MARCH 2024 | VOLUME 21 | ISSUE 3

PEDIATRIC
Emergency Medicine Practice
Evidence-Based Education • Practical Application

CLINICAL CHALLENGES

- Which screening tools can be used to help identify suicide risk in children?
- What are key aspects of high-quality care for children with suicidal ideation?
- What components should be included in safety planning interventions for suicide prevention?

Evaluation and Management of Suicidal Ideation and Self-Harm in Children in the Emergency Department

Authors

Ashley A. Foster, MD
Assistant Professor of Emergency Medicine, Department of Emergency Medicine, University of California, San Francisco, San Francisco, CA

Bijan Ketabchi, MD, MPH
Assistant Professor of Clinical Pediatrics, Perelman School of Medicine at the University of Pennsylvania; Division of Emergency Medicine, Children's Hospital of Philadelphia, Philadelphia, PA

Jennifer A. Hoffmann, MD, MS
Assistant Professor of Pediatrics, Northwestern University Feinberg School of Medicine; Division of Emergency Medicine, Ann & Robert H. Lurie Children's Hospital of Chicago, Chicago, IL

Peer Reviewers

Kathleen Berg, MD, FAAEM, FACEP
Assistant Professor of Pediatrics, University of Texas at Austin Dell Medical School, Austin, TX

Genevieve Santillanes, MD, FACEP
Associate Professor of Emergency Medicine, Keck School of Medicine of the University of Southern California; Attending Physician, Los Angeles General Medical Center, Los Angeles, CA

Prior to beginning this activity, see the "CME Information" on page 2.

Abstract

Suicide is a leading cause of death among youth, and the emergency department (ED) serves as the primary point of healthcare contact for many with suicidal ideation. As suicide-related presentations to the ED continue to rise, the implementation of time- and cost-effective care pathways becomes ever more critical. Evidence-based tools for the identification and stratification of suicide risk can aid in clinical decision-making and care linkage. This issue reviews best practices for suicide risk assessment of youth to guide evaluation, management, and disposition planning within the ED setting.

EB MEDICINE

For online access:

For mobile app access:

CME Information

Date of Original Release: March 1, 2024. Date of most recent review: February 1, 2024. Termination date: March 1, 2027.

Accreditation: EB Medicine is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing medical education for physicians.

Credit Designation: EB Medicine designates this enduring material for a maximum of *4 AMA PRA Category 1 Credits™*. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

Specialty CME: Included as part of the 4 credits, this CME activity is eligible for 4 Behavioral Health CME credits, subject to your state and institutional approval.

ACEP Accreditation: *Pediatric Emergency Medicine Practice* is approved by the American College of Emergency Physicians for 48 hours of ACEP Category I credit per annual subscription.

AAP Accreditation: This continuing medical education activity has been reviewed by the American Academy of Pediatrics and is acceptable for a maximum of 48 AAP credits. These credits can be applied toward the AAP CME/CPD Award available to Fellows and Candidate Members of the American Academy of Pediatrics.

AOA Accreditation: *Pediatric Emergency Medicine Practice* is eligible for up to 4 American Osteopathic Association Category 2-B credit hours per issue.

Needs Assessment: The need for this educational activity was determined by a practice gap analysis; a survey of medical staff, including the editorial board of this publication; review of morbidity and mortality data from the CDC, AHA, NCHS, and ACEP; and evaluation responses from prior educational activities for emergency physicians.

Target Audience: This enduring material is designed for emergency medicine physicians, physician assistants, nurse practitioners, and residents.

Goals: Upon completion of this activity, you should be able to: (1) identify areas in practice that require modification to be consistent with current evidence in order to improve competence and performance; (2) develop strategies to accurately diagnose and treat both common and critical ED presentations; and (3) demonstrate informed medical decision-making based on the strongest clinical evidence.

CME Objectives: Upon completion of this activity, you should be able to: (1) identity and risk stratify children with suicide-related concerns in the emergency department (ED); (2) apply evidence-based practice for ED evaluation of a child with suicidal ideation; and (3) utilize ED interventions and disposition planning to reduce suicide and self-harm risk.

Discussion of Investigational Information: As part of the activity, faculty may be presenting investigational information about pharmaceutical products that is outside Food and Drug Administration-approved labeling. Information presented as part of this activity is intended solely as continuing medical education and is not intended to promote off-label use of any pharmaceutical product.

Disclosure: It is the policy of EB Medicine to ensure objectivity, balance, independence, transparency, and scientific rigor in all CME activities. All individuals in a position to control content have disclosed all financial relationships with ACCME-defined ineligible companies. EB Medicine has assessed all relationships with ineligible companies disclosed, identified those financial relationships deemed relevant, and appropriately mitigated all relevant financial relationships based on each individual's role(s). Please find disclosure information for this activity below:

Planners
- Ilene Claudius, MD (Editor-in-Chief): Nothing to Disclose
- Tim Horeczko, MD (Editor-in-Chief): Nothing to Disclose

Faculty
- Ashley A. Foster, MD (Author): Nothing to Disclose
- Bijan Ketabchi, MD, MPH (Author): Nothing to Disclose
- Jennifer A. Hoffmann, MD, MS (Author): Nothing to Disclose
- Kathleen Berg, MD (Peer Reviewer): Nothing to Disclose
- Genevieve Santillanes, MD (Peer Reviewer): Nothing to Disclose
- Aimee Mishler, PharmD (Pharmacology Editor): Nothing to Disclose
- Brian Skrainka, MD (CME Question Editor): Nothing to Disclose
- Cheryl Belton, PhD (Content Editor): Nothing to Disclose
- Dorothy Whisenhunt, MS (Content Editor): Nothing to Disclose

Commercial Support: This issue of *Pediatric Emergency Medicine Practice* did not receive any commercial support.

Earning CME Credit: Go online to http://www.ebmedicine.net/CME and click on the title of the test you wish to take. When completed, a CME certificate will be emailed to you.

Additional Policies: For additional policies, including our statement of conflict of interest, source of funding, statement of informed consent, and statement of human and animal rights, visit http://www.ebmedicine.net/policies.

EB MEDICINE

Direct all inquiries to:
Phone: 678-366-7933
Fax: 770-500-1316
5600 Spalding Drive, Unit 921697
Norcross, GA 30010-1697
E-mail: **ebm@ebmedicine.net**
Website: **www.ebmedicine.net**

Chief Executive Officer: Stephanie Williford
Publisher: Suzanne Verity
Director of Editorial Quality: Dorothy Whisenhunt, MS
Senior Content Editor: Cheryl Belton, PhD, ELS
Managing Editor: Angie Wallace
CME & Content Coordinator: Kristen Raynor, MEd
Editorial Assistant: Lindsay Petracek
Database Administrator: Jose Porras

Director of Operations: Robin Wilkinson
Director of Technology: Anna Motuz, MBA
Director of Revenue Growth: Bill Dugan
Account Executive: Dana Stenzel
Marketing Specialist: Valerie Yuhouse
Education Coordinator: Kandis Slater
Customer Service Representative: Katie Resumovic

EVIDENCE-BASED AI-FREE CONTENT PEER-REVIEWED

EB Medicine's Statement on the Use of Artificial Intelligence (AI) Tools in Content Production
At EB Medicine, we produce content for emergency medicine and urgent care clinicians that is evidence-based and peer reviewed, and at the same time infused with an understanding of the realities of clinical practice, human behavior, and institutional and social limitations that only humans can apply. For these reasons, EB Medicine assures our readers and subscribers that all authors of our content have certified that they have not used generative AI-assisted technology in the writing of their manuscript and that clinical pathways and images are human-designed. For more information, go to www.ebmedicine.net/AI

ISSN info and disclaimer:

Pediatric Emergency Medicine Practice (ISSN Print: 1549-9650, ISSN Online: 1549-9669, ACID-FREE) is published monthly (12 times per year) by EB Medicine (5600 Spalding Drive, Unit 921697, Norcross, GA 30010-1697). Opinions expressed are not necessarily those of this publication. Mention of products or services does not constitute endorsement. This publication is intended as a general guide and is intended to supplement, rather than substitute, professional judgment. It covers a highly technical and complex subject and should not be used for making specific medical decisions. The materials contained herein are not intended to establish policy, procedure, or standard of care. *Pediatric Emergency Medicine Practice* is a trademark of EB Medicine.

Case Presentations

CASE 1

A 13-year-old girl presents with her father with the request for a medical evaluation after she ran away from home for 24 hours...

- The girl tells you she wanted to hang out with friends after recently getting into an argument with her father about her grades at school. She has a history of depression noted in the electronic medical record and no prior ED visits.
- During triage assessment, the patient avoids eye contact with the triage nurse and answers questions with few words.
- You wonder whether there is more to this patient's story and what questions you should ask when interviewing the patient in a room.

CASE 2

A 16-year-old boy presents with his foster mother for concern for worsening mental health symptoms...

- The boy was recently started on an antidepressant medication and started to see a therapist last year but has not recently followed up. His foster mother discovered recent texts to a friend on his phone discussing suicidal ideation over the past several weeks. He has no prior history of suicide attempt or self-harm.
- In the ED, he is placed in a safe room. While conducting your history, he shares that he has been engaging in self-harm activities of cutting.
- What are your next steps to complete his ED assessment?

CASE 3

An 8-year-old boy with history of autism spectrum disorder presents with his parents for self-harm by head-banging...

- The parents tell you the head-banging is a new behavior that started 3 days ago and is increasing in frequency.
- In the ED, the patient appears upset and is trying to hit his head on the gurney.
- What underlying etiologies for his symptoms should you consider? What strategies can be used to help with your assessment of a child with autism spectrum disorder and concern for self-harm in the ED?

Introduction

Suicide and self-harm behavior among youth represent a major public health crisis.[1] Suicide is the second leading cause of death for children aged 10 to 14 years and the third leading cause of death for those aged 15 to 24 years.[2] Nearly half of all youth suicide deaths occur by firearms,[3] and suicide attempts involving firearms have high case fatality rates.[4] Suicide deaths are often preceded by suicidal thoughts and behaviors. In 2021, 30% of United States high school students reported seriously considering attempting suicide, and 13% reported attempting suicide in the prior year.[5] To prevent suicide, it is helpful to identify at-risk youth and provide them with resources and support.

The emergency department (ED) represents a critical contact point to detect youth at risk for suicide and to initiate suicide prevention interventions.[6,7] One-third of youth who die by suicide visit the ED in the 6 months prior to their death.[8,9] Of youth seen in the ED for suicidal thoughts or behaviors, the period after discharge is considered high risk,[10,11] with approximately one-quarter of these youth returning to the ED for a mental health reason within 6 months.[12] Brief interventions delivered in the ED are often effective at reducing subsequent suicide attempts and ensuring that patients engage in follow-up mental health care.[13]

Use of the ED by children with mental health crises has increased over the past decade, with one study finding a 329% increase in presentations for deliberate self-harm.[14-16] Simultaneously, hospitalizations for suicidal thoughts or behaviors among youth are also rising, with a 163% relative increase from 2009 to 2019.[17] During the COVID-19 pandemic, the proportion of ED visits by children for mental health reasons increased.[18] The length of stay for pediatric ED visits also has risen over time, with many youths experiencing prolonged periods awaiting inpatient psychiatric care, called *ED boarding*.[19-21]

In this context, it is crucial for ED clinicians to understand best practices for the evaluation of youth with suicidal ideation and self-harm behavior. This issue of *Pediatric Emergency Medicine Practice* reviews key risk factors for youth suicide, strategies for screening and assessment, ED-based interventions, and considerations for determining appropriate levels of care.

Critical Appraisal of the Literature

A systematic search was conducted in PubMed, PsychInfo, Embase, and the Cochrane Library using the following keywords: *child* (or *pediatric* or *adolescent* or *teens* or *teenagers* or *youth*), *emergency department* (or *ED* or *emergency room* or *emergency services*), *suicide* (or *suicidal ideation* or *suicidal thoughts* or *suicide attempt* or *suicidal behaviors* or *suicidality*), *screening*, or *diagnosis*, or *evaluation*, or *management*, or *treatment*, or *disposition*, or *lethal means counseling*. After reviewing the titles and abstracts of 961 articles, 240 were selected for full review. Additional review and original research articles that focused on epidemiology, presentations, management, practice gaps, and policy guidelines were included. Few studies were identified that focused on prevention of firearm suicides or evidence-based practices to care for children and youth experiencing ED boarding.

Etiology and Pathophysiology

Suicide is substantially more common in adolescence, although suicides do occur among elementary school-aged children.[22] Suicide rates among male youth are 3 times higher than for females, whereas suicidal ideation, suicide plans, and nonfatal suicide attempts are higher among females.[23] Across racial and ethnic groups in the United States, American Indian and Alaska Native youth have the highest suicide rates.[3] Rates of suicide death among Black children aged <13 years are twice as high as for White children,[24] and suicide attempts by Black high school students have increased over time.[25] Sexual and gender minority populations are at higher risk for suicide attempts and suicide compared with their peers.[26] When examining differences across geographic areas, youth living in rural and high-poverty areas are at elevated risk for suicide.[27,28]

Youth with certain mental health conditions and those with a history of prior suicide attempts are at increased risk for suicide.[29] Prevalent mental health conditions prior to suicide include anxious and depressed mood, as well as disorders of conduct, eating, and substance use.[30] Lack of access to mental health treatment is an additional risk factor for suicide.[31] While 1 in 5 children in the United States has a mental or behavioral health condition, less than half receive needed treatment from a mental health professional.[31] Psychosocial risk factors for suicide include adverse childhood experiences such as abuse, family conflict, bullying, socioeconomic disadvantage, involvement in foster care, and housing instability.[32] Access to lethal means substantially increases suicide risk, as youth who live in a home with firearms have a 3-fold to 4-fold increased risk for suicide.[33] Protective factors include family cohesion, strong interpersonal relationships, social connectedness, and access to mental health care.[34]

Differential Diagnosis

There are many medical conditions that can cause or exacerbate psychiatric symptoms, including infection, neurologic disorders, endocrine disorders, medications, substances, or conditions such as electrolyte derangements.[35,36] A careful review of systems can be helpful to uncover conditions that can be evaluated and treated in the ED. Additionally, co-occurring eating disorders may require evaluation and medical management.[37] Among youth presenting with suicidal thoughts, attention is needed to identify and report neglect, emotional or physical abuse, sexual abuse, or commercial sexual exploitation.[38]

Prehospital Care

Approximately 11% of prehospital pediatric encounters in the United States are for mental or behavioral health emergencies.[39] Despite representing a sizeable portion of pediatric prehospital encounters, a 2023 scoping review found only 2 publicly available pediatric-specific behavioral health emergency medical services (EMS) protocols and 2 adult hyperactive delirium with agitation protocols with pediatric-specific recommendations.[40] Furthermore, it is unknown how many EMS agencies have protocols for transport of individuals with suicidal thoughts or behaviors, with a review of one state showing few agencies had these currently in place.[41] While EMS have traditionally transported children in mental health crises to EDs, protocols facilitating transport of children meeting prespecified criteria to alternative destinations, such as local crisis stabilization units, have been implemented and demonstrated to be safe in Alameda, California.[42]

Emergency Department Evaluation

Evaluation of youth with suicidal ideation involves a detailed history of the presenting chief complaint, as well as identification and review of co-occurring conditions that require active ED management.[36]

History

When obtaining patient history, a confidential mental health assessment is necessary to obtain accurate information. The limitations of confidentiality should be explained to the patient, including disclosure of thoughts relating to harm to self or others.[43] Relevant historical details include whether the suicidality is passive (ie, wondering whether one would be better off dead) or active (ie, currently wanting to die), the presence of a plan, and any history of past suicide attempts. Patients should be asked about self-harm behaviors such as cutting or ingestions.[44]

Knowledge of the patient's home medications as well as alcohol and/or substance use may aid in understanding the potential for withdrawal, medication side effects, drug interactions, or symptoms related

to medication discontinuation. Diagnosis and assessment of illness severity may be informed by asking questions regarding sleep, appetite, and the patient's ability to perform activities of daily living.[36] Collateral information from parents, caregivers, or other providers should be obtained whenever possible, particularly when patients have poor insight, delusions, hallucinations, developmental delays, or communication barriers.[45] Relevant history also includes conditions requiring ongoing medical evaluation, such as diabetes or eating disorders, as well as those that may require rescue medications, such as severe allergies or epilepsy.

