

IACAPAP Textbook of Child and Adolescent Mental Health

Section J

MISCELANEOUS, LEGAL AND ADMINISTRATIVE



CHILD AND ADOLESCENT PSYCHIATRIC EMERGENCIES

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Children and adolescents who present with acute mental health complaints require a concise yet systematic assessment to determine if the young person is suffering from an acute psychiatric disorder versus a mental health problem which presents with a crisis. However, before the urgent mental health assessment can proceed, acute medical complications emanating from the mental health problem need to be ruled out. Ultimately, urgent mental health assessment is needed to determine if a higher level of care is needed, such as referral to a psychiatric inpatient unit, crisis unit/step-up unit, or urgent mental health outpatient clinic.

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EMERGENCY PSYCHIATRIC ASSESSMENT

An emergency psychiatric assessment of a young person in crisis can occur in an outpatient setting, but it is ideal to carry out this assessment within the confines of an emergency department (ED) of a hospital. The ED is most equipped to contain and triage the mental health crisis in a quick and safe manner. Also, the pediatric patient in crisis is often not cooperative and can present with out of control behaviors, which may require immediate containment to keep the patient and others safe.

This chapter will focus on emergency psychiatric assessment in the ED. Increasing numbers of patients with mental health issues access pediatric emergency departments for care (Newton et al, 2009). This trend has been attributed, among others, to an increasing prevalence of mental illness in the context of limited availability of mental health resources and the growing use of substances, particularly alcohol and amphetamines, although this may vary between countries. The ED is a key entry point for crisis care, a link for community services and has been described as a *safety net* for patients and families in urgent need of psychiatric care. The most common mental health presentations to a pediatric ED in Western countries are substance abuse, overdoses, mood disorders, anxiety disorders and behavioral disorders (Newton et al, 2009). In addition, suicide behaviors and aggression will present to the ED and require quick, concise, yet systematic assessment and containment, for the safety of the patient and others. Assessment and management of child abuse in the ED are also discussed. This chapter gives clinicians an overview on how to conduct an emergency assessment, while at the same time diffusing the crisis and containing a potentially explosive and unsafe situation.

Goals of emergency assessment

The goals of emergency assessment are to:

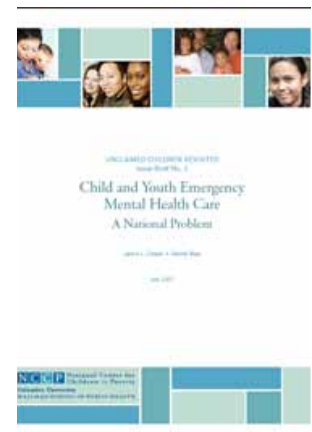
1. Determine if the patient is at imminent risk of harm to self or others
2. Establish the presence of one or more psychiatric disorder(s)
3. Elicit the factors that may have caused or contributed to the initiation of these problems and to their persistence (genetic, developmental, familial, social, medical)
4. Evaluate patients' normal level of functioning and the extent this has been impaired by the illness
5. Identify areas of strength as well as potential supports within the family and the wider social environment,
6. Identify target problems for treatment and
7. Determine if inpatient psychiatric hospitalization is needed.

Assessment of a child or adolescent differs from that of an adult in several respects. Whereas most adults seek help on their own behalf, children rarely do so. In addition, depending on age and development, some children are simply unable to provide certain historical and clinically necessary information. Therefore, parents or caregivers are often the primary source of information (this does not mean that children should be excluded from the process, however). Greater emphasis is also placed on the importance of multiple informants, such as teachers, daycare providers or other persons who know the patient. Another crucial aspect of clinical assessment in this population is the developmental level of the child when considering appropriateness of behavior and functioning. To make accurate judgments about the child's behavior, a solid grasp of what is developmentally appropriate is required. Similar to assessing adults, however, clinical evaluation entails a detailed history, a mental status examination (and evidence of a recent physical examination), a formulation (integrating all available data regarding biological, psychological, and social aspects), diagnosis, and differential diagnosis. This integrated formulation needs to be conveyed to the patient and family, and used to negotiate a plan for treatment.

General recommendations

Clinicians may differ in their views about how to structure clinical interviews, although most would agree that they vary according to the age and developmental level of the patient. Following a brief greeting and introduction, some prefer seeing adolescents on their own first and then together with the parents – or each group alone, if one expects too much conflict. For children, the opposite is often preferred: to see the child together with parents or parents alone first, and then interviewing the child alone. Children younger than 12 years of age are less likely to reliably answer questions about mood, onset and duration of symptoms, be able to compare themselves to their peers, and questions that require the child to use judgment (Granero Perez et al, 1998). Additionally, meeting with the parents first may provide direction for the clinician and areas of interest to be addressed when meeting with the child. During the interviews, particularly with younger children, it may be useful to talk about neutral topics first in order to set the child at ease. This approach also permits evaluation of the child's speech, discourse and thought patterns. Questions about behavior or emotions need to be simple (e.g., dealing with one concrete issue at a time: "Have you been feeling so bad that you have been crying often in the last few days?"). It is more useful to learn about how the child feels, thinks or behaves rather than probing for explanations as to why.

Adolescents value their privacy and independence and are more likely to share information if they know it will be kept confidential. Confidentiality should be discussed from the outset. Clinicians should outline the conditions under which they will share information with the parents – such as safety issues (suicidal and homicidal thoughts). When abuse is suspected, the role of clinicians as mandated reporters of abuse (in most countries) should also be explained. Because child protection is paramount, disclosures of abuse to the clinician from the child or others need to be shared with the local child protection agency. Sensitive issues such as substance abuse, sexual activity, and pregnancy would not necessarily warrant breaking confidentiality unless there are special circumstances, such as



Click on the picture to access
 "Child and Youth Emergency
 Mental Health Care: A
 National Problem"
 by J.L. Cooper and R. Masi.
 The National Center for
 Children in Poverty (2007)

a youth repeatedly operating a motor vehicle when intoxicated. It is generally appropriate, however, to encourage the youth to share this information directly with the parents.

Diagnosis

It is important to determine if the patient has a psychiatric diagnosis versus a mental health problem. Presenting with an acute psychiatric disorder usually has different treatment needs than someone presenting with adjustment problems after a break-up with their girlfriend or boyfriend. Acute psychiatric disorders and acute mental health problems are discussed further below.

Treatment history

An inventory and assessment of prior treatments, including pharmacotherapy and psychotherapy, is essential. A detailed review of prior treatments, their duration, drug dosages, adverse effects, adherence to treatment, hypersensitivities, and information as to whether the patient showed a positive or negative response is warranted.

Co-occurring disorders

In emergency settings, the most prominent and acute disorder should be addressed first (for example, an adolescent with mania and ADHD should have the mania addressed in the ED setting). Co-occurring disorders that present with less acuity and severity should be addressed at another time in an outpatient setting.

Family assessment

For an urgent assessment, the focus should be on high risk family mental health problems, like suicide, substance abuse, mood disorders, and psychosis. A family history of psychiatric illness may suggest that the identified patient is at greater risk for developing the same illness.

ACUTE PSYCHIATRIC DISORDERS PRESENTING TO THE ED

It is important to assess if the patient presenting to the ED in crisis has an underlying psychiatric disorder. Listed below are common psychiatric disorders presenting acutely to the ED and brief clinical descriptions and mnemonics (Table J.1.1) (please refer to the corresponding chapters in the book for more details on these disorders).

Psychosis

Psychosis is a disorder of thinking (delusions) and perception (hallucinations) in which there is a gross impairment in reality testing. Youth with psychosis might experience a decline in their social and cognitive functioning prior to presenting with psychotic symptoms. Often, this decline manifests itself broadly via social withdrawal, worsening school performance, bizarre or eccentric thoughts and behaviors, self-neglect, suspiciousness, anxiety, irritability, hostility, or aggression. Patients might not come for medical care and they are often brought by relatives. The youth in the emergency department might be fearful, apprehensive, irritable, or agitated. The mnemonic **THREAD** (Table J.1.1) can help clinicians remember the criteria for psychosis.



