Suicide is the third leading cause of death among adolescents.¹ Most youth who complete a suicide never came into contact with a mental health professional prior to their death by suicide. Pediatricians are ideally suited to screen high-risk adolescents for suicide because of their position as first-line providers that are most likely to encounter a previously undiagnosed case.² However, studies suggest that screening of distressed adolescents is underutilized in the primary care setting. By one account, only 23% of providers routinely screened for suicide risk factors.³ Barriers to screening include a shortage of time and discomfort about adequately assessing suicide risk. A lack of mental health resources, including adequate numbers of child and adolescent psychiatrists across the nation, have led to the development of collaborative models of care to assist primary care providers in treating psychiatric disorders. Initial studies on these models indicate they lead to more frequent screening for mental health disorders.⁴ Education of medical professionals has had promising results in reducing suicide rates.⁵ An understanding of risk factors, protective factors, interviewing, and safety planning for a suicidal adolescent is essential for preparing general pediatric practitioners to address this important public health issue.

Assessment, Referral, and Treatment of Suicidal Adolescents

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In 2009, there were 4,371 completed suicides in the United States in the age group 15 to 24 years, making it the third leading cause of death in this population. As many as 62% of patients younger than the age of 35 years who died by suicide had been in contact with a primary care provider in the year before their death; 23% of them were seen by a primary care provider in the month before their death. It is estimated that there are between 100 and 200 attempts for each completed suicide.

The annual physical exam is an ideal forum in which to assess high-risk youth for suicide, but most patients report they are not being screened for emotional issues. Discomfort around assessing suicidal risk may have worsened after the Food and Drug Administration (FDA) issued a black box warning on antidepressant use in children and adolescents in 2004, stating, “the increased risk of suicidal thoughts and behavior (‘suicidality’) in children and adolescents being treated with antidepressant medications." This advisory did not recommend against using selective serotonin reuptake inhibitors (SSRIs) in adolescents, but it did recommend close follow-up after initiating an SSRI. Following this warning, the treatment of depression in adolescents with SSRIs decreased by 16% in the following 2 years. Population-based studies have demonstrated a concurrent increase of completed suicides by 18.2% following a steady decline from the mid-1990s to 2004.

The US Preventive Services Task Force (USPSTF) states that there is insufficient evidence to recommend routine suicide screening in primary care. However, the task force suggests that pediatricians “perform routine depression screenings for adolescents aged 12 to 18 years when appropriate services are in place to ensure accurate diagnosis, treatment and follow-up care.”

The American Academy of Child and Adolescent Psychiatry (AACAP) and the American Academy of Pediatrics (AAP) Task Force on Mental Health jointly published an article, recommending that primary care providers (PCPs) complete routine behavioral screening for adolescents, as long as appropriate mental health follow-up services were available.

Implementing these suggestions will require further education for pediatricians on recognizing warning signs for suicide and identifying, evaluating, and treating emotional disorders (see Sidebar).

**RISK ASSESSMENT**

The *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV)* defines depression in adolescents using similar criteria as for adults, with the exception for that irritability can replace depressed mood as a core diagnostic symptom in adolescents and children.

Depression is less likely to be diagnosed in adolescents than adults because the primary presentation may be irritability instead of pervasive sadness, a decline in academic performance, truancy, school refusal, behavioral problems, mood lability, appetite and sleep changes, and unexplained physical problems such as stomachaches, headaches, and pain.

Pediatricians are in a unique position to detect adolescent depression because of its broader range of presenting symptoms. The following cases are vignettes of adolescents who often present to a pediatrician but have no previous mental health history.

**Case 1**

A 16-year-old male presents for his annual physical. His mother comments that he has become “grumpier” and has started spending more time on the Internet and less time playing basketball with his friends. He watches television late at night and rarely wakes up in time for school. His grades have steadily declined from a B average to Cs and Ds. When questioned alone, the patient reports, “I just don’t feel like doing the same stupid stuff, and I don’t want to...
go to college, so I don’t need to get good grades.” He shrugs his shoulders and denies having a depressed mood.

