



Trauma-Informed Care for Hospitalized Adolescents

Allison Fialkowski¹ · Katherine Shaffer¹ · Maya Ball-Burack¹ · Traci L. Brooks^{1,2} · Nhi-Ha T. Trinh^{1,3} · Jennifer E. Potter^{1,4,5} · Katherine R. Peeler^{1,6}

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Abstract

Purpose of Review Exposure to trauma accelerates during the adolescence, and due to increased behavioral and psychiatric vulnerability during this developmental period, traumatic events during this time are more likely to cause a lasting impact. In this article, we use three case studies of hospitalized adolescents to illustrate the application of trauma-informed principles of care with this unique population.

Recent Findings Adolescents today are caught in the crosshairs of two syndemics—racism and other structural inequities and the COVID-19 pandemic. Increased hospitalizations and mental health diagnoses during the past two years signal toxic levels of stress affecting this group. Trauma-informed care promotes health, healing, and equity.

Summary This concept of the “trauma-informed approach” is still novel; through examples and practice, providers can learn to universally apply the trauma-informed care framework to every patient encounter to address the harmful effects of trauma and promote recovery and resilience.

Keywords Adverse childhood experiences · Adolescent · Hospitalized · Patient-centered care · Feeding and eating disorders · Suicide

Introduction

Haley is a 19-year-old admitted to the pediatric floor after telling their roommate, “I am at the end of my line and can’t keep going.” Ryan is a 16-year-old hospitalized with anorexia nervosa. Emmanuel is a 13-year-old struggling with a new diagnosis of type 1 diabetes. Adolescents in similar

situations are currently well-represented in pediatric hospitals, with children’s mental health being a national emergency [1–3]. Any history of trauma may influence how these patients experience a hospitalization and can be compounded by trauma of the hospitalization itself.

This paper will review how trauma influences adolescents during hospitalization and how inpatient providers can utilize an understanding of the prevalence and impact of trauma to provide therapeutic care. After reviewing the impacts of trauma in this population and introducing the principles of trauma-informed care (TIC), we will use cases to discuss applying skills to the care of hospitalized adolescents in varying stages of development. Importantly, we aim to equip readers with strategies to **Realize** how trauma can affect an adolescent patient and their family, **Recognize** the signs of trauma in this population, **Respond** to trauma while an adolescent is hospitalized, and **Resist** further traumatization within an inpatient setting (the four “R’s” of TIC) [4].

Epidemiology of Trauma

Trauma is “an event, series of events, or set of circumstances an individual experiences as physically or emotionally

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✉ Katherine R. Peeler
katherine.peeler@childrens.harvard.edu

¹ Harvard Medical School, Boston, MA, USA

² Department of Pediatrics, Cambridge Health Alliance, Cambridge, MA, USA

³ Department of Psychiatry, Massachusetts General Hospital, Boston, MA, USA

⁴ The Fenway Institute, Boston, MA, USA

⁵ Division of General Medicine, Department of Medicine, Beth Israel Deaconess Medical Center, Boston, MA, USA

⁶ Division of Medical Critical Care, Boston Children’s Hospital, 300 Longwood Ave, Boston, MA 02115, USA

harmful that can have lasting adverse effects on the person's functioning and mental, physical, emotional, or spiritual well-being" [5•]. This definition encompasses individual traumas such as car accidents or the death of loved one; interpersonal traumas such as interpersonal violence, discrimination, or abuse; collective traumas such as natural disasters or pandemics; and structural traumas such as racism and sexism. Trauma can occur at any life stage. Roughly 90% of Americans have experienced at least one traumatic event in their lifetime, and 28.9% of youth have experienced at least one adverse childhood event (ACE) [6, 7]. Transgender and gender diverse adolescence have the highest rates of mistreatment, harassment, and violence in their home life, school, occupations, and interpersonal relationships; nearly half of these individuals have been sexually assaulted and 40% have attempted suicide in their lifetime [8]. In socio-economically disadvantaged communities, rates of trauma exposure have also been shown to be disproportionately higher [9, 10••]. In the USA, racial-based traumatic stress (the mental, emotional, spiritual, and physical injury that occurs as the result of living within a racist system or experiencing racism) [11] leaves Black, Indigenous People of Color (BIPOC) most vulnerable. Examples of individualized, interpersonal, and systemic racism afflicting trauma on a range of minority groups have persisted and continue to persist throughout this nation's history.

