Jassin M. Jouria, MD

Dr. Jassin M. Jouria is a medical doctor, professor of academic medicine, and medical author. He graduated from Ross University School of Medicine and has completed his clinical clerkship training in various teaching hospitals throughout New York, including King’s County Hospital Center and Brookdale Medical Center, among others. Dr. Jouria has passed all USMLE medical board exams, and has served as a test prep tutor and instructor for Kaplan. He has developed several medical courses and curricula for a variety of educational institutions. Dr. Jouria has also served on multiple levels in the academic field including faculty member and Department Chair. Dr. Jouria continues to serves as a Subject Matter Expert for several continuing education organizations covering multiple basic medical sciences. He has also developed several continuing medical education courses covering various topics in clinical medicine. Recently, Dr. Jouria has been contracted by the University of Miami/Jackson Memorial Hospital’s Department of Surgery to develop an e-module training series for trauma patient management. Dr. Jouria is currently authoring an academic textbook on Human Anatomy & Physiology.

ABSTRACT

Polysubstance abuse may be diagnosed when a person is dependent on three or more substances over a 12-month period. Unique challenges exist for individuals with polysubstance abuse, which include a higher degree of physical side effects from substances consumed and longer period of time of detoxification. A personalized detoxification treatment plan is needed for individuals diagnosed with polysubstance abuse according to their unique medical, psychiatric, and substance use history. Polysubstance Abuse Part II discusses aspects of the physical assessment and comorbid conditions influencing the patient’s initial treatment and ongoing recovery plan.
Continuing Nursing Education Course Director & Planners:
William A. Cook, PhD, Director, Douglas Lawrence, MS, Webmaster, Susan DePasquale, CGRN, MSN, FPMHNP-BC, Lead Nurse Planner

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Statement of Need:
Polysubstance abuse is associated with a variety of life circumstances, medical and mental health conditions. Health professionals informed of best practice screening tools and treatment guidelines are able to support patient success in an individualized plan of care.
Course Purpose:
To provide nurses and health team associates with knowledge about polysubstance abuse and treatments in all age groups.

Learning Objectives:
1. Identify the goals of a medical assessment of a patient with signs of polysubstance abuse.
2. List laboratory tests used during in the assessment phase of polysubstance abuse.
3. Identify the various drugs that may be abused.
4. Explain the prevalence and patterns of dual diagnosis.
5. Explain mental disorders associated with substance abuse.

Target Audience:
Advanced Practice Registered Nurses, Registered Nurses, Licensed Practical Nurses and Nursing Associates

Course Author & Director Disclosures:
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Susan DePasquale, CGRN, MSN, FPMHNP-BC – all have no disclosures

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Please take time to complete the self-assessment Knowledge Questions before reading the article. Opportunity to complete a self-assessment of knowledge learned will be provided at the end of the course.
1. Components of the assessment of a patient with polysubstance abuse include:
   a. Complete history
   b. Physical examination
   c. Mental status examination
   d. All of the above

2. True or False. The transtheoretical model targets specific questions and responses to the stages of change during the diagnostic interview.
   a. True
   b. False

3. Drug diversion most commonly occur in drug categories except:
   a. Opioids
   b. Central Nervous System Depressants
   c. Stimulants
   d. Selective Serotonin Reuptake Inhibitors (SSRIs)

4. A psychiatric disorder not commonly seen in dual diagnosis in combination with drug abuse is:
   a. major depression
   b. anorexia nervosa
   c. schizophrenia
   d. bipolar disorder

5. True or False. It is important that the clinician include an assessment of the patient’s commitment level as part of the initial evaluation.
   a. True
   b. False
Introduction

The diagnosis and treatment of polysubstance abuse requires a personalized recovery plan in order to address an individual’s unique medical, psychiatric, and substance use history. Polysubstance Abuse Part I highlighted the distinctive similarities and differences between single substance and polysubstance abuse and the unique screening tools useful to the diagnostic and treatment strategies. If the initial screening process indicates the presence of polysubstance abuse, the patient will require further assessment to diagnose the patient’s problem, to identify comorbid or complicating medical or emotional conditions, and to determine the appropriate treatment setting and level of treatment intensity for the patient.

A comprehensive assessment is often necessary in order to achieve an in depth assessment. The level and extent of assessment will depend on the type of substances used and the patient’s physical and mental status. Therefore, the practitioner will develop an individual assessment plan for each patient (55).