Click on the picture to watch a video clip explaining what parents, children and mental health providers should expect when a child is transported to the emergency room for a mental health evaluation (8:45)

Acute mania

The hallmark of a manic episode is the presence of irritable, elevated or expansive mood state, which represents a significant change from the youth's usual mood state and persists for at least a week. The **FIND** (**F**requency, **I**ntensity, **N**umber and **D**uration) strategy (Kowatch et al, 2005) is recommended to assess symptoms in a youth with mania. The change in mood state is usually accompanied by a change in the youth's perception of themselves manifested by grandiosity. During a manic episode, adolescents show a decreased need for sleep, pressured speech, experience racing thoughts, have increased interest in multiple activities, increased sexual behaviors due to poor impulse control and poor judgment, and may show a provocative change in clothing style. During the initial days of a manic episode, there might be an increase in productivity; however, this is usually self-limited due to growing distractibility. More than half of the adolescents with mania might develop psychotic symptoms, which are usually mood congruent (Yatham et al, 2009). The mnemonic for mania is **DIGFAST** (Table J.1.1), developed by William Falk (Ghaemi, 2003, page 13).

Depression

Youth with depression often present as irritable rather than depressed or sad. Up to 60% also have suicidal ideation and 30% attempt suicide (Birmaher et al, 2007). Depressed youth experience irritability or depressed mood, which persists for more than two weeks and is associated with deterioration in functioning. The youth may also exhibit anhedonia, social withdrawal, declining school performance, disrupted sleep patterns, changes in appetite or weight, and fatigue. A negative self-appraisal, low self-esteem and cognitive distortions in thinking lead adolescents to have thoughts of worthlessness, hopelessness, guilt, death and suicide. Children might present with somatic symptoms or behavioral problems, as they may not yet have the cognitive ability to verbalize thoughts of guilt and hopelessness or identify their own mood state (Baren et al, 2008). Psychotic or melancholic symptoms are less likely to present in children with depression (Rao et al, 2009). The mnemonic for depression is **SIGECAPS** (Table J.1.1), developed by Carrey Gross (Ghaemi, 2003, p11).

Anxiety disorders

There are multiple subtypes of anxiety disorders in youth, but we will focus on acute stress disorder, posttraumatic stress disorder, panic disorder and social phobia, as these disorders may require immediate attention in the ED.

Acute stress disorder

The presentation of youth with acute stress disorder is similar to that of posttraumatic stress disorder with respect to symptoms. However, as acute stress disorder is limited to one month following the traumatic event, the young person's subjective report of symptoms is more focused on the trauma than the re-experiencing of it. When young people discuss the traumatic event, they often describe having experienced it in a dissociative manner. For example, they may describe watching the event happening to them, lacking an emotional response to the event, or having incomplete recollection of the event.

Table J.1.1. Mnemonics for acute psychiatric disorders in children and adolescents.

THREAD (psychosis)

- Thinking may become disordered
- Hallucinations may occur
- Reduced contact with reality
- Emotional control affected (incongruent affect, affective flattening)
- Arousal may lead to worsening of symptoms
- Delusions might occur.

DIG FAST (mania)

- Distractibility
- Insomnia (decreased need for sleep)
- Grandiosity
- Flight of ideas
- Activity increase
- Speech pressured
- Thoughtlessness- reckless behaviours

SIGECAPS (depression)

- Suicidal thoughts
- Interests decreased
- Guilt
- Energy decreased
- Concentration decreased
- Appetite disturbance (increased or decreased)
- Psychomotor changes (agitation or retardation)
- Sleep disturbance (increased or decreased)

TRAUMA (PTSD)

- Traumatic event
- Re-experience
- Avoidance
- Unable to function
- Month or more of symptoms
- Arousal increased

WILD (substance abuse)

- Work, school and home role obligations failures
- Interpersonal or social consequences
- Legal problems
- Dangerous use

ADDICTeD (substance dependence)

- Activities are given up or reduced
- Dependence - physical - Tolerance
- Dependence - physical - Withdrawal
- Intrapersonal (internal) consequences: physical or psychological
- Can't cut down use or control use
- Time-consuming
- Duration of use is greater than intended.

Posttraumatic stress disorder (PTSD)

PTSD requires the presence of a traumatic event in which the individual experiences extreme fear, hopelessness or horror. In younger children this may be expressed through agitated or disorganized behavior. The traumatic experience leads to re-experiencing the symptoms associated with the trauma, avoidance of stimuli associated with the trauma and hyper arousal, which causes significant distress or functional impairment. Most individuals exposed to severe trauma develop some of these symptoms but usually they do not last more than a month. When symptoms last longer than a month, a diagnosis of PTSD is warranted. Because the traumatic event is linked to the onset of the symptoms, children and adolescents may display symptoms or behaviors not present before. Parents not always know about their child's exposure to trauma – or they may be the perpetrators. A difficulty in establishing this diagnosis in the young is that the very feature of avoidance makes it difficult for the youth to report or recall the traumatic experience. Young children may reenact elements of the traumatic experience through play, experience frightening dreams without trauma-related content, become aggressive or develop separation anxiety or fears, which are not necessarily related to the traumatic experience. Older children and adolescents may present with general anxiety symptoms, substance use and self-harming behavior. The mnemonic for PTSD (Table J.1.1) is **TRAUMA** (Khouzam, 2001).

Panic disorder

A panic attack is the sudden emergence of intense fear and associated symptoms peaking within ten minutes: palpitations, shortness of breath, paresthesias, dizziness, sweatiness, shaking and the perception of choking. Children and adolescents can experience panic attacks in response to anxiety-provoking stimuli within any anxiety disorder, other mental disorders and some medical conditions. Youth could be considered to have a panic disorder when panic attacks are repetitive and happen with or without stimuli. They also worry about having future panic attacks and change their behavior in an attempt to avoid them.

Social phobia:

Children and adolescents with social phobia experience marked distress and fear of social situations, which results in a pattern of avoidance and anticipatory anxiety of these situations. Younger children might not be able to verbalize anxiety-provoking situations; thus, their anxiety may be expressed in tantrums or crying spells. Older children and adolescents might have somatic symptoms such as nausea, abdominal pain or headaches related to social situations. As a result, they may not attend or participate in activities that are unfamiliar to them or that demand their active participation. This can present on a spectrum from avoiding to raise their hand in class, to refusing to attend school or gatherings altogether.

Disruptive behavior disorders

Behavioral disorders can present to the ED with aggression and severe disruptive behavior. They include attention deficit hyperactivity disorder (ADHD), oppositional defiant disorder and conduct disorder.

Attention deficit hyperactivity disorder (ADHD)

The core symptoms of ADHD are inattentiveness, hyperactivity and impulsivity. Children and adolescents with ADHD are symptomatic before the age of 7 years and their symptoms lead to functional impairment in at least two settings. Symptoms occur frequently and can be exacerbated when the youth is in a group setting or engaging in activities that require a concentration or lack novelty or interest. Symptoms of hyperactivity and impulsivity are more noticeable as the youth becomes disruptive and noisy or has difficulties remaining still or waiting; as a result of their hyperactivity they get injured often. Children with ADHD who present to the ED are usually brought due to aggression and disruptive behavior.

Oppositional defiant disorder:

The main feature is a pattern of developmentally inappropriate defiant, disobedient, negativistic and hostile behavior towards authority figures. This pattern needs to be present for at least six months and lead to academic, social or occupational impairment. Children and adolescents with this disorder are often argumentative with their parents or refuse to follow their rules, making the disorder more evident at home. These young people are likely to lose their temper and can become aggressive, usually verbally and without the serious aggression seen in conduct disorder.

Conduct disorder

Children and adolescents with conduct disorder have an inability to appreciate the importance of others' welfare and show little guilt or remorse about harming others. They show a repetitive and persistent pattern of behavior where the basic rights of others or major societal norms are violated. They often have a longstanding history of school suspensions, fighting, aggression and destructive behavior. Lies are often used to get out of a sticky situations and stealing is frequent. The four main clusters of symptoms are: aggression or threats of harm to people or animals; deliberate property damage; repeated violation of household or school rules or breaking the law; and persistent lying to avoid consequences (American Psychiatric Association, 1994). This pattern causes significant impairment socially, academically or occupationally.

Substance use disorders

Substance-using adolescents often present to the ED with intoxication or withdrawal. However, it is important to assess the pattern of substance use to establish if the youth has either substance abuse or dependence. Both are associated with psychosocial impairment or academic failure.

Substance abuse

The main feature of substance abuse is the continuous use of a substance despite the consequences, including actual or potential harm. The mnemonic for substance abuse (Table J.1.1) is **WILD** (Bogenschutz et al, 2001).

