

Depression Management in Children and Adolescents and Overview of Suicide Risk Assessment

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Disclosures

- No professional disclosures



Learning Objectives

- By the end of the presentations, participants will be able to:
 1. Define the common presenting symptoms of child and adolescent depression
 2. Outline the primary treatments for child and adolescent depression
 3. Identify the major risk factors for suicide attempts and completions
 4. Describe common interventions to address acute and chronic suicide risk factors

Why treat depression and anxiety in children?

- Extremely common - 15.9% of females and 7.7% of males develop major depression (Merikangas, KR et al., 2010)
- Up to 10% commit suicide and it is the leading cause of days lost for adolescents
- Suicide is a leading cause of death in patients under 18
- Children with anxiety/depression have higher school absences, increased substance use, lower graduation rates

10 leading causes of death, United States (<1 to 24 years) 2013, all races, both sexes

Rank	Age groups (years)					
	<1	1-4	5-9	10-14	15-19	20-24
1	Congenital anomalies 4758	Unintentional injury 1316*	Unintentional injury 746*	Unintentional injury 775*	Unintentional injury 3652*	Unintentional injury 7967*
2	Short gestation 4202	Congenital anomalies 476	Malignant neoplasms 447	Malignant neoplasms 448	Suicide 1748 [†]	Suicide 3130 [†]
3	Maternal pregnancy complications 1595	Homicide 337 ^Δ	Congenital anomalies 179	Suicide 386 [†]	Homicide 1407 ^Δ	Homicide 2922 ^Δ
4	SIDS 1563	Malignant neoplasms 328	Homicide 125 ^Δ	Congenital anomalies 161	Malignant neoplasms 627	Malignant neoplasms 869
5	Unintentional injury 1156*	Heart disease 169	Chronic lower respiratory disease 75	Homicide 152 ^Δ	Heart disease 297	Heart disease 644
6	Placenta cord membranes 953	Influenza & pneumonia 102	Heart disease 73	Heart disease 100	Congenital anomalies 166	Congenital anomalies 196
7	Bacterial sepsis 578	Chronic lower respiratory disease 64	Influenza and pneumonia 67	Chronic lower respiratory disease 80	Influenza and pneumonia 73	Diabetes mellitus 141
8	Respiratory distress 522	Septicemia 53	Cerebrovascular 41	Influenza and pneumonia 61	Chronic lower respiratory disease 60	Complicated pregnancy 137
9	Circulatory system disease 458	Benign neoplasms 47	Septicemia 35	Cerebrovascular 48	Cerebrovascular 56	Influenza and pneumonia 124
10	Neonatal hemorrhage 389	Perinatal period 45	Benign neoplasms 34	Benign neoplasms 31	Diabetes mellitus 52	HIV 106

SIDS: sudden infant death syndrome.

* Unintentional injury.

[†] Suicide.

^Δ Homicide.

Reproduced from: National Center for Health Statistics (NCHS), National Vital Statistics System. Available at: www.cdc.gov/injury/wisqars/leading_causes_death.html. Accessed on June 30, 2015.

Troubles with current treatment

- Large placebo effect in children (up to 70%)
- Long time for medications to produce benefit
- Side effects show up first
- Antidepressants work very poorly with comorbid substance abuse

Diagnosing Depression

- SIGECAPS plus depressed mood and anhedonia
 - 5/9 for 2 weeks (must have either the low mood or anhedonia)
- Recurrent: 2 or more episodes separated by at least 2 months
- Dysthymic Disorder (low mood most of day, more days than not, for at least 1 year)
- Bereavement can account for depressive symptoms up to 2 months (except for suicidal thoughts)

Diagnosing (continued)

- Depression NOS
 - Pre-menstrual dysphoric disorder (PMDD) (symptoms gone 1 week after menses)
 - Minor depression (2 weeks of <5/9)
 - Double Depression (dysthymia superimposed on MDD??)
- Specifiers
 - **Catatonic**
 - **Melancholic** (anhedonia, worse in am, early awakening, no mood reactivity, etc...)
 - **Atypical** (wt gain, incr. sleep, leaden paralysis, mood reactivity, etc....)
 - **Postpartum** (within 4 weeks)
 - **With psychotic features**
 - **Seasonal pattern**