Physical Examination

Assessment should begin with a complete set of vital signs, which may provide insight into etiologies of presenting symptoms.[44] For example, bradycardia may reflect an eating disorder or a medication overdose, while fever can indicate infection or presence of a toxidrome.[45] Neurologic and mental status evaluation may reveal altered mentation or neurologic deficits, which can prompt clinicians to consider ingestion, psychosis, or intracranial pathology. A thorough skin examination should be performed to inspect for injury secondary to self-harm.

Subtle physical examination findings can help differentiate specific toxidromes or medical conditions that can mimic symptoms of depression. Serotonin syndrome will demonstrate increased tone, hyperreflexia, and clonus, while neuroleptic malignant syndrome displays more severe rigidity ("lead pipe") and bradyreflexia.[44,45] Unlike most toxidromes, neuroleptic malignant syndrome is not dose-dependent and takes days to weeks to precipitate,[44] making it unlikely after an acute ingestion. Dilated pupils may result from anticholinergic or sympathomimetic toxicity. Sympathomimetic toxidromes demonstrate dilated, responsive pupils, while those with anticholinergic toxicity often lack or have sluggish pupillary response due to muscarinic blockade. Conversely, constricted pupils can indicate cholinergic or opioid toxidromes. Hyperactive bowel sounds may indicate serotonin syndrome or cholinergic toxicity, while hypoactive bowel sounds may reflect opioid or anticholinergic toxicity.[44,45] Identification of diaphoresis or anhidrosis may also aid in toxidrome differentiation.[36]

Patients experiencing prolonged ED stay while awaiting definitive mental health care should receive vital sign and physical examination re-evaluation every 12 and 24 hours, respectively, or when indicated due to a change in clinical status.[46]

Suicide Risk Screening Tools

While some youth present to the ED for suicidal ideation or behavior, many presenting for chief complaints not related to mental health have undetected mental health needs.[47-49] Suicide risk screening in the ED can facilitate identification of suicide risk and linkage to treatment for these youth.[13,48] Although implementation of universal screening has been shown to detect suicide risk among children who would have otherwise been overlooked, there are currently limited pediatric data regarding the efficacy of suicide screening as a preventive measure.[50]

Due to these limitations, there are differing recommendations regarding universal suicide screening in youth from national organizations including The Joint Commission,[51] the American Academy of Pediatrics (AAP),[1] and the United States Preventive Services Task Force (USPSTF).[52] Based on their appraisal of the literature, the USPSTF concluded that evidence is insufficient to assess the balance of benefits and harms of suicide screening.[52] However, there are several limitations to their evaluation, as described in an editorial rebuttal by Bridge et al.[53] The USPSTF assessment omitted several studies that validated youth suicide screening tools and did not present data to refute hypothetical concerns around iatrogenic consequences of screening. Additionally, although the USPSTF highlighted concern for "false positive" screens, these responses may actually hold benefit to care linkage, as most youth who screen positive have at least 1 lifetime mental health disorder.[54] Furthermore, in adult patients, universal suicide screening demonstrates promising results in subsequent linkage to outpatient care and protection against subsequent suicidal behavior.[55]

In contrast to USPSTF, The Joint Commission requires suicide screening with a validated tool for all patients aged ≥12 years who present to the ED with a primary mental or behavioral health concern.[51] AAP guidelines go a step further, recommending suicide screening for all youth aged ≥12 years and those aged 8 to 11 years with clinical indications (ie, primary mental or behavioral health condition, caregiver concern, history of suicidal behavior or self-harm, or findings uncovered during the clinical evaluation that warrant further assessment).[1]

Universal suicide screening in the ED and hospital setting has been shown to identify a substantial number of children with an elevated risk for suicide or self-harm.[50] A recent review article of 8 studies found that 46% to 93% of patients who screened positive for suicide risk had presented with a primary medical concern that would have been missed without the aid of universal screening.[50] The review highlighted 5 studies that conducted universal screening, encompassing patients aged 8 to 18 years.[7,56-59] The authors found that screening was acceptable and did not increase length of stay.[50] Early detection of suicide risk may facilitate provision of brief safety interventions. These brief interventions are associated with favorable outcomes such as timelier outpatient psychiatric follow-up as well as decreased suicide attempts.[60-63]

The Ask Suicide-Screening Questions (ASQ) tool

(see Figure 1) and Columbia Suicide Severity Rating Scale (C-SSRS) Screen Version **(see Figure 2, page 7)** are the most widely utilized validated suicide risk screening tools for youth. ASQ is a 4-to-5 question screen that has been validated in children aged ≥8 years;[48,64] the C-SSRS Screen Version is a 3-to-6 question tool that has been studied in children as young as 6 years.[48,65] **(See Table 1, page 8.)** Refusal to answer suicide screening questions is also of diagnostic value. One study examined youth presenting to the ED for nonpsychiatric concerns who did not answer ≥1 ASQ question. Based on subsequent interviews with mental health providers, 84.5% within this cohort were discovered to have some degree of suicide risk, including 15.5% determined to be at high risk.[66]

If screening does not indicate elevated suicide risk, further assessment is not indicated. Affirmative responses should be followed by a brief suicide safety assessment to elucidate the degree of suicide risk, which will guide disposition decisions. **(See Figure 3, page 9 and National Institute of Mental Health ASQ Emergency Department Suicide Risk Clinical Pathway for Youth, page 17.)** The ASQ toolkit, available through the National Institute of Mental Health (NIMH), includes the ASQ Brief Suicide Safety Assessment (ASQ BSSA; tips for screening implementation, and care pathways for various clinical settings.[29,67] The C-SSRS protocol is available through the Substance Abuse and Mental Health Services Administration (SAMHSA), and may be paired with the Suicide Assessment Five-Step Evaluation and Triage (SAFE-T).[68] **(See Figure 3, page 9.)**

The ASQ BSSA and the SAFE-T assessments share features, including identification of risk factors, support systems, potential plans, and access to lethal means. Common risk factors include prior suicide attempts or self-injurious behavior, current or past psychiatric diagnoses, ongoing medical illnesses, substance use, and triggering events (ie, loss of a loved one, ending of a relationship, abuse). Key protective factors include effective coping skills, religious beliefs, social supports, and therapeutic relationships. The extent of planning and preparation for suicide attempt (or lack thereof) is also evaluated.[69] The ASQ, C-SSRS, and their respective pathways each have merits, but no high-quality head-to-head comparison has been performed, which highlights a gap in the literature.[69]

Figure 1. Ask Suicide-Screening Questions (ASQ) Tool

NIMH TOOLKIT

asQ Suicide Risk **Screening Tool**

Ask Suicide-Screening Questions

Ask the patient:

1. **In the past few weeks, have you wished you were dead?** ❍ Yes ❍ No
2. **In the past few weeks, have you felt that you or your family would be better off if you were dead?** ❍ Yes ❍ No
3. **In the past week, have you been having thoughts about killing yourself?** ❍ Yes ❍ No
4. **Have you ever tried to kill yourself?** ❍ Yes ❍ No

If yes, how? _____

_____

_____

When? _____

_____

If the patient answers **Yes** *to any of the above, ask the following acuity question:*

5. **Are you having thoughts of killing yourself right now?** ❍ Yes ❍ No

If yes, please describe: _____

Next steps:

- If patient answers "No" to all questions 1 through 4, screening is complete (not necessary to ask question #5). No intervention is necessary *(*Note: Clinical judgment can always override a negative screen).*
- **If patient answers "Yes" to any of questions 1 through 4, or refuses to answer, they are considered a positive screen. Ask question #5 to assess acuity:**
  - ☐ **"Yes"** to question #5 = **acute positive screen** (imminent risk identified)
    - **Patient requires a STAT safety/full mental health evaluation. Patient cannot leave until evaluated for safety.**
    - Keep patient in sight. Remove all dangerous objects from room. Alert physician or clinician responsible for patient's care.
  - ☐ **"No"** to question #5 = **non-acute positive screen** (potential risk identified)
    - **Patient requires a brief suicide safety assessment to determine if a full mental health evaluation is needed. Patient cannot leave until evaluated for safety.**
    - Alert physician or clinician responsible for patient's care.

Provide resources to all patients

- 24/7 National Suicide Prevention Lifeline 1-800-273-TALK (8255) En Español: 1-888-628-9454
- 24/7 Crisis Text Line: Text "HOME" to 741-741

asQ Suicide Risk Screening Toolkit | NATIONAL INSTITUTE OF MENTAL HEALTH (NIMH) | NIH | 7/1/2020

The Ask Suicide-Screening Questions (ASQ) Toolkit is available at: www.nimh.nih.gov/ASQ

Lisa M. Horowitz, Jeffrey A. Bridge, Stephen J. Teach, et al. Ask Suicide-Screening Questions (ASQ): a brief instrument for the pediatric emergency department. *Archives of Pediatrics & Adolescent Medicine.* 2012. Volume 166, issue 12. Pages 1170-1176.

■ Diagnostic Studies

The approach to diagnostic testing among youth with suicidal ideation or behaviors should be guided by the history and physical examination. For pediatric patients who require inpatient psychiatric admission, routine screening laboratory tests are not recommended, as they rarely result in changes to management or disposition.[70-77] For instance, in a prospective study of 210 children and adolescents presenting to the ED with psychiatric conditions, 54 had testing obtained without an indication based on the history and physical examination. Of these, 9% (5 patients) had unsuspected abnormalities, none of which altered ED patient management.[70] In another

retrospective single-center study of 1082 children presenting to the ED for a psychiatric condition, 81% had laboratory tests performed, including urine and serum tests. Of these, only 7 had a laboratory abnormality that resulted in a disposition change; only 1 of these abnormalities (a positive pregnancy test) was not suspected from the patient's history and physical examination.[72]

Several studies have specifically examined routine urine drug testing and have found little to no utility of this testing. In a retrospective study of 539 children presenting to the ED with a psychiatric complaint, a urine drug screen was positive in 11.5%, and no changes to patient management were made based on these results.[75] In another study that included 385 pediatric psychiatric patients in the ED who had urine toxicology screens that were routine (ie, not indicated by medical assessment), 5% were positive, and none were associated with changes in management. Moreover, there were no significant differences in disposition between cases with positive and negative toxicology screens.[76]

On the basis of this evidence, obtaining screening laboratory testing for youth requiring inpatient psychiatric admission has been identified as low-value care by the AAP's Pediatric Emergency Medicine Choosing Wisely Campaign.[77] Routine screening tests prolong ED length of stay and increase costs.[72,73] One study estimated that elimination of this practice across the United States may save up to $90 million annually.[73] Encouragingly, quality improvement initiatives have been successful in reducing unnecessary testing. At one hospital, implementation of a medical clearance algorithm for children requiring psychiatric admission successfully reduced routine laboratory testing from 93% to 20%.[78]

Laboratory testing is indicated in specific circumstances, based on the presenting history or physical examination. If an intentional ingestion is suspected, laboratory studies should be obtained to evaluate for toxicity from the offending agent and to identify treatable co-ingestions such as acetaminophen or salicylates.[79,80] When the time of ingestion is known, an acetaminophen level should be drawn 4 hours after the acute ingestion and plotted on the Rumack-Matthew nomogram[81] to determine toxicity and potential benefit of N-acetylcysteine (NAC) therapy. Acetaminophen levels in the setting of repeated or chronic supratherapeutic ingestion do not correlate with hepatotoxicity,[82] so the nomogram should not be

MD+CALC

An online tool for the Columbia Suicide Severity Rating Scale (C-SSRS Screener) is available at: www.mdcalc.com/calc/10169/columbia-suicide-severity-rating-scale-c-ssrs

Figure 2. Columbia Suicide Severity Rating Scale (C-SSRS) Screen Version

COLUMBIA-SUICIDE SEVERITY RATING SCALE
Screen Version - Recent

	Past month	
Ask Questions 1 and 2	**YES**	**NO**
1) *Have you wished you were dead or wished you could go to sleep and not wake up?*		
2) *Have you actually had any thoughts of killing yourself?*		
If YES to 2, ask questions 3, 4, 5, and 6. If NO to 2, go directly to question 6.		
3) *Have you been thinking about how you might do this?* E.g. "*I thought about taking an overdose but I never made a specific plan as to when where or how I would actually do it….and I would never go through with it.*"		
4) *Have you had these thoughts and had some intention of acting on them?* As opposed to "*I have the thoughts but I definitely will not do anything about them.*"		
5) *Have you started to work out or worked out the details of how to kill yourself? Did you intend to carry out this plan?*		

	YES	NO
6) *Have you ever done anything, started to do anything, or prepared to do anything to end your life?* Examples: Took pills, tried to shoot yourself, cut yourself, or hang yourself, took out pills but didn't swallow any, held a gun but changed your mind or it was grabbed from your hand, went to the roof but didn't jump, collected pills, obtained a gun, gave away valuables, wrote a will or suicide note, etc. **If YES, ask: *Was this within the past three months?***		

Low Risk
Moderate Risk
High Risk

Used with permission from Kelly Posner Gerstenhaber, PhD, Founder and Director of the Columbia Lighthouse Project. The C-SSRS is available at: https://cssrs.columbia.edu/the-columbia-scale-c-ssrs/about-the-scale/

used to guide care in these instances. For more information on managing toxic ingestions in children, see the December 2023 issue of *Pediatric Emergency Medicine Practice*, "Management of Pediatric Toxic Ingestions in the Emergency Department," available at: www.ebmedicine.net/toxic-ingestions

If the child's presentation includes features of acute psychosis, laboratory studies may aid in identification of potential medical etiologies.[83] Mental health conditions and substance use in youth are associated with high-risk sexual behaviors.[84] For patients who are sexually active, testing for sexually transmitted infections should be offered.[84]

Neuroimaging is rarely indicated but may be considered for patients with focal neurologic deficits, signs of potential central nervous system infection, trauma, or headache.[85] For cases of self-injury by hanging that involve significant force or duration (eg, those with ligature marks visible on the neck) computed tomography angiography of the neck should be obtained to evaluate for blunt cerebrovascular injury, laryngeal injury, and injury to the trachea or oropharynx.[86]

Treatment

Ensuring a Safe Environment

Provision of high-quality care to children with suicidal ideation begins with ensuring a safe environment for patients and staff. Steps should be taken to eliminate potentially dangerous objects from the patient's attire and property as well as the ED room.[87-89] Patients with diabetes should have insulin pumps removed, if present, and a hospital-administered insulin regimen should be initiated to prevent intentional overdose. Ligatures such as otoscope cords or strings from hooded sweatshirts, and asphyxiation risks such as garbage bags should be removed. Metal detection devices may aid in recognition of the presence of hazardous items. The use of standardized patient scrubs may reduce some of the aforementioned risks. Similarly, food trays and utensils should incorporate soft plastic or polystyrene foam rather than hard plastic or metal. Non-locking, barricade-proof doors should be employed in patient rooms and bathrooms.[87] If possible, furniture should be affixed to the ground or weighted (ie, sand-weighted chairs) to prevent throwing or dangerous use.

