Teen Substance Use
Nicholas Weiss, MD
February 26, 2022 | Webinar
Speaker Disclosures

N/A
I intend to reference off-label or investigational use of drugs or products in my presentation.

- NAC (1200mg BID)
- Gabapentin
- Naltrexone
- Disulfiram
- Ondansetron
- Topiramate
- Acamprosate
- Methadone
Objectives

1. Summarize current patterns of teen substance use and substance use disorders (SUDs).

2. Apply best practices for screening and assessing teens for substance use disorders.

3. Describe evidence-based interventions for teen substance use disorders and co-occurring disorders, including medications for opioid use disorder.
Epidemiology
PAST-YEAR MISUSE OF PRESCRIPTION/OVER-THE-COUNTER VS. ILLICIT DRUGS

VICODIN®

Past-year misuse of Vicodin among 12th graders has dropped dramatically in the past 15 years. Misuse of all Rx opioids among 12th graders has also dropped dramatically, despite high opioid overdose rates among adults.

PRESCRIPTION/OTC

5.6% Adderall®
4.7% Tranquilizers
4.2% Opioids other than Heroin
3.2% Cough/Cold Medicine
2.0% Sedatives
1.3% Ritalin®

ILlicit drugs

Past-year use among 12th graders

37.1% Marijuana/Hashish
3.7% Synthetic cannabinoids*
3.3% LSD
2.7% Cocaine
2.6% MDMA (Ecstasy/Molly)
1.6% Inhalants
0.4% Heroin

STUDENTS REPORT LOWEST RATES SINCE START OF THE SURVEY

Across all grades, past-year use of heroin, methamphetamine, cigarettes, and synthetic cannabinoids* are at their lowest by many measures.

*Called "synthetic marijuana" in survey

NIH National Institute on Drug Abuse

Seattle Children's®

DRUGABUSE.GOV
Prevalence of Teen Substance Use Disorders

2002
Any substance: 8.9%
Alcohol: 5.9%
Illicit drug: 5.6%
Marijuana: 4.3%
Pain Reliever: 1.0%
Cocaine: 0.4%
Heroin: 0.1%

2018
Any substance: 3.7%
Alcohol: 1.6%
Illicit drug: 2.7%
Marijuana: 2.1%
Pain Reliever: 0.4%
Cocaine: <0.1%
Heroin: <0.1%
DAILY MARIJUANA USE MOSTLY STEADY

<table>
<thead>
<tr>
<th>2007 – 2017</th>
<th>2017</th>
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<tbody>
<tr>
<td></td>
<td>8th graders</td>
</tr>
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<td></td>
<td>0.8%</td>
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</tbody>
</table>

71.0% of high school seniors do not view regular marijuana smoking as being very harmful, but 64.7% say they disapprove of regular marijuana smoking.
DAILY MARIJUANA USE IN LOWER GRADES INCREASES BUT PAST YEAR MARIJUANA USE STEADY

DAILY MARIJUANA USE
sees significant increase among 8th and 10th graders since 2018

2017 2018 2019
8% 6% 4%
6% 8% 6%
4% 4.8% 6.4%
2% 1.3%

PAST YEAR MARIJUANA USE
gap closing between older grades

2017 2018 2019
40% 30% 20%
30% 28.8% 35.7%
20% 11.8%
10%
Harms of Cannabis

- Clear link to risk for psychotic symptoms and psychotic disorders, but absolute risk is still low
- Association with depression, anxiety and suicidal thoughts
- Clear link to acute impairment in memory, judgment and reaction time
- Clear link to motivational problems even when not “high”
- Possible link to irrecoverable decrease in IQ, primarily in early onset cannabis use disorder
- Some risk of lung disease
Drug Overdose Death Rates

Figure 1. Drug overdose death rates for adolescents aged 15–19, by sex: United States, 1999–2015

1Significant increasing trend for 1999–2007; significant decreasing trend for 2007–2014; rate for 2015 significantly higher than for 2014; p < 0.05.
2Significant increasing trend for 1999–2004; stable trend for 2004–2013; significant increasing trend for 2013–2015; p < 0.05.

NOTES: Drug overdose deaths are identified with International Classification of Diseases, Tenth Revision underlying cause-of-death codes X40–X44, X60–X64, X85, and Y10–Y14. In 2015, there were 772 total drug overdose deaths: 494 for males and 278 for females. Access data table for Figure 1 at: https://www.cdc.gov/nchs/data/databriefs/db282_table.pdf1.

