Adolescent Substance Use Disorders: Current Perspectives & Treatment Approaches

N.C. Foundation for Alcohol and Drug Studies
2015 Winter School
Greensboro, North Carolina
February 16-18, 2014

Instructor: Michael Torch, M.A., MLADC
Description

- This Track will review current perspectives on this very difficult treatment population.
- Effective treatment techniques and approaches will be presented didactically and experientially.
- Topics will include:
  - developmentally appropriate screening and assessment techniques
  - biogenetic influences and consequences
  - neurological functioning and condition progression
  - productive intervention techniques.
Objectives

Participants will:
1. Gain an understanding of the developmental differences between adolescent and adult substance use disorders.
2. Identify the neurobiological consequences of adolescent chemical use.
3. Gain an understanding of the neurological conditioning that creates cognitive barriers to recovery for this population.
4. Review current data regarding adolescent psychoactive chemical use in North Carolina and some of the current indicators of the consequences of such use.
5. Review currently recognized evidence-based practices with this population and participate in analysis of those practices.
6. Participation in specific skill building exercises that can be helpful with this population.
Workshop Outline

I. Introduction and Overview

II. Defining the Problem and the Population
   a) What is the prevalence of these disorders among Youth in North Carolina
   b) What is the relationship between AOD Use, Psychiatric Symptoms/Disorders and Delinquency
   c) Adolescent Substance Use impact upon public school education in North Carolina

III. Adolescence

IV. What is Adolescent Substance Use Disorder

V. Issues of Screening and Assessment

VI. SBIRT with Adolescent Population

VII. What does it take to work with this population-Related Categories of Competency (TAP 21)
   a) Knowledge Expectations
   b) Skill Expectations
   c) Attitude Expectations

VIII. Basic Counseling techniques useful with this population

IX. Strategies for treatment

X. Specific Treatment interventions that are effective with this population

XI. Evidence-Based Practice for Adolescent Substance Abuse: North Carolina Adolescent Substance Abuse Treatment Project

XII. Principles of Integrated Treatment with this population

XIII. Strategies of Engaging Youth with Co-occurring disorders on programmatic levels.

XIV. An Evidenced Informed Outpatient Treatment Protocol
Defining the problem and the population

Alcohol-related behaviors among high school students (grades 9-12), 2011

<table>
<thead>
<tr>
<th></th>
<th>North Carolina</th>
<th>United States</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drank alcohol for the first time before age 13 years (other than a few sips)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>18%</td>
<td>20%</td>
</tr>
<tr>
<td>Male</td>
<td>22%</td>
<td>23%</td>
</tr>
<tr>
<td>Female</td>
<td>14%</td>
<td>17%</td>
</tr>
<tr>
<td>Had at least one drink of alcohol on at least one day (during the 30 days before the survey)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>34%</td>
<td>39%</td>
</tr>
<tr>
<td>Male</td>
<td>35%</td>
<td>39%</td>
</tr>
<tr>
<td>Female</td>
<td>33%</td>
<td>38%</td>
</tr>
<tr>
<td>Had five or more drinks of alcohol in a row within a couple of hours on at least one day (during the 30 days before the survey)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>18%</td>
<td>22%</td>
</tr>
<tr>
<td>Male</td>
<td>22%</td>
<td>24%</td>
</tr>
<tr>
<td>Female</td>
<td>14%</td>
<td>20%</td>
</tr>
<tr>
<td>Usually obtained the alcohol they drank by someone giving it to them (among students who currently drank alcohol, during the 30 days before the survey)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>34%</td>
<td>40%</td>
</tr>
<tr>
<td>Male</td>
<td>28%</td>
<td>35%</td>
</tr>
<tr>
<td>Female</td>
<td>41%</td>
<td>46%</td>
</tr>
<tr>
<td>Drove when drinking alcohol one or more times (a car or other vehicle during the 30 days before the survey)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>6%</td>
<td>8%</td>
</tr>
<tr>
<td>Male</td>
<td>9%</td>
<td>9%</td>
</tr>
<tr>
<td>Female</td>
<td>4%</td>
<td>7%</td>
</tr>
<tr>
<td>Rode with a driver who had been drinking alcohol one or more times (in a car or other vehicle during the 30 days before the survey)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>21%</td>
<td></td>
</tr>
</tbody>
</table>

Office of Adolescent Health | Adolescent Health Facts
Substance abuse data for North Carolina
Defining the problem and the population

Marijuana use among high school students (grades 9-12), 2011SA1 Percent of high school students who:

<table>
<thead>
<tr>
<th></th>
<th>North Carolina</th>
<th>United States</th>
</tr>
</thead>
<tbody>
<tr>
<td>Have ever used marijuana one or more times (during their life)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>43%</td>
<td>40%</td>
</tr>
<tr>
<td>Male</td>
<td>48%</td>
<td>42%</td>
</tr>
<tr>
<td>Female</td>
<td>37%</td>
<td>37%</td>
</tr>
</tbody>
</table>

Inhalant use among high school students (grades 9-12), 2011SA1 Percent of high school students who:

<table>
<thead>
<tr>
<th></th>
<th>North Carolina</th>
<th>United States</th>
</tr>
</thead>
<tbody>
<tr>
<td>Have ever sniffed glue, breathed the contents of aerosol spray cans, or inhaled any paints or sprays to get high one or more times (during their life)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>11%</td>
<td>11%</td>
</tr>
<tr>
<td>Male</td>
<td>12%</td>
<td>10%</td>
</tr>
<tr>
<td>Female</td>
<td>10%</td>
<td>12%</td>
</tr>
</tbody>
</table>

Cocaine use among high school students (grades 9-12), 2011SA1 Percent of high school students who:

<table>
<thead>
<tr>
<th></th>
<th>North Carolina</th>
<th>United States</th>
</tr>
</thead>
<tbody>
<tr>
<td>Used any form of cocaine one or more times (for example, powder, crack, or freebase, during the 30 days before the survey)</td>
<td>N/A</td>
<td>3%</td>
</tr>
<tr>
<td>Total</td>
<td>N/A</td>
<td>3%</td>
</tr>
<tr>
<td>Male</td>
<td>N/A</td>
<td>4%</td>
</tr>
<tr>
<td>Female</td>
<td>N/A</td>
<td>2%</td>
</tr>
</tbody>
</table>