Appropriately trained staff are integral to maintaining a safe, therapeutic environment. Recently published multidisciplinary consensus guidelines identify social workers and behavioral-health–trained nurses as important team members who facilitate multidisciplinary care for children with mental health needs in the ED.[46] Trauma-informed care is a patient-centered approach that aims to foster therapeutic relationships and avoid retraumatization.[90] Trauma-informed care acknowledges that maladaptive behaviors may result from past traumatic experiences and encourages demonstration of support, trust, empowerment, and cultural sensitivity by clinicians toward all patients.[90] Resources such as the Safewards Model[91] and Therapeutic Crisis Intervention[92] offer training programs in de-escalation and crisis response for healthcare workers. Not only do such programs improve staff knowledge and confidence, but they have also been shown to decrease staff injury.[93-96]

Table 1. Ask Suicide-Screening Questions (ASQ) and Columbia Suicide Severity Rating Scale (C-SSRS) Screen Version

Ask Suicide-Screening Questions (ASQ) **www.nimh.nih.gov/ASQ** **(Validated in children aged ≥8 years; see Figure 1, page 6)**	**Columbia Suicide Severity Rating Scale (C-SSRS) Screen Version** **https://cssrs.columbia.edu/the-columbia-scale-c-ssrs/about-the-scale/** **(Studied in children as young as 6 years; see Figure 2, page 7)**
1. In the past few weeks, have you wished you were dead?	1. Have you wished you were dead or wished you could go to sleep and not wake up?
2. In the past few weeks, have you felt that you or your family would be better off if you were dead?	2. Have you actually had any thoughts of killing yourself?
3. In the past few weeks, have you been having thoughts about killing yourself?	If yes to question 2, questions 3-6 should be asked. If no to question 2, skip directly to question 6.
4. Have you ever tried to kill yourself? If yes—When? How?	3. Have you been thinking about how you might do this?
If a child answers yes to any of these questions, they should be asked question 5.	4. Have you had these thoughts and had some intention of acting on them?
5. Are you having thoughts of killing yourself right now?	5. Have you started to work out or worked out details of how to kill yourself? Do you intend to carry out this plan?
	6. Have you ever done anything, started to do anything, or prepared to do anything to end your life?
Next Step: ASQ Brief Suicide Safety Assessment (BSSA) **https://www.nimh.nih.gov/sites/default/files/documents/research/research-conducted-at-nimh/asq-toolkit-materials/youth-ed/bssaed_youth_asq_nimh_toolkit.pdf**	**Next Step: Suicide Assessment Five-Step Evaluation and Triage (SAFE-T) (See Figure 3, page 9.)** **https://store.samhsa.gov/sites/default/files/sma09-4432.pdf**

Medication Management

Medication management is an important component of care. Medication adherence should be assessed, and reasons for discontinuation or alteration of regimen should be elicited. Of note, many psychotropic medications should be weaned rather than abruptly discontinued to prevent withdrawal or discontinuation syndromes.[97] Barring serious adverse reaction or drug-drug interactions, home psychiatric prescriptions should be continued in the ED.[98]

Wound Care For Self-Inflicted Injuries

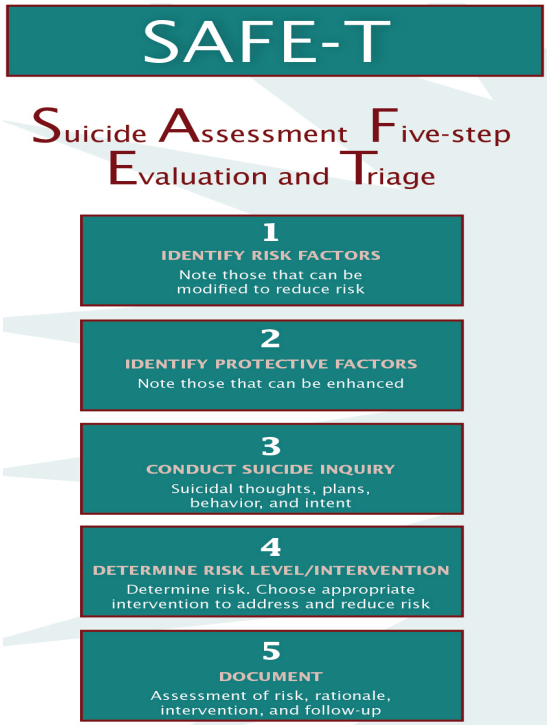
General principles of wound management (including cleansing, closure, dressing, and antibiotic prophylaxis) should be followed when treating youth with lacerations due to self-harm. Tetanus prophylaxis should be administered when indicated.[99,100] Children aged <7 years should receive DTaP vaccines, while those aged ≥7 years should have Tdap administered. Those who have received <3 doses of tetanus toxoid-containing vaccine should receive the vaccine regardless of cleanliness and/or size of the wound, and human tetanus immune globulin should be administered for all non-minor or contaminated wounds in tetanus under-immunized patients.[99,100] Material that could be used for self-harm, such as bandage rolls and other items that could be used as ligatures, should be avoided.[88] Needles, scalpels, scissors, and other sharp objects used for wound repair should never be left accessible to patients. Extra staff may be needed during procedures to maintain safety.

Management of Intentional Ingestions

Intentional poisoning is one of the most common means of self-harm in youth.[101,102] Consultation with the regional Poison Control Center or local toxicologist may be valuable in the evaluation, diagnosis, and management of patients with known or suspected ingestions.[103] Orally administered activated charcoal is an option for gastric decontamination for known or suspected ingestion.[104-108] It should be administered in cases of potentially toxic exposures and, ideally, within 1 hour of ingestion.[104,109,110] Activated charcoal should not be administered in cases of depressed mental status (current or anticipated), elevated aspiration risk, or for ingestions involving substances that adsorb poorly to activated charcoal (eg, acids, bases, metals, alcohols, and hydrocarbons).[106,107] Other historically used methods of gastric decontamination—including ipecac, gastric lavage, cathartics, and whole bowel irrigation—have insufficient evidence supporting their use and are rarely, if ever, advised.[105,108]

Acetaminophen and salicylate toxicity are troublesome in that, unlike other ingestions, poisoning may be difficult to identify in early stages. When ingestion is suspected, clinicians should have a low threshold to evaluate and treat potential toxicity from these medications.[79] Activated charcoal should be considered for patients who have ingested a potentially toxic amount of acetaminophen (>150 mg/kg) and present to the ED shortly after ingestion.[104,109] Patients with 4-hour serum acetaminophen levels above the treatment threshold on the Rumack-Matthew nomogram should receive treatment with NAC, an amino acid-derived antioxidant that has the ability to reduce hepatotoxicity secondary to acetaminophen

Figure 3. Suicide Assessment Five-Step Evaluation and Triage (SAFE-T) Risk Stratification



RISK LEVEL	RISK/PROTECTIVE FACTOR	SUICIDALITY	POSSIBLE INTERVENTIONS
High	Psychiatric diagnoses with severe symptoms or acute precipitating event; protective factors not relevant	Potentially lethal suicide attempt or persistent ideation with strong intent or suicide rehearsal	Admission generally indicated unless a significant change reduces risk. Suicide precautions
Moderate	Multiple risk factors, few protective factors	Suicidal ideation with plan, but no intent or behavior	Admission may be necessary depending on risk factors. Develop crisis plan. Give emergency/crisis numbers
Low	Modifiable risk factors, strong protective factors	Thoughts of death, no plan, intent, or behavior	Outpatient referral, symptom reduction. Give emergency/crisis numbers

Substance Abuse and Mental Health Services Administration. SAFE-T: Suicide Assessment Five-Step Evaluation and Triage. United States Department of Health and Human Services, Substance Abuse and Mental Health Services Administration. Available at: https://store.samhsa.gov/sites/default/files/sma09-4432.pdf

overdose.[109] For patients who consumed a potentially toxic dose of acetaminophen or who have abnormal liver enzymes presenting with an unknown ingestion time or ingestion outside of a 24-hour window, it is reasonable to initiate empiric NAC therapy.[109]

When salicylate overdose is suspected, serum salicylate level, serum electrolytes, blood gas, and urine pH should be obtained during initial assessment and re-evaluated frequently.[111] Because salicylate poisoning produces a mixed respiratory alkalosis and elevated anion gap metabolic acidosis, endotracheal intubation should be approached with caution.[111] Fluid resuscitation with IV lactated Ringer's solution is preferred over IV normal saline, which could worsen pH.[111] Activated charcoal should be considered within 2 hours of ingestion. Although there is not an antidote for salicylate toxicity, urine alkalinization is an effective treatment.[111] Hemodialysis is the most effective method to remove salicylate from the body, and is utilized in cases of severe symptomatic toxicity.[111]

Management of Specific Toxidromes and Acute Agitation

For more information on management of specific toxidromes, see the December 2023 issue of *Pediatric Emergency Medicine Practice*, "Management of Pediatric Toxic Ingestions in the Emergency Department," at: www.ebmedicine.net/toxic-ingestions Management of acute agitation is beyond the scope of this review and is discussed separately. See the January 2018 *Pediatric Emergency Medicine Practice* issue, "Best Practices in Managing Child and Adolescent Behavioral Health Emergencies," at: www.ebmedicine.net/behavioral-health and the consensus statement on acute agitation management by Gerson and colleagues for further information.[112]

Special Populations

Children With Intellectual Disabilities and Autism Spectrum Disorder

Self-injurious behavior among children with intellectual disabilities and autism spectrum disorder requires a distinct approach to evaluation and management. Self-injurious behavior occurs in approximately 4% of individuals with intellectual disability,[113] and may present as head-banging, face-slapping, self-biting, self-pinching, scratching, or hair-pulling.[114] Children with autism spectrum disorder present with a range of developmental abilities but, taken together, they have 3-fold higher odds of self-injurious behavior and more than double the risk for suicidality relative to peers without autism spectrum disorder.[115]

Standardized evaluation of suicidal thoughts and behaviors among children with intellectual disabilities is challenged by the lack of appropriate tools. Many screening questionnaires require a certain level of reading comprehension, receptive language skills, and abstract thinking.[116] Among children with intellectual disabilities, distress may be signaled by a regression in functional skills or a change in outward behaviors from baseline (eg, an increase in stereotypic or repetitive behaviors).[116]

When a child with an intellectual disability presents to the ED for self-injurious behaviors, a careful history and physical examination are needed to evaluate for an underlying medical etiology. Among children with limited communication abilities, self-injurious behaviors may represent a manifestation of pain. Important historical questions include the nature of the presenting behaviors, how they have changed from baseline, whether the change was acute or occurred gradually, identified triggers for the behaviors, recent changes to the patient's home or school environment, and recent medication changes.[117] The history and physical examination should focus on identifying potential causes of pain such as acute otitis media, dental infection, constipation, urinary tract infection, dysmenorrhea, accidental injury, and nonaccidental (ie, inflicted) injury.[118]

If a reversible medical etiology is not identified, some children with intellectual disabilities and/or autism spectrum disorder may benefit from placement at specialized facilities with staff who are trained in evidence-based behavioral interventions. Due to limited availability of appropriate inpatient and residential placement options, children with autism spectrum disorder are at increased risk for boarding in the ED while awaiting placement.[20] For these children, the ED environment can contribute to distress and symptoms of agitation and should be modified, when possible, to provide a safe and therapeutic environment.[119] Sensory stimulation can be reduced by dimming lights and reducing the number of staff. Safe activities and soothing sensory items can be provided, along with rewards for positive behavior. Some children may benefit from the use of adaptive communication devices or picture exchange communication systems (ie, "storyboards" explaining the flow of events in the ED).[117] Additional information regarding the evaluation and management of children with autism spectrum disorder in the ED may be found in the January 2018 issue of *Pediatric Emergency Medicine Practice*, "Best Practices in Managing Child and Adolescent Behavioral Health Emergencies," at: www.ebmedicine.net/behavioral-health

Controversies and Cutting Edge

A "No-Suicide" Contract Is Not Recommended

Safety planning is now recommended instead of a "no-suicide contract," also known as *suicide-prevention contracting*.[120] A no-suicide contract is an agreement between a patient and clinician in which the patient agrees to abstain from self-harm or

suicidal behaviors and reach out to medical professionals when in crisis.[121] Several concerns have been raised regarding this strategy for suicide prevention. First, the term *contract* implies a medicolegal aspect with intention of enforcement, which may limit open and honest communication between patients and clinicians.[122] Additionally, a no-suicide contract may cause false reassurance on behalf of the provider and may replace evidence-based suicide assessment and interventions.[121] Several reviews on no-suicide contracts have concluded that no high-quality empirical evidence supports their effectiveness in patients with suicidal ideation.[121,123] Despite this, a survey of pediatric emergency medicine chiefs conducted from 2018-2020 revealed that 17% of respondents reported discharging patients with no-suicide contracts and without psychiatric evaluation.[124] Evidence-based safety planning tools, such as the Stanley-Brown Safety Planning approach, should be used instead of suicide-prevention contracts. **(See Figure 4.)**

Suicide Screening Does Not Increase Risk of Suicide

Concern has been raised about the possible risk for questions about suicidal thoughts and behaviors leading to rumination on suicidal thoughts that results in increased suicidal behaviors (iatrogenic effect).[125] A 2022 systematic review and random-effects meta-analysis included 17 studies for review and 8 studies for analysis, comparing patients who were asked versus patients who were not asked about suicide-related behaviors, nonsuicidal self-injury, and psychological distress.[126] Asking about these topics did not significantly change the risk for subsequent suicide-related behaviors, nonsuicidal self-injury, or psychologic distress. A potential limitation is that none of the included studies were conducted in an ED setting. However, these studies provide robust qualitative and quantitative evidence that there is no iatrogenic risk in assessing suicidality.

Provision of Safety Devices in the ED as Part of Lethal Means Counseling

Although the AAP recommends triple-safe storage of firearms (storing firearms unloaded, locked, and with ammunition stored and locked separately), an estimated 4.6 million children live in homes with a loaded, unlocked firearm.[127] Among youth who presented to 4 urban EDs with suicidal ideation, 28% reported a gun was kept in the household, and 8% reported access to a firearm.[128] Additionally, surveyed teens with recent depression or lifetime history of suicidality had an increased perceived access to firearms compared to peers without depression or history of suicidality.[129] Nearly 50% of suicide deaths are related to firearms,[3] and youth who present to the ED for suicidal thoughts and behaviors often have a healthcare visit (including the ED) in the 30 days prior to the ED visit.[130,131] Therefore, the ED may offer a critical venue for education, training, and distribution of gun safety devices. A prospective pre-post study performed in a pediatric ED found distribution of a firearm safety device was associated with increased triple-safe storage compared to observation alone.[132]

Figure 4. Example Script for Stanley-Brown Safety Plan for Emergency Department Use

Step 1: Warning Signs

"What specific warning signs do you experience when a suicidal crisis is beginning or getting worse that will remind you to review your safety plan?"

Step 2: Internal Coping Strategies

"What specific activity can you do by yourself, without contacting another person, that will help to distract you from your problems or urge to kill yourself?"

Step 3: People and Social Settings that Provide Distraction

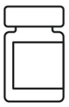
"Who can you contact or where could you go to be with other people who can distract you from your problems? This step does not involve disclosing you are in crisis"

Step 4: People Whom I Can Ask for Help During a Crisis

"Who can you contact to ask for help during a crisis and how would you contact them (include phone number or other way to contact them, e.g., text message. Who can you share the safety plan with to help you during a crisis?"

Step 5: Professionals or Agencies I Can Contact During a Crisis

"What are the names of health care professionals, agencies, hospitals, or other organizations that you can contact during a crisis and how will you contact them (include a phone number or other way to contact them)"



Step 6: Making an Environment Safer (plan for lethal means safety)

"For each lethal mean that is identified, what is the specific plan to reduce access to this lethal method so that time will pass, your suicide feelings will diminish, and it will be less likely that you will kill yourself? Who may assist you with this plan to make your environment safer?"

This figure was adapted from the Stanley-Brown Safety Plan form, copyrighted by Barbara Stanley, PhD and Gregory K. Brown, PhD (2008, 2021). The form and additional resources are available from: https://www.suicidesafetyplan.com

Further research is needed to understand whether distribution of gun safety devices in the ED reduces youth suicide attempts and deaths.

