Pediatric Emergency Behavioral Health, Suicidal Behavior, and Non-Suicidal Self-Injury

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Emergency Behavioral Health

Over the past decade, emergency departments (EDs) across the country have experienced a dramatic influx of psychiatric patients. Studies have shown that behavioral health emergencies represent nearly 2% of all ED presentations, and to date in 2013, behavioral health emergencies at Children’s Hospital Colorado (CHCO) constitute an average of 4.9% of all ED visits, more than twice the national average. The reasons for this discrepancy are not entirely clear, as population studies demonstrate higher rates of emergency department pediatric behavioral health visits in the Northeast and Southern parts of the United States; however it is of interest that Colorado ranks 32nd in overall public behavioral health spending and 50th in the number of available inpatient beds, seemingly supporting the conjecture that EDs are becoming the “safety net” for a fragmented, underfunded, and under-resourced behavioral health system in crisis.

The ED behavioral health crisis, as it is experienced from within systems of care, is not only a function of the ever-expanding volume, but also the influx of this high acuity patient population further taxes EDs by their disproportionate consumption of resources. The length of stay of behavioral health patients in the ED far exceeds the average length of stay of non-psychiatric patients; in the CHCO ED, this difference is almost 3 hours. Assessments are time-consuming, as information from multiple collateral sources is often required to complete a comprehensive risk assessment, and the need to admit or transfer a patient to a psychiatric facility (the disposition in nearly 46% of psychiatric patients from the CHCO ED) further prolongs the process. Behavioral health patients presenting to the ED are also at risk for dangerous behaviors, including aggression and attempted elopement, which have been demonstrated to occur in over 20% of ED encounters. These high-risk behaviors often necessitate the use of seclusion, restraint, emergency medications, and intensive monitoring to maintain the safety of the patient, staff, and the environment.

There is agreement across national professional organizations, including the Institute of Medicine, the American Academy of Pediatrics, and the American Academy of Child and Adolescent Psychiatry (AACAP), that models and standards of care are needed to address this burgeoning clinical need. However, a recent review of psychiatric emergency care for children and adolescents demonstrates that there is no clear consensus or recommended care for this population. In 2002, the American Psychiatric Association (APA) convened a task force on Psychiatric Emergency Services that conducted a similar review of the adult psychiatric literature. The findings resulted in a comprehensive summary of proposed categorizations and model program descriptions, which included minimum standards of practice for the structure and process of psychiatric emergency services. The task force report included program descriptions that could be implemented in the hospital setting, an expanded description of ambulatory urgent care services, and a comment about telemedicine. Important commonalities that appear to emerge, from both the pediatric and adult psychiatric literature, are the need to clarify definitions of emergency, urgency, and crisis, and that approaches to patient care should start with basic process components of registration, stabilization, evaluation and assessment, disposition, treatment, referral, and fol-
low up. Additionally, of possible use to the pediatric community is the creation of a model curriculum for residency training by the American Association for Emergency Psychiatry (AAEP).11 The important work of the APA and AAEP has the potential to inform pediatric providers and administrators as we strive to create and implement evidence-based models of care, and train future providers in the management of pediatric behavioral health emergencies.

Patients and families present for emergency room evaluations with a variety of psychiatric crises. Studies that examine demographic and diagnostic characteristics of children and youth report that suicide attempt and non-suicidal self-injury are among the most common presenting problems.2, 5 It is thus important to expand our knowledge about the scope of the problem, factors which place our patients at risk, and available standards for assessment, treatment, and prevention.

Suicidal Behavior in Children and Adolescents

Suicide is the second leading cause of death in the 15-24 year age group, with Colorado ranking seventh in the nation at a rate of 16.7 per 100,000 population. Adolescent males most commonly complete suicide, while adolescent females more commonly attempt. The most common method of suicide completion is by gunshot, followed by suffocation, and poisoning.12 It is estimated that over 30% of households in Colorado contain firearms, and teenagers that complete suicide by gunshot most often use a firearm that is owned by a family member. Colorado is 1 of only 4 states in the union that has a separate Office of Suicide Prevention, which was created through House Bill 00-1432 in June 2000, with the charge to lead the statewide suicide prevention and intervention efforts.