Office of Adolescent Health | Adolescent Health Facts
Substance abuse data for North Carolina
Defining the problem and the population

Nonmedical use of pain relievers, ages 12-17, 2009-2010SA2 Percent of adolescents ages 12-17 who:

<table>
<thead>
<tr>
<th></th>
<th>North Carolina</th>
<th>United States</th>
</tr>
</thead>
<tbody>
<tr>
<td>Used pain relievers for nonmedical reasons (during the 12 months before the survey)</td>
<td>7%</td>
<td>6%</td>
</tr>
</tbody>
</table>

Needing but not receiving treatment for substance use, ages 12-17, 2009-2010SA2 Percent of adolescents ages 12-17 who:

<table>
<thead>
<tr>
<th></th>
<th>North Carolina</th>
<th>United States</th>
</tr>
</thead>
<tbody>
<tr>
<td>Needed but did not receive treatment for alcohol use (during the 12 months before the survey)</td>
<td>4%</td>
<td>4%</td>
</tr>
<tr>
<td>Needed but did not receive treatment for illicit drug use (during the 12 months before the survey)</td>
<td>4%</td>
<td>4%</td>
</tr>
</tbody>
</table>

Office of Adolescent Health | Adolescent Health Facts
Substance abuse data for North Carolina
Defining the problem and the population

Adolescent Behavioral Health

In Brief

A Short Report from the Office of Applied Studies

Highlights: Adolescents in North Carolina

- Approximately 78,000 (11.0 percent) of adolescents in North Carolina used an illicit drug in the past month;
- 53,000 (7.4 percent) used marijuana, and 41,000 (5.7 percent) used an illicit drug other than marijuana.
- 28,000 adolescent males and 24,000 females used pain relievers nonmedically in the 12 months prior to the interview.
- 14.3 percent (102,000) of adolescents used alcohol in the past month and 8.9 percent (63,000) engaged in binge drinking.
- 31,000 adolescents (14,000 males and 17,000 females) needed but did not receive treatment for past-year drug problems.
- 20,000 females and 13,000 males needed but did not receive treatment for alcohol problems.
- Adolescent females were almost twice as likely as males to have experienced a major depressive episode (MDE) in the past year (11.8 v. 6.4 percent).
Defining the problem and the population

April 23, 2012
North Carolina Update: Screening for Adolescent Substance Abuse
by JESSICA JONES

From 2010-2011, 2,663 GAIN screeners were completed with 2,490 youth in Reclaiming Futures' North Carolina sites. Of these screenings, 22% scored at moderate to high risk on the substance disorder screener. This indicates that these youths may need substance abuse, dependence or substance use disorder treatment and therefore should be referred for further assessment. Approximately 18% of youth scored high risk on the overall screening with an additional 75% scoring moderate risk, indicating need for substance abuse and/or mental health assessment/treatment.
• NORTH CAROLINA

Reclaiming Futures State Office
North Carolina Department of Public Safety
Division of Juvenile Justice
4212 Mail Service Center
Raleigh, NC 27699-4212
Contact: Jessica Jones
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Email: jessica.jones@ncdps.gov

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System of Care – System Liaison
Partners Behavioral Health Management
1985 Tate Blvd SE, Suite 529
Hickory, NC 28602
Contact: Kim Sorrell
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Email: KSorrell@partnersbhm.org

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PO Box 99
Webster, NC 28788
Contact: Stephen Fletcher
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Email: sfletcher@bariumsprings.org

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Phone: 910-829-9017
Email: jpilgrim@cccomunicare.org

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Email: mcook@drugfreenc.org

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Gastonia, NC 28054
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Reclaiming Futures Guilford County
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Email: dlmccain@uncg.edu
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Hendersonville, NC 28792
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Email: Mary.Walker@TheMentorNetwork.com

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Marion, NC 28752
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Email: whitney.mace@mcdowellcountyncdss.org

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Chapel Hill, NC 27515
Contact: Julie Bailey
Phone: (919) 942-8083
Email: julie@mhatriangle.org

Reclaiming Futures Rockingham, Stokes and Davie Counties
Post Office Box 66
Reidsville, NC 27323
Contact: Christopher Hicks
Phone: 336-347-8529
Email: christopher.m.hicks@gmail.com

Reclaiming Futures Rowan County
P.O. Box 4217
Salisbury, NC 28145
Contact: Daniel Sevigny
Phone: 704-633-5636 ext:103
Email: drsevigny@gmail.com
The changes in the numbers of each of the offenses reported from 2010-11 to 2011-12 are shown in the table below.

<table>
<thead>
<tr>
<th>Acts</th>
<th>Number of Acts 2011-12</th>
<th>Number of Acts 2010-11</th>
</tr>
</thead>
<tbody>
<tr>
<td>Possession of a Controlled Substance in Violation of Law</td>
<td>4,777</td>
<td>4,934</td>
</tr>
<tr>
<td>Possession of Alcoholic Beverage</td>
<td>971</td>
<td>1,068</td>
</tr>
<tr>
<td>TOTAL</td>
<td>11,161 (51.5%)</td>
<td>11,657 (51.4%)</td>
</tr>
</tbody>
</table>
Elementary, middle, and high schools differ in the types of acts most frequently reported:

Acts most frequently reported in elementary school were:
1) possession of a weapon excluding firearms
2) assault on school personnel
3) sexual assault.