Treatment

- Antidepressants
- Psychotherapy
- Augmentation
- Physical Treatments (procedures??)
- Natural treatments
- Environmental changes
- **Often needing a combination of many of the above!!**

■ ANTIDEPRESSANTS

ANTIDEPRESSANTS

- 8 Main classes
 - MAOIs
 - TCAs
 - SSRIs
 - SNRIs
 - NRI
 - DNRI
 - Alpha antagonists
 - Serotonin antagonists

SSRIs

- 1st developed was zimelidine (Zelmid); however, caused GBS....so off market
- 1970s: Eli Lilly worked on diphenhydramine (Benadryl) to develop fluoxetine (Prozac)
- Very well tolerated
 - GI, HA, sexual dysfunction, dry mouth, “activation”
- Safer in overdose (typically need 3 month supply)
- All very similar, but differ in half lives and proposed side effect profiles??

What about suicidal thoughts?

Efficacy vs. Suicidal Risk of Antidepressants in Pediatric Patients

- Meta-analysis of 27 trials of pediatric major depression

Number Needed to Treat 10

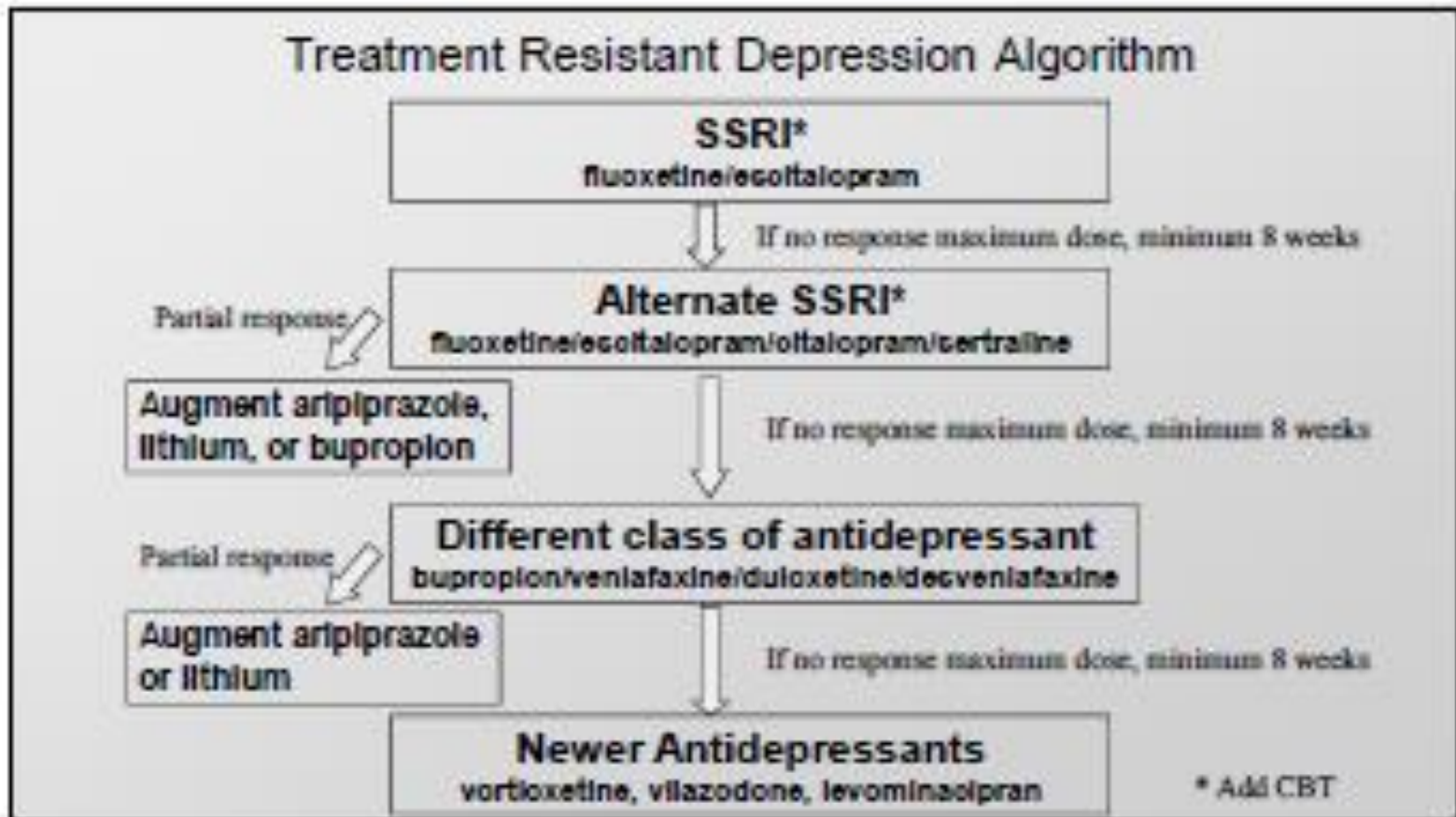
Number Needed to Harm 112

	<u>Suicidal Ideation/Attempts</u>
Antidepressants	3%
Placebo	2%

What if they don't respond??

- First line is to switch to alternative SSRI or to Venlafaxine (TORDIA, 2008)
- Found that in adolescents with depression not responding to an adequate initial treatment with an SSRI, switching to an alternative agent resulted in a higher rate of clinical response when combined with CBT (54.8% compared to 40.5%)

What if they don't respond?? (2)



SSRIs

- 1. **fluoxetine** (Prozac, Sarafem)
 - Very long half life
 - Fairly activating
 - Approved for children with depression, generalized anxiety and panic disorder
 - Has a liquid formulation (that has a bad taste)
 - Typical dosage is 5-80mg per day
- 2. **paroxetine** (Paxil)
 - Anticholinergic, most rebound SEs
 - Highest affinity for serotonin receptor
 - Short half-life (around 18 hours)
 - Only SSRI with solid link to suicidal thoughts
 - **Best to avoid in children**

SSRI's continued

- 3. **sertraline** (Zoloft)
 - Allows for starting a very low dose (12.5mg daily)
 - Typical dosage range is 12.5-200mg daily
 - Moderate activation
- 4. **fluvoxamine** (Luvox)
 - Treatment OCD only because of activation
- 5. **citalopram** (Celexa)