Assessment Of Polysubstance Abuse

Comprehensive assessments may take a number of weeks to complete, as the patient will be required to undergo a number of assessment procedures to accurately identify the scope of the problem and specific treatment needs. Patients will typically be assessed through several office visits. In most instances, assessment will continue after the onset of treatment and will evolve into standard patient monitoring (56).
The goals of medical assessment of a patient who shows signs of polysubstance abuse are to: (1)

- Establish the diagnosis or diagnoses
- Determine appropriateness for treatment
- Make initial treatment recommendations
- Formulate an initial treatment plan
- Plan for engagement in psychosocial treatment
- Ensure that there are no contraindications to the recommended treatments
- Assess other medical problems or conditions that need to be addressed during early treatment
- Assess other psychiatric or psychosocial problems that need to be addressed during early treatment

The components of the assessment of a patient with polysubstance abuse problems should include: (57)

- Complete history
- Physical examination
- Mental status examination
- Relevant laboratory testing
- Formal psychiatric assessment (if indicated)

**Communication with the patient and significant others**

Communication with the patient is one of the most important components of the assessment process. Throughout the process, it will be necessary to obtain information from the patient, which will only happen if the patient feels comfortable with the practitioner (58). The primary goal of communication is to gain the patient’s trust and to ensure the patient is able to provide the necessary information to
develop an appropriate treatment plan. Communication with the patient will also provide a means of monitoring their progress throughout the treatment process. If a patient is unable to communicate with the practitioner, he or she will be less apt to disclose any issues related to treatment and progress (47).

Given the prevalence of denial on the part of substance abusers, if there is any suspicion about a possible substance use problem, it is important in the first interview to request permission to involve family members, friends, coworkers, and others who may be able to provide more objective information about the client’s pattern of substance use and related behaviors (59). Collateral interviews often help to give a more complete picture of both the user and the impact they are having on others in their environment. Partners and family members of a patient with an alcohol and drug addiction often want to be helpful in the patient’s treatment (60).

If either a substance user or family member is describing examples of domestic violence, legal problems, financial problems, medical complications, or other issues that are often related to substance abuse, it is important to determine if they think the problem would have occurred if alcohol or drugs were not a factor (45). Questions for family members include: (61)

- Does the user’s personality change while using?
- Has anyone been concerned or embarrassed about the use?
- Has the user or others been uncomfortable about the user’s safety in circumstances such as riding in a car when the user has been driving after having a drink?
It is important to note that family members and significant others may be unaware of, or reluctant to divulge, information about the patient’s substance use patterns. Like the patient, they are often experiencing denial or avoiding a confrontation with the user. Common misinformation about substance abuse may divert the focus of the problem to other factors that are then presented as the primary problem (62). Due to the shame and embarrassment that frequently accompany the admission of substance abuse, the clinician may need to reassure everyone involved in the assessment that appropriate help can only be made available if an understanding of the problem is accurate and complete (8).

The Diagnostic Interview

The most important aspect of any assessment of substance abuse is the diagnostic interview. A carefully planned and conducted interview is the cornerstone of the diagnostic process. The initial contact with someone for the assessment of substance abuse may occur within the context of individual, family, group, or marital counseling. The clinician may be aware of the possible problem by the nature of the referral, or it may be discovered within the context of a family or marital problem. Referrals from health providers, other clinicians, or the legal system may be clearly for the purpose of assessing a drug or alcohol problem. Many assessments, however, will initially be undertaken as a part of the clinicians’ normal interviewing procedure (63).

A routine clinical interview should include questions about clients’ habits of using prescription and/or illicit drugs, alcohol, tobacco, and caffeine. An important part of the diagnostic interview is an assessment of the client’s readiness for change. The transtheoretical
model offers clinicians very useful guidelines and information to assist in evaluating where the client is in the process of change. This model describes a series of six stages people experience in making changes, whether the changes are in therapy or not, which are: precontemplation, contemplation, determination, action, maintenance, and relapse. By determining the stage that the client is in the therapist can focus treatment on helping the client proceed through the various stages of change (64).

The transtheoretical model has been incorporated into the principles of motivational interviewing with substance abuse clients. It elaborates on targeting specific questions and responses to the stages of change, which can be very helpful in the process of diagnostic interviewing (65). A clinical interview that incorporates motivational interviewing techniques sets the stage for a successful counseling relationship and helps with treatment planning. Therapists who plan to work with substance abuse clients benefit greatly from familiarity with the model and techniques of interviewing (66).

Given the frequency of denial and minimization encountered with clients who are experiencing substance abuse problems, having a supportive, respectful, effective strategy for interviewing is essential. Initially, it is still important to ask the client directly about his or her use of drugs or alcohol. Many clinicians find it helpful to assure the client that they are not asking questions about substance use in order to make judgments (56). People will often respond less defensively if they are reassured that the clinician is trying to determine the impact of drugs and alcohol on the patient’s life, rather than trying to determine if he or she is an addict. If either a substance user or family
member is describing examples of domestic violence, legal problems, financial problems, medical complications, or other issues that are often related to substance abuse, it is important to determine if they think the problem would have occurred if alcohol or drugs were not a factor (45).