Novel Methods to Identify Suicide Risk

Natural Language Processing

To enhance success of suicide prevention, surveillance and monitoring of suicide must be improved. In addition to universal screening, use of existing electronic health record data is an alternative avenue for identification of high-risk youth.[133] Natural language processing (NLP) is a form of machine learning that can be used to identify suicide risk by analyzing language data, such as the free text of clinical notes.[134] One study that enrolled suicidal adolescents and matched controls in the ED demonstrated that NLP can distinguish between suicidal and nonsuicidal patients.[135] A subsequent prospective multicenter trial with 379 adolescents and adults enrolled from EDs and inpatient and outpatient centers showed that machine-learning algorithms can be trained to automatically identify suicidal subjects in a group of participants with suicidal ideation, psychiatric illness, and control subjects. The receiver operating characteristic curve threshold of 0.8 was met in all cases, except for adults in the adult suicide versus psychiatric illness comparison.[136] These studies represent preliminary research and offer an exciting potential future direction for identifying youth at risk for suicide.

Computerized Adaptive Testing

A computerized adaptive testing (CAT) strategy is grounded in a multidimensional extension of item response theory, in which an individual's responses are used to ascertain a provisional estimate of their standing on a measured trait.[137] In 2021, King and colleagues developed a computerized adaptive screen for suicidal youth (CASSY) after prospective enrollment of adolescent patients from 13 geographically diverse United States EDs within the Pediatric Emergency Care Applied Research Network (PECARN).[138] The CASSY measures interrelated domains of suicide risk and uses estimates to predict future suicidal behavior. Out of 72 items, CASSY requires a mean of 11 self-reported items per adolescent, taking approximately 1 to 2 minutes for administration. In the initial derivation study, the CASSY had a sensitivity of 83% and specificity of 80% for the prediction of suicide attempt within 3 months of the ED visit. A follow-up multicenter study compared CASSY to the Ask Suicide-Screening Questions (ASQ). The area under the receiver operating characteristic curve (AUROC; a measurement of the overall quality of the screening test) for CASSY was higher compared to the AUROC for ASQ overall, across specific demographic strata, and among children who presented to the ED with psychiatric symptoms.[139] Additionally, there were no statistically significant differences between the tools with respect to sensitivity and specificity in predicting suicide attempt or suicide-related events in patients with physical symptoms. A limitation to the studies includes that they were conducted at academic medical centers and therefore, the tool will need additional assessment in all ED settings.

Disposition

Determining an Appropriate Level of Care

Following the completion of suicide screening (eg, ASQ and C-SSRS Screen Version) and suicide risk assessment (eg, ASQ BSSA or SAFE-T), the next step in care is determining appropriate disposition. Pediatric and mental health resources vary among EDs in the United States,[140] so workflows should be developed to align with local resource availability. Patients should always receive care in the least restrictive environment that is able to provide an adequate level of safety.[141] This can be accomplished through a stepped-care approach that directs patients to the appropriate level of care based on their specific risk and protective factors (see the "Suicide Risk Screening Tools" section, beginning on page 5).[141] The ASQ BSSA and SAFE-T assessments aid in stratification of patients into tiers of suicide risk that align with recommended disposition.[29,68] **(See Figure 3, page 9 and National Institute of Mental Health ASQ Emergency Department Suicide Risk Clinical Pathway for Youth, page 17.)** The BSSA or SAFE-T tools can be performed by any clinician with advanced training (including a physician, nurse, physician assistant, or mental health professional who has been trained on how to administer the assessment tool).[1] Training on use of these tools is available online through the AAP's Blueprint for Youth Suicide Prevention.[1] Although there are slight differences between the clinical pathways, overarching principles suggest patients in the lowest-risk tiers can be discharged home after ED safety planning with outpatient referral, while patients in the highest-risk tier will likely need inpatient psychiatric admission.[29,68] Those in the middle-risk stratum will benefit from a full suicide safety assessment by a trained mental health provider to aid in determination of disposition. If mental health providers are not available to conduct a full safety assessment in person or via telehealth, youth who are determined to be in the middle or highest suicide risk groups may require an ED-to-ED transfer to a dedicated pediatric facility.

Preparing for Safe Discharge

It is recommended that all patients not requiring psychiatric admission (see the "Determining an Appropriate Level of Care" section) should have brief safety planning interventions for suicide prevention performed by the ED physician, advanced practice provider, nurse, social worker, or a mental health

specialist prior to ED discharge.[89] One component of safety planning, counseling on access to lethal means, focuses on taking inventory of dangerous items in the home (eg, firearms, knives, medications, and cleaning products) and making specific plans for securement or removal.[142,143] Several studies have shown that this type of brief intervention—especially when paired with distribution of securement devices such as lockboxes—is effective in improving safety practices in homes of high-risk adults and youth.[135,144,145] Despite its efficacy, counseling on access to lethal means is underutilized nationally.[146,147] The topic can be introduced to youth and their caregivers through 3 steps: (1) introduce the topic, (2) explain the importance, and (3) provide guidance. **(See Table 2.)** In addition to discussion of potential lethal means at home, use of personal coping strategies and identification of trusted people to contact (friends/family and professionals/organizations) should be emphasized.

Stanley-Brown Safety Planning is another, more comprehensive available tool. Compared to usual care, this intervention has been associated with reduced suicidal behavior in adult patients presenting to the ED[150] and has been implemented for youth as well.[151] The Stanley-Brown approach incorporates several prompts into a concise format to facilitate discussions with patients and families.[13,150,152] An example script for emergency clinicians is provided in **Figure 4, page 11**. These brief safety interventions not only help prevent suicide but may also reduce rates of readmission.[153] A 2023 systematic review supports the efficacy of ED interventions for suicide prevention;[154] however, further research is needed to identify best practices.

Timely outpatient care following a mental-health–related ED visit is a key driver for both short-term and long-term benefits. While 26% of children will re-present to the ED in the 6 months following discharge, the risk for return is decreased among children with prompt outpatient follow-up,[155] therefore clinicians should familiarize themselves with resources to improve care linkage. Direct communication with the patient's pediatrician is preferable, with referral to mental health professionals when indicated.[63] ED-based care coordination[156] and post-visit contact (via text message, phone calls, or postcards), increase the likelihood of outpatient care linkage.[157-159] Other levels of care, such as psychiatric urgent care centers or mobile crisis response units, can also aid in follow-up and emergency psychiatric care.[160] The national crisis hotline, accessed by dialing 9-8-8, is now available 24/7 to connect families with trained mental health counselors.[161] School-based mental health services and telehealth may remove barriers related to transportation or provider availability.[160] Intensive outpatient or partial hospitalization programs may be appropriate for youth requiring more intensive care than routine outpatient therapy, but who do not meet criteria for inpatient admission.[162] These programs offer treatment multiple days per week, while allowing children to return to the home environment to practice new coping skills. Overall, improving family awareness of available mental health services improves access to care and may decrease return ED visits.[160,162]

Care of Patients Awaiting Admission

For youth determined to be at moderate or high risk for suicide who are awaiting definitive disposition, ED staff should initiate safety precautions (see the "Ensuring a Safe Environment" section, page 8) and 1:1 observation when feasible. Many children who require inpatient admission board in the ED or inpatient medical units for prolonged time periods.[20] A survey of clinicians, representing both freestanding pediatric and general hospitals, found that 87 of 88 hospitals regularly board youth awaiting psychiatric admission.[21] Only 14% of hospitals initiated or adjusted psychiatric medications for boarded youth and just 18% provided psychotherapy during boarding. The median duration of boarding was 48 hours, with patients at 75% of institutions routinely boarding for >24 hours.[21] This is

Table 2. How to Introduce Counseling on Access to Lethal Means

Step	Example Verbiage
Introduce topic	• Many children and teens are struggling with mental health. • When mental health concerns are identified, we like to provide information to families on ways you can help keep the home safe.
Explain importance	• Suicide is the second leading cause of death in adolescents.[1] • In just 1 year, 1 in 5 high schoolers seriously considered suicide.[5] • Unfortunately, adolescents can be impulsive: over 70% that attempt suicide do so after considering it for <1 hour.[148]
Provide guidance	• The best way to keep your family safe is to reduce access to potentially dangerous items in the home. • Medication overdose is the most common means of suicide attempt, while firearms are the most lethal means.[4] Other dangerous items include knives, razor blades, and household cleaning solutions. • While your child is in crisis, any of these potentially lethal means that are not in regular use should be removed from the home—even if just temporarily. • All remaining items should be secured in a locked cabinet or lockbox. • We recommend all firearms be stored locked, unloaded, with ammunition secured separately. • These actions can reduce suicide risk by nearly 80%.[149]

significantly higher than the maximum boarding duration of 4 hours recommended by The Joint Commission[163] and can cause psychological stress for boarded patients, increased delays in care for all ED patients, and detrimental financial impacts for the ED.[160,163,164]

Methods to enhance the care and well-being of boarded patients and their families through multidisciplinary stakeholder focus groups have been explored and reveal themes in patient safety, development of normal routines, interdisciplinary collaboration, optimization of existing resources, mental health skills development, caregiver/family presence and engagement, and patient affirmation and empathy.[165] Additionally, published consensus panel recommendations for children experiencing mental health boarding give guidance on optimizing the treatment environment, ensuring appropriate staffing, and enhancing service delivery.[46] In EDs without available in-person mental health providers, psychiatric consultation via telehealth has been shown to decrease ED length of stay and patient cost, while also improving patient-family experience.[46,166]

Summary

Suicide is one of the leading causes of death among youth, and rates of presentation to the ED for suicidal ideation and attempts have increased dramatically in recent years. The ED may be the first or only healthcare contact for many youths in mental health crisis. Suicide risk screening with a validated tool, such as the ASQ or C-SSRS Screen Version, is required by The Joint Commission for all patients aged ≥12 years presenting to the ED with a primary mental or behavioral health concern. Additionally, universal screening in the ED is feasible, does not increase ED length of stay, identifies children with previously unknown risk for suicide, and is associated with timelier follow-up and decreased risk for suicide attempt when coupled with brief ED interventions. Risk factors for suicide include poverty, rural residence, sexual and gender minority populations, prior mental health diagnoses, prior suicide attempt, childhood maltreatment, foster care or housing instability, and access to lethal means (eg, firearms). Positive suicide risk screening should prompt follow-up assessment with a brief, evidence-based, structured suicide safety assessment. Care pathways from the National Institute of Mental Health and Substance Abuse and Mental Health Services Administration can help clinicians determine a patient's level of risk and inform ED disposition planning.

While noting limitations, confidentiality, including disclosure of thoughts relating to harm to self or others, is crucial in obtaining an accurate history from youth. The medical evaluation of youth with suicidality should include a detailed evaluation of the presenting chief complaint, as well as identification of co-occurring conditions that require active management during the ED visit. The physical examination should evaluate for alterations in mental status, vital sign abnormalities, neurologic deficits, and signs of self-harm (eg, lacerations, ligature marks, and toxidromes). The AAP recommends against routine laboratory testing for "medical clearance" of children who require inpatient psychiatric admission, as evidence shows that this testing is costly, delays care, and does not change management.

Optimizing safety is a cornerstone of management for youth with suicidal ideation. Training ED staff in de-escalation techniques and trauma-informed care can improve safety and promote therapeutic relationships with patients. Youth at risk for suicide should have 1:1 observation and receive care in an environment free of potentially hazardous items. Facilitation of outpatient follow-up and safety planning are evidence-based interventions that can decrease future suicide attempts for patients determined to be safe for discharge. No-suicide contracts lack evidence to support their use and should be avoided.

Time- and Cost-Effective Strategies

Universal screening for suicidal ideation among children may aid in early identification of children with occult suicidality.[56,167] Many publications describe screening youth aged ≥12 years and those aged 8

5 Things That Will Change Your Practice

1. Implement universal suicide screening for all patients aged ≥12 years.
2. When performing suicide screening, use a validated evidence-based suicide risk screening tool such as the Ask Suicide-Screening Questions or the Columbia Suicide Severity Rating Scale Screen Version.
3. Once a child is determined to be a possible safety risk, ensure a safe environment that is free of items that can be used for self-harm (eg, cords, strings, ties, furniture that can be thrown).
4. If a child is discharged from the ED after a mental health evaluation for self-harm or suicidal ideation, ensure safety planning occurs prior to discharge and determine an outpatient follow-up plan.
5. The ED assessment of a child with suicidal ideation offers the opportunity to review access to lethal means in the home and the importance of safe storage of firearms as part of the brief safety planning intervention.

Case Conclusions

CASE 1

For the 13-year-old girl who presented with her father with the request for a medical evaluation...

The triage nurse used the ASQ screening tool while performing intake for the girl, and identified that the girl had thoughts of killing herself in the past week. You placed the girl in a safe room and conducted a confidential interview with her. She shared that she had suicidal thoughts in the past week with a plan to hang herself. She also reported childhood trauma and prior physical abuse by her father. You conducted a brief suicide safety assessment and concluded that the patient was at high risk and required assessment by a mental health provider. You also filed a mandated report and contacted Child Protective Services due to her disclosure of prior abuse. Telehealth was utilized for the mental health assessment, and the patient was transferred to an inpatient psychiatric unit for further care.

CASE 2

For the 16-year-old boy who presented with his foster mother with concern for worsening mental health symptoms...

Upon interviewing the boy, he denied active suicidal ideation or plan. You performed a thorough examination and identified multiple lacerations requiring repair. The timing of his last tetanus vaccination was unknown. After irrigation and closure of the wounds and updating his tetanus vaccination, you performed a safety assessment. You determined he was at moderate risk for suicide, and he was evaluated by a mental health professional who did not think he would benefit from inpatient psychiatric care at this time. Close follow-up was recommended with his existing outpatient provider. You contacted the outpatient provider to discuss the case and scheduled a timely appointment. Prior to discharge, you conducted counseling on access to lethal means and discovered that there was an unlocked firearm in the household. You counseled his foster mother about safe gun storage and provided the family with a gun lock.

CASE 3

For the 8-year-old boy with a history of autism spectrum disorder who presented with his parents for self-harm by head-banging...

Your ED team placed the boy in a safe room. You gathered further information that the child had intermittently seemed uncomfortable. On your examination, you identified that the patient had a slightly distended abdomen and palpated stool. His parents reported that he has never had a diagnosis of constipation, but he has had difficulty with stooling over the past few months. They say he last had a bowel movement 7 days ago. Based on this information, you were concerned about constipation as a cause for the self-harm. Your team administered a pediatric enema. After a large stool in the ED, the patient's head-banging behaviors resolved. You discharged the patient on a stool regimen with a plan for close follow-up with his pediatrician.

to 11 years with clinical indications (see the "Suicide Risk Screening Tools" section, page 5), based on current recommendations from the AAP;[1,49] however, studies have demonstrated the efficacy of universal and clinically indicated screening in children as young as 6 and 8 years old.[50,56,168] While implementation may raise concern about increasing time in the ED, studies have shown that suicide screening does not prolong ED length of stay.[50,169] Integration of suicide screening into established workflows can improve uptake and reduce care disruptions.[62] Screening questionnaires such as the ASQ or C-SSRS Screen Version, and predefined care algorithms can be embedded within the electronic medical record.[170] At one institution, a multidisciplinary quality improvement effort streamlined processes for youth with suicidal ideation in the ED. The team mapped care processes, standardized suicide risk screening, and implemented follow-up phone calls after discharge.[170] Not only did the screening rate increase from 0% to 94%, but the average length of stay also decreased from 5.2 to 4.0 hours.[170]

Investing in dedicated mental health staff is another avenue to improve ED throughput. Some institutions have embedded dedicated child psychiatrists and psychiatric social workers within their EDs, with resulting decreases in admission rates and length of stay, without increasing ED return rates.[171] Telepsychiatry or providing mental health assessment via telehealth are other options to facilitate timely assessments and connect patients with outpatient follow-up.[160,166] One large academic center employed telepsychiatry services at a satellite campus and found length of stay, on average, was reduced by 3 hours, while patient costs decreased by over $5000.[166]

Risk Management Pitfalls for Suicidal Ideation and Self-Harm in Children

1. **"I thought that young children didn't need to be screened for suicide risk."** Although suicide is more common among adolescents, suicide does occur among elementary school-aged children. Children aged 8 to 11 years should be screened for suicide risk when clinically indicated (eg, presenting to the ED for mental health symptoms, caregiver concern).