In middle school the order was:
1) possession of a weapon excluding firearms,
2) possession of a controlled substance
3) possession of an alcoholic beverage

while in high school the order was:
1) Possession of a controlled substance
2) possession of a weapon excluding firearms
3) possession of an alcoholic beverage
### Table C1. Reported Statewide Acts by School Levels

<table>
<thead>
<tr>
<th>SPECIFIED ACTS</th>
<th>TOTAL NUMBER OF ACTS</th>
<th>TOTAL NO. OF ACTS BY SCHOOL LEVEL</th>
<th>NO. OF OFFENDERS</th>
<th>NO. OF VICTIMS$^5$</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PK-5</td>
<td>ELEM/MID**</td>
<td>G6-8</td>
<td>MID/HIGH**</td>
</tr>
<tr>
<td>Possession of a Controlled Substance in Violation of Law</td>
<td>4,777</td>
<td>48</td>
<td>95</td>
<td>1,009</td>
</tr>
<tr>
<td>Possession of a Weapon</td>
<td>3,613</td>
<td>1032</td>
<td>183</td>
<td>1,095</td>
</tr>
<tr>
<td>Assault on School Personnel</td>
<td>1212</td>
<td>410</td>
<td>52</td>
<td>276</td>
</tr>
<tr>
<td>Possession of Alcoholic Beverage</td>
<td>971</td>
<td>9</td>
<td>31</td>
<td>284</td>
</tr>
<tr>
<td>Sexual Assault not including Rape or Sexual Offense</td>
<td>187</td>
<td>49</td>
<td>9</td>
<td>104</td>
</tr>
<tr>
<td>Sexual Offense</td>
<td>79</td>
<td>19</td>
<td>1</td>
<td>15</td>
</tr>
<tr>
<td>Assault Resulting in Serious Injury</td>
<td>73</td>
<td>7</td>
<td>3</td>
<td>27</td>
</tr>
<tr>
<td>Bomb Threat</td>
<td>73</td>
<td>5</td>
<td>1</td>
<td>34</td>
</tr>
<tr>
<td>Possession of a Firearm or Powerful Explosive</td>
<td>73</td>
<td>13</td>
<td>4</td>
<td>16</td>
</tr>
<tr>
<td>Assault Involved Use of a Weapon</td>
<td>64</td>
<td>13</td>
<td>4</td>
<td>27</td>
</tr>
<tr>
<td>Burning of a School Building</td>
<td>26</td>
<td>1</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Kidnapping</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Rape</td>
<td>4</td>
<td>1</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Robbery with a Dangerous Weapon</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Taking Indecent Liberties with a Minor</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Death By Other Than Natural Causes</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>11,161</td>
<td>1,680</td>
<td>384</td>
<td>2,395</td>
</tr>
</tbody>
</table>

This table shows the total reported statewide offenses/acts by school level and is ranked by the total number of occurrences of specified acts.

* A combination elementary/middle school must include some or all of the grade levels defined as elementary (PK-5) and middle (6-8).

** A combination middle/high school must include some or all of the grade levels defined as middle (6-8) and high school (9-12).

$^1$ Other includes ungraded schools, special education schools, and schools with grades that cross more than one level (e.g. K-12).

$^5$ Specified acts may have multiple victims per incident.
Figure S3. Short-Term Suspension Rates by Race/Ethnicity

- As in previous years, black students had the highest rate of short-term suspension in 2011-12, followed by American Indian students.

- Short-term suspension rates decreased in 2011-12 for all groups except American Indian students.
Defining the Problem and the Population

• “An untold story of drug and alcohol abuse among the nation’s adolescents is the degree to which the juvenile justice system has become the de facto substance abuse treatment provider for young people”
  “Interpreting the Key Elements Within a Juvenile Justice Setting” Laura Nissen, Ph.D., M.S.W., LADC, Director, Reclaiming Futures

• “Estimates suggest that fewer than 10% of youth who appear to need treatment ever get it”
  Dennis, Dawud-Noursi, Muck and McDermitt, 2001

• “Compared to their non-drug using peers, those who abuse substances are 3 to 47 times more likely to end up in emergency rooms, do poorly in school, engage in disruptive behavior, find themselves in trouble with the law or be arrested.”
  Dennis & McGeary, 1999

• “Contributing to the troubling equation at the local level are:
  a high availability of drugs and alcohol
  an increasing number of adolescents with little to do
  schools and community youth programs facing cutbacks
  economic turmoil among families with few resources
  increasingly punitive attitudes towards juveniles”
  “Interpreting the Key Elements Within a Juvenile Justice Setting” Laura Nissen, Ph.D., M.S.W., LADC Director, Reclaiming Futures
• “In fact, although juvenile delinquency has decreased during recent years, there has been a dramatic increase in the numbers of offender youths entering the juvenile justice system on drug-related charges (U.S. Department of Justice, 1999).

  144% increase in juvenile drug abuse violations
  183% increase in juvenile drug abuse cases that were formally processed among juvenile offenders in the last few years (U.S. Department of Justice, 1999)

• During the last 10 years, 291% increase in the rate at which young people were incarcerated because of drug involvement in general.

• Drug-related incarcerations for young black men during that same period was 539%

• Only 36% of juvenile corrections facilities offer any type of substance abuse treatment (SAMHSA, 1997) and juvenile probation department cite substance abuse treatment as one of their top four program expansion needs.

• “The link between adolescent substance use and juvenile delinquency is complex. There is a strong and consistent association between conduct disorder and substance use among teenagers (Crowley and Riggs, 1995). Many young people entering the juvenile justice system have a host of problems ranging from impaired emotional, psychological, and educational functioning to physical abuse, sexual victimization, and substance use disorders (Dembo, 1996).”

Treatment of Adolescents with Substance Use Disorders, Treatment Improvement Protocol(TIP) Series #32, CSAT, SAMHSA, Pub. # (SMA) 99-3283, 1999
Relationship to Delinquency and other Behavioral issues

- Estimates of the prevalence rates (of substance use) among juvenile offenders are at least five times higher than rates for the general population and have not shown any evidence of decreasing in the past few years.

- A study of 113 delinquent youths in a state detention facility found that 82% reporting being daily users of alcohol and other drugs just prior to admission to the facility (DeFrancesceo, 1996). Other studies report such crimes as drug selling, serious assault, burglary and robbery are strongly associated with substance abuse among juvenile offenders (Altschuler and Brounsteine, 1991).