 - Most selective of the SSRIs
 - Not very activating
 - Moderate half-life (24-36 hours)
- 6. **escitalopram** (Lexapro)
 - S enantiomer of citalopram
 - Like Celexa, minimal SE and P450 interactions

SNRIs

- Much like the TCAs (higher doses are more noradrenergic)
- Watch for elevation of the diastolic blood pressure
- Indications for chronic pain (like the TCAs??)
- Very limited data in children
- 1. **venlafaxine** (Effexor) – Often used after failure of 2 SSRI's in adolescents
- 2. **duloxetine** (Cymbalta) – No current indication in children

NRI

- Only one drug in this class
- Failed trials as monotherapy for depression, but still used as augmentation strategy
- Now indicated as treatment for ADHD
- Better results for the inattentive subtype
- **Atomoxetine (Strattera)**

Bupropriion (Wellbutrin)

- Acts on Serotonin and Dopamine
- No (or minimal) serotonergic activity
- Minimal sexual side effects
- Seizure risk at 300mg and over
- Avoid in patients with eating disorders (purging) because of seizure risk with electrolyte imbalance

Mirtazapine (Remeron)

- Has effects on serotonin, dopamine, alpha-2
- Minimal sexual side effects
- Side effects due to antihistaminergic properties
 - Increased sleep, increased eat, gain weight
- Rare agranulocytosis
- An odd medication, because it is more sedating a lower dosage (7.5mg QHS) because of higher antihistaminergic behavior
- Has found a home in children with cancer and receiving chemotherapy because of appetite suppression and insomnia from treatment.

5-HT₂ antagonists

- Some agonist properties at 5-HT₃
- 1. **trazodone** (Desyrel)
 - Low dose is sedative (12.5-100mg QHS)
 - Can be used as a PRN for aggression
 - High dose is antidepressant (around 600mg daily)
 - Side effect of note is priapism
- 2. **nefazodone** (Serzone)
 - Not off the market, but rarely used in children
 - Rare hepatotoxicity
 - Significant 3A4 interactions

New Medications may be coming

Newer Antidepressants in Pediatric Depression

<u>Medication</u>	<u>Status</u>
Vilazodone	Pediatric MDD study in progress
Levomilnacipran	Adolescent MDD study in progress
Ketamine	Adolescents with treatment refractory MDD study in progress