The COVID-19 pandemic represents a collectively experienced potentially traumatic stress in adolescents and children akin to the trauma of a natural disaster [12]. Stressors occurring during this time include prolonged home confinement, school interruptions, worry for loved ones, unexpected illnesses and death, mental healthcare disruptions, and economic instability [13, 14]. These challenges have had the potential to exacerbate any number of individual traumas, including identity crises and family conflicts [15]. Notably, adolescents have experienced the results of governments and communities failing to address the impact of structural violence and racism. Though the full extent of the impact of racism and other structural inequities, as well as the effects of COVID-19 pandemic, on developing youth has yet to be quantified, increased hospitalizations and diagnoses suggest that anxiety, fear, anger, loneliness, and grief associated with these events has led to toxic stress for many adolescents [16••, 17, 18].

Exposure to many types of trauma accelerates and peaks in the teenage years [19]. Traumatic experiences cluster such that adolescents exposed to one event are at an increased risk for additional ACEs [20]. Trauma during the impressionable periods of childhood and adolescence is strongly associated with worse mental and physical health outcomes as well as high-risk adolescent behavior and functional impairment [20–22]. Trauma can directly interfere with the core objectives of adolescence: (1) biological and sexual maturation,

(2) development of a personal identity, (3) establishment of intimate sexual relationships, and (4) establishment of independence and autonomy in the context of the sociocultural environment [23].

Trauma-Informed Care

Recurrent exposure to trauma is correlated with increased behavioral and psychological symptoms in adolescents (see Fig. 1) [24]. Medical interventions themselves have the potential to be traumatic for patients and families [25]. TIC is a strength-based approach “grounded in an understanding of and responsiveness to the impact of trauma, that emphasizes physical, psychological, and emotional safety for both providers and survivors, and that creates opportunities for survivors to rebuild a sense of control and empowerment” [26]. The core goals of TIC are to (1) reduce re-traumatization, (2) highlight survivor strengths and resilience, (3) promote healing and recovery, and (4) support the development of healthy short- and long-term coping mechanisms [27]. In the context of all patients, but especially pediatric patients, this framework must be applied to both the patient and their family.

The Substance Abuse and Mental Health Services Administration (SAMHSA) has developed a framework outlining six key-principles of TIC: (1) safety; (2) trust and transparency; (3) peer support; (4) collaboration and mutuality; (5) empowerment, voice, and choice; and (6) cultural, gender, and historical issues [4]. Examples of using TIC in caring for adolescents can map directly to these principles. For example, to ensure safety, medical staff can ask a patient's preference about where procedures should be performed, thus protecting the patient's bed as a place of healing. To ensure trust and transparency, clinicians should provide early and honest discussion with adolescents about their differential diagnoses and ultimate diagnosis [28]. We acknowledge that many providers may feel underprepared to address patients' trauma histories and the possibilities of de novo and re-traumatization [29]. Skills of TIC can be learned, and increased dexterity with principles of TIC takes time and repetition [30]. In the following three cases, we will continue to discuss how to incorporate principles of TIC in the care of all hospitalized adolescents (Table 1).

Case One: a Case of Intentional Ingestion

Haley is a 19-year-old college student (they/them pronouns) with a history of major depressive disorder who was admitted to the pediatric service after an intentional overdose of bupropion.

On the day of admission, Haley had told their roommate, “I am at the end of my line and can't keep going anymore.”