Overdose Death by Drug Involved

Figure 3. Drug overdose death rates for adolescents aged 15–19, by type of drug involved: United States, 1999–2015

- Significant increasing trend for 1999–2007; fluctuations, but significant decreasing trend for 2007–2014; rate for 2015 significantly higher than for 2014; p < 0.05
- Significant increasing trend for 1999–2006; significant decreasing trend for 2006–2012; significant increasing trend for 2012–2015; p < 0.05; too few cases in 1999 to compute a reliable rate.
- Significant increasing trend for 1999–2006; significant decreasing trend for 2006–2009; stable trend for 2009–2013; rate for 2015 significantly higher than for 2013; p < 0.05.
- Significant increasing trend for 1999–2015; p < 0.01.

NOTES: Drug overdose deaths are identified with International Classification of Diseases, Tenth Revision underlying cause-of-death codes X40–X44, X60–X64, X85, and Y10–Y14. Drug overdose deaths involving opioid analgesics include drug poisoning deaths with multiple cause-of-death codes, including T40.0, T40.1, T40.2, T40.3, T40.4, or T40.0 (2015 N = 566). Drug overdose deaths involving cocaine include code T40.5 (2015 N = 70); benzodiazepines include code T42.4 (2015 N = 126); and psychostimulants with abuse potential include code T43.6 (2015 N = 82). Deaths might involve more than one drug, so categories are not exclusive. Trends may have been affected by improvement in the reporting of specific drugs for drug overdose deaths during the reporting period; see Data source and methods. Access data table for Figure 3 at: https://www.cdc.gov/nchs/data/databriefs/db253_table.pdf#3.

Overdose Deaths from Opioids in Washington State

Figure 1. Number of overdose deaths involving opioids in Washington, by opioid category. Drug categories presented are not mutually exclusive, and deaths may have involved more than one substance. Source: CDC WONDER, 2020.
All demographic groups experienced more overdose deaths during 2020 — particularly males, younger age groups, and communities of color.

Estimated percent increase in provisional overdose deaths, Jan.–Dec. 2020 vs. Jan.–Dec. 2019

- All: 30%
- Male: 33%
- Female: 23%
- Ages 15–24: 48%
- Ages 25–34: 33%
- Ages 35–44: 35%
- Ages 45–54: 25%
- Ages 55–64: 23%
- Black: 45%
- Latinx/Hispanic: 42%
- AIAN: 39%
- Asian American: 37%
- White: 24%

Note: AIAN = American Indian/Alaska Native.

Data: Centers for Disease Control and Prevention, Quarterly Provisional Drug Overdose Estimates with Demographics, Aug. 2021. Provisional estimates from the CDC are not final data and are subject to change.

Fentanyl overdose deaths on track to set grim record in Washington

Fentanyl and other drugs are now killing more King County residents each week than COVID-19.
Summary: Epidemiology

• Experimentation is common but consequences can be severe, even catastrophic
• Use *Disorder* is the exception
• Vaping is rising
• Cannabis harms are likely rising
• Opioid overdose rates are spiking
Screening and Assessment
Risk Factors: Early

• Genetic vulnerability
• Prenatal exposures
• Attachment/neglect
• Sensation-seeking temperament
• Traumatic exposure(s)
• Impulse control deficits
• Learning disorders
Risk Factors: Later

- Poor parental supervision and poor parenting skills
- Substance problems and conflict in family
- Heavy use in local community
- School failure
- Social skills deficits
- Using peer group (gang)
- Poor affect identification and regulation
- Conduct problems
- Mental health problems
The CRAFFT 2.1
Begin: “I’m going to ask you a few questions that I ask all my patients. Please be honest. I will keep your answers confidential.”

**Part A**
During the PAST 12 MONTHS, on how many days did you:

1. Drink more than a few sips of beer, wine, or any drink containing alcohol? Say “0” if none.

2. Use any marijuana (weed, oil, or hash, by smoking, vaping, or in food) or “synthetic marijuana” (like “K2,” “Spice”) or “vaping” THC oil? Put “0” if none.

3. Use anything else to get high (like other illegal drugs, prescription or over-the-counter medications, and things that you sniff, huff, or vape)? Say “0” if none.
Did the patient answer “0” for all questions in Part A?

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
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<tbody>
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</table>

**Ask CAR question only, then stop**

**Ask all six CRAFFT* questions below**

### Part B

<table>
<thead>
<tr>
<th>C</th>
<th>Have you ever ridden in a CAR driven by someone (including yourself) who was “high” or had been using alcohol or drugs?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No</td>
</tr>
<tr>
<td>-----</td>
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</table>