An interview format that gathers information specific to substance abuse should be a standard part of the assessment process. An example of a structured interview format is the Substance Use History Questionnaire (see below). It may be given to the client to complete, or the questions can be asked during the interview. The information from this procedure will help in determining what additional assessment instruments to use (67). Information regarding work habits, social and professional relationships, medical history, and previous psychiatric history are also necessary for the assessment. Questions related to each of these areas should be included as a part of the standard intake (1).

<table>
<thead>
<tr>
<th>Substance Use History Questionnaire</th>
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<tbody>
<tr>
<td><strong>Part I: Substance Abuse History</strong></td>
</tr>
<tr>
<td>Substance</td>
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<tr>
<td>-------------------------------</td>
</tr>
<tr>
<td>Alcohol</td>
</tr>
<tr>
<td>Barbiturates</td>
</tr>
<tr>
<td>Benzodiazepines</td>
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<tr>
<td>Caffeine</td>
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<tr>
<td>Cocaine</td>
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<tr>
<td>Crack</td>
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<tr>
<td>Ecstasy</td>
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<td>Ephedra</td>
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<tr>
<td>Drug</td>
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<td>--------------------------------</td>
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<tr>
<td>Gasoline</td>
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<tr>
<td>Glue</td>
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<tr>
<td>Heroin</td>
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<tr>
<td>Other inhalants</td>
</tr>
<tr>
<td>LSD</td>
</tr>
<tr>
<td>Marijuana or hash</td>
</tr>
<tr>
<td>Methadone</td>
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<tr>
<td>Methamphetamine</td>
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<td>Mescaline</td>
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<td>Mushrooms</td>
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<tr>
<td>Nicotine</td>
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<td>Nitrous Oxide</td>
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<td>Opiates</td>
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<tr>
<td>Opium</td>
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<td>PCP</td>
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<tr>
<td>Peyote</td>
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<tr>
<td>Poppers</td>
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<tr>
<td>Prescription Drugs</td>
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<tr>
<td>Psilocybin</td>
</tr>
<tr>
<td>Quaaludes</td>
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<tr>
<td>Seconal</td>
</tr>
<tr>
<td>Speedballs</td>
</tr>
<tr>
<td>Steroids</td>
</tr>
<tr>
<td>Tuinol</td>
</tr>
</tbody>
</table>

How did you get started using drugs/alcohol?

When you consume alcohol, what do you usually drink (circle)? Beer  Wine  Vodka  Gin  Tequila  Whiskey  Scotch  Rum  Other:

How many drinks do you usually have per day? _________ Per week? _________
How much (name of drug) do you usually have per day? ___________________
Per week? ___________________

How have you ingested (the drug)? Swallow  Smoke  Sniff  Inject  Mix with other

What is the best thing about getting high?

What is your favorite thing to do when drinking or using drugs?

Are there any times you tend to use these substances less? More? When?

Are there any times you have successfully stopped? When? For how long?

How much do you spend each week on your drugs/alcohol?

Do you usually drink/use drugs alone or with others? At home or elsewhere?

What time of day do you usually start using drugs/drinking? Is there a pattern to your use?

What effects does drinking/using drugs have on you? (circle)
Feel happier     Feel more important     Feel more alert     Reduces physical discomfort     Increased irritability     Less shy     Think more clearly     More creative
Have more fun     Reduce stress/tension     Help to sleep     Relax socially
Express self more easily     Avoid negative emotions (depression, anger, grief, boredom)     Forget something that happened     Concentrate better

Have you ever experienced any of the following symptoms when you use drugs or alcohol (circle)?
Seizures     Blackouts     Hallucinations     Paranoia     Personality changes
Decreased need for sleep     Increased aggression     Increased sexual arousal
Severe weight loss     Ulcers or other stomach problems     Headaches
Excessive bleeding     Sinus problems     Heart palpitations     Suicidal thoughts
Panic attacks     Memory problems     Depression     Loss of sex drive
Sex with strangers     Other: _______________________________
Do you or have you ever experienced any physical symptoms when you try to stop drinking or use drugs?  Yes  No  
If so, which ones?  
- Shakes/tremors  
- Sweating  
- Seizures  
- Continuous vomiting  
- Sleeplessness  
- Disorientation  
- Hallucinations  
- Depression  
- Hypersomnia  
- Increased appetite  
Other: ________________________

Do you gamble when you drink or use drugs?  Yes  No  
Is your gambling out of control or excessive?  Yes  No  
Have you ever had an eating disorder (bulimia, anorexia, obesity)?  Yes  No  

### Part II: Family History

Which family members have had a drug or alcohol problem (circle)?
- None
- Mother
- Father
- Brother(s)
- Sister(s)
- Stepparent
- Grandparent
- Uncle/Aunt

How were you affected by your family member’s drug abuse?