Although a suicide assessment may not follow the above scenario, this is exactly the type of patient who may have suicidal ideation. In a survey of adolescents, only 24.7% of distressed adolescent males reported being screened for emotional difficulties or mood changes in a primary care setting, whereas 41.7% of distressed females reported that they were questioned.4 This discrepancy is especially troubling because male adolescents are five times more likely to complete a suicide, even though females attempt at a greater rate.14 This difference has mainly been attributed to the more lethal means by which males choose to attempt suicide, such as firearms or suffocation by hanging.6

**Evaluation Interview**

Direct questioning about suicide has shown no risk in increasing suicidal ideation or behavior.15 Adolescents are not forthcoming about ideation in the absence of direct inquiry. Even asking, “Do you have thoughts of hurting yourself?” may not be interpreted by an adolescent as a question about suicide; direct questions asking about “killing yourself” may provide a different response.16 Leading questions such as, “You don’t have any thoughts of suicide, right?” should be avoided during assessment and substituted with direct questions such as, “Have you ever thought life was not worth living?”

An adolescent should always be evaluated for suicidal ideation separately from the parent or guardian, as he or she is more likely to be forthcoming if interviewed in private.6 This also provides an opportunity for the adolescent to speak to the dynamics in his or her own family, as research suggests that conflict at home is a predictor for completed suicide.17 Following this initial question about suicidal ideation, it is important to follow-up with inquiry as to whether the patient has a plan and to ask the patient to describe the plan in detail.

**Risk Factors**

Adolescents who have recently heard of a suicide in the community are at increased risk of completing a suicide themselves.18 It is important to screen carefully in communities where a suicide has just received a lot of media attention.19

Other static risk factors for adolescents include a family history of suicide or attempts, male gender, gay, or bisexual orientation and a history of physical or sexual abuse. Studies have shown that gay, lesbian, bisexual adolescents and those with uncertain sexual identity were at a greater risk for suicide when compared with heterosexual youth without same-sex attraction or behavior. However, youth who reported same-sex attraction or behavior but reported a heterosexual identity, meaning that they recognized themselves as having opposite and same-sex attraction but still identified themselves as “heterosexual,” were not at elevated risk.20

Preadolescent physical abuse is an independent risk factor for suicidal behavior in adolescents.21 This fact underscores the importance of asking directly about abuse while the patient is being evaluated privately and not in the presence of the guardian.

Dynamic risk factors for completed suicides include difficulties in school, social isolation, and the presence of firearms.6 Poor peer relationships from the perspective of an adolescent are also a risk factor for suicide.22 In bullying, both the bully and the victim demonstrate an increased risk of suicidal behaviors.23 Girls are more likely to be affected by bullying than boys. One explanation for this finding is “boys often experience more overt physical victimization, whereas girls are more liable to indirect relational victimization. Relational victimization has been found to have a greater impact on mental conditions than overt victimization.”24

Adolescents at highest risk for suicide, in either gender, are those with a plan, a recent attempt with high lethality, recent suicidal ideation or behavior, severe hopelessness, and impulsivity.25

**Protective Factors**

There are several identified factors that reduce the odds of attempting suicide. For females, emotional well-being, counseling services at school, and parental presence were identified as protective factors. For males, a high grade-point average, high parental expectations for school achievement, and religiosity were protective.

For both genders, perceived parent or family connectedness reduced the risk of suicide.26 Few interventions have been designed to encourage protective factors in youth, but PCPs can use their long-standing relationships with adolescents to inquire about school achievement and relationships with family members at annual visits.

**Case 2**

A 14-year-old female presents for a sports physical so she can run cross-country. Although she has not gained weight since her last visit, her body mass index is in an acceptable range and she reports she is menstruating regularly. During the physical exami-
nation, superficial lacerations are noted throughout her inner thighs. When questioned, the girl reports, “I think I’m fat so I just cut to relieve stress. I’m not trying to kill myself or anything.”

The female evaluated was demonstrating nonsuicidal self-injury (NSSI), which has shown an increased risk of suicide in a large cohort study over a 4-year follow-up. In fact, there was no difference in suicide risk between those with nonsuicidal self-harm gestures and those with suicidal gestures. The study found that “self-harm appears to confer a particularly high risk of suicide in female patients.”

These findings suggest that adolescents who engage in NSSI need careful monitoring and suicide assessment.

Screening and Psychometrics

The use of screens can alleviate some of the possible fear of adequately assessing suicide in the primary care setting. The incorporation of two screening questions in the standard interview demonstrated a significant increase in inquiry about suicide in primary care settings. These questions were: “Have you ever felt that life is not worth living?” and, “Have you ever felt like you wanted to kill yourself?” Case detection among PCPs following the use of the questions improved by a staggering 392% across all clinics and referrals to social work increased at a rate similar to the detection rate.

A number of tools for assessing suicide have been developed and have demonstrated reliability and validity with adolescents. The Modified Scale for Suicidal Ideation, the Suicidal Ideation Questionnaire-Junior, and the Columbia-Suicide Severity Rating Scale are suitable screens for adolescent populations based on initial results of reliability and validity in adolescent populations when assessing suicidal risk.