Substance dependence

After prolonged exposure to an addictive substance, the pattern of use becomes habitual and compulsive. The young person becomes unable to control their substance use, either the amount or frequency. Function is impaired as the youth increasingly prefers to engage in substance use at the expense of other activities

(friends, family, hobbies, school or work). The maladaptive pattern of use continues despite enduring physical and psychological problems caused or exacerbated by the substance. Along with this pattern of use, the youth develops tolerance, needing higher doses to achieve the same effect or experiencing withdrawal when use is reduced or stopped. The mnemonic for substance dependence (Table J.1.1) is **ADDICTeD** (Bogenschutz et al, 2001).

ACUTE MENTAL HEALTH PROBLEMS PRESENTING TO THE ED

Acute mental health problems can present to the ED with or without an acute psychiatric disorder. In addition to assessing for the presence of a psychiatric disorder, it is also important to assess for acute mental health problems, such as suicidal behavior, aggression, parent-child conflict, adjustment issues, abuse, and homelessness.

Suicidal behavior

A suicide attempt is the most common presentation of young people to the ED. Once patients have been medically stabilized, the ED clinician needs to determine the patients' suicide risk. Suicide is a major public health concern around the world. A recent study using data from 90 countries found a suicide rate of 7.4/100,000 for youth 15 to 19 years of age with a higher rate for males (10.5) compared to females (4.1). This same study found that suicide accounted for 9.1% of all deaths in this age group and represented the 3rd leading cause of death among females and 4th for males (Wasserman et al., 2005). In the US, suicide is the third leading cause of death among 15 to 24 year olds accounting for 12.2% of all deaths in this age group (Centers for Disease Control and Prevention, 2010).

Data from the US showed that in a one-year period, 14% of students in grades 9-12 had suicidal ideation. In addition, this survey also showed that in a one-year period, 11% of students had made a suicide plan, 6% had made at least one suicide attempt and 2% had made a suicide attempt requiring medical attention (Eaton et al, 2009) (see also Chapter E.4).

Assessing risk of suicide

Two important issues are degree of confidence (in the assessment) and changeability (of risk). It is important to remember that risk factors do not necessarily cause suicide, but rather are characteristics associated with suicidal behavior. As such, these factors may provide guidance in assessing a patient's vulnerability to suicide.

Engagement

Engagement is crucial to detection, assessment, and management of suicide risk. The level of engagement should be assessed, as it influences the confidence of the risk assessment. For example, lack of cooperation of the patient and inability of the clinician to engage may lead to poor detection and assessment, leading to low confidence of the risk assessment, thereby increasing the risk.

The first step is establishing a therapeutic alliance. There are many ways to do this but, most importantly in a busy ED, the clinician needs to sit down, make eye contact and not appear distracted or rushed (e.g., in an office rather

than interviewing the patient standing up in a corridor). Provide a calm and safe atmosphere. Be empathic. Youth will be far more likely to open up about their suicidal thinking and planning if they feel the clinician is interested in them and trying to understand. Also, it is important for clinicians to be aware of their own feelings towards patients who are suicidal – countertransference. Be open and accepting of youths’ beliefs and feelings. In most cultures suicide is viewed negatively, however when assessing a suicidal child or adolescent, it is important to be non-judgemental, as this fosters the therapeutic alliance through open and honest communication.

The limits of confidentiality should be clearly explained at the beginning of the assessment. Confidentiality must be maintained unless the young person is at risk of harming themselves (suicide) or others (homicide) or if someone is harming them (child maltreatment). These situations allow breaking medical confidentiality.

Detection

Detection is about assessing personal risk factors, intent, lethality, mental status and collateral information. It is important to ask directly about suicidal thinking and planning; this will not increase suicide risk (Gould et al, 2005). As mentioned above, engagement is crucial in detection: introduce the topic gently and gradually through general questions, move gradually to more direct questioning, for example:

- Have you ever had the feeling that you didn’t want to get up to greet the day?
- Have you ever had thoughts that you can’t go on?
- Do you ever think that if you went to sleep and didn’t wake up that that would be ok?
- Have you ever thought about ending your life?
- Have you ever thought of a plan to end your life?
- If yes – tell me about your plan
- How close have you come to acting on your plan?

Personal risk factors. Psychiatric illness is a risk factor for suicide. Psychological autopsy research has shown that among adolescents who completed suicide, approximately 90% had a diagnosable psychiatric condition, most commonly depression, but included bipolar, substance use and conduct disorders (Brent et al, 1993; Shaffer & Pfeffer, 2001). Psychotic youth may be at elevated risk for suicide, especially if they are experiencing command hallucinations telling them to kill themselves. Depression, particularly with high levels of hopelessness, carries significant risk of suicide. Thus, another important area to assess is the degree of hopelessness. Asking “Do you have hope that things will get better?” can be helpful in assessing this important factor. Patients who do not have any hope that things will improve are at higher risk for suicide. Asking about plans for the immediate future (i.e., coming weekend or that evening) as well as for the more distant future (i.e., upon graduation from high school) can help determine if patients see themselves in the future; patients with a lack of future orientation are at higher risk for suicide.

Having made suicide plans also carries a risk. In contrast, passive suicidal thoughts have lower risk. Having made a recent suicide attempt is a risk factor; youth who make a suicide attempt are at increased risk of subsequent attempts. Among suicide attempters, the period of greatest risk for completed suicide appears to be in the first year following the initial attempt (Gould et al, 2003). Recent major life events, especially losses (break up of a relationship, loss of a job), humiliations (resulting in shame, guilt, or anger), or disciplinary crises, are another risk factor. The timing of the suicide attempt is often associated with a stressful life event. Other risk factors for suicide include recent discharge (within last month) from a psychiatric inpatient facility and alcohol intoxication.

Youth with a family history of suicide are at increased risk of both completed suicide and suicide attempts. It is unclear whether this increased risk is due to genetic or environmental influences, or both. In terms of the genetic influences, this could be related to the transmission of a specific tendency for suicide or for psychiatric illness as these two factors often occur together (Gould et al, 2003).

Intent refers to whether the self-harming young persons actually seek to kill themselves or not (as in the case of non-suicidal self-harm) and, if so, how determined they are. Using scales of 1 to 10 can be helpful with youth who often struggle to express their thoughts and emotions. For example, “on a scale of 1 to 10, with 1 being no intention to follow through and 10 being definite intention to end your life, what is the likelihood that you would follow through with your suicidal plan?” Most people find it distressing to have suicidal thoughts and are more than willing to discuss these thoughts if they are asked about them.

Lethality

When assessing suicidal risk following a suicide attempt it is important to take a careful history of the events leading up to and following the attempt. Questions to ask regarding lethality include:

- Was the attempt carefully planned or impulsive?
- Was *rescue* anticipated or likely?
- Were there preparations and measures taken to ensure death was likely?
- Did they believe they would die?
- Were personal business finalized? (e.g., made arrangements for pets, debts, goodbyes and giving away possessions, letter)
- Was lethal means available?

Clinicians need to assess the lethality of the attempt – including both objective and subjective realities. Medical professionals know which medications are potentially lethal (e.g., acetaminophen) whereas patients may not; for example a patient may take a nonlethal overdose (e.g., penicillin) believing it was potentially lethal because it is a prescription medication. In gathering information about the circumstances surrounding a suicide attempt, it is important to also assess for the availability of help and potential to abort the attempt as this will provide more clues as to the degree of intent.

Start with open-ended questions such as “what happened to bring you here?” or “Can you describe what happened?” This allows patients to tell their story in



their own words. Then follow up with more direct questions to determine the patient's thoughts and emotions before, during and after the event. For example (in case of an overdose):

- How were you feeling the day before you took the pills?
- How did you get the pills?
- What were you thinking and feeling when you took the pills?
- Where were you when you decided to take the pills?
- Who was there? Were you alone?
- How did you take the pills? One at a time? All at once?
- What happened after you took the pills?
- How did you feel after you took the pills?
- How do you feel now that you didn't kill yourself?
- What do you think you have learned from all of this?
- How might you react next time?

In the US, where guns are prevalent in the population, access to firearms has been shown to increase the risk for suicide among youth. One study found that the risk of suicide completion was doubled in homes where there were firearms (Brent et al, 1991).

Mental state assessment

An *at risk* mental state may include severe depression, command hallucinations or delusions about dying, preoccupation with hopelessness, despair, feelings of worthlessness, severe anger, and hostility.

Collateral information

Collateral information is important to validate patients' accounts, to determine previous psychiatric diagnoses and treatments, and identify previous suicide behaviors. Information can be obtained from medical records, nursing reports, police, other health providers, and family physicians. Information from family and friends can help to establish whether the behavior is out of character, for how long it has been evident and if supports are available.