PSYCHOTHERAPY

- Cognitive Behavioral Psychotherapy (CBT) can be equally as effective as medication (Compton et al., 2004)
 - First line treatment for mild to moderate severity
 - Can be difficult given lack of providers, need to complete homework, frequency of appointments

PSYCHOTHERAPY

- 1. **Cognitive Behavioral Therapy**
 - Cognitive errors and thought processing
 - As effective as anti-depressants??
- 2. **Interpersonal Psychotherapy**
 - Relationships and role transitions
 - More effective for SI/anhedonia/mood
 - Psychotropics more effective for appetite/sleep
- 3. **Dynamic Psychotherapy**
 - Best for “budding” Axis II co-morbidities

AUGMENTATION commonly used by psychiatry

- 1. Thyroid supplementation (t3)
- 2. Lithium
- 3. Lamotrigine (Lamictal)
- 4. Pindolol
- 5. Buspirone (Buspar)
- 6. stimulants
- 7. Hydroxyzine

Anti-psychotic medication augmentation

- This has become very popular in children and adults.
- Relatively little data in children for mood/anxiety, but can be helpful at times (particularly in obsessive spectrum illness)
- 1. Risperdal (Typically just QHS because of sedation). Dosage range 0.25-2mg for mood
- 2. Abilify. Dosage range 2-10mg
- 3. Geodon. Must be BID dosing and taken with 500 calories of food. Dosage range 20-60 mg BID
- All need metabolic monitoring labs (CBC, lipid panel, glucose and A1c) every 6-12 months.

Benzodiazepines

- No longer recommended for anxiety/depression in children for long term use.
- Can be used as a bridge therapy while awaiting an SSRI to become effective
- Longer half-life medications (Klonopin or ativan) are preferred to short half-life (Xanax)

“NATURAL” TREATMENTS

- 1. St. John's Wort
- 2. SAMe
- 3. Folate / B12
- 4. Tryptophan
- 5. DHEA (dehydroepiandrosterone)
- 6. PEA (phenylethylamine)
- 7. Essential fatty acids
- 8. Inositol

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■ ENVIRONMENTAL CHANGES

Environmental Changes

- Sleep hygiene
- Exercise
- Good diet
- Faith/religion/belief system
- Proper socialization

- **SCHEDULE!!!**

Exercise

Exercise for Treatment of Adolescent Depression

- 87 depressed adolescents randomized to aerobic exercise at preferred intensity plus treatment as usual or treatment as usual only for 12 weeks
- Findings
 - At 6 weeks post-treatment, no differences between groups
 - At 6 month follow-up, preferred intensity exercise group had significantly greater improvement in depressive symptoms than treatment as usual group

Overview of Suicidal Behavior in Young Patients

- Suicidal behavior includes symptoms ranging from thoughts or ideas that revolve around suicide or death (suicidal ideation) through fatal completion of suicide. (Catalozzi, M. et al., 2001)
- Suicide is the third leading cause of death for youth between the ages of 10-24 with 4,600 completed suicides per year. (CDC, 2015)
 - 14% of deaths in adolescents aged 15-19 and 8% in children 10-14 are from suicide

Overview of Suicidal Behavior in Young Patients (2)

- A vast majority of patients survive their suicide attempt, but can have ongoing physical or mental health concerns
 - There are about 50-100 suicide attempts for every completed suicide (CDC, 1991)
 - The top 3 methods for completed suicide are firearms, suffocation, and poisoning/overdose
 - The most common method for attempted suicide is overdose

Epidemiology of Youth Suicide

- True prevalence is difficult to determine as many attempts are not reported or are misclassified as accidents
- Suicide rates have doubled in the 15-19 year age group and tripled in the 10-14 year group from the 1960s to the 1990s (AAP, 1996)
 - There was a decrease between 1990-2003, but increased in 2004.

