among 4100 youth injured by violence: a population-based study. *CJEM*. 2007;9:164-169.
  69. Cunningham R, Knox L, Fein J, et al. Before and after the trauma bay: the prevention of violent injury among youth. *Ann Emerg Med*. 2009;53:490-500.
  70. Goins WA, Thompson J, Simpkins C. Recurrent intentional injury. *J Natl Med Assoc*. 1992;84:431-435.
  71. Martin-Mollard M, Becker M. Key Components of Hospital-based Violence Intervention Programs. 2009. Available at: <http://nnhvip.org/wp-content/uploads/2010/09/key.pdf>. Accessed December 1, 2017.
  72. Juillard C, Cooperman L, Allen I, et al. A decade of hospital-based violence intervention: benefits and shortcomings. *J Trauma Acute Care Surg*. 2016;81:1156-1161.
  73. Zun LS, Downey L, Rosen J. The effectiveness of an ED-based violence prevention program. *Am J Emerg Med*. 2006;24:8-13.
  74. Purtle J, Dicker R, Cooper C, et al. Hospital-based violence intervention programs save lives and money. *J Trauma Acute Care Surg*. 2013;75:331-333.
  75. Affinati S, Patton D, Hansen L, et al. Hospital-based violence intervention programs targeting adult populations: an Eastern Association for the Surgery of Trauma evidence-based review. *Trauma Surg Acute Care Open*. 2016;1:e000024.
  76. Drexel University Center for Nonviolence and Social Justice. Healing Hurt People evaluation. Available at: <https://drexel.edu/cnvsj/projects/healing-hurt-people-evaluation/>. Accessed September 26, 2018.
  77. Purtle J, Rich LJ, Bloom SL, et al. Cost-benefit analysis simulation of a hospital-based violence intervention program. *Am J Prev Med*. 2015;48:162-169.
  78. Crabbe JM, Bowley DMG, Boffard KD, et al. Are health professionals getting caught in the crossfire? the personal implications of caring for trauma victims. *Emerg Med J*. 2004;21:568-572.
  79. Wilson W, Raj JP, Narayan G, et al. Quantifying burnout among emergency medicine professionals. *J Emerg Trauma Shock*. 2017;10:199-204.
  80. Iacovides A, Fountoulakis KN, Kaprinis S, et al. The relationship between job stress, burnout and clinical depression. *J Affect Disord*. 2003;75:209-221.
  81. Weiss D, Kassam-Adams N, Murray C, et al. Application of a framework to implement trauma-informed care throughout a pediatric health care network. *J Contin Educ Health Prof*. 2017;37:55-60.

## Images in Emergency Medicine

The *Annals* Web site ([www.annemergmed.com](http://www.annemergmed.com)) contains a collection of hundreds of emergency medicine-related images, complete with brief discussion and diagnosis, in 18 categories. Go to the Images pull-down menu and test your diagnostic skill today. Below is a selection from the Trauma Images.



“Child With Dinner Fork Deformity” by Kardouni, February 2016, Volume 67, #2, pp. 165, 188.