With the emergence of adolescent suicide as a significant public health concern and the knowledge that 15% to 30% of adolescent suicide attempters re-attempt within a year, it is essential to identify and intervene with adolescents who are high suicide risk.13, 14 Numerous trait and state factors have been identified that elevate the risk for suicide. In addition to the male gender, adolescents are more likely to complete suicide than children. Compared to the statistics for 15-24 year olds in the state cited previously in the under 15 year age group, suicide is the fourth leading cause of death at a rate of 0.7 per 100,000 population.15 Adolescents with symptoms of psychiatric illness are also at risk for suicide—including depression, impulsive aggression, and hopelessness—with depression being among the most potent risk factors for suicide. Family history of suicide attempts or suicide completion, a history of abuse—especially sexual abuse—or stress in the family system are additional risk factors for suicide. Gay, lesbian, bisexual, and transgender youth are also thought to be at higher risk, as are pediatric patients with a history of substance abuse, suicide attempt, or nonsuicidal self-injury.16-18

Nonsuicidal Self-Injury (NSSI) in Children and Adolescents

Children and adolescents with self-harming behavior (both suicidal and nonsuicidal self-injury) are frequently encountered in the ED setting. The prevalence rates for nonsuicidal self-injury are quite variable, but community studies indicate between 13% and 45% of adolescents report engaging in self-injury at some point in their lifetime.13, 14, 19, 20 In clinical settings it is even higher, at approximately 40%-60%.21, 22 Studies of self-harming behavior are complicated by the variety of terms used to describe the behavior (eg, self-harm, self-mutilation, parasuicidal, self-injury, suicide gesture), and recent attempts have been made to categorize and clarify theses terms.23 The term deliberate self-harm encompasses both suicide attempts (having the intent to die) and nonsuicidal self-injury (NSSI), which is self-injury without the intent to die. While it may be difficult to distinguish adolescent suicide attempts from NSSI, teenagers who harm themselves without suicide intent are still at high risk for suicide and suicide attempts.24 Adolescents who engage in NSSI are more likely to have suicidal behavior and vice versa.25 In one large study, 70% of the adolescents who engaged in NSSI had made at least 1 suicide attempt, and 55% made multiple attempts.26 A previous suicide attempt is a significant predictor of future suicidal behavior in teenagers, but more recent studies indicate that NSSI is the strongest predictor of future suicide attempts in
depressed adolescents. Non-suicidal and suicidal behaviors may serve distinctly different purposes, with a major function of NSSI being the management of distressing thoughts and emotions, and many teenagers reporting that NSSI helps them to stop suicidal thoughts and avoid suicide attempts. As a result, NSSI has been conceptualized as a morbid form of self-help.

Characteristics of NSSI include an age of onset between 12 to 14 years. Cutting oneself with a razor or sharp object is the most common method, and forearms, legs, and stomach are the most common locations. In community studies, most adolescents report engaging in NSSI only a few times (<10 lifetime episodes), whereas inpatient populations report more frequent episodes of self-injury (averaging >50 episodes in the previous year). The risk of self-injury is increased by any number of general factors that create greater difficulty regulating affective, cognitive, and social experiences. Distal factors might include childhood abuse, whereas proximal factors might include physiological hyperarousal in response to stress.

Screening and Assessment of Suicidal Behavior and NSSI

The frequency of suicidal behavior and nonsuicidal self-injury, and the associated morbidity and mortality, make it incumbent upon psychiatric providers to identify those individuals at risk, and to provide the necessary intervention. In addition, the Joint Commission on Accreditation of Healthcare Organizations (JCAHO) has included in its National Patient Safety Goals the requirement to “identify patients at risk for suicide.” CHCO responded to the JCAHO mandate by reviewing available research and creating a 4-question screening tool, which was inclusive of questions found to be most predictive of suicide risk. As of 2013, screening has been completed in the CHCO emergency room with all patients over the age of 12 years, regardless of presenting problem. Once patients are identified as moderate or high risk for suicide, they are referred to the CHCO Psychiatric Emergency Service (PES) for more comprehensive assessment. While there are a number of suicide assessment tools that are utilized and validated through research, administrators in the CHCO Department of Psychiatry and Behavioral Sciences selected the Columbia Suicide Severity Rating Scale (C-SSRS) for use in the PES, to further stratify risk for suicide in our adolescent patients. The C-SSRS was developed in 2003 by a group of researchers from Columbia University, and was designed to distinguish the domains of suicidal ideation and suicidal behaviors by measuring 4 research-supported constructs including severity of ideation, intensity of ideation, suicidal behavior, and lethality of actual attempts. The C-SSRS includes questions about NSSI, and in a 2011 study of depressed adolescents and adults, has demonstrated good sensitivity, specificity, and convergent and divergent validity with other multi-informant suicidal ideation and behaviors scales.