2. **"The child stated he had thoughts about killing himself within the past week but does not have any suicidal thoughts now, so he does not need a suicide risk assessment."** Evidence-based suicide risk screening tools guide the need for suicide risk assessment. Suicide screening tools, such as the ASQ and C-SSRS Screen Version, should be followed by a brief safety assessment if any of the screening questions are answered affirmatively.

3. **"I thought caregiver observation was sufficient to mitigate safety hazards in the ED room for children with suicidal ideation."** All medical equipment that could potentially be used for self-harm should be removed from the room to ensure a safe ED environment for children with suicidal ideation or self-harm.

4. **"I thought the child with suicidal thoughts who had an insulin pump should keep the insulin pump on in the ED to ensure he received appropriate insulin therapy while undergoing psychiatric evaluation."** Personal medical equipment that can be used for lethal means should not be used by youth with thoughts of self-harm or suicidal ideation who present to the ED. The insulin pump should be disconnected and therapies should be provided by the ED team.

5. **"The parents did not want to leave the room, so I asked questions regarding suicidal ideation and substance use with parents present."** The ED team should make every effort to obtain information for sensitive subjects such as mental health in a confidential manner without family/friends present. Informing caregivers that this is a standard part of the adolescent examination is often helpful in encouraging them to allow clinician time alone with the patient. In discussing confidentiality, clinicians should also discuss the limitations of confidentiality with youth, including disclosure of imminent risk for self-harm.

6. **"I didn't think I needed to perform a full skin examination on the child with suicidal thoughts."** A complete skin examination should be performed to ensure there is no soft-tissue injury secondary to self-harm that requires irrigation, closure, and/or tetanus vaccination.

7. **"I assumed the child was at low risk for suicide because they did not respond to the screening questions."** In prior studies, children who refused to answer suicide risk screening questions have been shown to have some level of suicide risk as determined by an interview with a mental health provider. Refusal to answer suicide screening questions has diagnostic value and should not be ignored.

8. **"She and I talked about a promise to not engage in suicidal behaviors, and I felt confident she would keep her promise."** There is no evidence to support suicide prevention contracting or creating a no-suicide contract between the ED clinician and patient. Instead, safety planning should use an evidence-based tool such as the Stanley-Brown Safety Planning approach.

9. **"The pediatrician will probably hear about the ED visit for self-harm, and the family will likely schedule follow-up."** Every effort should be made to ensure outpatient follow-up for youth discharged from the ED after evaluation for a mental health concern. Follow-up can decrease the risk for ED return within the first 5 days after discharge.

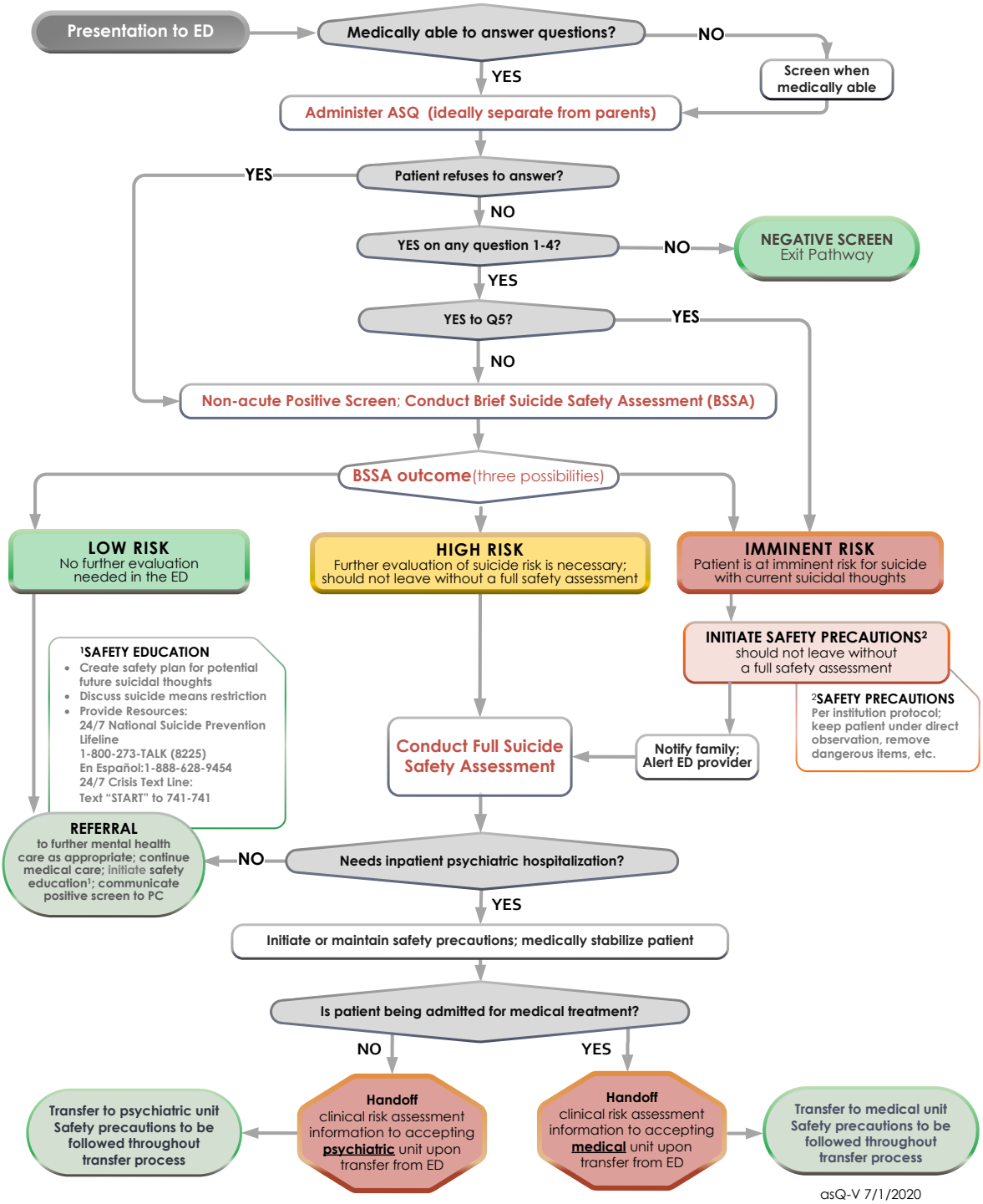
10. **"I didn't ask about lethal means because that is not in my role as an emergency clinician."** Youth who live in homes with firearms have 3-fold to 4-fold increased risk for suicide. Thirty-five percent of gun-related deaths in children are due to suicide, and youth often have a health visit (including the ED) in the 30 days before an ED visit for suicidal crisis. The ED can therefore serve as an important location for lethal means counseling, training, and distribution of gun safety devices.

National Institute of Mental Health ASQ Emergency Department Suicide Risk Clinical Pathway for Youth

SUICIDE RISK SCREENING PATHWAY — EMERGENCY DEPARTMENT

[See accompanying text document]

Sponsored by AACAP's Abramson Grant. Created by PaCC workgroup of Physically Ill Child Committee.



The Ask Suicide-Screening Questions (ASQ) Toolkit is available at: https://www.nimh.nih.gov/ASQ

Khyati Brahmbhatt, Brian P. Kurtz, Khalid I. Afzal, et al. Suicide risk screening in pediatric hospitals: clinical pathways to address a global health crisis. *Psychosomatics*. 2019. Volume 60, Issue 1. Pages 1-9.

References

Evidence-based medicine requires a critical appraisal of the literature based upon study methodology and number of subjects. Not all references are equally robust. The findings of a large, prospective, randomized, and blinded trial should carry more weight than a case report.

To help the reader judge the strength of each reference, pertinent information about the study, such as the type of study and the number of patients in the study is included in bold type following the references, where available. The most informative references cited in this paper, as determined by the authors, are noted by an asterisk (*) next to the number of the reference.

1.* American Academy of Pediatrics and American Foundation for Suicide Prevention. Suicide: blueprint for youth suicide prevention. Accessed February 1, 2024. Available at: **https://www.aap.org/en/patient-care/blueprint-for-youth-suicide-prevention/ (Report)**

2. United States Centers for Disease Control and Prevention. Leading causes of death and injury. Accessed February 1, 2024. Available at: https://www.cdc.gov/injury/wisqars/leadingcauses.html **(Report)**

3. United States Centers for Disease Control and Prevention. WONDER. Accessed February 1, 2024. Available at: https://wonder.cdc.gov/ **(Epidemiologic database)**

4. Conner A, Azrael D, Miller M. Suicide case-fatality rates in the United States, 2007 to 2014: a nationwide population-based study. *Ann Intern Med.* 2019;171(12):885-895. **(Cross-sectional study; 3,657,886 patient records)**

5. Gaylor EM, Krause KH, Welder LE, et al. Suicidal thoughts and behaviors among high school students - youth risk behavior survey, United States, 2021. *MMWR Suppl.* 2023;72(1):45-54. **(Survey; 17,232 participants)**

6. Goldman-Mellor S, Olfson M, Lidon-Moyano C, et al. Association of suicide and other mortality with emergency department presentation. *JAMA Netw Open.* 2019;2(12):e1917571. **(Retrospective cohort study; 648,646 patients)**

7.* King CA, Grupp-Phelan J, Brent D, et al. Predicting 3-month risk for adolescent suicide attempts among pediatric emergency department patients. *J Child Psychol Psychiatry.* 2019;60(10):1055-1064. **(Prospective observational study; 2897 participants) DOI: 10.1111/jcpp.13087**

8. Fontanella CA, Warner LA, Steelesmith D, et al. Clinical profiles and health services patterns of Medicaid-enrolled youths who died by suicide. *JAMA Pediatr.* 2020;174(5):470-477. **(Case-control study; 7256 participants)**

9. Braciszewski JM, Lanier A, Yeh HH, et al. Health diagnoses and service utilization in the year before youth and young adult suicide. *Psychiatr Serv.* 2023;74(6):566-573. **(Case-control study; 4895 participants)**

10. Asarnow J, Berk M, Zhang L, et al. Emergency department youth patients with suicidal ideation or attempts: predicting suicide attempts through 18 months of follow-up. *Suicide Life Threat Behav.* 2017;47(5):551-566. **(Randomized controlled trial; 181 youth)**

11. Olfson M, Marcus SC, Bridge JA. Focusing suicide prevention on periods of high risk. *JAMA.* 2014;311(11):1107-1108. **(Review)**

12. Cushing AM, Liberman DB, Pham PK, et al. Mental health revisits at US pediatric emergency departments. *JAMA Pediatr.* 2023;177(2):168-176. **(Cohort study; 308,264 mental health visits, 217,865 patients)**

13.* Doupnik SK, Rudd B, Schmutte T, et al. Association of suicide prevention interventions with subsequent suicide attempts, linkage to follow-up care, and depression symptoms for acute care settings: a systematic review and meta-analysis. *JAMA Psychiatry.* 2020;77(10):1021-1030. **(Systematic review and meta-analysis; 14 studies, 4270 patients) DOI: 10.1001/jamapsychiatry.2020.1586**

14. Cutler GJ, Rodean J, Zima BT, et al. Trends in pediatric emergency department visits for mental health conditions and disposition by presence of a psychiatric unit. *Acad Pediatr.* 2019;19(8):948-955. **(Cross-sectional study; 8,479,311 ED visits)**

15. Lo CB, Bridge JA, Shi J, et al. Children's mental health emergency department visits: 2007-2016. *Pediatrics.* 2020;145(6):e20191536. **(Cross-sectional study, nationwide emergency department sample databases)**

16. Bommersbach TJ, McKean AJ, Olfson M, et al. National trends in mental health-related emergency department visits among youth, 2011-2020. *JAMA.* 2023;329(17):1469-1477. **(Cross-sectional study; 49,515 mental health-related visits)**

17. Arakelyan M, Freyleue S, Avula D, et al. Pediatric mental health hospitalizations at acute care hospitals in the US, 2009-2019. *JAMA.* 2023;329(12):1000-1011. **(Cross-sectional study; 4,767,840 hospitalizations)**

18. Yard E, Radhakrishnan L, Ballesteros MF, et al. Emergency department visits for suspected suicide attempts among persons aged 12-25 years before and during the COVID-19 pandemic - United States, January 2019-May 2021. *MMWR Morb Mortal Wkly Rep.* 2021;70(24):888-894. **(Report)**

19. Ibeziako P, Kaufman K, Scheer KN, et al. Pediatric mental health presentations and boarding: first year of the COVID-19 pandemic. *Hosp Pediatr.* 2022;12(9):751-760. **(Retrospective study; 3799 mental health admissions to ED and inpatient medical/surgical unit)**

20. McEnany FB, Ojugbele O, Doherty JR, et al. Pediatric mental health boarding. *Pediatrics.* 2020;146(4):e20201174. **(Systematic review; 11 studies)**

21. Leyenaar JK, Freyleue SD, Bordogna A, et al. Frequency and duration of boarding for pediatric mental health conditions at acute care hospitals in the US. *JAMA.* 2021;326(22):2326-2328. **(Survey; 88 hospitals)**

22. Sheftall AH, Asti L, Horowitz LM, et al. Suicide in elementary school-aged children and early adolescents. *Pediatrics.* 2016;138(4):e20160436. **(Cross-sectional study; 693 participants)**

23. Miranda-Mendizabal A, Castellvi P, Pares-Badell O, et al. Gender differences in suicidal behavior in adolescents and young adults: systematic review and meta-analysis of longitudinal studies. *Int J Public Health.* 2019;64(2):265-283. **(Systematic review and meta-analysis; 67 studies)**

24. Bridge JA, Horowitz LM, Fontanella CA, et al. Age-related racial disparity in suicide rates among US youths from 2001 through 2015. *JAMA Pediatr.* 2018;172(7):697-699. **(Cross-sectional study; 15,002 suicide deaths)**

25. Lindsey MA, Sheftall AH, Xiao Y, et al. Trends of suicidal behaviors among high school students in the United States: 1991-2017. *Pediatrics.* 2019;144(5):e20191187. **(Survey; 198,540 participants)**

26. Hatchel T, Polanin JR, Espelage DL. Suicidal thoughts and behaviors among LGBTQ youth: meta-analyses and a systematic review. *Arch Suicide Res.* 2021;25(1):1-37. **(Systematic review and meta-analysis; 44 studies)**

27. Fontanella CA, Hiance-Steelesmith DL, Phillips GS, et al. Widening rural-urban disparities in youth suicides, United States, 1996-2010. *JAMA Pediatr.* 2015;169(5):466-473. **(Cross-sectional study; 66,595 youths)**