	Piaget's Cognitive Stages ⁶²	Erickson's Psychosocial Stages ⁶³	Relationship with Caregiver ⁶⁴	Pertinent Trauma Symptoms ^{65*}	Trauma-Informed Responses ⁴⁸
Adolescence	Concrete Operational (7-11 yo) - Can think logically about objects and events	Task: Industry vs. Inferiority (5-13 yo) Associated virtue: Competency "How can I be good?"	Begins a period of separation and detachment from caregiver Adolescents begin to ask for more autonomy and independence	Worries/fears of specific situations Change in continence (ex. new bedwetting) Over/under reliance on caregiver Nightmares or sleep problems Perfectionism Risk taking in excess of peers Self-destructive behaviors Academic performance changes Difficulty maintaining friendships	Hold conversations about diagnosis and treatment as a group with medical team, adolescent, and their chosen caregiver(s). Encourage adolescent-driven supported decision making when choices available. Promote psychological safety by reassuring adolescents that they are not being assessed as "right" or "wrong". Communicate directly with adolescent rather than through a caregiver. Engage adolescents in making plans and setting goals.
	Formal Operational (11+ yo) - Can think logically about abstract propositions - Can test hypotheses systematically - Becomes concerned about the hypothetical, future, and ideological problems	Task: Identity vs. Role Confusion (13-19 yo) Associated virtue: Fidelity "How can I fit into the adult world?"	Adolescents strive for a satisfying relationship with caregivers and increased connectedness	Change in eating habits Abrupt change in interests/activities Conflict/difficulty in romantic relationships Unexplained chronic pain Legal system involvement High risk sexual activity	Inquire about important peer relationships and how adolescents would like them involved; consider how they can provide support in person or virtually. Assist adolescents in communicating with school, work, and/or family as desired. Plan for safe discharges when adolescents have less caregiver supports.
	Late (17-20 yo)	Task: Intimacy vs. Isolation (19-35 yo) Associated virtue: Love "How can I love?"	Often considered a "recovery process" after earlier struggles for autonomy		

Fig. 1 Incorporating principles of TIC through hospitalization

A few hours later, their roommate returned to the room to find Haley agitated, disoriented, and mumbling. Haley then had rapid eye movements and loss of tone, followed by whole body shaking. Haley’s roommate called 9-1-1.

EMS arrived, Haley was eventually admitted to the PICU, and they were transferred to the medical floor when stable. Based on past prescriptions and an empty pill bottle, they were believed to have ingested a potentially lethal dose of bupropion.

Social history was provided by Haley’s roommate, who listed several stressors in Haley’s life including a failed exam and less frequent communication with their partner. The roommate noted that Haley had been missing class, skipping meals, and sleeping for several hours during the day, all of which was out of the ordinary. Haley’s roommate also noted that Haley’s family relationships had been strained. The roommate stated that Haley is “a truly great friend” and usually “such a positive person to be around.”

With this background, Haley’s providers ask questions such as follows:

- What are best practices for TIC of a patient after a suicide attempt?
- How should an inpatient provider proceed with trauma-inquiry with this patient?

Over the last decade, rates of suicide among adolescents have risen alarmingly [31, 32], and during the COVID-19

pandemic, the proportion of ED visits for mental health conditions has markedly increased [1]. Periods of high COVID-19 stress in the community have been paralleled by higher rates of suicide ideation or attempt among adolescents [33•]. Prior to the pandemic, black youth were already experiencing a significant upward trend in suicide [34], and during this period of increased racism and structural inequities, race-based discrimination has been shown as a “painful and provocative event” for increased depression and suicide ideation [35••].

In a patient like Haley, TIC is relationship-based and starts with building rapport and a therapeutic relationship with the patient prior to addressing any trauma [36•]. Sitting at the bedside [37], sincerely asking the patient “how are you?,” and starting with discussions of a patients’ strengths and passions can help build and maintain a therapeutic alliance with patients.

Assuming principles of solution-focused brief therapy, TIC is a strength-based approach that focuses on “patients’ resources and preferred future rather than their histories and problems” [38]. After medical stabilization, the pediatric team should promote the patient’s self-assessment of their key strengths. To provide reflection time, the team could consider “homework assignments,” such as creating short lists of talents, successes, challenges overcome, or values. This work builds a sense of self-worth, can be done on the medical ward, and can carry forward to psychiatric treatment. This strength-based focus aligns with the principle of