- Adolescents committing violent crimes and behavior have more dramatic drug use histories (Chaiken and Chaiken, 1984). Generally, the more serious the pattern of alcohol and drug abuse, the higher the likelihood of more serious delinquency (Dishon and Loeber, 1985). Research tends to suggest that involvement in substance abuse tends to lengthen the “delinquent career” (Menard and Elliot, 1990).

- Substance abuse and involvement in delinquent behavior are clearly interrelated. They are the major dependent variables in this research, and they clearly overlap. The more serious the youth’s involvement in drug use, the more serious is his or her involvement in delinquency, and vice versa. This is observed across age, gender and ethnic groups.

Nissen, Laura Burney, Banderburg, Janine, Embree-Bever, Janice and Mankey, Jennifer; Strategies for Integrating Substance Abuse Treatment and the Juvenile Justice System: A Practice Guide, CSAT; August, 1998
Adolescent Substance Use: America’s #1 Public Health Problem

The treatment gap is, in fact, a function of three realities:

- America’s failure to understand the pediatric origin and nature of adolescent addiction and of the imperative of providing care for those in need;

- A failure of health care education and practice to address this health problem; and

- A failure to provide adequate insurance coverage for treatment services.
Figure 10.A

Sources of Referral to Treatment

Source: CASA analysis of the Treatment Episode Data Set (TEDS), 2008.
Learning Collaborative

As a small group identify by consensus:

3 most important pieces of information presented to this point.

Any information that was new to the group?

What are the implications of this information for young people in North Carolina?
Adolescence

• Delinquency is a term that grew from the recognition that criminal behavior and antisocial behavior by an adolescent is different from criminal behavior and antisocial behavior displayed by an adult. Most people will quickly agree with such statements, but the recognition of why this is true is often less well known or acknowledged.

• **Adolescents are not short adults**

• **Adolescence is also not a disease.**

Laurence Steinberg in his text *Adolescence* provides a good starting point for a review of this time of life transition:

• “A thorough understanding of adolescent development in contemporary society depends on being familiar with numerous perspectives on adolescence. Among the most important are those drawn from psychology, biology, history, sociology, education, and anthropology. “
Adolescence:

Steinberg’s model of the boundaries of adolescence

- Biological
- Emotional
- Cognitive
- Interpersonal
- Social
- Educational
- Legal
- Chronological
- Cultural
Five Chief Physical Manifestations of Puberty

• Acceleration in growth
• Development of primary sex characteristics
• Development of secondary sex characteristics
• Changes in body composition
• Changes in circulatory and respiratory systems
Learning Collaborative

What information presented in Steinberg’s model of the boundaries of adolescence is most significant with regard to working with Substance Use Disordered Adolescents?

Tell us why in your report out.
Diagnostic Changes DSM IV to DSM V for Substance Use Disorders

Substance Use Disorder
• [Substance] use Disorder replaces 
  *abuse or dependence*.
  
  • Severity Scale
  • Cravings
  • Eliminate legal symptoms
  • Prescription use
  • Substance/Medication Induced Disorders

Rachel Michaelsen, LCSW | Psychological Training and Education | www.PsyTE-online.com
The essential feature of a substance use disorder is a cluster of cognitive, behavioral, and physiological symptoms indicating that the individual continues using the substance despite significant substance-related problems. As seen in Table 1, the diagnosis of a substance use disorder can be applied to all 10 classes included in this chapter except caffeine. For certain classes some symptoms are less salient, and in a few instances not all symptoms apply (e.g., withdrawal symptoms are not specified for phencyclidine use disorder, other hallucinogen use disorder, or inhalant use disorder).

An important characteristic of substance use disorders is an underlying change in brain circuits that may persist beyond detoxification, particularly in individuals with severe disorders. The behavioral effects of these brain changes may be exhibited in the repeated relapses and intense drug craving when the individuals are exposed to drug-related stimuli. These persistent drug effects may benefit from long-term approaches to treatment.
Diagnostic Criteria

A. A problematic pattern of use leading to clinically significant impairment or distress, as manifested by at least two of the following, occurring within a 12-month period:

1. Substance is often taken in larger amounts or over a longer period than was intended.
2. There is a persistent desire or unsuccessful efforts to cut down or control use.
3. A great deal of time is spent in activities necessary to obtain substance, use substance or recover from its effects.
4. Craving, or a strong desire or urge to use the substance.
5. Recurrent substance use resulting in a failure to fulfill major role obligations at work, school, or home.
6. Continued substance use despite having persistent or recurrent social or interpersonal problems caused or exacerbated by the effects of the substance.
7. Important social, occupational, or recreational activities are given up or reduced because of substance use.
8. Recurrent substance use in situations in which it is physically hazardous.
9. Substance use is continued despite knowledge of having a persistent or recurrent physical or psychological problem that is likely to have been caused or exacerbated by use.
10. Tolerance, as defined by either of the following:
   a) A need for markedly increased amounts of substance to achieve intoxication or desired effect.
   b) A markedly diminished effect with continued use of the same amount of substance.