Changeability of risk

Risk status is dynamic and requires re-assessment. It is important to identify highly changeable risk status, as it will guide the clinician as to the safe interval between assessments. Alcohol intoxication in suicidal individuals is an indication of changeable risk and low confidence in the risk assessment because intoxicated individuals are unreliable in the information they provide and alcohol reduces self-control. A highly changeable risk implies the need for careful re-assessment and more vigilant management with respect to safety (e.g., re-assessment within 24 hours).

Confidence of risk assessment

The confidence (validity) of the risk assessment is influenced by many factors. The following indicate low assessment confidence:

- *Factors in the patient:* impulsivity, drug or alcohol abuse, inability to engage, lack of cooperation
- *Factors in the social environment:* impending court case, divorce with child custody dispute; and
- *Factors in the clinician's assessment:* incomplete assessment, inability to obtain collateral information.

Similar to high changeability of risk, a low assessment confidence implies a need for careful re-assessment (e.g., within 24 hours). More vigilant management is needed with respect to safety in the light of gaps in information or rapport.

Suicide risk levels and their management

Once the risk assessment has been completed, the next step is to determine the appropriate management. Youth deemed to be at high suicide risk will require admission to hospital to keep them safe. Uncooperative youth who do not wish to be admitted but are at imminent suicidal risk may need to be admitted involuntarily to ensure their safety (according to local laws and procedures, which may vary from country to country). Those deemed to be at low to medium risk require a well-organized discharge plan developed in consultation with the patient and family and will vary from person to person. This should include detailed, written information about follow up, important contact information, and medications (if any). Discussion should take place with parents/caregivers and the youth about creating a safe environment at home by removing access to means (firearms, medications). As a final component of the discharge plan, the youth and family

should always be reminded that they can return to the ED at anytime should there be a need.

High risk usually involves several of the following components:

- At-risk mental state (e.g., severe depression; command hallucinations or delusions about dying; preoccupation with hopelessness, despair, feelings of worthlessness; severe anger, hostility)
- Suicide attempt or suicidal thoughts (e.g., continual/specific thoughts), evidence of clear intention, a previous attempt with high lethality
- Substance use (e.g., currently intoxicated with alcohol)
- Corroborative history (e.g., unable to access information or conflicting reports)
- Strengths and supports (e.g., youth refuses help; lack of supportive relationships/hostile relationships).

High risk patients need a safe and secure environment. Consider involuntary hospitalization if no other reasonable options are available and *if* (1) suicidal thoughts or intention are persistent and intense; *or* (2) attempt is serious in nature; *or* (3) there is evidence of a severe mental disorder. If a patient who is considered at high risk leaves the facility, attempts to locate that person should be made including informing the police. Other options for the high risk patient include: voluntary hospitalization; observation at home (if family able to provide round-the-clock supervision and risk is not too high); and ongoing management and close monitoring. Contingency plans should be in place for rapid re-assessment if distress or symptoms escalate.

If the high risk patient is not hospitalized, then a re-assessment should occur within 24 hours. For medium risk, the reassessment should occur within one week. For low risk, the reassessment should occur within one month. In cases of no foreseeable risk, referral to outpatient mental health or the family physician is warranted to address any mental health problems.

A caveat to this is that high changeability will influence the risk assessment, and it is prudent for the clinician to develop a safety plan and assure re-assessment within 24 hours. A low assessment confidence will also influence the risk assessment, so it is also prudent to keep the patient safe and reassess as appropriate.

Contracting for safety

Over the years, many clinicians have used the strategy of “contracting for safety” or “no-suicide contracts” when discharging patients with suicidal ideation from the ED. There is no evidence to support the use of such contracts and may give false reassurance (Garvey et al, 2009). Creating a safety plan for a patient is much more realistic; it should be developed in collaboration with the patient and family. A safety plan basically lists what a patient agrees to do should their suicidal ideation return or worsen. Key components of a safety plan include getting rid of means for completing suicide (such as removing firearms and medications) and listing:

- Triggers that lead to suicidal feelings
- Coping strategies the patient can use when feeling suicidal (such as exercise, listening to music, taking a bath, reading)



Click on the picture to view a clip explaining in general terms how an emergency room works (4:09)

A 14 year old female was brought to the ED for crisis assessment. She appeared shy and quiet. She presented with superficial cuttings on her arms (about 50 cuts) and had been cutting herself for one year. She had told her parents about the cutting one month earlier. She typically cut herself when her mood was low. She denied wanting to die. However, she persisted with cutting herself and cuts were possibly becoming deeper. She reported intrusive thoughts of suicide with a recent increase in frequency and intensity and was being bullied at school. Despite these symptoms, her functioning was not impaired; she did well in school, was insightful for her age and stated she cut herself to relieve tension and to ward off feelings of loneliness. She described “dips” in her mood that seemed to be triggered by stressful situations, and did not sleep well. Family history was significant for depression on the maternal side. She denied substance or alcohol use and showed no signs of intoxication. She had a good relationship with her parents, who described her as a “good kid.”

She was assessed as suffering from deliberate self-harm and possibly had a diagnosis of major depression. Suicide risk was assessed as low and discharged home with a referral to outpatient mental health services. She returned to the ED six days later following an outpatient appointment where she disclosed feeling suicidal, exhausted and wanting to “give up.” She was vague about the suicidal ideation, but denied having a plan. She refused to talk to the crisis worker. Eventually she revealed that a good friend had died of suicide the day before. “My friend was always smiling and no one knew because she never talked to anyone –that is how I am.” The patient was subsequently admitted voluntarily to the adolescent inpatient psychiatric unit due to high risk for suicide.

- Friends and specific family member the patient can call on for support if they feel suicidal
- Contact numbers for crisis lines, mental health professionals or peer support groups
- Circumstances for returning to the ED.

Aggression and out-of-control behavior

Aggression in children and youth includes a wide range of behaviors from lack of cooperation, loss of control, defiance, and non-compliance to outright hostility and violence. Young people displaying these behaviors are often brought to ED by relatives, the police or social services. Treating and containing the aggressive youth is one of the most challenging situations in the ED. Not only is skilled and empathetic staff needed, but also adequate facilities, security personnel and good liaison with the law enforcement, justice and child welfare systems. All these requirements should be set-up beforehand or else situations can get out of control and become dangerous to the patient, staff and others receiving care in the ED.

Most common psychiatric diagnoses associated with out-of-control behavior include disruptive behavior disorders (attention deficit hyperactivity disorder, oppositional defiant and conduct disorder), mood disorders (irritability with depression and with mania) and substance abuse (intoxication). Other diagnoses associated with aggression are developmental disabilities (mental retardation, autism), psychosis and general medical conditions such as head injuries, particularly if they occur in the context of a dysfunctional or over-stretched family.

In the ED, preventing the escalation in aggressive behavior can involve such measures as having a security team present, using metal detectors to detect weapons, using seclusion rooms as well as educating staff regarding the early

detection of potentially violent situations. Predicting actual violence or aggression is very difficult for even the most experienced clinicians.

The design of the ED can play an important role in the management of violent or aggressive patients. Having a mental health observation room with specially designed furniture that can not be thrown, a camera with video links to a nursing or security station to monitor patients, an exit door that swing outwards to allow staff to escape quickly if necessary, and duress alarms can all play a role in maintaining safety for all.

The management of acute violence or loss of control should initially involve verbal de-escalation techniques. Strategies to deal with potentially violent situations include:

- Give the individual as much space as possible
- Do not block exits and leave door to room open
- Situate yourself between the individual and the door
- Speak to the individual in an honest straightforward manner
- Listen, be empathic,
- Speak slowly and calmly
- Offer choices as much as possible
- Offer food or drink
- Be non-confrontational
- Avoid direct eye contact or sudden movements
- Stay at least an arm's length away
- Set limits ("I am here to help you with your difficulties, but I cannot allow you to continue with your threatening behaviors")
- Try as much as possible to respond to the individual's requests in the positive ("Sure we can get you something to eat, but first we need to...")
- Refrain from criticizing or arguing with the person
- Don't interrupt
- Avoid responding in a defensive manner
- Don't take the person's anger personally.

If the youth does not respond to verbal techniques then chemical restraint (also called rapid tranquilization) may be necessary. Chemical or physical restraint should only be used if the child or adolescent is actively trying to harm themselves or others. Parental consent should be obtained if possible. As a first step, medications should always be offered orally. Intramuscular injection should be used only as a last resort.