28. Hoffmann JA, Farrell CA, Monuteaux MC, et al. Association of pediatric suicide with county-level poverty in the United States, 2007-2016. *JAMA Pediatr.* 2020;174(3):287-294. **(Cross-sectional study; 20,982 youths)**
29. National Institute of Mental Health. Ask Suicide-Screening Questions (ASQ) Toolkit. Accessed February 1, 2024. Available at: https://www.nimh.nih.gov/research/research-conducted-at-nimh/asq-toolkit-materials **(NIMH Toolkit)**
30. Cash SJ, Bridge JA. Epidemiology of youth suicide and suicidal behavior. *Curr Opin Pediatr.* 2009;21(5):613-619. **(Review)**
31. Whitney DG, Peterson MD. US national and state-level prevalence of mental health disorders and disparities of mental health care use in children. *JAMA Pediatr.* 2019;173(4):389-391. **(Survey; estimated 46.6 million children after survey weighting)**
32. Abraham ZK, Sher L. Adolescent suicide as a global public health issue. *Int J Adolesc Med Health.* 2017;31(4):20170036. **(Review)**
33. Swanson SA, Eyllon M, Sheu YH, et al. Firearm access and adolescent suicide risk: toward a clearer understanding of effect size. *Inj Prev.* 2020;27(3):264-270. **(Cross-sectional study, 10,123 adolescents)**
34.* Hughes JL, Horowitz LM, Ackerman JP, et al. Suicide in young people: screening, risk assessment, and intervention. *BMJ.* 2023;381:e070630. **(Review) DOI: 10.1136/bmj-2022-070630**
35. Jellinek MS, Snyder, JB. Depression and suicide in children and adolescents. *Pediatr Rev.* 1998;19(8):255-264. **(Review)**
36. Chun TH, Mace SE, Katz ER, et al. Evaluation and management of children and adolescents with acute mental health or behavioral problems. Part I: common clinical challenges of patients with mental health and/or behavioral emergencies. *Pediatrics.* 2016;138(3):e20161570. **(Review and clinical guidelines)**
37. Smith AR, Zuromski KL, Dodd DR. Eating disorders and suicidality: what we know, what we don't know, and suggestions for future research. *Curr Opin Psychol.* 2018;22:63-67. **(Review)**
38. Barnert ES, Bath E, Heard-Garris N, et al. Commercial sexual exploitation during adolescence: a US-based national study of adolescent to adult health. *Public Health Rep.* 2022;137(1_suppl):53S-62S. **(Retrospective cohort study; 10,918 adult participants)**
39. Wnorowska JH, Naik V, Ramgopal S, et al. Characteristics of pediatric behavioral health emergencies in the prehospital setting. *Acad Emerg Med.* 2023. DOI: 10.1111/acem.14833 **(Cross-sectional study; 2,740,271 pediatric EMS encounters)**
40. Zorovich EV, Kothari K, Adelgais K, et al. Prehospital management of pediatric behavioral health emergencies: a scoping review. *Cureus.* 2023;15(5):e38840. **(Scoping review; 50 studies, 43 EMS protocols, 7 studies and 4 EMS protocols included for in-depth analysis)**
41. DeCou CR, Huppert T, Kume K, et al. Prehospital patient care protocols for suicidality in Washington state. *Prehosp Emerg Care.* 2021;25(3):432-437. **(Protocol review; 39 protocols)**
42. Glomb NW, Trivedi T, Grupp-Phelan J, et al. Safety of a prehospital emergency medical services protocol for an alternative destination for pediatric behavioral emergencies in Alameda County. *J Am Coll Emerg Physicians Open.* 2023;4(2):e12930. **(Retrospective cohort study; 38,241 pediatric encounters)**
43. Ford CA. Influence of physician confidentiality assurances on adolescents' willingness to disclose information and seek future health care. A randomized controlled trial. *JAMA.* 1997;278(12):1029-1034. **(Retrospective cohort study; 562 participants)**
44. Rocker JA, Oestreicher J. Focused medical assessment of pediatric behavioral emergencies. *Child Adolesc Psychiatr Clin N Am.* 2018;27(3):399-411. **(Review)**
45. Chun TH, Mace SE, Katz ER, et al. Evaluation and management of children with acute mental health or behavioral problems. Part II: recognition of clinically challenging mental health related conditions presenting with medical or uncertain symptoms. *Pediatrics.* 2016;138(3):e20161573. **(Review and clinical guidelines)**
46. Feuer V, Mooneyham GC, Malas NM, et al. Addressing the pediatric mental health crisis in emergency departments in the US: findings of a national pediatric boarding consensus panel. *J Acad Consult Liaison Psychiatry.* 2023;64(6):501-511. **(Delphi consensus)**
47. Boudreaux ED, Camargo CA Jr, Arias SA, et al. Improving suicide risk screening and detection in the emergency department. *Am J Prev Med.* 2016;50(4):445-453. **(Three-phase interrupted time series; 236,791 ED visit records)**
48. Scudder A, Rosin R, Baltich Nelson B, et al. Suicide screening tools for pediatric emergency department patients: a systematic review. *Front Psychiatry.* 2022;13:916731. **(Systematic review; 43 articles)**
49. Roaten K, Horowitz LM, Bridge JA, et al. Universal pediatric suicide risk screening in a health care system: 90,000 patient encounters. *J Acad Consult Liaison Psychiatry.* 2021;62(4):421-429. **(Retrospective cohort study; 91,580 pediatric encounters)**
50. Alrisi K, Alnasif N, Nazeer A, et al. Risk of suicide in children and adolescents in the emergency department - is universal screening the answer? *Arch Dis Child.* 2023;108(12):970-974. **(Comprehensive review; 8 studies)**
51. The Joint Commission. R3 report: national patient safety goal for suicide prevention. 2018. Accessed February 1, 2024. Available at: https://www.jointcommission.org/standards/r3-report/r3-report-issue-18-national-patient-safety-goal-for-suicide-prevention/ **(Report)**
52. Mangione CM, Barry MJ, Nicholson WK, et al. Screening for depression and suicide risk in children and adolescents: US Preventive Services Task Force recommendation statement. *JAMA.* 2022;328(15):1534-1542. **(Recommendation statement)**
53. Bridge JA, Birmaher B, Brent DA. The case for universal screening for suicidal risk in adolescents. *Pediatrics.* 2023;151(6):e2022061093. **(Editorial)**
54. Nock MK, Green JG, Hwang I, et al. Prevalence, correlates, and treatment of lifetime suicidal behavior among adolescents: results from the National Comorbidity Survey Replication Adolescent Supplement. *JAMA Psychiatry.* 2013;70(3):300-310. **(Dual frame study; 6483 adolescents)**
55. Miller IW, Camargo CA Jr, Arias SA, et al. Suicide prevention in an emergency department population: the ED-SAFE study. *JAMA Psychiatry.* 2017;74(6):563-570. **(Multi-center clinical trial; 1376 participants)**
56. DeVylder JE, Ryan TC, Cwik M, et al. Assessment of selective and universal screening for suicide risk in a pediatric emergency department. *JAMA Netw Open.* 2019;2(10):e1914070. **(Retrospective cohort study; 15,003 youths)**
57. Patel A, Watts C, Shiddell S, et al. Universal adolescent suicide screening in a pediatric urgent care center. *Arch Suicide Res.* 2018;22(1):118-127. **(Retrospective study; 4786 patients)**
58. Pickett ML, Krentz C, Nimmer M, et al. Implementation of a tablet-based suicide screening tool in an emergency department. *Am J Emerg Med.* 2021;42:256-257. **(Prospective cohort study; 1625 youth presenting to children's hospital ED)**
59. Crandal BR, Aguinaldo LD, Carter C, et al. Opportunities for early identification: implementing universal depression screening with a pathway to suicide risk screening in a pediatric health care system. *J Pediatr.* 2022;241:29-35.e1. **(Retrospective study; 95,613 adolescent patients)**
60. Lightbody T, Thull-Freedman J, Freedman SB, et al. Use of quality improvement methods to enhance implementation of

a mental health care bundle in a pediatric emergency department. *CJEM*. 2023;25(4):326-334. **(Quality improvement study)**

61. Heilbron N, Goldston D, Walrath C, et al. Suicide risk protocols: addressing the needs of high risk youths identified through suicide prevention efforts and in clinical settings. *Suicide Life Threat Behav*. 2013;43(2):150-160. **(Review)**
62. Newton AS, Hamm MP, Bethell J, et al. Pediatric suicide-related presentations: a systematic review of mental health care in the emergency department. *Ann Emerg Med*. 2010;56(6):649-659. **(Systematic review; 10 studies)**
63. Esposito JM, Fein JA, Marshall J, et al. Improving mental health communication from the pediatric emergency department to primary care. *Pediatr Emerg Care*. 2020;36(9):424-429. **(Quality improvement study)**
64.* Horowitz LM, Bridge JA, Teach SJ, et al. Ask Suicide-Screening Questions (ASQ): a brief instrument for the pediatric emergency department. *Arch Pediatr Adolesc Med*. 2012;166(12):1170-1176. **(Instrument validation study)** **DOI: 10.1001/archpediatrics.2012.1276**
65. Posner K, Brown GK, Stanley B, et al. The Columbia-Suicide Severity Rating Scale: initial validity and internal consistency findings from three multisite studies with adolescents and adults. *Am J Psychiatry*. 2011;168(12):1266-1277. **(Multicenter study; 3 studies, 1 study with 124 adolescents, 1 study with 312 adolescents, and 1 study with 237 adults)**
66. Hengehold T, Boyd S, Liddy-Hicks S, et al. Utility of the "no response" option in detecting youth suicide risk in the pediatric emergency department. *Ann Emerg Med*. 2019;74(1):11-16. **(Retrospective cohort study; 3388 patients)**
67. Brahmbhatt K, Kurtz BP, Afzal KI, et al. Suicide risk screening in pediatric hospitals: clinical pathways to address a global health crisis. *Psychosomatics*. 2019;60(1):1-9. **(Review)**
68. Jacobs D. Suicide assessment five-step evaluation and triage for clinicians. 2009. Accessed February 1, 2024. Available at: https://store.samhsa.gov/sites/default/files/sma09-4432.pdf **(Guide)**
69. Cwik MF, O'Keefe VM, Haroz EE. Suicide in the pediatric population: screening, risk assessment and treatment. *Int Rev Psychiatry*. 2020;32(3):254-264. **(Review)**
70. Santiago LI, Tunik MG, Foltin GL, et al. Children requiring psychiatric consultation in the pediatric emergency department: epidemiology, resource utilization, and complications. *Pediatr Emerg Care*. 2006;22(2):85-89. **(Prospective descriptive cohort study; 210 patients)**
71. Santillanes G, Donofrio JJ, Lam CN, et al. Is medical clearance necessary for pediatric psychiatric patients? *J Emerg Med*. 2014;46(6):800-807. **(Retrospective cohort study; 22,000 annual patient visits)**
72. Donofrio JJ, Santillanes G, McCammack BD, et al. Clinical utility of screening laboratory tests in pediatric psychiatric patients presenting to the emergency department for medical clearance. *Ann Emerg Med*. 2014;63(6):666-675.e3. **(Retrospective cohort study; 1082 visits)**
73. Donofrio JJ, Horeczko T, Kaji A, et al. Most routine laboratory testing of pediatric psychiatric patients in the emergency department is not medically necessary. *Health Aff* (Millwood). 2015;34(5):812-818. **(Retrospective cohort study; 1082 children)**
74. Bonadio W, Welsh C, Rosen C, et al. Efficacy of emergency department screening tests for children admitted to an inpatient psychiatric unit for acute mental health emergencies. *Acad Emerg Med*. 2022;29(6):789-791. **(Retrospective cohort study; 613 charts)**
75. Shihabuddin BS, Hack CM, Sivitz AB. Role of urine drug screening in the medical clearance of pediatric psychiatric patients: is there one? *Pediatr Emerg Care*. 2013;29(8):903-906. **(Retrospective cohort study; 875 charts identified from laboratory records, 539 charts from ED evaluation)**
76. Fortu JM, Kim IK, Cooper A, et al. Psychiatric patients in the pediatric emergency department undergoing routine urine toxicology screens for medical clearance: results and use. *Pediatr Emerg Care*. 2009;25(6):387-392. **(Retrospective cohort study; 652 charts)**
77. American Academy of Pediatrics. Choosing wisely: five things physicians and patients should question in the practice of pediatric emergency medicine. 2022. Accessed February 1, 2024. Available at: https://www.aap.org/en/news-room/news-releases/aap/2022/choosing-wisely-five-things-physicians-and-patients-should-question-in-the-practice-of-pediatric-emergency-medicine/ **(Society recommendations)**
78. Berg JS, Payne AS, Wavra T, et al. Implementation of a medical clearance algorithm for psychiatric emergency patients. *Hosp Pediatr*. 2023;13(1):66-71. **(Quality improvement study)**
79. Sporer KA, Khayam-Bashi H. Acetaminophen and salicylate serum levels in patients with suicidal ingestion or altered mental status. *Am J Emerg Med*. 1996;14(5):443-446. **(Retrospective cohort study; 1820 patients)**
80. Wood DM, Dargan PI, Jones AL. Measuring plasma salicylate concentrations in all patients with drug overdose or altered consciousness: is it necessary? *Emerg Med J*. 2005;22(6):401-403. **(Retrospective cohort study; 722 patient episodes)**
81. Rumack BH, Matthew H. Acetaminophen poisoning and toxicity. *Pediatrics*. 1975;55(6):871-876. **(Review)**
82. Schiodt FV, Rochling FA, Casey DL, et al. Acetaminophen toxicity in an urban county hospital. *N Engl J Med*. 1997;337(16):1112-1117. **(Retrospective cohort study; 71 patients)**
83. Merritt J, Tanguturi Y, Fuchs C, et al. Medical etiologies of secondary psychosis in children and adolescents. *Child Adolesc Psychiatr Clin N Am*. 2020;29(1):29-42. **(Review)**
84. Ekstrom J, Alfath Z, Schneider K. Sexual history documentation and sexually transmitted infection screening for mental health patients in a pediatric emergency department. *Pediatr Emerg Care*. 2022;38(1):9-12. **(Retrospective cohort study; 285 patient encounters)**
85. Cunqueiro A, Durango A, Fein DM, et al. Diagnostic yield of head CT in pediatric emergency department patients with acute psychosis or hallucinations. *Pediatr Radiol*. 2019;49(2):240-244. **(Retrospective cohort study; 397 pediatric emergency department head CTs)**
86. Dorfman JD. Near hanging: evaluation and management. *Chest*. 2023;163(4):855-860. **(Review)**
87. Pankey V, Bardwell P, EM. B, et al. Design of behavioral health crisis units. 2022. Accessed February 1, 2024. Available at: https://fgiguidelines.org/wp-content/uploads/2022/06/FGI-Design-of-BHCUs_2022-06.pdf **(Guidelines)**
88. Stricker FR, O'Neill KB, Merson J, et al. Maintaining safety and improving the care of pediatric behavioral health patients in the emergency department. *Child Adolesc Psychiatr Clin N Am*. 2018;27(3):427-439. **(Review)**
89. Betz ME, Boudreaux ED. Managing suicidal patients in the emergency department. *Ann Emerg Med*. 2016;67(2):276-282. **(Review)**
90. Substance Abuse and Mental Health Services Administration. SAMHSA's concept of trauma and guidance for a trauma-informed approach. HHS Publication No. (SMA) 14-4884. Rockville, MD: Substance Abuse and Mental Health Services Administration, 2014. **(Guidelines)**
91. Bowers L, James K, Quirk A, et al. Reducing conflict and containment rates on acute psychiatric wards: the Safewards Cluster randomised controlled trial. *Int J Nurs Stud*. 2015;52(9):1412-