11. Withdrawal, as manifested by either of the following:
   a) The characteristic withdrawal syndrome for the Substance.
   b) Substance (or closely related substance) is taken to relieve or avoid withdrawal symptoms.
Specifiers:

In early remission: Full criteria for a substance use disorder were previously met, none of the criteria for use disorder have been met for at least 3 months but for less than 12 months (except Craving)

In sustained remission: Full criteria for a substance use disorder were previously met, none of the criteria for use disorder have been met at any time during a period of 12 months (except Craving or urge)

In a controlled environment: If the individual is in an environment where access to substance is restricted

On maintenance therapy: If an individual is receiving medication assisted therapy.
General estimate of severity:

**Mild** - presence of two to three symptoms

**Moderate** - presence of four or five symptoms

**Severe** - presence of six or more symptoms
Recording Procedures for Substance Use Disorders

The clinician should use the code that applies to the class of substances but record the name of the specific substance. For example, the clinician should record 304.10 (F13.20) moderate alprazolam use disorder (rather than moderate sedative, hypnotic, or anxiolytic use disorder) or 305.70 (F15.10) mild methamphetamine use disorder (rather than mild stimulant use disorder). For substances that do not fit into any of the classes (e.g., anabolic steroids), the appropriate code for “other substance use disorder” should be used and the specific substance indicated (e.g., 305.90 [F19.10] mild anabolic steroid use disorder). If the substance taken by the individual is unknown, the code for the class “other (or unknown)” should be used (e.g., 304.90 [F19.20] severe unknown substance use disorder). If criteria are met for more than one substance use disorder, all should be diagnosed (e.g., 304.00 [F11.20] severe heroin use disorder; 304.20 [F14.20] moderate cocaine use disorder).
Diagnostic Exercise

As a group come to consensus on a diagnostic impression for the individual described in your group’s handout.

Support your impression in your report out.
“Addiction is a brain disease”,

Alan I. Leshner, Ph.D.,
Director of the National Institute on Drug Abuse

“Dramatic advances over the past two decades in both the neurosciences and the behavioral sciences have revolutionized our understanding of drug abuse and addiction. Scientists have identified neural circuits that are involved in the actions of every known drug of abuse, and they have specified common pathways that are affected by almost all such drugs. Research has also begun to reveal major differences between the brains of addicted and nonaddicted individuals and to indicate some common elements of addiction, regardless of the substance.”

DSM V:
“An important characteristic of substance use disorders is an underlying change in brain circuits that may persist beyond detoxification, particularly in individuals with severe disorders.”
Neurotransmission
PET Scan

Brain of Nonaddict

Brain of Drug Addict
MEMORY

DECLARATIVE (EXPLICIT)
- FACTS
  - HIPPOCAMPUS-MEDIAL TEMPORAL LOBE; DIENCEPHALON

- EVENTS
  - STRIATUM; MOTOR CORTEX; CEREBELLUM

NONDECLARATIVE (IMPLICIT)
- SKILLS AND HABITS
  - NEOCORTEX
  - AMYGDALA (HIPPOCAMPUS)
- PRIMING
  - EMOTIONAL RESPONSES
  - SKELETAL MUSCULATURE
- BASIC ASSOCIATIVE LEARNING
  - CEREBELLUM (HIPPOCAMPUS)
- NONASSOCIATIVE LEARNING
  - REFLEX PATHWAYS
When marijuana is smoked, its main psychoactive ingredient travels quickly to the brain. Dark areas indicate where the ingredient concentrates and disrupts the brain's normal ability to control the body's movements, balance, coordination, memory and judgment abilities, and sensations.
CEDAR Experimental Design

Three groups of male and female children are studied for a 20-year period:
- Offspring of substance abusing fathers (high risk)
- Offspring of normal fathers (average risk)
- Offspring of psychiatrically disturbed fathers

The 3 groups are longitudinally tracked from age 10-12 until they reach age 30 using the following schedule.
- 10-12 _____ 12-14 _____ 16 _____ 19 _____ 22 _____ 25 _____ 28 _____ 30

Baseline ___________________________________________________________ Outcome

As of July 1, 1998, CEDAR has recruited over 705 families into the project. The primary outcome of interest is a DSM-IV substance use disorder. However, the positive and negative outcomes are also of interest, including values, school failure, psychological and medical problems and management.

**Abbreviations**

- **SUD** = Substance Use Disorders
- **DRD5** = Dopamine D5 Receptor
- **MAOA** = monoamine oxidase A
- **ECF** = Executive Cognitive Functioning
- **HAR** = High Average Risk
- **LAR** = Low Average Risk
- **ERP** = Event Related Potential
- **SES** = socioeconomic status
CEDAR

• Data suggest an association between the liability to SUD and the DRD5 and MAOA genes. For DRD5 gene the association is stronger in females than males; in the MAO-A gene the association is observed only in males.

• The DRD5 gene has been tentatively found to be associated with novelty seeking behavior in females but not in males.

• In prepubertal boys, parental genotype was shown to correlate with aggressivity, an important precursor of SUD liability.

• Significant similarity exists between liability phenotypes of spouses as well as for the personality traits associated with the risk for SUD.

• Diminished secretion of the stress hormone cortisol was observed in HAR subjects in an anticipated stress situation compared to LAR subjects.

• HAR youth demonstrated lower executive cognitive functioning than LAR youth (e.g. planning, attentional control, thinking flexibility).

• HAR subjects showed elevated behavioral activity level measured by actigraph during tasks requiring focused attention and behavior control.
HAR subjects revealed attenuated P300 ERP’s and longer alpha synchronization than LAR youth on the oddball task.

Level of stress reactivity, measured by saliva cortisol, was found to partly moderate the association between paternal SUD and attenuated P300 in offspring.

P300 latency and amplitude correlated with executive cognitive functioning (ECF) capacity.

Significant elevation of scores on both externalizing and internalizing scales was found among HAR children only if the father’s drug use persisted after their offspring surpassed age 6, suggesting perhaps a "critical" developmental period on SUD liability.

Male and female HAR youth demonstrated greater cognitive, affective and behavioral dysregulation compared to LAR youth on the Dysregulation Inventory developed at CEDAR.

Dysregulation scores in youth were found to correlate with antisociality during childhood, as well as parental and peer antisociality; Level of parental involvement mediated the association between dysregulation and antisociality.

Adolescent onset SUD was observed to be featured by higher lifetime rates of cannabis and hallucinogen disorders, a shorter duration between first exposure and dependence, and shorter interval between first and second drug dependence diagnoses than adult onset SUD.
• Low executive cognitive functioning capacity at age 10-12 was found to predict level of reactive aggression two years later in HAR but not LAR youth.

• Adolescent onset, early adult onset, and mid-adult onset SUD were shown to differ with respect to profile and natural history of SUD.

• Aggressivity in HAR but not LAR boys was found to covary with cognitive distortions or misattributions.