Three classes of medications are used for chemical restraint – benzodiazepines, typical antipsychotics and atypical antipsychotics. In children and youth, the tendency is to avoid high potency typical antipsychotics such as haloperidol because of the risk of acute dystonia, especially in young males. While benzodiazepines such as lorazepam can be used, there is potential for paradoxical reactions in children and youth producing increased agitation. Although there is no consensus or systematic evidence, most clinicians agree that the best choice of medication for

After an extended trip to Lebanon, a 15 year old Canadian female of Lebanese background had trouble readjusting upon her return home (her current school has few students from non-Canadian background and she feels “out of place”). Parents noticed a significant change in her behavior, and parent-child conflict ensued. The youth began to engage in high risk behaviors – staying out all night, not attending school, became defiant and disrespectful and, against parents’ wishes, began visiting another community where there is a large representation of peers of Lebanese origin. This resulted in multiple visits to the ED with her overwhelmed parents insisting she was “mentally ill.” On one occasion the youth had assaulted her mother, so much so that charges were laid and she was asked to leave home. The youth was unable to follow rules in the neighbor’s home, where she had been provisionally placed. Aggressive outbursts led to more visits to the ED involving grueling meetings with the family and attempts to improve the situation.

While waiting for an outpatient mental health appointment, the family doctor prescribed risperidone for her impulsive aggression. Subsequently, following a fight with her mother, she got onto a bus and ingested about 10 tablets of risperidone. She then developed palpitations, became scared and called her mother who took her back to the ED, where she underwent monitoring and overnight observation. She told the crisis worker the next morning that she had not intended to kill herself. Hospitalization was offered but refused. However, she became more cooperative and agreed to initiate safety planning, which included temporary placement in an extended family member’s home with constant observation. She was referred for outpatient mental health follow-up.

chemical restraint in children and youth would be the atypical antipsychotics such as olanzapine or ziprasidone.

Physical and chemical restraints should only be used as a last resort. Teams trained in the use of physical restraint can be mobilized if there is a risk of imminent harm to the patient or staff. Physical restraint should be used for the minimum amount of time necessary to calm the patient. Patients in physical restraint should be monitored frequently not only to ensure that they don’t injure themselves while in restraints but also to determine the earliest point at which the restraints can be removed.

Parent-child conflict

Parent-child conflict can take many forms and occur for many reasons. Without the resources or abilities to solve these conflicts, parents may resort to taking their child to the ED when it gets out of control. Presentations include difficulty implementing discipline, repeated arguments, disobedience, frustration, anger and in extreme cases, violence.

Conflicts between children and parents can emerge at any age, but it is during the adolescent years when conflict tends to escalate. Adolescents’ drive for independence and autonomy can be in direct opposition to parental wishes for continuing control over their child’s actions and behavior. Emergencies usually occur following legal or disciplinary crises that result in the child losing control and becoming aggressive towards the self, others, or property in the context of chronic problems that may have lasted years.

The clinician needs to ascertain what the current problem is by interviewing child and parent, either separately or together, keeping in mind that there is a considerable amount of hostility and emotion on all sides, which needs to be contained. It is crucial to understand the problem at hand so that potential temporary solutions can be developed in a collaborative manner. This will require the parent and child together in the same room. It can be helpful to stress to

parents that the art of negotiation and compromise is learned in the home and that parents are well positioned to teach this to their children as developmentally appropriate. Determining what the actual underlying issue is may be difficult and the current argument is often a symptom of larger chronic problems.

The goal in the ED is to ascertain whether a serious physical or mental disorder is present and to defuse the situation so that the child can return home or to a safe environment. Discharge planning should include a referral to available community resources for family therapy and parenting skills training with the goal of developing more effective communication and problem solving skills. Parent-child conflict affects the whole family and ideally the resolution of the conflict should involve all family members.

Adjustment problems

Adjustment disorders are a common reason for children and youth to present to the ED. Adjustment disorders, by definition, are reactions to a specific stressor that are beyond the normal expected reaction or that cause significant impairment in functioning. Death of a loved one, move to a new city or a new school, bullying, break up of a romantic relationship, and poor academic performance are just some examples of events that could trigger an adjustment disorder in a vulnerable child or youth. Assessment should include a discussion about recent stressors precipitating the presentation to the ED. Despite not meeting criteria for a major depressive episode, patients with an adjustment disorder can be at significant risk for suicide, thus it is important to always screen for suicide risk. If there is no indication to admit the patient (e.g., low suicidal risk) then discharge planning should include a referral for outpatient treatment.

Abuse

Child maltreatment can take many forms and includes physical, verbal and sexual abuse as well as neglect (see Chapter B.3). By maintaining a high index of suspicion, the ED physician is well positioned to detect child maltreatment. Consultation with a child protection team, if available, can be invaluable in terms of making decisions regarding disposition for the abused child. Most countries have legal requirements in terms of reporting suspected abuse of children to local authorities and this should be done according to local legislation.

The patient is a 16-year-old, grade 9 girl who lives with her mother. Over the past two months, she had exhibited depressive symptoms characterized by tearfulness and disrupted sleep. The patient and her mother had been evicted from their apartment four months earlier and had to spend several weeks at a homeless shelter. They have since found an apartment to rent, but the patient is now worried that her mother will kick her out of the house because she recently turned 16, and her mother had been making comments that the patient should find a job because she has to take care of herself eventually. At times they did not have money to buy food. The patient and her mother fought constantly; she dropped out of school because her home life was too stressful to focus on schoolwork. The mother brought the patient to the ED because she was concerned about her daughter being depressed and dropping out of school, spending most of her day isolated in her room. The patient denied suicidal ideations. The patient was diagnosed with adjustment disorder with depressed mood and referred for outpatient mental health follow-up.

Homeless youth

Homeless youth regularly present to the ED with mental health issues and they are often brought by the police because of dangerous or risky behavior. It is important to be non-judgmental, open and empathic when conducting an assessment with any youth, but particularly with homeless youth who will already feel judged in a negative way. Their looks may be off-putting in that they may be dirty, disheveled, tattooed and have multiple piercings. In the US and other high income nations, homeless youth have often been in foster care or group homes and experienced major family dysfunction. They have often left home on their own accord because of conflict or abuse, are unlikely to be attending school and are often engaged in drug and alcohol use or delinquent activities. They have tenuous support systems consisting mostly of other homeless youths with similar backgrounds and behaviors. In contrast, homeless youth in other parts of the world particularly in low-income countries, may be homeless because of poverty, famine, war or political instability. Often in these situations, the homeless youth is with his or her family and not alone (see Chapter J.4).

A recent German study looking at the prevalence of psychiatric conditions among homeless adolescents found that 80% of participants had a diagnosable psychiatric disorder (Aichorn et al, 2008). The most common diagnosis was substance abuse and dependence (65%). Other diagnoses included mood disorders, eating disorders and anxiety disorders. Over half had a history of self-harm and 25% reported at least one suicide attempt. This study also found that the longer a youth was homeless, the more likely it was for the youth to have a psychiatric disorder. Homeless youth engage in more risky behaviors than youth in the general population (Milburn et al, 2006). These high-risk behaviors include shoplifting, prostitution, substance use, multiple sexual partners, and gang involvement.

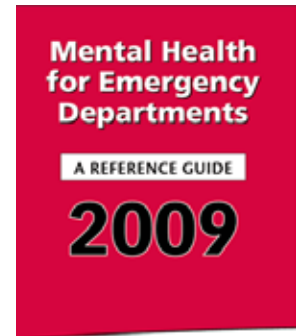
Establishing rapport will be of utmost importance in order to obtain accurate and honest information from the youth; sit down, make eye contact, be patient and be empathic. The evaluation must include a risk assessment for suicide and homicide as well as an evaluation of physical health status. It is also necessary to explore the patient's living situation and to provide information about housing, financial aid, educational and vocational supports. Referral for social services support and outpatient mental health follow-up may also be indicated; compliance with follow up is usually low.

MEDICAL ASSESSMENT OF THE MENTAL HEALTH PATIENT IN THE ED

Before an urgent mental health assessment can proceed, the presence of acute medical illnesses, whether emanating from mental health problems or not, need to be assessed. Young people with mental disorders can also suffer from unrelated acute physical illnesses. Medical complications of psychiatric illness or their treatment can have a high morbidity and mortality if not detected and treated promptly.