<table>
<thead>
<tr>
<th>R</th>
<th>Do you ever use alcohol or drugs to RELAX, feel better about yourself, or fit in?</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>No</td>
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<tr>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>A</th>
<th>Do you ever use alcohol or drugs while you are by yourself, or ALONE?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No</td>
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<table>
<thead>
<tr>
<th>F</th>
<th>Do you ever FORGET things you did while using alcohol or drugs?</th>
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<tbody>
<tr>
<td></td>
<td>No</td>
</tr>
<tr>
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<table>
<thead>
<tr>
<th>F</th>
<th>Do your FAMILY or FRIENDS ever tell you that you should cut down on your drinking or drug use?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No</td>
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<td>-----</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>T</th>
<th>Have you ever gotten into TROUBLE while you were using alcohol or drugs?</th>
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<tbody>
<tr>
<td></td>
<td>No</td>
</tr>
<tr>
<td>-----</td>
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</table>

*Two or more YES answers suggest a serious problem and need for further assessment. See back for further instructions.
Percent with a DSM-5 Substance Use Disorder by CRAFFT score*

<table>
<thead>
<tr>
<th>CRAFFT Score</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>32%</td>
</tr>
<tr>
<td>2</td>
<td>64%</td>
</tr>
<tr>
<td>3</td>
<td>79%</td>
</tr>
<tr>
<td>4</td>
<td>92%</td>
</tr>
<tr>
<td>5</td>
<td>100%</td>
</tr>
<tr>
<td>6</td>
<td>100%</td>
</tr>
</tbody>
</table>
Opioid Use: Signs and Symptoms

Use
- Constricted pupils
- Sedation
- Respiratory depression
- Flushed, itchy skin
- Bradycardia
- Track marks

Withdrawal
- Restlessness
- Sweating
- Body aches
- Vomiting, diarrhea, nausea
- Dilated pupils, watery eyes
- Tachycardia
- Yawning
WHAT ARE TRACK MARKS?

Track marks are evidence of chronic intravenous (IV) drug use. This method entails a person injecting or “shooting” the drug directly into their vein.
Urine Drug Testing

• In acute change in mental status testing is essential, but not fully reliable

• For outpatient assessment: voluntary and confidential urine drug testing may be useful
  • If there is concern that the patient’s use puts them at immediate, significant risk, there may be grounds to break confidentiality

• For ongoing monitoring: testing may improve outcomes
Chemical Dependency Assessment

• Usually performed by a Chemical Dependency Professional

• Consists of a specialized interview that addresses the 6 dimensions of American Society of Addiction Medicine (ASAM) Patient Placement Criteria
  • Acute Intoxication and/or Withdrawal Potential
  • Biomedical Conditions and Complications
  • Emotional, Behavioral, or Cognitive Conditions and Complications
  • Readiness to Change
  • Relapse, Continued Use, or Continued Problem Potential
  • Recovery/Living Environment
ASAM Criteria

(Recommended Placement Levels)

- Level 0.5: Early intervention
- Level I: Outpatient services
- Level II: Intensive outpatient/partial hospitalization
- Level III: Residential/inpatient services
- Level IV: Medically managed intensive inpatient services
Treatment
# Evidence Base: Psychosocial Treatments

<table>
<thead>
<tr>
<th>Program</th>
<th>Level of Support</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multisystemic Therapy (MST)</td>
<td>Evidence-based</td>
</tr>
<tr>
<td>Teen Marijuana Check Up</td>
<td>Evidence-based</td>
</tr>
<tr>
<td>Adolescent Assertive Community Care</td>
<td>Research-based</td>
</tr>
<tr>
<td>Adolescent Community Reinforcement Approach (ACRA)</td>
<td>Research-based</td>
</tr>
<tr>
<td>MET/CBT-5 for youth MJ use</td>
<td>Research-based</td>
</tr>
<tr>
<td>Multidimensional Family Therapy</td>
<td>Research-based</td>
</tr>
<tr>
<td>Therapeutic Communities</td>
<td>Research-based</td>
</tr>
<tr>
<td>Functional Family Therapy</td>
<td>Research-based</td>
</tr>
<tr>
<td>Dialectical Behavioral Therapy</td>
<td>Promising</td>
</tr>
<tr>
<td>Recovery Support Services</td>
<td>Promising</td>
</tr>
<tr>
<td>Seven Challenges</td>
<td>Promising</td>
</tr>
</tbody>
</table>
Multisystemic Therapy

- Addresses multiple determinants of substance use
  - environment, community, family, individual
- Engages family members as collaborators
- Engages school and community supports
- Stresses the strengths of youth and families
- Addresses barriers to treatment goals
- Therapists familiar with case management, CBT, contingency management, and structural family therapy
- Frequent home visits and full time on-call
CBT: Cognitive Behavioral Therapy

• Functional analysis of substance use
  • When? Where? Who? and Why?
  • Close attention to sound, sight, smell triggers

• Skills training:
  • drug refusal, coping, and self-regulation skills

• Efficacy enhanced by FAMILY involvement
12 Step and SMART Recovery

• Alcoholics Anonymous (AA), Narcotics Anonymous (NA), and many other substance specific programs
  • Focus on building support network
  • Spiritually based and abstinence only
  • Most commonly used intervention, but no true RCT in adolescents