Table 1 Adolescent development, trauma symptoms, and trauma-informed responses

	Admission	Daily	Discharge
Strengths-based Relationships-based	Inquire about patients' strengths, consider a self-assessment of strengths, reflect noted strengths back to the patient, and leverage strengths in treatment Contact primary care providers and mental health clinicians on admission (with patient permission) Inquire about how to best support patient preferences	Document patients' interests, passions, and preferences Include these notes in hand-offs to support continuity of therapeutic alliance between teams	Contact primary care providers and mental health clinicians prior to discharge to ensure continuity of care Highlight noted patient preferences and strengths
Safety	Support trusted caregivers and/or peers to be at the bedside Identify with adolescents if certain family members/caregivers/friends make them feel unsafe and determine hospital mechanisms to limit that visitation Discuss and reinforce how to ask for nursing, provider, and team support (social work, child life, chaplaincy)		Discuss home life and identify a safe discharge plan Provide information regarding resources in the community if home life becomes unsafe
Trustworthiness and transparency		Provide care as originally specified; promptly communicate deviations from original plans Communicate work-up, results, and diagnoses directly with adolescents (i.e., not through family members)	Ensure defined discharge criteria and adhere to these criteria throughout hospitalization
Peer support	Identify relationships in the teen's life that they identify to be meaningful Respect and normalize that relationships with family may be challenging or not existent Discuss how to maintain communication with schools, universities, or employers during hospitalization (consider consulting social work and/or child life to support these discussions)	Discuss with the adolescent how they may lead discussions with peers/family regarding details of the hospitalization Leverage flexible visitation (i.e. friends may have to visit after school/work) and technology to maintain these important relationships Identify diagnosis-related peer support groups	Plan with the adolescent how they will re-engage with their meaningful community activities Work with the adolescent to define scripts to address questions of their absence during hospitalization
Collaboration and mutuality	Elicit adolescent's goals for hospitalization and collaborate to find shared goals	Focus on working with the patient (i.e., we are not doing this TO you but WITH you) Continually elicit both short-term (daily) goals as well as long term (for hospitalization and beyond)	Convey patient-identified long-term care goals to the primary care provider to ensure continuity of goals
Empowerment, voice, and choice	Close encounters by eliciting questions directly from the adolescent to ensure their understanding Explain procedures prior to initiation and convey how the adolescent can communicate stopping procedures if the adolescent feels unsafe or a loss of control Inquire regarding learning preferences, and provide videos, images, and/or text to ensure the teen understands diagnoses and treatment Support healthy boundaries regarding discussing personal medical information		Discuss that the individual controls the disclosure of personal medical information to peers Ensure supported decision-making (with caregiver, if appropriate) around treatment decisions and discharge planning

Table 1 (continued)

	Admission	Daily	Discharge
Cultural, historical, and gender issues	<p>Initiate every encounter with a medically stable patient with a discussion of names and pronouns</p> <p>Discuss and document which names and pronouns are preferred in which settings</p> <p>Lead with inquiry of cultural or religious practices that can be supported throughout hospitalization (i.e., Kosher diets or Holy communion)</p>	<p>Introduce new members of the team with names and pronouns</p> <p>Consider staff pins or name badges that include pronouns</p> <p>Use simple, clinical language during the physical exam</p> <p>Ask the patient which terms they use to talk about their body (i.e., vagina vs. genital opening)</p>	<p>Attempt to support gender or cultural preferences when selecting referrals for outpatient providers (i.e., an adolescent girl may be more comfortable with a woman as a provider)</p>
Trauma-informed techniques	<p>Practice a trauma-informed physical exam. For further discussion of this exam, we recommend “A Novel, Trauma-Informed Physical Examination Curriculum for First-Year Medical Students” by Elisseu et al. [61••] (noting that this exam is described for adult patients, and principles must be adapted for a pediatric population)</p>		

empowerment, voice, and choice discussed in more detail below.

Key TIC principles in Haley’s care include peer support and cultural, historical, and gender issues. To ensure peer support, care teams should acknowledge the prevalent stigma regarding mental health [39] and directly engage with patients about how they want to discuss their hospitalization with friends and family. The team should empower patients to lead discussions with these relevant individuals but support conversations as patients feel necessary to provide medical context. Providers must acknowledge beforehand that their outside opinions of who may be supportive, such as parents, may not align with patients’ experiences. In this setting, attempts can be made to support visiting possibilities (hindered in many current settings) and virtual engagement with those the patient deems crucial.

As to cultural, historical, and gender issues, providers should initiate a prompt discussion of names and pronouns. Transgender youth have extremely high levels of suicidal ideation and behavior [40]; use of chosen name and pronouns can be life-saving due to lower depressive symptoms, suicidal ideation, and suicide behavior [41]. Notably, some individuals who identify as transgender or gender diverse may have not disclosed this aspect of identity with certain family members or peers. Transparent discussions about when to use the patient’s chosen name and pronouns are crucial to preserve safety and confidentiality, both in verbal communications and medical records.