Epidemiology of Youth Suicide (2)

- Suicidal ideation occurs in prepubertal children, but suicide attempts and completions are rare (Pfeffer, C.R., et al, 1988)

- Suicidal ideation is more common in high school girls than boys (21-31% versus 12-20%) (Grunbaum, J.A. et al., 2002)

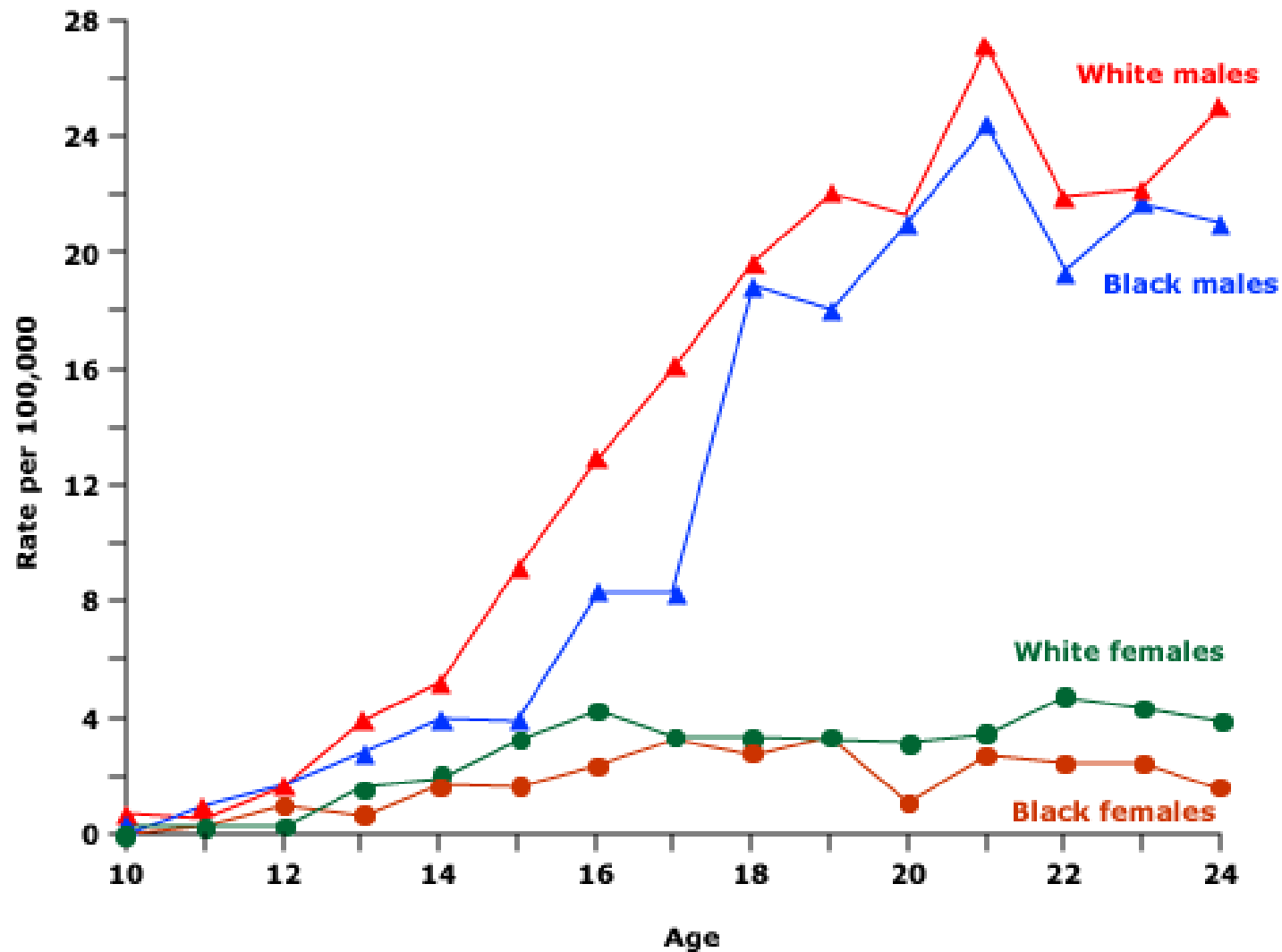
- Girls are also more likely to have a plan and make a suicide attempt (Grunbaum, J.A., et al, 2003)

- Adolescent boys are more likely to complete suicide (Perou, R., et al., 2013)

- 7 per 100,000 for boys

- 2 per 100,00 for girls

Suicide rates per 100,000 population, ages 10-24 in 1997: National Center for Health Statistics (1999)



Risk Factors for Youth Suicide

- History of psychiatric disorders
- History of previous suicide attempt
- Family history of mood disorder and/or suicide
- History of physical or sexual abuse
- Exposure to violence
- Access to lethal means, such as firearms
- Alcohol and drug use
- Social stress and isolation