1422. **(Randomized controlled trial; 31 wards)**

92. Holden MJ, Powers J. Therapeutic crisis intervention. *J Emot Behav Disord.* 1993;2:49-52. **(Training program)**
93. Lamanna J. The effects of therapeutic crisis intervention training on perceived job stress and efficacy. 1992. Accessed February 1, 2024. Available at: https://files.eric.ed.gov/fulltext/ED382898.pdf **(Research/technical report)**
94. Dalton EM, Herndon AC, Cundiff A, et al. Decreasing the use of restraints on children admitted for behavioral health conditions. *Pediatrics.* 2021;148(1):e2020003939. **(Quality improvement study)**
95. Brown T, Ashworth H, Bass M, et al. Trauma-informed care interventions in emergency medicine: a systematic review. West *J Emerg Med.* 2022;23(3):334-344. **(Systematic review; 10 studies)**
96. Ashworth H, Lewis-O'Connor A, Grossman S, et al. Trauma-informed care (TIC) best practices for improving patient care in the emergency department. Int *J Emerg Med.* 2023;16(1):38. **(Review)**
97. Harman H, Zeller S. Principles of emergency psychopharmacology. In: Lipson Glick R ZS, Berlin J, ed. *Emergency Psychiatry: Principles and Practice.* 2nd ed: Wolters Kluwer; 2021:129-137. **(Book)**
98. Gerson R, Malas N, Mroczkowski MM. Crisis in the emergency department: the evaluation and management of acute agitation in children and adolescents. *Child Adolesc Psychiatr Clin N Am.* 2018;27(3):367-386. **(Review)**
99. Liang JL, Tiwari T, Moro P, et al. Prevention of pertussis, tetanus, and diphtheria with vaccines in the United States: recommendations of the Advisory Committee on Immunization Practices (ACIP). *MMWR Recomm Rep.* 2018;67(2):1-44. **(Guidelines)**
100. Havers FP, Moro PL, Hunter P, et al. Use of tetanus toxoid, reduced diphtheria toxoid, and acellular pertussis vaccines: updated recommendations of the advisory committee on immunization practices - United States, 2019. *MMWR Morb Mortal Wkly Rep.* 2020;69(3):77-83. **(Guidelines)**
101. Gonzalez-Urdiales P, Kuppermann N, Dalziel SR, et al. Pediatric intentional self-poisoning evaluated in the emergency department: an international study. *Pediatr Emerg Care.* 2021;37(12):e1631-e1636. **(Prospective multicenter study, secondary analysis; 1688 poisoning exposures)**
102. Geller AI, Ehlman DC, Lovegrove MC, et al. National estimates of emergency department visits for medication-related self-harm: United States, 2016-2019. *Inj Prev.* 2022;28(6):545-552. **(Cross-sectional; 18,074 surveillance cases, 269,198 ED visits)**
103. American College of Emergency Physicians. Role of poison centers in emergency health care, preparedness and response. 2022. Accessed February 1, 2024. Available at: https://www.acep.org/patient-care/policy-statements/role-of-poison-centers-in-emergency-health-care-preparedness-and-response **(Policy statement)**
104. Buckley NA, Whyte IM, O'Connell DL, et al. Activated charcoal reduces the need for N-acetylcysteine treatment after acetaminophen (paracetamol) overdose. *J Toxicol Clin Toxicol.* 1999;37(6):753-757. **(Retrospective cohort study; 981 consecutive acetaminophen poisonings)**
105. Underhill TJ, Greene MK, Dove AF. A comparison of the efficacy of gastric lavage, ipecacuanha and activated charcoal in the emergency management of paracetamol overdose. *Arch Emerg Med.* 1990;7(3):148-154. **(Randomized controlled trial; 60 patients)**
106. Chyka PA, Seger D, Krenzelok EP, et al. Position paper: single-dose activated charcoal. *Clin Toxicol* (Phila). 2005;43(2):61-87. **(Position paper)**
107. Hoegberg LCG, Shepherd G, Wood DM, et al. Systematic review on the use of activated charcoal for gastrointestinal decontamination following acute oral overdose. *Clin Toxicol* (Phila). 2021;59(12):1196-1227. **(Systematic review; 542 studies)**
108. Albertson TE, Owen KP, Sutter ME, et al. Gastrointestinal decontamination in the acutely poisoned patient. *Int J Emerg Med.* 2011;4:65. **(Review)**
109. Chiew AL, Gluud C, Brok J, et al. Interventions for paracetamol (acetaminophen) overdose. *Cochrane Database Syst Rev.* 2018;2(2):CD003328. **(Systematic review; 11 randomized clinical trials, 700 participants)**
110. Spiller HA, Krenzelok EP, Grande GA, et al. A prospective evaluation of the effect of activated charcoal before oral N-acetylcysteine in acetaminophen overdose. *Ann Emerg Med.* 1994;23(3):519-523. **(Prospective observational case series; 122 patients)**
111. Palmer BF, Clegg DJ. Salicylate toxicity. *N Engl J Med.* 2020;382(26):2544-2555. **(Review)**
112. Gerson R. Pediatric Best Practices for Evaluation and Treatment of Agitated patients (BETA) guidelines for management of acute agitation in children and adolescents in the emergency department: consensus statement of the American Association for Emergency Psychiatry. *West J Emerg Med.* 2019;20(2):6-10. **(Delphi consensus)**
113. Emerson E, Kiernan C, Alborz A, et al. The prevalence of challenging behaviors: a total population study. *Res Dev Disabil.* 2001;22(1):77-93. **(Population study)**
114. Furniss F, Biswas AB. Recent research on aetiology, development and phenomenology of self-injurious behaviour in people with intellectual disabilities: a systematic review and implications for treatment. *J Intellect Disabil Res.* 2012;56(5):453-475. **(Systematic review; 9 studies)**
115. Blanchard A, Chihuri S, DiGuiseppi CG, et al. Risk of self-harm in children and adults with autism spectrum disorder: a systematic review and meta-analysis. *JAMA Netw Open.* 2021;4(10):e2130272. **(Systematic review and meta-analysis; 31 studies)**
116. Ludi E, Ballard ED, Greenbaum R, et al. Suicide risk in youth with intellectual disabilities: the challenges of screening. *J Dev Behav Pediatr.* 2012;33(5):431-440. **(Review)**
117. McGonigle JJ, Venkat A, Beresford C, et al. Management of agitation in individuals with autism spectrum disorders in the emergency department. *Child Adolesc Psychiatr Clin N Am.* 2014;23(1):83-95. **(Review)**
118. Hoffmann JA, Pergjika A, Konicek CE, et al. Pharmacologic management of acute agitation in youth in the emergency department. *Pediatr Emerg Care.* 2021;37(8):417-422. **(Review)**
119. Wolpert KH, Kodish I, Kim SJ, et al. Behavioral management of children with autism in the emergency department. *Pediatr Emerg Care.* 2023;39(1):45-50. **(Review)**
120. Edwards SJ, Sachmann MD. No-suicide contracts, no-suicide agreements, and no-suicide assurances: a study of their nature, utilization, perceived effectiveness, and potential to cause harm. *Crisis.* 2010;31(6):290-302. **(Survey study; 420 valid responses)**
121. Rudd MD, Mandrusiak M, Joiner TE Jr. The case against no-suicide contracts: the commitment to treatment statement as a practice alternative. *J Clin Psychol.* 2006;62(2):243-251. **(Review)**
122. Volk ML, Lieber SR, Kim SY, et al. Contracts with patients in clinical practice. *Lancet.* 2012;379(9810):7-9. **(Commentary)**
123. Shaffer D, Pfeffer CR. Practice parameter for the assessment and treatment of children and adolescents with suicidal behavior. *J Am Acad Child Adolesc Psychiatry.* 2001;40(7):24S-51S. **(Review)**
124. Mroczkowski MM, Lake AM, Kleinman M, et al. Treatment of patients presenting with suicidal behavior in North

American pediatric emergency departments. *Psychiatr Serv.* 2022;73(9):1047-1050. **(Survey study, 46 participants)**

125. Mathias CW, Michael Furr R, Sheftall AH, et al. What's the harm in asking about suicidal ideation? *Suicide Life Threat Behav.* 2012;42(3):341-351. **(Prospective cohort study; 170 adolescents)**
126. Polihronis C, Cloutier P, Kaur J, et al. What's the harm in asking? A systematic review and meta-analysis on the risks of asking about suicide-related behaviors and self-harm with quality appraisal. *Arch Suicide Res.* 2022;26(2):325-347. **(Systematic review and meta-analysis; 17 studies reviewed, 8 studies analyzed)**
127. Hoskins K, Roy Paladhi U, McDonald C, et al. Applying behavioral economics to enhance safe firearm storage. *Pediatrics.* 2020;145(3):e20192268. **(Review)**
128. Lowry NJ, Stanley IH, Mournet AM, et al. Firearms access among pediatric patients at risk for suicide. *Arch Suicide Res.* 2023;27(3):1105-1114. **(Cross-sectional study; 1065 youths)**
129. Haasz M, Myers MG, Rowhani-Rahbar A, et al. Firearms availability among high-school age youth with recent depression or suicidality. *Pediatrics.* 2023;151(6):e2022059532. **(Probability-based cross-sectional survey study)**
130. Cunningham RM, Walton MA, Carter PM. The major causes of death in children and adolescents in the United States. *N Engl J Med.* 2018;379(25):2468-2475. **(Epidemiologic database)**
131. Doupnik SK, Passarella M, Terwiesch C, et al. Mental health service use before and after a suicidal crisis among children and adolescents in a United States national Medicaid sample. *Acad Pediatr.* 2021;21(7):1171-1178. **(Retrospective cohort study; 30,312 ED-to-hospital admissions)**
132. Uspal NG, Strelitz B, Cappetto K, et al. Impact of a firearm safety device distribution intervention on storage practices after an emergent mental health visit. *Acad Pediatr.* 2021;21(7):1209-1217. **(Prospective, pre-post study; 256 participants)**
133. National Institute of Health. Suicide prevention. 2021. Accessed February 1, 2024. Available at: https://www.nimh.nih.gov/health/topics/suicide-prevention **(Website)**
134. Bernert RA, Hilberg AM, Melia R, et al. Artificial intelligence and suicide prevention: a systematic review of machine learning investigations. *Int J Environ Res Public Health.* 2020;17(16):1-25. **(Systematic review; 87 studies)**
135. Pestian JP, Grupp-Phelan J, Bretonnel Cohen K, et al. A controlled trial using natural language processing to examine the language of suicidal adolescents in the emergency department. *Suicide Life Threat Behav.* 2016;46(2):154-159. **(Prospective controlled trial; 61 adolescents)**
136. Pestian JP, Sorter M, Connolly B, et al. A machine learning approach to identifying the thought markers of suicidal subjects: a prospective multicenter trial. *Suicide Life Threat Behav.* 2017;47(1):112-121. **(Prospective multicenter study; 379 participants)**
137. Baker F, Kiim S. *Item Response Theory: Parameter Estimation Techniques.* 2nd ed. CRC Press; 2014. **(Book)**
138. *King CA, Brent D, Grupp-Phelan J, et al. Prospective development and validation of the computerized adaptive screen for suicidal youth. *JAMA Psychiatry.* 2021;78(5):540-549. **(Prospective multicenter study; 2075 adolescents)** **DOI: 10.1001/jamapsychiatry.2020.4576**
139. Brent DA, Horowitz LM, Grupp-Phelan J, et al. Prediction of suicide attempts and suicide-related events among adolescents seen in emergency departments. *JAMA Netw Open.* 2023;6(2):e2255986. **(Prospective multicenter study; 4050 adolescents)**
140. Gausche-Hill M, Ely M, Schmuhl P, et al. A national assessment of pediatric readiness of emergency departments. *JAMA Pediatr.* 2015;169(6):527-534. **(Survey study; 5017 United States EDs)**
141. Ahmedani BK, Vannoy S. National pathways for suicide prevention and health services research. *Am J Prev Med.* 2014;47(3 Suppl 2):S222-S228. **(Review)**
142. Siry BJ, Polzer E, Omeragic F, et al. Lethal means counseling for suicide prevention: views of emergency department clinicians. *Gen Hosp Psychiatry.* 2021;71:95-101. **(Qualitative study)**
143. Attridge MM, Holmstrom SE, Sheehan KM. Injury prevention opportunities in the pediatric emergency department. *Clin Ped Emerg Med.* 2020;21(1):100761. **(Review)**
144. Runyan CW, Becker A, Brandspigel S, et al. Lethal means counseling for parents of youth seeking emergency care for suicidality. *West J Emerg Med.* 2016;17(1):8-14. **(Quality improvement study)**
145. Betz ME, Knoepke CE, Siry B, et al. 'Lock to Live': development of a firearm storage decision aid to enhance lethal means counselling and prevent suicide. *Inj Prev.* 2019;25(Suppl 1):i18-i24. **(Instrument development study)**
146. Naureckas Li C, Sacks CA, Cummings BM, et al. Improving pediatric residents' screening for access to firearms in high-risk patients presenting to the emergency department. *Acad Pediatr.* 2021;21(4):710-715. **(Retrospective chart review; 501 charts)**
147. Betz ME, Kautzman M, Segal DL, et al. Frequency of lethal means assessment among emergency department patients with a positive suicide risk screen. *Psychiatry Res.* 2018;260:30-35. **(Retrospective chart review; 800 charts)**
148. Simon OR, Swann AC, Powell KE, et al. Characteristics of impulsive suicide attempts and attempters. *Suicide Life Threat Behav.* 2001;32(1 Suppl):49-59. **(Case-control study; 153 case-subjects)**
149. Grossman DC, Mueller BA, Riedy C, et al. Gun storage practices and risk of youth suicide and unintentional firearm injuries. *JAMA.* 2005;293(6):707-714. **(Case-control study; 586 respondents)**
150. *Stanley B, Brown GK, Brenner LA, et al. Comparison of the safety planning intervention with follow-up vs usual care of suicidal patients treated in the emergency department. *JAMA Psychiatry.* 2018;75(9):894-900. **(Comparative study; 1640 patients)** **DOI: 10.1001/jamapsychiatry.2018.1776**
151. Hughes JL, Trombello JM, Kennard BD, et al. Suicide risk assessment and suicide risk management protocol for the Texas Youth Depression and Suicide Research Network. *Contemp Clin Trials Commun.* 2023;33:101151. **(Quality improvement study)**
152. Asarnow JR, Berk M, Hughes JL, et al. The SAFETY program: a treatment-development trial of a cognitive-behavioral family treatment for adolescent suicide attempters. *J Clin Child Adolesc Psychol.* 2015;44(1):194-203. **(Prospective study; 35 youths)**
153. Connell SK, Burkhart Q, Tolpadi A, et al. Quality of care for youth hospitalized for suicidal ideation and self-harm. *Acad Pediatr.* 2021;21(7):1179-1186. **(Retrospective observational study; 1090 patients)**
154. *Abbott-Smith S, Ring N, Dougall N, et al. Suicide prevention: what does the evidence show for the effectiveness of safety planning for children and young people? - A systematic scoping review. *J Psychiatr Ment Health Nurs.* 2023;30(5):899-910. **(Systematic review; 15 studies)** **DOI: 10.1111/jpm.12928**
155. Hoffmann JA, Krass P, Rodean J, et al. Follow-up after pediatric mental health emergency visits. *Pediatrics.* 2023;151(3):e2022057383. **(Retrospective cohort study; 28,551 children)**
156. Grupp-Phelan J, Stevens J, Boyd S, et al. Effect of a motivational interviewing-based intervention on initiation of mental health treatment and mental health after an emergency department visit among suicidal adolescents: a randomized clinical trial. *JAMA Netw Open.* 2019;2(12):e1917941. **(Randomized**

controlled trial; 168 participants)

157. Ryan TC, Chambers S, Gravey M, et al. A brief text-messaging intervention for suicidal youths after emergency department discharge. *Psychiatr Serv.* 2022;73(8):954-957. **(Quality improvement study)**
158. Vaiva G, Berrouiguet S, Walter M, et al. Combining postcards, crisis cards, and telephone contact into a decision-making algorithm to reduce suicide reattempt: a randomized clinical trial of a personalized brief contact intervention. *J Clin Psychiatry.* 2018;79(6). **(Randomized controlled trial; 1040 patients)**
159. Rengasamy M, Sparks G. Reduction of postdischarge suicidal behavior among adolescents through a telephone-based intervention. *Psychiatr Serv.* 2019;70(7):545-552. **(Quality improvement study)**
160. *United States Department of Health and Human Services Health Resources and Services Administration, Maternal and Child Health Bureau. Critical crossroads pediatric mental health care in the emergency department: a care pathway resource toolkit. 2019. Accessed, February 1, 2024. Available at: **https://www.hrsa.gov/sites/default/files/hrsa/critical-crossroads/critical-crossroads-tool.pdf** **(Toolkit)**
161. Fix RL, Bandara S, Fallin MD, Barry CL. Creating comprehensive crisis response systems: an opportunity to build on the promise of 988. *Community Ment Health J.* 2023;59(2):205-208. **(Commentary)**
162. National Action Alliance for Suicide Prevention. Best practices in care transitions for individuals with suicide risk: inpatient care to outpatient care. 2019. Accessed February 1, 2024. Available at: https://theactionalliance.org/resource/best-practices-care-transitions-individuals-suicide-risk-inpatient-care-outpatient-care **(Report)**
163. The Joint Commission. Quick safety: ED boarding of psychiatric patients - a continuing problem. 2021. Accessed February 1, 2024. Available at: https://www.jointcommission.org/-/media/tjc/newsletters/quick-safety-19-ed-boarding-update-7-27-21.pdf **(Report)**
164. The Joint Commission. R3 report issue 4: patient flow through the emergency department. 2012. Accessed February 1, 2024. Available at: https://www.jointcommission.org/-/media/tjc/documents/standards/r3-reports/r3_report_issue_4.pdf **(Report)**
165. Brady RE, St Ivany A, Nagarajan MK, et al. Multistakeholder perspectives on interventions to support youth during mental health boarding. *J Pediatr.* 2023;253:286-291.e4. **(Qualitative study)**
166. Thomas JF, Novins DK, Hosokawa PW, et al. The use of telepsychiatry to provide cost-efficient care during pediatric mental health emergencies. *Psychiatr Serv.* 2018;69(2):161-168. **(Cross-sectional, pre-post study; 494 records)**
167. Hackfeld M. Implementation of a pediatric/adolescent suicide risk screening tool for patients presenting to the emergency department with nonbehavioral health complaints. *J Child Adolesc Psychiatr Nurs.* 2020;33(3):131-140. **(Qualitative study)**
168. Latif F, Patel S, Badolato G, et al. Improving youth suicide risk screening and assessment in a pediatric hospital setting by using the joint commission guidelines. *Hosp Pediatr.* 2020;10(10):884-892. **(Quality improvement study)**
169. Burt H, Doan Q, Landry T, et al. The impact of universal mental health screening on pediatric emergency department flow. *Acad Pediatr.* 2022;22(2):210-216. **(Retrospective cohort study; 256 days)**
170. Emerson BL, Setzer E, Blake E, et al. Improving quality and efficiency in pediatric emergency department behavioral health care. *Pediatr Qual Saf.* 2022;7(1):e530. **(Quality improvement study)**
171. Sheridan DC, Sheridan J, Johnson KP, et al. The effect of a dedicated psychiatric team to pediatric emergency mental health care. *J Emerg Med.* 2016;50(3):e121-e128. **(Pre- and post-intervention retrospective study; 212 encounters)**