• Functional communication skills are lower in HAR than LAR subjects; this capacity is related to level of substance use measured two years later.

• The rate of DSM-III-R diagnosis of learning disability was revealed to be higher in HAR (11.7%) than LAR (5.7%) subjects.

• Parents of HAR youth exhibit higher levels of risk for child abuse than LAR parents. Psychopathology in offspring of SUD probands was found to be more strongly predicted by parental childhood than parental adult psychopathology.

• Proband fathers with SUD retrospectively reported a higher rate of disruptive behavior disorder than proband fathers without SUD (51% vs. 7%); the former subjects had a significantly higher rate of childhood anxiety disorders (15% vs. 1%).
Research directed at multidimensional mapping of substance use topography during adolescence revealed that single latent traits could be derived for three dimensions: a) context of consumption, (b) expectancies, and, (c) reinforcing effects.

Preliminary analyses using growth curve modeling indicated that the social environment best predicted alcohol and tobacco use whereas cannabis use was best predicted by conduct problems.

Preliminary analyses suggest that initial cannabis and tobacco use status is predicted by IQ; initial status of tobacco use is predicted by SES; initial alcohol and cannabis use is predicted by father’s substance use status.

At age 12-14, the odds ratio in HAR boys was 4.1 for boys to have had sex with one or more opposite partners in the past year compared to LAR boys.

At age 16, the odds ratio in HAR boys was found to be 6.76 to have had sex with one or more opposite sex partners in the past year.
At age 19, HAR boys were more likely to have a poor diet compared to LAR boys (odds ratio = 2.98).

At age 16, HAR boys exhibited a trend towards having suffered an accidental injury that continued to bother them compared to LAR boys (odds ratio = 2.45).

At age 19, the odds ratio of HAR boys was observed to be 6.79 for having to face legal charges of assault.

At ages 16 (odds ratio trend = 1.97) and 19 (odds ratio = 9.18), HAR boys were found to be less likely to eat 3 meals a day compared to LAR boys.

At age 19, based on a small sample (N=52), HAR boys compared to LAR boys, show a trend towards having had sex with someone they hardly know.
“High comorbidity is typical with adolescent-onset alcohol use disorders. As in our cohort, other studies have shown that a substantial percentage of adolescents with alcohol use disorders have other comorbid substance use disorders (particularly cannabis abuse) as well as conduct disorders, ADHD, mood disorders, and PTSD. Our subjects with alcohol use disorders had high rates of comorbid major depression.”
Dr. Teplin discussed what can happen when the primary care, school, child welfare and the larger mental health systems fail. She suggested that changes in systems (e.g., Medicaid reductions, rise of managed care) have resulted in fewer children getting treatment for mental health problems. Consequently, many children are falling through the cracks and these kids are ending up in the juvenile justice system. Poor children, minority children, and children with comorbid disorders are disproportionately represented.

The literature suggests high rates of alcohol, drug, or mental disorders in the juvenile justice population.

Chicago Study that looked at the prevalence of mental disorders among children in a typical detention center.

Among a sample of 1,829 children (650), two thirds tested positive for drugs. Nearly three quarters of the females and over two thirds of the males had one or more psychiatric disorders. Nearly 20% of the sample had an affective disorder; rates were higher among females (27.5%). Comorbidity is common. For example, over two thirds of youth with an affective disorder also had substance abuse/dependence (alcohol, drug, or both). In addition, mortality is high. To date, 33 youth (1.8% of the sample) have died, all violently.

The magnitude of mental health services needs far exceeds current resources.
Figure 1.
Comorbidity Among Adolescents in DATOS-A

(N=992)

Grella, Hser, Joshi, & Rounds-Bryant, 2001, *Journal of Nervous and Mental Disease*, 189, 384-392
Learning Collaborative

How do you make sense of the information presented regarding the impact of psychoactive chemicals on adolescent brains?

What are the implications for intervention and treatment?
Differences Between Adult and Adolescent Substance Use Disorder

A. Adolescents are at a much more crucial time developmentally than adults. Therefore, the impact upon them is much more developmentally devastating.
   1. The earlier chemical use begins, the more developmental retardation will occur.
   2. There are developmental windows during adolescence, when use inhibits development past his window, then even with remedial care, retarded development will remain.
   3. Adolescent coping skills are not developed sufficiently to withstand the impact of chemicals, therefore chemicals cause a much more rapid onset of impaired social, emotional, and educational functioning among adolescents than adults.

B. The effects of intoxicants upon adolescent performance are markedly different.
   1. At the ages of 14-19 more impairment of judgment and hand-eye coordination occurs than 20 years and over at the same dosage level.
   2. If use is delayed until age 22, then the incidence of chemical dependency is lowered by 5 times.
   3. The progression of the disease is accelerated 2 to 5 times among adolescents when compared with adults. The 5-15 rule has developed as a result of this accelerated progression.
   4. The major cause of these differences in impact and progression is the development of liver enzymes during late adolescence and early adulthood.

C. There is a much higher incidence of positive family history of substance use disorder among adolescents that have been diagnosed than among adults (90% vs. 70%).

D. The duration of a severe problem among adolescents at the time of diagnosis is usually less than 18 months.

E. The problem rarely presents as substance use disorder and is most often seen by parents, courts and professionals as a psychiatric, behavioral or family dysfunction.

F. Among adolescent victims of substance use disorder there is usually an absence of other positive life drives. This is rarely true for adults.