Mnemonic for Suicide Warning Signs – IS PATH WARM

- **I**deation
- **S**ubstance Abuse
- **P**urposelessness
- **A**nxiety
- **T**rapped
- **H**opelessness
- **W**ithdrawal
- **A**nger
- **R**ecklessness



Evaluation and Management of Suicidal Behavior in Young Patients

Screening

- Review of primary care screening methods
- Discussion of management in Emergency Department and other settings

Acute Management

- Management of the “actively suicidal” patient
- Management following attempted suicide

Ongoing Management

- Care following a suicide attempt and acute care
- What to say to the patient at the next visit

When to call for help

- Discussion of when psychiatric consultation or referral to emergency services is advised

Suicide Risk Screening

- Primary prevention is always desired
 - I.e. Prevention of a suicide attempt is better than great management afterwards
 - Unfortunately, no evidence for routine screening has been shown to reduce suicide attempts (O’Conner, E., et al., 2013)
 - “You don’t know if you don’t ask” – Many patients want help, but are afraid to ask
- Sample screening questions (Tishler, C.L., et al., 2007)
 - Do you ever think about dying? How often?
 - What do you think happens when you die?
 - Have you ever wished you were dead?
 - Do you ever think the world would be better if you were dead? Do you think life would be easier for your family and friends if you were dead?
 - Have you ever thought of what would have to happen for your life to end?
 - Have you had thoughts about hurting yourself? Killing yourself?
 - Have you ever tried to kill yourself?

Ask suicide-screening questions

Answering "yes" to at least one question constitutes a positive screen that should trigger a more extensive evaluation of patient's risk for suicide

1. In the past few weeks, have you wished you were dead?

Yes ____ No ____ No response ____

2. In the past few weeks, have you felt that you or your family would be better off if you were dead?

Yes ____ No ____ No response ____

3. In the past week, have you been having thoughts about killing yourself?

Yes ____ No ____ No response ____

4. Have you ever tried to kill yourself?

Yes ____ No ____ No response ____

If yes, how?

When?

Patient name: _____ Date: _____

Medical record # (or patient label): _____

So, What if the patient says “yes” to suicide screening

- The lines of communication must be kept open
 - Active listening, patience, maintenance of a calm demeanor, and neither minimizing the patient’s concerns, nor reacting with disapproval
 - The natural tendency to be reassuring and optimistic must be inhibited
 - Attempts to talk the patient “out of it” should be avoided, as should discussions of whether suicide is right or wrong (LeFevre, M.L., et al., 2014)
 - Confidentiality should not be promised since it cannot be maintained under these circumstances

So, What if the patient says “yes” to suicide screening (2)

- Risk for suicide should be considered imminent in patients who report an active plan or intent and have access to lethal means.

- The clearer the intent -> the higher the risk

The combination of inquiring about current suicidal behavior, past suicidal ideation, past self-destructive behavior, and current stressors yields 98% sensitivity of suicidal risk factors compared to psychiatric assessment (Horowitz, L.M., et al., 2001)

- Remember to get collateral information from parents, caregivers, friends, etc

Initial Management

- The focus of the intervention is to keep the patient safe until the suicidal state diminishes or abates.
- Treatment options may include hospitalization, medication, more frequent psychological intervention, mobilizing supports, access to crisis intervention services, and “no-suicide contracts” (Gould, M.S., et al., 1996)
 - However, “contracts” have not been shown to be effective
- Immediate psychiatric evaluation and/or hospitalization is indicated when there is an imminent risk of suicide (Shain, B.N., et al., 2007)

Emergency Evaluation

Medical stabilization is the first priority for those who have attempted suicide or express active suicidal ideation with a plan.

- The manner in which patients with suicidal behavior and their families are treated by the medical staff may affect compliance with follow-up care (Rotheran-Borus, M.J., et al., 1996)
- Potentially harmful supplies and equipment should be removed from the examination/hospital room
- The patient should be placed in a hospital gown to discourage elopement
- Laboratory screening (toxicology, pregnancy, thyroid studies, CBC and CMP) are common

Psychiatric Evaluation

~~Should proceed after the patient is medically stable (AACAP, 2001)~~

Goals include:

- Determination of the risk of suicide completion or subsequent attempt
- Identification of predisposing and precipitating factors that can be treated or modified