When discussing self-harm behavior, providers can start by acknowledging the role that prior trauma exposure may have played in a patient’s symptomatology and that certain behaviors are an adaptation to cope. Asking directly about the antecedents to and emotional and relational impacts of the behavior promotes transparency and demonstrates openness and curiosity rather than judgment or blame. Exploring options for managing future situations in which the patient feels similarly triggered supports empowerment, voice and choice. In addition, providers should take a holistic approach that incorporates important aspects of an adolescent’s culture (such as religious, extracurricular, or school support) as well as their home environment (family and peer relationships).

History of difficult relationships with family and partners as well as a presentation with clear symptoms of trauma (i.e., suicide attempt) would require an assessment for certain types of traumas like intimate partner and domestic violence. Importantly, in the initial trauma inquiry, the provider should not require the patient to detail emotionally overwhelming events, as disclosure of granular details can be re-traumatizing for patients. As many patients are not aware of the connection between trauma and psychological or physical symptoms, the assessment instead can focus on how a history of trauma may affect the patient’s current patterns of behavior. The clinician should discuss how findings

from the assessment can be used to support the patient's care plan, such as arranging for community support, or can highlight the need for additional medical testing (i.e., STI or pregnancy). Frank discussions of trauma can be emotionally destabilizing, so clinicians should ensure that the patient is grounded, has a care plan in place for the immediate future (e.g., how they will manage the next few hours), and is aware of additional support resources. A team-based approach that includes a child abuse pediatrician and clinical social worker should be considered to ensure proper investigation and documentation is performed to protect the patient's legal rights and to support access to community resources. Though beyond the scope of this article, the child protective team should be engaged if there is any suspicion of ongoing abuse or safety concern. After the initial trauma inquiry, repeated and unnecessary inquiries should be avoided, if possible.

Case Two: a Case of New-Onset Eating Disorder

Ryan is a 16-year-old teenage girl (she/her pronouns) with no significant past medical history who was referred to the emergency room by her pediatrician in the setting of weight loss.

Ryan is a long-standing gymnast who three months prior to admission abruptly quit gymnastics after a “difficult interaction” with her coach. She then began to diet and became fixated on her weight and appearance. She skips breakfast and lunch, has soup most days for dinner, and goes on numerous multi-hour walks per day. She has lost approximately 11 kg. In addition, she has begun wearing exclusively compressive sports bras.

Ryan does well in school and describes having friends in classes, but over the last year, she has been less interested in social activities. Her mother is unclear why Ryan quit gymnastics and has encouraged Ryan to participate in other high school clubs as an alternative. In independent conversations with Ryan's mother, she says that she and Ryan used to be close, but that Ryan has become increasingly isolated from her mother and her stepfather.

Due to electrolyte abnormalities, hypothermia, BMI of 16.5, and prolonged inadequate intake, Ryan was admitted to a general pediatrics floor and adolescent medicine was consulted, and Ryan was initiated on standardized treatment.

The inpatient team asks:

- How might a history of trauma have contributed to Ryan's acute presentation?
- How can TIC principles be incorporated into treatment?

Eating disorders (e.g., anorexia nervosa and bulimia) and subthreshold eating conditions are prevalent in adolescents

[42]. Ryan is among many children with exacerbated eating disorder signs and symptoms during the pandemic [2]. While Ryan's conversation with her coach may have triggered behavior change, this was likely one of many contributors including societal, social, and athletic pressures, as well as an increased wish for control [43]. In middle adolescence, distancing from parents may be a normal behavior, but the sudden distancing from parents, peers, and extracurriculars is concerning. In addition to warning signs and symptoms of disordered eating, clinicians must keep in mind common trauma-related symptoms (Fig. 1).

In working with adolescents who have eating disorders, assumptions of past trauma are often held explicitly or implicitly. Many adolescents have experiences of body shame and fatphobia either in the media [44], in peer groups, or in family networks. In Ryan, additional aspects of her past that may warrant attention during treatment include long-term engagement in a competitive sport that relies on maintenance of a specific body type, a recent conversation that may have had undertones of fatphobia or sexualization, and a family structure that includes a stepfather (reflecting possible divorce or single mother history). Though much of the work around trauma and body dysmorphia will likely be done in outpatient settings, there are some aspects of Ryan's case that require upfront attention. An initial evaluation to rule out current abuse and to ensure safety would be crucial (see “Case One” for detailed description of considerations in an initial evaluation). To ensure the team is correctly addressing and supporting Ryan, evaluation for gender dysphoria should be completed.