• SMART Recovery
  • Free mutual support meetings similar to 12 Step but grounded on "evidence-based" principles
Harm Reduction

• Focus is on reducing harmful consequences of use, rather than demanding or promoting abstinence
  • Designated drivers
  • Naloxone (Narcan)
  • Fentanyl checks
  • Needle exchange
  • Injection sites
  • Condom distribution

• Resource in King County: People's Harm Reduction Alliance
Motivational Approaches

• Motivational interviewing (MI)
  • Client-centered approach focused on ambivalence and autonomy

• MI Techniques
  • Elicit Self-motivational Statements
    • Express Empathy
    • Develop Discrepancy
    • Roll with Resistance
    • Readiness Rulers
MI: The Fork in the Road Exercise
Medication Treatments for Substance Use Disorder

• Cannabis
  • NAC (1200mg BID)
  • Gabapentin
• Alcohol
  • Naltrexone
  • Disulfiram
  • Ondansetron, Topiramate, Acamprosate
• Opiate
  • Methadone
  • Buprenorphine
  • Naltrexone

All OFF- LABEL (EXCEPT BUPRENORPHINE)
Medication Opioid Use Disorder

• “The AAP recommends that pediatricians consider offering medication-assisted treatment (MAT) to their adolescent and young adult patients with severe opioid use disorders…”

• Some addiction experts recommend switch in language from MAT to Medication for Opioid Use Disorder (MOUD)

• Psychosocial treatments are less effective in opioid use disorder, as compared with marijuana and alcohol use disorder
Medication Opioid Use Disorder, Part II

- The harms of ongoing illicit opioid use are severe, including catastrophic accidental overdose
- Methadone and buprenorphine have been shown to improve functioning, decrease mortality & lower the transmission of infectious diseases like HIV and HCV
- Buprenorphine lowered mortality by 37% over 4 months compared to no MAT/MOUD in one study
- Buprenorphine is approved by for youth age 16+
“Yes We Narcan!”

• Any **prescriber** can write a prescription for naloxone and any pharmacy can fill that prescription.

• Under [Washington’s Statewide Standing Order](#) anyone can obtain naloxone directly from any pharmacy that carries it **without first seeing a doctor or ARNP**.

• Many **syringe exchange and other community programs** distribute naloxone.

• WA Medicaid covers most forms of naloxone with no co-pay.

• Most commercial health insurance plans cover at least one form of naloxone.
Co-Occurring Mental Health Disorders

• The Rule, Not the Exception

• Increased Role for Medications

• Common Conditions
  • Disruptive Behavior Disorders (DBDs)
  • Depression & other mood disorders
  • Anxiety disorders
  • Attention-Deficit Hyperactivity Disorder (ADHD)
  • Learning disabilities & sensory problems
  • Others: Bulimia, Psychosis, Personality Disorders
Medications in Co-Occurring Disorders

- **Depression:**
  - CBT/Fluoxetine more effective than CBT/Placebo in RCT

- **Anxiety Disorders:**
  - Reasonable to use SSRIs in most cases

- **ADHD:**
  - Support for treatment with long-acting methylphenidate, Vyvanse or atomoxetine
  - Caution advised

- **Bipolar Disorder and Psychotic Disorder**
  - Psychiatric medications generally are indicated even if there is co-occurring use

- **PTSD**
  - No great medication treatment, but reasonable to consider SSRI or alpha-agonist
So...

- The sky is not falling, but there is a core group of very impaired teens, vaping is rising, marijuana may have increasing risks, and there is an opioid overdose epidemic
- Screen using the CRAFFT
- The best supported interventions use well-defined, structured approaches with family involvement
- Substance use is generally not a contraindication to appropriate psychiatric medications
- Opioid using adolescents should be seriously considered for MOUD and standing Narcan
Resources

• WA Recovery Helpline
• Teen Link
• CRAFFT Website: [http://crafft.org/](http://crafft.org/)
• SAMHSA Treatment Services Locator
  • [findtreatment.samhsa.gov](http://findtreatment.samhsa.gov)
• SAMHSA Information on Buprenorphine Waiver:
  • [https://www.samhsa.gov/medication-assisted-treatment/training-materials-resources/apply-for-practitioner-waiver](https://www.samhsa.gov/medication-assisted-treatment/training-materials-resources/apply-for-practitioner-waiver)
• WA Standing Order for Narcan
  • [https://www.doh.wa.gov/Portals/1/Documents/Pubs/150-127-StatewideStandingOrderToDispenseNaloxone.pdf](https://www.doh.wa.gov/Portals/1/Documents/Pubs/150-127-StatewideStandingOrderToDispenseNaloxone.pdf)
Hope. Care. Cure.