Although there is no “gold standard” to assess suicidality, sensitivities and specificities of each individual scale are available from the AAP. All adolescents who screen positive on these scales should be further assessed; a detailed family history of psychiatric illness and substance abuse history are important to obtain at this point if they have not been obtained earlier in the evaluation.

Referral and Collaboration

According to guidelines issued by the AAP in 2003, referral to a child and adolescent psychiatrist should be considered “when a child or adolescent demonstrates an emotional or behavioral problem that constitutes a threat to the safety of the child/adolescent or the safety of those around him/her.” This constitutes all active suicidal ideation and active homicidal ideation.

Resource availability determines the threshold for referral among adolescents without active suicidal activation. The USPSTF does not recommend screening for depression when “adequate mental health resources” are not available for follow-up. Thus, it is important to know the resources available in the community and determine what is adequate based on the comfort-level of the pediatrician in treating behavioral issues.

The Massachusetts Child Psychiatry Access Program (MCPAP) was founded in 2005 to provide telephone consultations on mental health services to enrolled PCPs throughout the state. The PCPs call the MCPAP hotline for consultations about their patients with mental health professionals and to be connected with available local referral services to meet the needs of the patient.

Initial results for the PCP perception of MCPAP suggests that enrolled pediatricians found it reliable and utilized it for ancillary advice. According to the National Network of Child Psychiatry Access Programs (NNC-PAP), there are now similar consultation programs in 23 states.

MANAGEMENT AND TREATMENT

A no-suicide contract has not been shown to protect against suicide in adolescents. However, providers can take several proven measures to reduce risk of patients attempting suicide.

Restrict Access to Lethal Means

Restricting access to lethal methods is one strategy that has had promising research results. Separately storing firearms and ammunition in locked compartments resulted in a reduced risk of youth using firearms for self-injury. Research indicates that parents will restrict access to firearms when health professionals recommend this intervention. PCPs should also recommend that medications be kept secure from a patient with suicidal ideation.

Treat Depression

While 20% of adolescents attempting suicide have no identifiable mental illness, depression is one of the leading causes of adolescent suicide. Treating depression early has the potential to prevent suicide. In cases of mild depression, close monitoring and active support are recommended before starting an evidence-based treatment. Currently, fluoxetine is FDA approved for children as young as 8 years of age; escitalopram is approved for age 13 and older.
The Treatment of Adolescents with Depression study (TADS) was a randomized, controlled trial that evaluated the effectiveness of fluoxetine, cognitive-behavioral therapy (CBT) and the combination of the two treatments on adolescents with depression. All groups were followed and assessed with the Children’s Depression Rating Scale. The group with combination therapy showed the most benefit with a 71% improvement in symptoms of major depression, followed by a 61% improvement for fluoxetine alone, 43% for CBT, and 35% for placebo. Notably, those treated with fluoxetine were shown to have twice the rate of self-harm adverse events. These findings point to the importance of monitoring adolescents taking antidepressants, but the positive results also support the treatment guideline to treat moderate depression ideally with a combination of fluoxetine and CBT when close monitoring is available.

The APA and AACAP suggest a strategy to reduce the chance of self-harm behaviors by enlisting the support of the legal guardian in the monitoring stage when beginning an antidepressant. Parents or legal guardians must be educated that they should call the physician immediately if the adolescent demonstrates any of the following signs or symptoms: new or frequent thoughts of wanting to die; self-destructive behavior; signs of increased anxiety/panic; agitation; aggressiveness; impulsivity; insomnia or irritability; new or more involuntary restlessness, such as pacing or fidgeting; extreme degree of elation or energy; fast and driven speech; or the onset of unrealistic plans or goals.

CONCLUSION

Pediatricians play a crucial role in preventing adolescent suicide because they tend to be the center of this patient population’s respective medical home. Each encounter with a patient represents an opportunity to screen for emotional disorders. Studies examining response to PCP education programs targeting depression recognition and treatment have all reported increased prescription rates of antidepressants and often, striking declines in suicide rates, making it one of the most promising strategies by which to prevent suicide.

Educating PCPs on assessing suicide risk is one of the few interventions that demonstrated efficacy in reducing adolescent suicide. Webinars, in-person training, and toolkits are available for all PCPs to learn more about suicide risk assessment (see Sidebar, page 516) and steps for greater collaboration between CAPs and pediatricians need to continue in order to address the overwhelming need for mental health services.

REFERENCES