In working with patients with eating disorders, two crucial TIC principles include trustworthiness and transparency and collaboration and mutuality. Necessary treatment (i.e., feeding) is often unwanted—and in minors, forced—making the provision of care through a trauma-informed lens even more crucial. In addition, many patients receiving eating disorder treatment have already experienced inpatient therapy, resulting in traumatic experiences and distrust in the system. First and foremost, providers should work to make sure that patients feel trustworthiness and transparency with the team. This can include care being provided as originally specified (such as meals at specific times) or care being escalated or deescalated as it has been indicated (such as the nasogastric tube being inserted after three missed meals, and not allowing a fourth attempt). It cannot go unrecognized that communities that have been historically marginalized by healthcare may have a great deal of mistrust, and teams should recognize the possibility of prior adverse experiences and secondhand trauma. In the other direction, providers can take steps to indicate to patients that they have trust in them, as well. Working with patients to make them feel more heard or involved in care and trusted as participants in their own care allows for an increased sense of control and

authenticity, and autonomous motivation has been found to predict treatment success [45, 46].

As to the principle of collaboration and mutuality, collaboration with a patient and their family includes identifying an eating disorder as an adaptive reaction to a traumatic situation rather than a pathological set of behaviors [27]. Mutuality centers on building a sense of working with the patient, rather than on the patient. With this approach, treatment should include nutritional support and work with the patient to determine skills to respond to this maladaptation through healthy methods of emotional regulation. The team should inquire about the patient's strengths and encourage those traits and behaviors; alternatively, the team should also accept patient feedback about what is not working, and carefully negotiate those aspects of care. Mutuality includes shared decision-making around goals of care (i.e., discharge to residential treatment versus home). As an added layer of complexity, providers should collaborate with families as well, as their buy-in supports patient outcomes.

Case Three: a Case of Pediatric Medical Traumatic Stress

Emmanuel is a previously healthy 13-year-old boy who uses he/him pronouns who was admitted to the pediatric intensive care unit with the diagnosis of diabetic ketoacidosis in the setting of newly diagnosed type 1 diabetes.

Emmanuel presented to the community emergency room after three days of nausea, vomiting, and mild diffuse abdominal pain. Over the past month, Emmanuel has been fatigued to the point of wanting to skip his usual favorite activities of basketball and computer class. His mother has noticed that Emmanuel looks thinner despite a “teenage boy appetite” and “eating everything in sight.”

The emergency physician noted extensive laboratory abnormalities, and Emmanuel was transferred, via helicopter, to the tertiary children's hospital's pediatric intensive care unit to be fluid resuscitated and started on an insulin drip.

Throughout the first night of admission, Emmanuel's mother was noted to be visibly tearful. She noted to the nursing staff, “Between Emmanuel and my dad getting sick, we have spent this whole year in the hospital.”

Diabetes education began on day two of admission. Emmanuel was noted to be fearful of needles, and he did not engage in teaching by staff, instead pulling his blankets over his head and not responding to staff when teaching began.

Questions:

- How may the process of Emmanuel's admission have been potentially traumatizing/re-traumatizing for him?

- How can trauma-informed principles be incorporated into educating Emmanuel about his disease?

Within the hospital, adolescents can experience pediatric medical traumatic stress (PMTS), which consists of a child or adolescent's psychologic and physiologic response to potentially traumatic medical events such as procedures, pain, serious illness or injury, and effects of treatment [47]. PMTS can manifest as avoidance of healthcare systems, nightmares, and frank post-traumatic stress disorder (PTSD); notably, a child or adolescent is predisposed to PMTS if they have a history of other trauma prior to hospitalization [48]. PMTS is also known to affect not only the pediatric patient, but also their families and communities [49].