G. Chemical use is rarely “social” among adolescents- “partying” is going to a place where a group of people individually sedate themselves.
The Composite Model of Human Growth and Bio-Socio Conflicts as Determinants of Life Styles
(Based on the Constructs of Erikson, Piaget, and Confucius)

Possible life styles rooted in unresolved conflicts or retarded personality development:

<table>
<thead>
<tr>
<th>IX. POST MATURITY</th>
<th>Peace vs. fear in old age</th>
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<tbody>
<tr>
<td>(9) Merely waiting to die</td>
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<tr>
<th>VIII. MATURITY</th>
<th>Ego integrity vs. despair</th>
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<tr>
<td>(8) Retreat from real life and responsibilities</td>
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<tr>
<th>VII. ADULTHOOD</th>
<th>Generativity vs. stagnation</th>
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<tr>
<td>(7) Depression and self-defeatism</td>
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<tr>
<th>VI. YOUNG ADULTHOOD</th>
<th>Intimacy vs. isolation</th>
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<tr>
<td>(6) Obsessional and impulsive behavior</td>
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<tr>
<th>V. PUBERTY &amp; ADOLESCENCE</th>
<th>Identity vs. role confusion</th>
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<tbody>
<tr>
<td>(5) Passive aggressive behavior</td>
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<tr>
<th>IV. LATENCY</th>
<th>Industry vs. inferiority</th>
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<tr>
<td>(4) Passive dependency</td>
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<tr>
<th>III. LOCO-GENITAL</th>
<th>Initiative vs. guilt</th>
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<tr>
<td>(3) Passive indifference</td>
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<tr>
<th>II. MUSCULAR/ANAL</th>
<th>Autonomy vs. shame</th>
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<tr>
<td>(2) Pseudo life</td>
<td></td>
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<tr>
<th>I. ORAL SENSORY (maternal characteristics)</th>
<th>Basic trust vs. mistrust</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Paranoid life</td>
<td>Healthy birth vs. malformation</td>
</tr>
</tbody>
</table>

Prenatal Period | Sensory motor period | Pre-operational stages | Concrete operations | Formal operations | Adult thoughts and work | Creative Self reliance | Faith & fulfillment | Destiny & death |

Socio-Cultural Development
Relationship Between Substance Use and Mental Health

Biological Factors
- Risk Factors
  - Close biological relative with a disorder
  - Personality traits (high risk)
  - Gender
  - Ethnicity
- Protective Factors
  - No family history of substance use or mental health problems
  - Adaptive personality traits

Environmental Factors
- Risk Factors
  - Life stressors
  - Relationship issues
  - Health & mental health
- Protective Factors
  - Coping skills (reduce stress)
  - Treating substance use & mental health problems

Substance Use ↔ Mental Health

“Co-occurring Disorders Treatment Workbook 2002”, Hunt, W. Michael, M.A.; Moore, Kathleen, Ph.D; Matthews, Chad, Ph.D; Pape, Laura, B.S.; Department of Mental Health Law & Policy of the Louis de la Parte Florida Mental Health Institute, University of South Florida, 2002
<table>
<thead>
<tr>
<th>DISORDER OF 1&lt;sup&gt;st&lt;/sup&gt; DEGREE RELATIVE (E.G., PARENTS, SIBLINGS)</th>
<th>INCREASED CHANCE TO DEVELOP DISORDER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major Depressive Disorder</td>
<td>1.5 to 3 times more likely to develop Major Depressive Disorder</td>
</tr>
<tr>
<td>Panic Disorder</td>
<td>4 to 7 times more likely to develop Panic Disorder</td>
</tr>
<tr>
<td>Bipolar I Disorder</td>
<td>4% to 24% more likely to develop Bipolar I Disorder</td>
</tr>
<tr>
<td>Bipolar I Disorder</td>
<td>4% to 24% more likely to develop Major Depressive Disorder</td>
</tr>
<tr>
<td>Schizophrenia</td>
<td>10 times more likely to develop Schizophrenia</td>
</tr>
</tbody>
</table>
Environmental Risk Factors

“Life stressors:
- Work (loss of employment, problems at work, new job)
- Moving to a new place
- Money (being unable to pay bills or having more money than usual)
- Being a victim of a crime
- Housing problems (losing one’s home)
- Legal problems

Relationships:
- Death of a loved one
- Divorce, separation, remarrying
- Parenting (difficulties raising/caring for one’s children or having unresolved parent/child issues)
- Frequent arguments among family members and spouse/significant other
- Having few or no friends (lack of social support)
- Having friends who use drugs or alcohol
- Grief

Health and Mental Health:
- Illness, injuries, or accidents
- Not getting enough rest or eating well
- Caring for a sick relative or friend
- Not dealing with feelings
- Abusing substances
- Experiencing mental health symptoms”
Interpretation of this information to make it more applicable to adolescents.

In particular:

- **Developmentally age appropriate coping skills**
- **Frame of reference timelines**
- **Developmentally controlled cognitive functioning** (i.e., ability to abstract)

Educational environment is the primary occupational environment

- Performance pressure
- Peer harassment
- Sexual harassment
- Potential for violence
- Lack of support systems
Adolescent Relationships

• An important area for interpretation Developmentally, an adolescent’s very psychological existence is often dependent upon very fragile peer relationships.

• A loss of relationship often represents the loss of sense of self. This is an extremely powerful psychological stressor capable of causing significant mental health symptoms.
Relationship between AOD use and Psychiatric Symptoms

“There are several possible relationships between AOD use and psychiatric symptoms and disorders. AOD’s may induce, worsen or diminish psychiatric symptoms, complicating the diagnostic process.”

“The primary relationships between AOD use and psychiatric symptoms or disorders are described in the following classification model ( Landry et al., 1991a; Lehman et al., 1989; Meyer, 1986)”

- AOD use can cause psychiatric symptoms and mimic psychiatric disorders. Acute and chronic AOD use can cause symptoms associated with almost any psychiatric disorder. The type, duration, and severity of these symptoms are usually related to the type, dose, and chronicity of the AOD use.
- Acute and chronic AOD use can prompt the development, provoke the reemergence, or worsen the severity of psychiatric disorders.
- AOD use can mask psychiatric symptoms and disorders. Individuals may use AODs to purposely dampen unwanted psychiatric symptoms and to ameliorate the unwanted side effects of medications. AOD use may inadvertently hide or change the character of psychiatric symptoms and disorders.
- AOD withdrawal can cause psychiatric symptoms and mimic psychiatric syndromes. Cessation of AOD use following the development of tolerance and physical dependence causes an abstinence phenomenon with clusters of psychiatric symptoms that can also resemble psychiatric disorders.
- Psychiatric and AOD disorders can coexist. One disorder may prompt the emergence of the other, or the two disorders may exist independently.
- Psychiatric behaviors can mimic behaviors associated with AOD problems. Dysfunctional and maladaptive behaviors that are consistent with AOD abuse and addiction may have other causes, such as psychiatric, emotional, or social problems. Multidisciplinary assessment tools, drug testing, and information from family members are critical to confirm AOD disorders.”