Overdose

Drug overdoses account for approximately one quarter of completed suicides. In many countries, intentional drug overdose of pharmaceutical, over-the-counter and natural products is the most frequent presentation of self-harm



NSW HEALTH

Click on the picture to access a guide on mental health in the emergency department (not specifically for youth) produced by NSW Health, Sydney, Australia.

in the ED. Most countries have poison centers that should be contacted to determine the specific management for each substance ingested. Acetaminophen and salicylates are discussed here as they are readily available and commonly used in overdose. Tricyclic antidepressants are also discussed as clinicians need to have a clear management plan for them and understand their significant threat to life.

Salicylates

Salicylates are widely used for their analgesic and antipyretic properties and can be purchased over the counter. Mild intoxication results from acute ingestion of 150 mg/kg of acetylsalicylic acid. Severe intoxication occurs at doses of 300-500 mg/kg. The most potent over-the-counter salicylate is oil of wintergreen; each five milliliters contains the equivalent of 7.5 g of acetylsalicylic acid (Olson et al, 2007). Even one drop of oil of wintergreen can be fatal in a young child and is a significant threat to life in the intentional overdose patient. Salicylates produce profound metabolic and respiratory disturbances when taken in overdose. The primary mechanisms of toxicity are:

- Central stimulation of the respiratory centre leading to *respiratory alkalosis*
- Increased *metabolic rate* through the uncoupling of oxidative phosphorylation
- Profound *metabolic acidosis* through inhibition of carbohydrate and lipid metabolism, which is manifested by tachycardia, tachypnea, hypoglycemia and fever
- Hepatocyte destruction
- Platelet inhibition

Vomiting occurs in the early phase after ingestion. Following this, patients report tinnitus, have severe tachypnea, lethargy, and hyperthermia. The clinical presentation progresses over time to include seizures, coma, pulmonary edema and ultimately cardiovascular collapse (Olson et al, 2007). In the absence of a known history of salicylate ingestion, intentional overdose should strongly be suspected with a mixed respiratory alkalosis and metabolic acidosis. Serum salicylate level, serum glucose, gas, electrolytes, complete blood count and coagulation tests (partial thromboplastin time /international normalized ratio) need to be conducted. A chest radiograph should be obtained at baseline to ascertain the presence or absence of pulmonary edema if clinical symptoms indicate.

Activated charcoal must be given if the patient presents within one hour of known salicylate ingestion. A second dose should be considered if the product was enteric coated or sustained release.

Close monitoring is required and treatment should be tailored to complications. The cornerstone of therapy is urine alkalization. Decision to initiate treatment with bicarbonate is based on the presence of symptoms regardless of the serum salicylate level. Bicarbonate enhances the urinary excretion of salicylate by ion trapping. The goal of therapy is to maintain urinary pH at 7.5-8 and urine flow of 1 ml/kg/hour. A single IV bolus of 1-2 mEq/kg of sodium bicarbonate (NaHCO₃) is given followed by an infusion of 5% dextrose

(D5) with NaHCO_3 and 20-40 mEq/L of potassium chloride (KCl). Meticulous monitoring of urine output, urine and serum pH, serum potassium, mental status and pulmonary status must be performed.

Care should be taken to address the potential complications of salicylate ingestion including:

- Support airway with mechanical ventilation if required
- Management of hyperthermia with external cooling
- Management of seizures with benzodiazepines
- Replacement of fluid deficit with a crystalloid solution
- Correction of hypokalemia (in patients who are not anuric)
- Treatment of hypoglycaemia with dextrose

Hemodialysis is recommended in patients with refractory acidosis, profound electrolyte disturbance, severe CNS toxicity, or clinical deterioration despite urinary alkalization. The clinical status of the patient is deemed to be more important in deciding which patients should undergo hemodialysis, but some reports suggest that a serum salicylate level greater than 1000 mg/L would be an additional indication (Olson et al, 2007).

Acetaminophen

Analgesics are the most frequent accidental and non-accidental overdoses (Bronstein et al, 2010). Acetaminophen can produce toxic effects with single ingestions over 200mg/kg. The primary organ affected is the liver. Toxicity occurs when the production of N-acetyl-pbenzoquinonimine (NAPQI) by cytochrome P450 enzymes exceeds detoxification capacity (Dart et al, 2006). NAPQI has a direct cytotoxic effect on hepatocytes. If the patient presents less than two hours after exposure, activated charcoal should be administered. Acetaminophen level, AST and ALT should be ascertained once the patient is at least four hours post-exposure and plotted on a Rumack-Matthew nomogram. If the exposure is in the toxic range, n-acetylcysteine has been shown to decrease mortality and limit hepatocellular damage (Dart et al, 2006). Both oral and intravenous forms of acetylcysteine are available and have comparable efficacy (Perry & Shannon, 1998).

Tricyclic antidepressants

Tricyclic antidepressants (TCAs) have an overall mortality rate of 6% (Eyer et al, 2009). Consults to the regional poison center and the local intensive care unit should be initiated promptly. Activated charcoal should be given if the patient arrives in the ED within one hour of ingestion. TCA overdose should be suspected in patients who present with an anticholinergic toxic syndrome as well as cardiac and neurologic dysfunction. The mnemonic for the anticholinergic toxic syndrome can be easily remembered: *Hot as a hare; blind as a bat; dry as a bone; red as a beet; mad as a hatter.*

Vital sign changes are variable depending on the state of the patient and can include extremes of either hyper or hypotension. Tachycardia and hypertension are more commonly seen, and are the result of inhibition of catecholamine reuptake. Hypotension is generally mild and is due to the tricyclic blockade on peripheral

alpha-adrenergic receptors leading to vasodilation and hypotension. Hypotension can generally be managed with the Trendelenburg position or a crystalloid bolus (Olson et al, 2007).

Direct *cardiac toxicity* and cardiac conduction disturbances occur as a result of inhibition of the sodium fast channel and membrane depressant effects. The single most important investigation is the electrocardiogram. *Widening of the QRS beyond 100 ms is the best clinical correlate to severity of toxicity* (Braden et al, 1986). The delay in repolarization is evidenced by prolongation of not only the QRS, but also prolongation of the QT and PR intervals. The patient is at risk for ventricular ectopy including ventricular fibrillation, ventricular tachycardia or asystole. Metabolic and respiratory acidosis further promote the tendency to cardiac arrhythmias. Sodium bicarbonate 1-2 mEq/kg may reverse membrane depressant effects and reverse sodium channel blockade, and is indicated when the QRS prolongation is greater than 100 milliseconds. Specific cardiac arrhythmias should be treated as per standard [American Heart Association protocols](#). Procainamide should be strictly avoided in tricyclic overdose, as its mechanism of action may exacerbate cardiotoxicity.

Neurological manifestations of tricyclic overdose evolve over time after TCA ingestion. These patients initially present with significant agitation but may progress rapidly to a profound altered level of consciousness with loss of protective airway reflexes. Because 2 out of 3 of patients who present with an overdose have taken multiple agents, coma should be treated empirically with naloxone and glucose. Respiratory arrest and loss of airway reflexes can occur abruptly. The clinician should anticipate and prepare for early intubation when managing tricyclic overdose.

Seizures occur in 20% of patients with tricyclic overdose. Initial management should include a benzodiazepine. However, second line management is neuromuscular blockade with a non-depolarizing agent to prevent the hyperthermia and rhabdomyolysis that is associated with a prolonged seizure. Continuous EEG monitoring will be required if the patient is paralyzed and ventilated to assess for signs of cerebral seizure activity (Olson et al, 2007).

Self-mutilation

Self-mutilation is a complex group of behaviors resulting in the deliberate destruction of body tissue; it is common in self-harming youth without suicide intent and is associated with organic, psychological and psychiatric conditions. The most frequent manifestations of self-mutilation are cutting or burning of the arm and wrist region. In addition to a thorough screening for coexisting suicidal ideation and other psychiatric disorders, the wounds must be cleaned, sutured and dressed. The patient should be approached in a non-judgmental manner. Tetanus status must be documented, and updated as necessary. A discussion should take place to ensure the patient knows that sharing a razor or other sharp object to carry out the mutilation would place them at risk of HIV or hepatitis transmission (Dallam, 1997).