Throughout the COVID-19 pandemic, pediatric hospitalizations for non-psychiatric indications have been associated with additional parental anxiety and depression [50]. These parental symptoms are associated with challenges in adolescent emotional and behavioral functioning [51, 52], in addition to the direct effect of hospitalization during a pandemic on the mental health of an adolescent, which has not yet been fully elucidated. Like the patients, many caregivers will have been exposed to trauma and chronic stress inside the healthcare system, including racism, language barriers, illness, or injury, emphasizing the importance of a trauma-informed approach to the entire family unit.

Educating families like Emmanuel's about new diagnoses in the setting of potentially traumatizing hospitalizations requires specific considerations. An acutely traumatic event can hinder the ability to process new information, as a perceived threat may cause emotional dysregulation, resulting in a state of either hyperarousal (“fight or flight”) or hypo-arousal (“freeze”) [53]. Emmanuel's behavior of not engaging in teaching is likely indicative of hypo-arousal and assisting him in moving back into his window of tolerance will help him to learn about his new diagnosis. The window of tolerance describes a balanced state of arousal in which individuals can regulate their emotions and integrate new experiences [54]. Using tools of mindfulness to promote a sense of grounding and safety (explored further below) can help patients move into this window following potentially traumatizing events [55]. Patient strengths can also promote learning and healing. For example, Emmanuel's team could note his interest in computers and use technology-based teaching. Emmanuel's secure attachment with his mother is another strength that can promote resilience [56].

Using trauma-informed principles of safety and empowerment, voice, and choice can help Emmanuel and his mother navigate the hospitalization and learn about this new diagnosis. As to the principle of safety, the team should ensure that Emmanuel and his mother have a sense of feeling both physically and psychologically safe throughout his hospitalization. In the ICU, providers can promote a sense of

safety by remaining present, sharing knowledge (as desired by patients and families), and addressing the key concerns families have [57]. While there will likely be overlap in adolescent and caregiver concerns, adolescents may carry their own concerns they wish to discuss. High-quality nursing care and presence of relatives at the bedside have been shown to improve adult patients' sense of safety in the ICU [58], implying that adolescent patients could also benefit.

To ensure the principle of empowerment, voice, and choice, the team should provide the support to make choices in Emmanuel's care when possible. Even in an emergency situation, providers can obtain consent from parents of minors and assent from these minors as is developmentally appropriate [47]. For a younger adolescent like Emmanuel, this could mean inclusion in treatment planning discussions and supported decision-making with his caregivers as he is ready. Patient education in the context of a potentially traumatic hospitalization should take place on the patient and family's terms. In this case, the family could work with the team to set a time for teaching and choose how they would like to initially be taught (perhaps without needles at first, then adding them in for practice later). Following the patient and family's lead can prepare them better for learning and help them to feel in control of the situation.

Conclusion

In the setting of the COVID-19 pandemic, there has been a marked increase in adolescent presentations and admissions to hospitals for mental health crises. This pandemic has also exacerbated long-existing disparities in healthcare based on race, socioeconomic status, and sexual and gender orientation; thus, adolescents in certain groups have been differentially affected. These teenagers often present with a history of trauma and can experience trauma in the setting of long-term boarding, medicalization, and treatment unaligned with personal will. Regardless of explicitly known ACEs or traumatic instances, approaching patients and families with a TIC lens can improve patient experiences and outcomes [59, 60]. Though pediatric providers may feel unaccustomed to explicitly considering trauma or feel less responsibility to provide TIC in inpatient settings, these considerations are critical, especially given the current influx of these vulnerable populations. This paper provides an outline of TIC principles and examples of cases where applications of these tools are critical to patient health. Further research must be undertaken regarding how to teach both faculty- and trainees-specific trauma-informed methods, including trauma-informed communication and physical exam, how trauma-informed self-care can be applied to pediatric healthcare workers, and how to develop a quality

standard to assess physician understanding and quality of trauma-informed skills.

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Maya Ball-Burack conceptualized the review, drafted the initial manuscript, and reviewed and revised this manuscript.

Traci L. Brooks reviewed and revised this manuscript.

Nhi-Ha T. Trinh conceptualized the review, reviewed, and revised this manuscript.

Jennifer E. Potter conceptualized the review, reviewed, and revised this manuscript.

Katherine R. Peeler conceptualized the review, drafted the initial manuscript, and reviewed and revised this manuscript.

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Declarations

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● Of importance

●● Of major importance

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