Core Activities and Personality Adaptation

“Many personality characteristics associated with addicts are not enduring traits but adaptations to the realities confronted in the addictive lifestyle.”

- **Paranoia.** Paranoia is a natural and protective adaptation emerging out of the progression of addiction.
- **Depression.** There are other forms and patterns of depression that are a consequence rather than a cause of addiction. Nearly all drugs of abuse induce neurochemical changes that produce a form of endogenous depression. Many addicts in early recovery also experience a form of grief in their abandonment of drugs and the social world of drug use.
- **Narcissism.** Whether such narcissism predates the onset of addiction is a matter of debate. What is not debatable is that the addict’s physical relationship with the drug will begin to dominate all other relationships and concerns. This is both a physiological and psychodynamic consequence of addiction and a value learned through participation in a culture that worships self-gratification.
- **Intimacy.** The addict is consistently characterized as being incapable of initiating or sustaining intimate relationships. The addict’s cultural norms, which place great value on coldness, cunning, and emotional detachment. What helpers would describe as openness for emotional and interpersonal exploration, the culture of addiction would describe as vulnerability and stupidity.
- **Manipulation.** Addicts manipulate social situations to their advantage as naturally as they breathe. These very skills achieve respect and status within the culture of addiction.
- **Risk-taking.** Risk-taking behavior is highly valued and rewarded among most tribal groups within the culture of addiction. Such risk-taking thus becomes a set of learned behaviors that are increasingly necessary to sustain addiction. Relapse may be triggered for some because they experience the drug-free lifestyle as boring and devoid of excitement and enjoyment.
- **Authority.** Inside the culture of addiction, almost all authority is held up for ridicule and disdain. Authority symbolizes every force in the world that has posed an obstacle to continued drug use.
- **Morality.** Addicts are often depicted as amoral human beings, void of compassion and conscience in their interaction with others having a striking incapacity for shame or guilt related to their predatory and antisocial behavior. Addiction superimposes both an intoxication-induced impairment in moral judgment and the cellular demand for drugs that often supersede personal morality. Expediency in the service of addiction replaces personal morality.
Learning Collaborative

What are your thoughts about the implications of the information presented regarding Co-occurring disorders and the environmental stressors of adolescence?

Report out significant points of discussion.
Issues of Screening, Assessment and Diagnosis

• “Essential to responding to a youth’s mental, emotional, and substance use problem is the identification of their problem. Detecting potential mental health and substance use disorders among youth requires reliable and valid screening and assessment instruments, and information on how best to implement the available instruments.”

• “Screening and assessment share objectives to evaluate youth, but they are distinguished by different purposes and often require somewhat different methods.”

• “Screening. Most definitions of screening for mental health and substance use problems (e.g., Trupin & Boesky, 1999; Grisso & Barnum, 2000) describe a relatively brief process designed to identify youth who are at increased risk of having disorders that warrant immediate attention, intervention, or more comprehensive review. Screening, therefore, is a ‘triage’ process, often employed with every youth entering a particular part of the juvenile justice system. Identifying the need for further evaluation is one of the more frequent purposes of screening.”

• “Assessment. In contrast, assessment is a more comprehensive and individualized examination of the psychosocial needs and problems identified during the initial screen, including the type and extent of mental health and substance use disorders, other issues associated with the disorders, and recommendations for treatment intervention. Assessments are typically more expensive than screening because they require more regarding individualized data collection, often including psychological testing, clinical interviewing, and obtaining past records from other agencies for review by the assessor. Thus, assessment typically requires the expertise of a mental health professional and is employed only for a subset of youths who, through screening or other means, are identified as most likely to be in need of such evaluation.”

“Screening and Assessing Mental Health and Substance Use Disorders Among Youth in the Juvenile Justice System”, Grisso, Thomas, Ph.D and Underwood, Lee, Psy.D, National Center for Mental Health and Juvenile Justice, January, 2001
DBHS Practice Protocol
COMPREHENSIVE ASSESSMENT AND TREATMENT FOR SUBSTANCE USE DISORDERS IN CHILDREN AND ADOLESCENTS
(Formerly known as Practice Improvement Protocol #10)
Developed by the
Arizona Department of Health Services
Division of Behavioral Health Services
(ADHS/DBHS)
Effective- August 30, 2009
<table>
<thead>
<tr>
<th>Instrument</th>
<th>Description</th>
<th>Source of information</th>
</tr>
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<tbody>
<tr>
<td>Adolescent Drinking Index (ADI)</td>
<td>This is a 24 item rating scale measuring the severity of drinking problems. It has been used with youths in schools, substance abuse programs and those under evaluation for psychological problems. It identifies those who need further evaluation and assists with treatment planning and recommendations. Administration time: 5 minutes Scoring time: 10 minutes Training: BA degree in psychology or related field and training in interpreting psychological tests.</td>
<td>Copyrighted. Psychological Assessment Consulting Services, Inc. P.O. Box 998 Odessa, Florida 33553 (800) 331-8378 <a href="http://www.parinc.com">http://www.parinc.com</a></td>
</tr>
<tr>
<td>Drug Use Screening Inventory –Revised (DUSI-R)</td>
<td>Contains 159 T/F questions that measure problem severity in ten domains. It has been used with youth who have been referred for emotional and behavioral problems. It identifies treatment needs and provides a way to monitor treatment progress and improvement.</td>
<td>Copyrighted. Gordian Group P.O. Box 1557 Hartsville, SC 29950 (843) 383-2201</td>
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