Intoxication

Intoxicated adolescents are a growing problem in EDs. While youth are intoxicated, their perception, coordination and decision making abilities are

altered. This puts the intoxicated youth at a high risk of injury, and thus a careful and complete physical examination is required to rule out co-existing injury. Ingestion of a known substance should not prevent the clinician from thoroughly considering alternative differential diagnoses. Head injury or physical assault can certainly co-exist with intoxication in a patient with altered level of consciousness.

Most substance intoxications are managed conservatively. Treatment is aimed at stabilizing vital signs or controlling troublesome side effects such as agitation. It is standard practice to perform an acetaminophen, acetylsalicylic acid and ethanol level in patients with known ingestion (see above). Broad spectrum urine drug screening is rarely indicated and is not done unless it would significantly alter the patient's management.

Epidemiologic trends in illicit drug use vary from city to city, country to country and year to year. The [National Institute of Drug Abuse](#) provides timely information on the emergency trends in drug use for a variety of centres in the US but these may be different in other countries. However, every clinician needs to recognize and manage ingestion of alcohol, cocaine, phencyclidine (PCP), opiates, ecstasy, ketamine, and *gamma*-hydroxybutyric acid (GHB).

Ethanol

Ethanol intoxication commonly presents as slurred speech, impaired judgment and loss of fine motor skills, but at higher blood concentrations can lead to respiratory and CNS depression, loss of protective reflexes and death (see also Chapter G.1). No routine blood tests are required aside from a glucose level for the mildly impaired patient. However, more significant impairment is often investigated with blood glucose, gas, osmolar gap, and ethanol level. Occult injury and co-ingestion of other substances must be investigated. Care is supportive.

Methanol

Ingestion of methanol and ethylene glycol has significant morbidity and mortality. Initially these patients are indistinguishable from standard ethanol intoxication. However, as both of these alcohols are metabolized, their breakdown products cause metabolic acidosis. In addition to the profound metabolic acidosis seen with methanol, its metabolite formic acid causes end-organ damage to multiple organs, most notably the eye. *Methanol ingestion can result in blindness.*

The buildup of glyoxylic acid from ethylene glycol metabolism presents with progressive symptoms beginning twelve hours after ingestion with hyperventilation, arrhythmias and later renal failure. There will be a wide anion gap metabolic acidosis with an osmolar gap with these two toxic alcohols. Methanol and ethylene glycol levels are not always immediately available. If there is limited access to these levels, empiric treatment with fomepizole should not be delayed. Significant metabolic acidosis should be managed with bicarbonate infusion. Folinic acid 1 mg/kg should be administered with methanol ingestion while thiamine and pyridoxine should be administered in ethylene glycol ingestions. These treatment regimens promote both less production and enhanced elimination of the toxic metabolites.

Ethanol infusion has been used extensively in the past to treat methanol and ethylene glycol ingestions on the premise that it acts as a competitive antagonist to these toxic alcohols. The significant side effects of respiratory and CNS depression

caused by ethanol make this treatment obsolete in light of the widespread availability of fomepizole.

Cocaine

Cocaine is a sympathomimetic leading to elevated heart rate, respiratory rate and temperature. Patients who have ingested cocaine are agitated, have increased motor activity and are at risk of rhabdomyolysis. Long term morbidity associated with cocaine use comes not only from its high rate of dependency, but from the serious cardiac and central nervous system complications associated with its use. These include myocardial infarction, cerebral infarction and cerebral hemorrhage. Treatment is supportive and directed at any complications. Benzodiazepines are typically used to treat agitation. Adjunctive measures to control hyperthermia or cardiac complications are used as needed.

Phencyclidine (PCP)

PCP may be used orally, intravenously, or intranasally and is often mixed with other substances including marijuana. PCP has sympathomimetic and dissociative properties. Supportive care should be provided. Physical restraints may be necessary in severely agitated patients. Extreme mood lability and behavioural problems may also be managed with benzodiazepines or an atypical antipsychotic such as olanzapine.

Opiates

Opiate overdose is easily recognized by pinpoint pupils, respiratory depression and altered mental status. Naloxone, an effective antidote, rapidly restores normal functioning. Supportive care including management of respiratory depression should be anticipated.

Ecstasy

Ecstasy is a stimulant and a hallucinogen. No specific antidote is available to treat ecstasy overdose. Treatment is aimed at restoring hydration, providing a benzodiazepine for agitation, and treatment of specific complications including hypertension, hyperthermia and rhabdomyolysis.

Ketamine

Ketamine is a recreational drug used for its dissociative properties. Users usually show tachycardia, hypertension, nystagmus and altered mental state. In overdose, ketamine users can develop hyperthermia, seizures and respiratory depression. Treatment is supportive with occasional use of a benzodiazepine as needed.

Gamma-hydroxybutyric acid (GHB)

GHB is an anxiolytic and sedative. Patients who have taken an overdose of GHB may present with respiratory and central nervous system depression, and are managed accordingly.

Serotonin Syndrome

Serotonin syndrome is a not infrequent complication of antidepressant medications, particularly when taken in combination with other pharmaceuticals or over-the-counter alternative remedies. Manifestations of the serotonin syndrome

encompass a wide spectrum of severity. Mild cases can be easily overlooked as the symptoms of diarrhea, restlessness and anxiety can have considerable overlap with the patient's underlying diagnosis. However, failure to recognize these early symptoms combined with an inappropriate dose increase of the antidepressant (e.g., serotonin reuptake inhibitor) can lead to a severe clinical presentation.

The triad of symptoms described with serotonin syndrome includes: mental status changes, autonomic hyperactivity and neuromuscular abnormalities. Autonomic hyperactivity includes:

- Tachycardia
- Hypertension
- Hyperthermia
- Mydriasis
- Diaphoresis
- Hyperactive bowel sounds
- Shivering

Early on, these patients may present with tremor. The other neuromuscular signs, which are often more pronounced in the lower extremities, include muscular hypertonicity and myoclonus. Ocular clonus has also been reported with serotonin syndrome. Those affected by serotonin syndrome appear agitated and have pressured speech.

Management of these patients is dependent on the severity. Patients on the milder end of the spectrum can be managed conservatively and with a benzodiazepine (e.g., diazepam). Physical restraint must be avoided: further muscle activity will exacerbate hyperthermia and rhabdomyolysis. Youth or children with significant hyperthermia (>41.1 C) need to be paralyzed, intubated and ventilated. The choice of paralytic substance is limited to a non-depolarizing agent (vecuronium) used to prevent muscular activity and further elevation of the temperature. It is critical that *succinylcholine be avoided* in this context due to the risk of rhabdomyolysis, hyperkalemia and subsequent cardiac arrhythmia. Serotonin antagonist therapy such as cyproheptadine may be used to control the syndrome. Other agents with significant 5-HT_{2A} antagonistic activity such as olanzapine may also be used to control severe symptoms. The offending agent must be discontinued (Boyer, 2011).

Acute extrapyramidal symptoms

Acute extrapyramidal symptoms refer to a range of movement disorders that occur while a patient is taking a dopamine receptor blocker. These movement disorders are associated with antiemetics, calcium channel blockers (metoclopramide), calcium channel antagonists (flunarizine) and the antipsychotics. The atypical antipsychotics in contrast to the older drugs in this class have a lower, yet still persistent, rate of extrapyramidal symptoms (Dayalu & Chou, 2008). Extrapyramidal symptoms can be divided into acute or tardive syndromes. The acute syndromes comprise:

- Acute dystonias
- Pseudoparkinsonism
- Akathisia

Dystonias are due to the disruption of the dopaminergic-cholinergic balance. Approximately one half of the acute dystonias occur in the first forty-eight hours of medication use (van Harten et al, 1999). Patients experiencing an acute dystonic reaction will typically show twisting, repetitive movements or have an abnormal posture. This muscle activity is intensely painful for the patient. The most common dystonias involve the face, neck and throat and is represented by clinical syndromes such as oculogyric crisis, opisthotonus, trismus and torticollis.

Immediate IV or IM administration of benztropine 1 to 2 mg, or diphenhydramine 25 to 50 mg will result in rapid restoration of the patient's baseline status. Treatment can be repeated in 30 minute intervals. The prescribing physician should re-evaluate the choice of antipsychotic or concurrently use anticholinergic medication.