Potential interventions

- Increasing family support (and non-familial resources)
- Targeting alcohol and substance abuse when indicated
- Discussion of motivation for treatment
- Starting mental health treatment
- Coordination of treatment

Hospitalization

- Indicated for patients with an acutely high risk of suicide
 - Hospitalization is for acute stabilization, it has not been shown to improve long term safety or prevent future suicide (AACAP, 2001)
 - Involuntary hospitalization (“psychiatric hold”) may be needed if hospitalization is indicated and refused by the patient or parent

Outpatient Treatment

- Indicated for patients with a lower acute risk of suicide
- May involve psychotherapy, family support, medication, and/or educational support services
- Family therapy has been shown to reduce risk of suicide (5% compared to 35%), hospitalization (16 vs. 53%) and arrest (5 vs. 41%) compared to controls (Esposito-Smythers, C., et al., 2011)

Suicide resources

In an emergency, call 1-800-SUICIDE (1-800-784-2433), the national suicide hotline	
American Academy of Child and Adolescent Psychiatry www.aacap.org 202-966-7300	Provides information about developmental, behavioral, and mental disorders
American Association of Suicidology www.suicidology.org 202-237-2280	Provides information on current research, prevention, ways to help a suicidal person, and surviving suicide. A list of crisis centers is also included.
American Foundation for Suicide Prevention www.afsp.org 888-333-AFSP (2377)	Provides research, education, and current statistics regarding suicide; links to other suicide and mental health sites are offered.
American Psychiatric Association www.psych.org 800-852-8330	Information and referrals to psychiatrists.
Boys Town www.boystown.org 800-448-3000 (crisis hotline) or 800-545-5771	Cares for troubled children - both boys and girls - and for families in crisis. Their hotline staff is trained to handle calls and questions about violence and suicide.
Centers for Disease Control Center for Injury Prevention and Control, Division of Violence Prevention www.cdc.gov/ncipc/ 770-488-4362	Provides links to suicide statistics, the SafeUSA Web site, and safety information.
National Alliance for the Mentally Ill (NAMI) www.nami.org 800-950-NAMI (6264)	Provides information about family support and self-help groups, links to information about teen suicide, child suicide, brain biology and suicide, as well as general suicide information links.
Depression and Bipolar Support Alliance www.dbsalliance.org 800-826-3632	Provides information about mood disorders including support groups and local chapters.
National Institute of Mental Health (NIMH) www.nimh.nih.gov 800-421-4211	Provides information on depression and other mental illnesses.

Data from: www.cdc.gov/ncipc/dvp/youth/suicide.htm and www.cdc.gov/safeusa/suicide.htm#Safety%20Resources.

Suicide resources (continued)

In an emergency, call 1-800-SUICIDE (1-800-784-2433), the national suicide hotline.	
National Mental Health Association (NMHA) www.nmha.org 800-228-1114 800-969-NMHA (6642) 800-433-5959 (TTY)	Provides information on depression and its treatment and referrals to local screening sites.
The National Mental Illness Screening Project Suicide Division www.nmisp.org 800-573-4433	Provides information regarding free, confidential screening near you.
Suicide Awareness-Voices of Education (SA\VE) www.save.org 612-946-7998	Provides suicide education, facts, and statistics on suicide and depression. It links to information on warning signs of suicide and the role a friend or family member can play in helping a suicidal person.
Suicide Information & Education Centre (SIEC) www.siec.ca 403-245-3900	Library and resource center providing information on suicide and suicidal behavior.
Suicide Prevention Advocacy Network (SPAN) spanusa.org 888-649-1366 Substance Abuse and Mental Health Administration (SAMHSA) www.samhsa.gov	SPAN is a nonprofit organization dedicated to creating an effective national suicide prevention strategy. SPAN links the energy of those bereaved by suicide with the expertise of leaders in science, business, government, and public service to achieve the goal of significantly reducing the national suicide rate by the year 2010.

Data from: www.cdc.gov/ncipc/dvp/youth/suicide.htm and www.cdc.gov/safeusa/suicide.htm#Safety%20Resources.

Conclusions

- Child and adolescent suicide is a significant public health concern
- Suicide risk screening should be done and treatment started if indicated
- If a patient is acutely suicidal (or has attempted suicide), safety and stabilization is the primary goal
- Long term, supportive treatments have been shown to be beneficial to the patient and family
- Mental Health Consultation should be considered for high risk patients

Questions???



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