Treatment and Prevention of Suicidal Behavior and NSSI

In a recent analysis of treatment interventions for self-harming and suicidal adolescents, it was noted that there are still no evidence-based psychological or pharmacological treatments for adolescent suicidal behavior or NSSI. Despite the lack of empirically-validated treatments, some treatment approaches, such as managing underlying psychiatric disorders with psychotherapy and consideration of medication interventions, identifying triggers for self-injurious acts, improving family relationships, and developing improved communication and coping skills, are strongly recommended. Given that the highest risk for recurrent suicidal events in adolescents is within 1 to 4 weeks after discharge from the psychiatric hospital or emergency department, coordinating better access and intensity of care at the right time is also strongly recommended. Factors that have been identified as targets for evaluation and intervention in adolescents with self-harm behaviors include the following factors: motivation to change, substance abuse issues, family support, facilitating positive affect, improving peer and social relationships, and healthy sleep. With a significant proportion (30%-50%) of adolescent suicide attempters being non-adherent to treatment, motivational interviewing may be helpful. This was the case in one study of adolescent suicide attempters, where motivational interviewing was helpful in reducing alcohol and substance abuse as well as recurrent suicidal behavior. Family conflict is one of the stronger predictors of suicidal events in teenagers, consistent with the finding that family support
and cohesion are protective against recurrent suicidal behavior.\textsuperscript{28} Studies that have shown some focus on improving the quality of the parent-child relationship have shown positive effects on decreasing self-harm and suicidality.\textsuperscript{42} Insomnia is one of the strongest predictors of imminent suicide in adults, and sleep problems predict suicidal ideation and self-harm in adolescents,\textsuperscript{45} but there are no studies evaluating whether improved sleep will decrease suicidal ideation and self-harm.

Despite the lack of evidence-based treatment interventions for suicide and NSSI, approaches to suicide prevention have recognized importance. The AACAP Practice Parameter for the Assessment and Treatment of Children and Adolescents With Suicidal Behavior was published in 2001, and while much of the content requires updating, the executive summary reviews the importance of media counseling and postvention following youth suicide, which is currently believed to be important in assessment for traumatic response in survivors, and preventing the development of suicide contagion.\textsuperscript{46,47} Means Restriction Counseling, an approach to suicide prevention that involves educating parents on the importance of restricting access of their adolescents to lethal means for suicide, has also increasingly received attention, and has been found to effectively alter the storage practices of household firearms.\textsuperscript{48} The CHCO PES piloted a quality improvement project in January 2014 that incorporated standardized Means Restriction Education into the discharge process for all adolescent patients that present with a chief complaint of suicidality. Parents not only received education about the importance of safe firearm storage practices, but were also given the option to take a lockbox home for securing household medications.

### Conclusion

The management of pediatric behavioral health emergencies continues to be a rapidly-growing clinical need. EDs have become the safety net to a mental health system in crisis, and patients and their families are presenting to EDs with ever-increasing frequency. Improved systems of care, including alternatives to reliance on general ED services for psychiatric crisis and related clinical expertise are needed to support this burgeoning clinical need. While model curricula and processes have been proposed, none have been rigorously studied in the pediatric population. The most common presenting problems are suicide attempt and nonsuicidal self-injury. Evidence-based screening and assessment tools have been developed, as have strategies for suicide prevention, which are currently being utilized in the CHCO ED and throughout the Department of Psychiatry. Approaches to the treatment of suicidality and NSSI are unfortunately lacking. Gaps in knowledge create opportunities for innovation and research, and the CHCO system of care and the University of Colorado are well-positioned to contribute to the expansion of this knowledge base.

### References