CME Questions

Current subscribers receive CME credit absolutely free by completing the following test. Each issue includes 4 *AMA PRA Category 1 Credits™*, 4 ACEP Category I credits, 4 AAP Prescribed credits, and 4 AOA Category 2-B credits. Online testing is available for current and archived issues. To receive your free CME credits for this issue, scan the QR code below with your smartphone or visit **www.ebmedicine.net/P0324**

1. **Which of the following populations of youth are NOT at elevated risk for suicide?**
   a. Gender diverse youth
   b. Youth living in a home with a firearm
   c. Youth living in urban areas, relative to those living in rural areas
   d. Youth in foster care

2. **What protective factor(s) reduce the risk for youth suicide?**
   a. Family cohesion
   b. Access to mental health care
   c. Limited access to lethal means
   d. All of the above

3. **What medical condition(s) can cause or exacerbate psychiatric symptoms?**
   a. Neurologic disorders
   b. Endocrine disorders
   c. Infection
   d. All of the above

4. **A 17-year-old boy presenting to the ED due to emotional outbursts and oppositional behavior must be screened for which of the following to meet hospital accreditation requirements?**
   a. Substance abuse
   b. Suicidal ideation
   c. Hyperthyroidism
   d. Depression

5. **The Ask Suicide Screening Questions (ASQ) and the Columbia Suicide Severity Rating Scale (C-SSRS) Screen Version are validated in children as young as what age?**
   a. ASQ 8 years, C-SSRS 6 years
   b. ASQ 3 years, C-SSRS 10 years
   c. ASQ 10 years, C-SSRS 8 years
   d. ASQ 12 years, C-SSRS 4 years

6. **Which screening laboratory test is recommended for all children presenting with suicidal thoughts who require inpatient psychiatric admission?**
   a. Urinalysis
   b. Chest x-ray
   c. Urine drug screen
   d. No specific screening test is recommended for children with suicidality.

7. **After an attempted suicide by hanging from a height with complete suspension, computed tomography angiography is indicated to evaluate for which of the following injuries?**
   a. Cervical spine fracture
   b. Blunt cerebrovascular injury
   c. Laryngeal injury
   d. All of the above

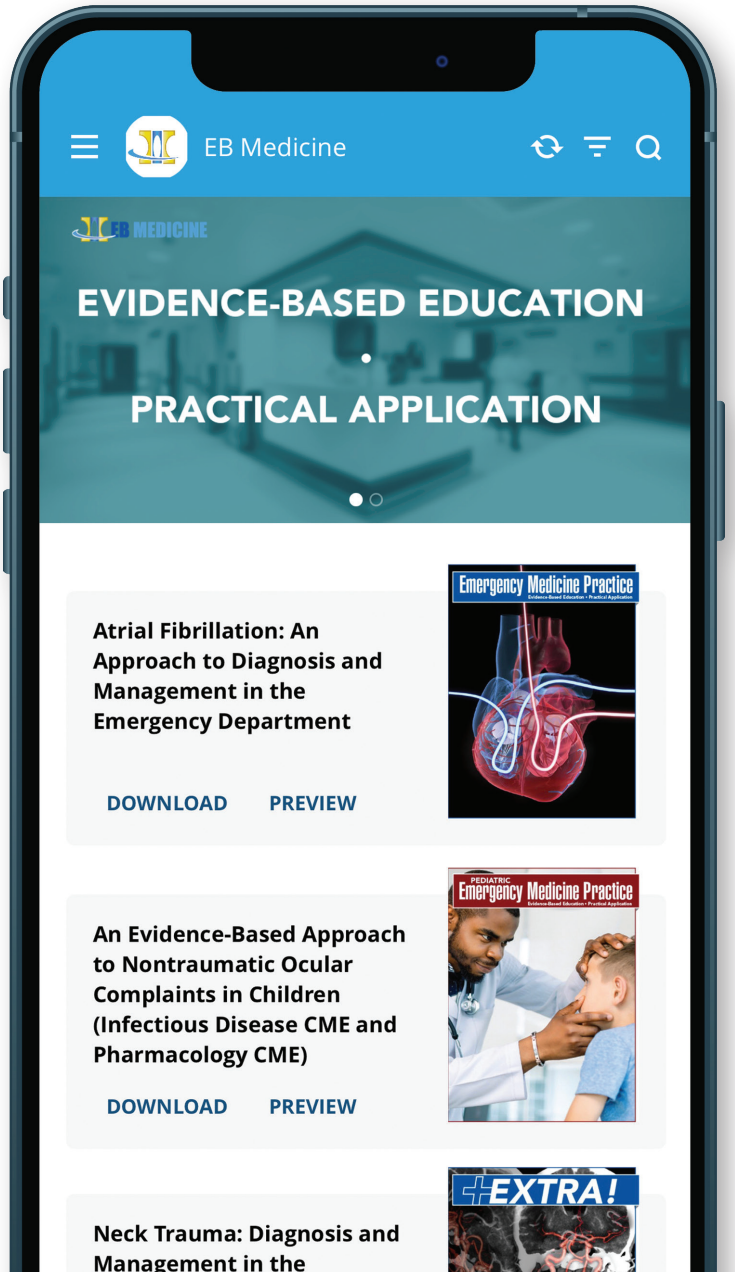
8. **A 12-year-old girl presents to the ED due to a self-inflicted forearm laceration from a shard of glass found outdoors. She has completed a primary tetanus diphtheria vaccine series. What tetanus prophylaxis should she receive at this time?**
   a. DTaP
   b. DTaP + tetanus immune globulin
   c. Tdap
   d. Tdap + tetanus immune globulin

9. **When should a "no-suicide" contract be utilized in the ED management of youth with suicidal ideation?**
   a. Before ED discharge
   b. Before ED transfer to an inpatient psychiatric unit
   c. At the start of the ED visit
   d. Never

10. **If a child presents to the ED with suicide risk and is discharged, what intervention is recommended?**
    a. Safety planning
    b. Counseling on access to lethal means
    c. ED team communication with the patient's pediatrician
    d. All of the above

The EB MEDICINE Mobile App

Get evidence-based content at your fingertips on our new mobile app

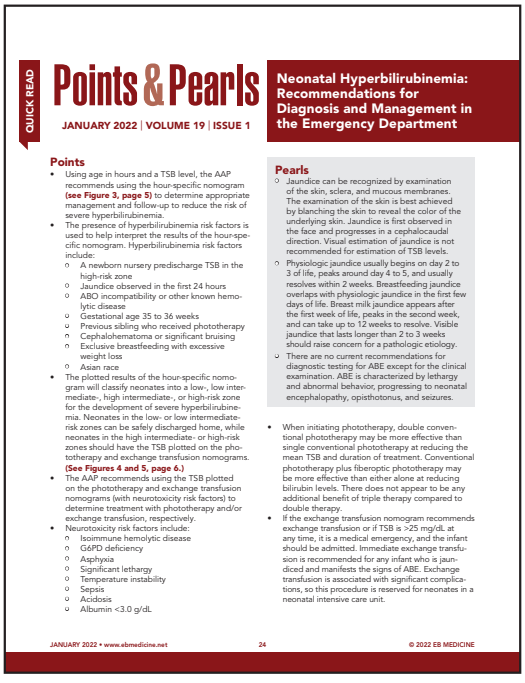


GET IT ON Google play

Listen on Apple Podcasts

When five minutes can mean a world of difference in the ED...

...Make it five minutes well spent.



QUICK READ

Points & Pearls

JANUARY 2022 | VOLUME 19 | ISSUE 1

Neonatal Hyperbilirubinemia: Recommendations for Diagnosis and Management in the Emergency Department

Points

- Using age in hours and a TSB level, the AAP recommends using the hour-specific nomogram **(see Figure 3, page 5)** to determine appropriate management and follow-up to reduce the risk of severe hyperbilirubinemia.
- The presence of hyperbilirubinemia risk factors is used to help interpret the results of the hour-specific nomogram. Hyperbilirubinemia risk factors include:
  - A newborn nursery predischarge TSB in the high-risk zone
  - Jaundice observed in the first 24 hours
  - ABO incompatibility or other known hemolytic disease
  - Gestational age 35 to 36 weeks
  - Previous sibling who received phototherapy
  - Cephalohematoma or significant bruising
  - Exclusive breastfeeding with excessive weight loss
  - Asian race
- The plotted results of the hour-specific nomogram will classify neonates into a low-, low intermediate-, high intermediate-, or high-risk zone for the development of severe hyperbilirubinemia. Neonates in the low- or low intermediate-risk zones can be safely discharged home, while neonates in the high intermediate- or high-risk zones should have the TSB plotted on the phototherapy and exchange transfusion nomograms. **(See Figures 4 and 5, page 6.)**
- The AAP recommends using the TSB plotted on the phototherapy and exchange transfusion nomograms (with neurotoxicity risk factors) to determine treatment with phototherapy and/or exchange transfusion, respectively.
- Neurotoxicity risk factors include:
  - Isoimmune hemolytic disease
  - G6PD deficiency
  - Asphyxia
  - Significant lethargy
  - Temperature instability
  - Sepsis
  - Acidosis
  - Albumin <3.0 g/dL

Pearls

- Jaundice can be recognized by examination of the skin, sclera, and mucous membranes. The examination of the skin is best achieved by blanching the skin to reveal the color of the underlying skin. Jaundice is first observed in the face and progresses in a cephalocaudal direction. Visual estimation of jaundice is not recommended for estimation of TSB levels.
- Physiologic jaundice usually begins on day 2 to 3 of life, peaks around day 4 to 5, and usually resolves within 2 weeks. Breastfeeding jaundice overlaps with physiologic jaundice in the first few days of life. Breast milk jaundice appears after the first week of life, peaks in the second week, and can take up to 12 weeks to resolve. Visible jaundice that lasts longer than 2 to 3 weeks should raise concern for a pathologic etiology.
- There are no current recommendations for diagnostic testing for ABE except for the clinical examination. ABE is characterized by lethargy and abnormal behavior, progressing to neonatal encephalopathy, opisthotonus, and seizures.
- When initiating phototherapy, double conventional phototherapy may be more effective than single conventional phototherapy at reducing the mean TSB and duration of treatment. Conventional phototherapy plus fiberoptic phototherapy may be more effective than either alone at reducing bilirubin levels. There does not appear to be any additional benefit of triple therapy compared to double therapy.
- If the exchange transfusion nomogram recommends exchange transfusion or if TSB is >25 mg/dL at any time, it is a medical emergency, and the infant should be admitted. Immediate exchange transfusion is recommended for any infant who is jaundiced and manifests the signs of ABE. Exchange transfusion is associated with significant complications, so this procedure is reserved for neonates in a neonatal intensive care unit.

With *Points & Pearls*, you get the key takeaways from each *Pediatric Emergency Medicine Practice* issue. They're great when you don't have time to read the full issue or you need a refresher on a topic.

The best part: *Points & Pearls* is included with your subscription at no charge! Go to the back page of this issue to view this month's *Points & Pearls*. You can also access all past editions at **www.ebmedicine.net/pearls** or on our mobile app.

EB MEDICINE

The *Pediatric Emergency Medicine Practice* Editorial Board

QUICK READ

Points & Pearls

MARCH 2024 | VOLUME 21 | ISSUE 3

Evaluation and Management of Suicidal Ideation and Self-Harm in Children in the Emergency Department

Points

- Evaluation of youth with suicidal ideation should include a detailed review of the presenting chief complaint, as well as identification of co-occurring conditions that require active emergency department (ED) management.
- Thorough review of systems and subtle physical examination findings can help differentiate specific toxidromes or medical conditions that may mimic symptoms of depression.
- Children with intellectual disabilities and autism spectrum disorder who present with self-injurious behaviors require a careful history and physical examination, as these behaviors may represent a manifestation of pain.
- Appropriately trained ED staff are integral to maintaining a safe, therapeutic environment for children with suicidal ideation and self-harm. Training programs in trauma-informed care, crisis response, and de-escalation techniques can improve staff knowledge, confidence, and decrease staff injury.
- Universal suicide screening in the ED using a validated screening tool has been shown to identify a substantial number of children with an elevated risk for suicide or self-harm.[50] **(See Figure 1 and Figure 2.)**
- Asking about suicidal thoughts and behaviors through suicide screening does not increase the risk of suicidal behaviors in youth.[126]
- Studies have shown that suicide screening does not prolong ED length of stay.[50]
- Ensure a safe environment for patients and staff by eliminating potentially dangerous objects from the patient as well as from the ED room.[87-89]
- Perform a thorough skin examination to inspect for injury secondary to self-harm.
- Routine laboratory tests, including drug screening, for youth in the ED for self-harm thoughts and behaviors are not recommended, as they rarely result in changes to management or disposition.[70-77]
- While in the ED, a patient's home psychiatric prescriptions should be continued, barring concerns for serious adverse reactions or drug-drug interactions.[98]

Pearls

- When obtaining patient history, a confidential mental health assessment is necessary to obtain accurate information.
- After identification of suicide risk, safety assessment using a validated tool such as the Ask Suicide-Screening Questions (ASQ) Brief Suicide Safety Assessment (BSSA) or Suicide Assessment Five-Step Evaluation and Triage (SAFE-T) should be used to determine the appropriate ED disposition. **(See Figure 3.)**
- For youth with self-harm thoughts and behaviors discharged from the ED, safety planning using an evidence-based tool, such as the Stanley-Brown Safety Plan, is now recommended instead of a "no-suicide" contract.
- One component of safety planning—counseling on access to lethal means—is feasible to perform in the ED and can improve safety practices in homes of high-risk youth.

- Patients not requiring psychiatric admission should have brief interventions for suicide prevention, including safety planning and counseling on access to lethal means.
- Counseling on access to lethal means is a recommended step of preparing for a safe discharge and focuses on taking inventory of dangerous items in the home (eg, firearms, knives, medications, or cleaning products) and making specific plans for securement or removal of each of these items.
- Distribution of firearm safety devices within the ED has been associated with increased triple safe storage (storing firearms unloaded, locked, and with ammunition stored and locked separately).[132]
- Timely outpatient follow-up for mental health-related ED visit is a key driver for both short- and long-term outcomes, and ED clinicians should familiarize themselves with available resources to improve care linkage.