The most serious acute dystonic reaction is *laryngospasm*. This life threatening emergency occurs when there is complete spasm of the vocal cord muscles resulting in full glottis closure. Initially, the patient presents with stridor but will progress to complete airway obstruction if not recognized and treated promptly. This is an extremely rare complication of antipsychotics, but can be recognized by a panicked patient who is unable to breathe. Initial management of laryngospasm is directed at providing positive pressure ventilation to overcome the obstruction. The patient should be immediately given an anticholinergic (benztropine 0.5-2mg IM/IV or diphenhydramine 25-50mg IM/IV). If oxygen saturation continues to fall, administration of a muscle relaxant should facilitate positive pressure ventilation (Miller et al, 2009). Succinylcholine 4-5 mg IM is the relaxant of choice in an emergency situation when intravenous access is not immediately available. It is important to note that the patient who has experienced an acute dystonic reaction will require oral anticholinergics for a minimum of four weeks after discharge.

The presentation of *pseudoparkinsonism* includes at least one of the following symptoms: bradykinesia, rigidity, tremor, or postural instability. The tremor is present at rest and disappears with movement. Rigidity is defined as the increase in resistance elicited when moving a limb, the neck or trunk through passive motion, and the so called "cogwheel" rigidity can usually be elicited from the upper extremities, with the resistance to movement repetitively increased and decreased as if moving the lever of a cogwheel. The features of bradykinesia most often associated with antipsychotic use are a lack of facial expression and difficulty with fine coordination. Postural instability can be detected by the impairment of the normal righting reflexes to a challenge in posture. Pseudoparkinsonism is an intermediate reaction that can occur a few months into treatment. Symptoms will improve gradually when antipsychotics are stopped but it can take weeks or even months (Dayalu & Chou, 2008). In addition to removal of the offending dopamine antagonist, cogwheel rigidity can be relieved by administering oral anticholinergics.

Akathisia can be recognized clinically by pacing, an inability to sit still and repetitive motor movements. These patients report a sense of inner restlessness and anxiety. The risk of akathisia is as high as 20-40% with typical antipsychotics and is reportedly less with atypicals. The management of akathisia can be complex. The first steps should be a reduction of the antipsychotic drug or a change of

medication. Using a beta-blocker, anticholinergic or antihistaminic can also be considered.

Lithium toxicity

Despite having been in use for over 60 years the mechanism of action of lithium remains unclear. Significant long term effects include weight gain, thyroid disturbance, renal failure, diabetes insipidus and cognitive impairment (Waring et al, 2006). The spectrum of toxic effects is dependent on the clinical context:

- Acute toxicity in a lithium-naïve individual
- Acute toxicity on chronic use
- Chronic toxicity (this often occurs as a result of lax monitoring and is not discussed here).

Acute toxicity on chronic use is a particular concern as the half-life of lithium is significantly prolonged in patients on longstanding lithium therapy compared to those naïve to the medication (half-life of 51 hours versus 13 hours respectively). Patients who have taken a supra-therapeutic dose of lithium while on chronic therapy are at high risk of toxic effects.

Neurologic and cardiac features dominate the clinical picture of lithium toxicity. These patients appear intoxicated: have slurred speech, poor coordination and unusual behavior. At higher lithium levels, symptoms can progress to coma, seizures or death. Permanent neurological injury may result regardless of how the toxicity is managed. Cardiac issues arising from lithium include AV block, arrhythmia and non-specific ST-T segment changes.

Activated charcoal does not adsorb lithium to any great extent and is unlikely to be beneficial in the setting of acute overdose. Haemodialysis and continuous haemodiafiltration are both highly effective at lowering serum concentrations of lithium. Local availability and practice will determine which method is used to treat acute toxicity in a naïve individual or acute toxicity on chronic use (Waring et al, 2006).

Traumatic Brain Injury

Children with mental health problems may be more at risk of traumatic brain injury than other populations. Risk taking behaviors such as drug use, and self-harming behavior can put these children and youth in situations which may result in a traumatic brain injury. Children who have had a head injury may experience headache, seizure, loss of consciousness, vomiting, amnesia, or confusion.

Children with a head injury need to be triaged by an experienced clinician. Children or youth who are medically unstable, have abnormal vital signs, a Glasgow Coma Scale (GCS) score lower than 15 or obvious focal neurological deficits need immediate medical stabilization. A large multicentre Canadian study determined that 4.1% of children/youth who present with a head injury have an intracranial bleed and only 0.6% required neurosurgical intervention (Osmond et al, 2010). A decision rule for the use of CT scanning in children with head injury was developed by Osmond et al (2010). Presence of any one of these factors

Table J.1.2 Common causes of delirium in children and adolescents**Medical**

- Fever
- Nonconvulsive status epilepticus
- Childhood confusional migraine
- Cerebral systemic lupus erythematosus
- End stage HIV/AIDS

Medication related

- Anticholinergic
- Antipsychotic
- Benzodiazepine withdrawal
- Drugs of abuse

should prompt the clinician to order a CT scan in the setting of head injury:

- Glasgow Coma Scale score <15 at two hours after injury
- Suspected open or depressed skull fracture
- History of worsening headache
- Irritability on examination
- Any sign of basal skull fracture
- Large, boggy hematoma of the scalp
- Dangerous mechanism of injury.

Children who do not meet the criteria for CT scanning should be observed for a period of six hours and discharged home with a responsible adult. Caregivers should be instructed to seek medical care if the child's level of consciousness deteriorates, has repeated episodes of vomiting, worsening headache or new focal neurological symptoms after discharge. Approximately 20% of patients with an epidural hematoma will have a lucid interval and subsequently deteriorate within 24 hours. This underscores the importance of good discharge instructions.

Delirium

Delirium can present at any age and is more common in the pediatric population. Delirium is a reduced situational awareness and change in cognition that has developed over a period of hours to days and fluctuates over time.

There are a number of broad categories that are associated with a delirious state in children including, these are listed in Table J.1.2.

The clinical presentation of a pediatric patient who has delirium is very similar to that of the adult. Common symptoms include:

- Irritability and agitation
- Alteration in sleep-wake cycle
- Mood lability

However, nuances that can be observed in the pediatric population include regression of developmental milestones, reduced eye contact and inconsolability despite usual caregiver presence (Hatherill & Flisher, 2010). The presence of

parents and familiar objects may enhance resolution of the delirious state. Medical management of pediatric delirium is controversial. Agents for consideration include: haloperidol 0.15-0.25 mg/dose IV and risperidone 0.1-0.2 mg/kg orally. The use of benzodiazepines may have a disinhibitory effect on the patient and could possibly exacerbate the delirium.

CONFIDENTIALITY IN THE ED

Confidentiality is a key component of the physician-patient relationship. It is important that children, youth and their parents appreciate and understand when patient information will be kept confidential and when it must be disclosed to others such as child protection agencies. The limits of confidentiality should be clearly established at the beginning of the assessment. Although there may be variability in legislation or practice among different countries and according to the patient's age, confidentiality must be maintained unless information is obtained that the child or youth is at risk for harming himself (risk of suicide) or others (risk of homicide) or if someone is harming them (child maltreatment). These situations allow for the breaking of confidentiality to pursue appropriate assessment and follow up.

Youth presenting with mental health problems may be concerned about how much information will be shared with their parents. Delineating the limits of confidentiality should reduce these worries. If a child or youth understands the importance of maintaining confidentiality (with the exceptions outlined above), they may be more likely to open up and speak more candidly about their symptoms and concerns.

In general, clinicians can receive unlimited information from parents and other nonclinical sources (school personnel, police, caregivers) regarding the child or youth without requiring consent from the patient but should not share information with parents and nonclinical sources without a patient's consent (with the exceptions mentioned), though this may vary among countries.

Privacy legislation varies among countries and often within countries. Some jurisdictions will allow a clinician to communicate clinical information about a patient with other medical professionals deemed to be within the "circle of care" without written consent from the patient. There are also variations in the age at which patients can give consent for the release of medical information—16 in many countries. It is crucial that clinicians be up-to-date with their local privacy legislation (see Chapter A.1).

SUMMARY

Clinical assessment of child and adolescent psychiatric emergencies requires systematic yet concise and prompt evaluation of acute psychiatric illness, acute mental health problems and the acute medical complications that can arise in mental health patients. Assessment and treatment of acute psychiatric emergencies in children and adolescents in the ED require a team approach consisting ideally of a child psychiatrist, crisis worker or social worker, nursing staff, and an ED physician. Once the medical complications are addressed, the primary goal of an urgent psychiatric assessment in the ED is to determine the safety risk of the patient. If there is imminent risk of harm to self or others due to the psychiatric

illness or acute mental health problems, then admission to a psychiatric inpatient unit is warranted; at times this is done against the will of the patient and their family, to ensure the safety of the patient.

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