Does anyone in your current household use drugs or drink?  Yes  No  
If so, who?

Do most of your friends drink or use drugs?  Yes  No  

### Part III: Consequences Related to Alcohol or Drug Use

Please circle any problems that have persisted following your use of drugs or alcohol:
- Hepatitis or liver problems
- Persistent cough
- Hallucinations
- Strange thoughts
- Congestion or wheezing
- Heart problems
- Depression
- Mania
- Loss of sex drive
Please circle any social or relationship problems that have resulted from your use of alcohol or drugs:
Arguments with spouse or partner  Thrown out of house  Social isolation
Arguments with parents or siblings  Loss of friends  Spouse or partner left you
Other: ________________________________

Please circle any job or financial problems caused or worsened by your use of drugs or alcohol:
Lost a job  Less productive at work  Behind in paying bills  Late to work  In debt  Missed days at work  Missed opportunities for raise or promotion
Other: ________________________________

Please circle any legal problems caused or worsened by your use of alcohol or drugs:
Arrest for possession  Arrest for forging prescriptions
Auto accident while intoxicated  Arrested for assault
Arrested for embezzlement or forgery  Arrested for selling drugs
Arrested for driving under the influence  Arrested for theft or robbery

**Part IV: Treatment History**

Have you ever attended a 12-step program?  Yes  No
Have you ever attended an outpatient program for drugs or alcohol?  Yes  No
Have you ever been treated in an inpatient facility for drugs or alcohol?  Yes  No
Have you ever been given a medication to help you abstain from drinking or using drugs?  Yes  No
Have you ever been treated in an emergency room for a drug overdose or alcohol poisoning?  Yes  No
Have you ever made a suicide attempt while intoxicated or using?  Yes  No
What is the longest you have been able to stop drinking/using drugs?

How were you able to remain abstinent or sober this long?

Why do you want to stop drinking or using drugs?

What do you think will happen if you do not stop drinking or using drugs?
<table>
<thead>
<tr>
<th>Part V: True/False Questions</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>I drink/use drugs when I feel anxious.</td>
<td>True</td>
<td>False</td>
</tr>
<tr>
<td>I often try to hide or minimize my drinking/drug use.</td>
<td>True</td>
<td>False</td>
</tr>
<tr>
<td>Many of my friends drink or use drugs.</td>
<td>True</td>
<td>False</td>
</tr>
<tr>
<td>I sell, or used to sell drugs.</td>
<td>True</td>
<td>False</td>
</tr>
<tr>
<td>I would never consider going to a 12-step program.</td>
<td>True</td>
<td>False</td>
</tr>
<tr>
<td>Drinking or using drugs has never really caused me any problems.</td>
<td>True</td>
<td>False</td>
</tr>
<tr>
<td>I have tried to stop using drugs/drinking in the past.</td>
<td>True</td>
<td>False</td>
</tr>
<tr>
<td>I drink/use drugs when I feel depressed.</td>
<td>True</td>
<td>False</td>
</tr>
<tr>
<td>When I drink, I usually get drunk.</td>
<td>True</td>
<td>False</td>
</tr>
<tr>
<td>I feel more confident when I drink or use drugs.</td>
<td>True</td>
<td>False</td>
</tr>
<tr>
<td>Sometimes I use drugs or drink in the morning.</td>
<td>True</td>
<td>False</td>
</tr>
<tr>
<td>Friends or family have told me I should stop drinking or using drugs.</td>
<td>True</td>
<td>False</td>
</tr>
<tr>
<td>I spend too much time thinking about drinking or using drugs.</td>
<td>True</td>
<td>False</td>
</tr>
<tr>
<td>I become very anxious if I am unable to have a drink or do drugs.</td>
<td>True</td>
<td>False</td>
</tr>
<tr>
<td>I have never stolen in order to buy drugs or alcohol.</td>
<td>True</td>
<td>False</td>
</tr>
<tr>
<td>I am an alcoholic.</td>
<td>True</td>
<td>False</td>
</tr>
<tr>
<td>I am a drug addict.</td>
<td>True</td>
<td>False</td>
</tr>
<tr>
<td>I have experienced the need to use more drugs to get the effect I had the first time I used them.</td>
<td>True</td>
<td>False</td>
</tr>
<tr>
<td>If I stopped using drugs or drinking, I would lose many of my friends.</td>
<td>True</td>
<td>False</td>
</tr>
<tr>
<td>I am not a religious person.</td>
<td>True</td>
<td>False</td>
</tr>
<tr>
<td>I think better when I have a few drinks or use drugs.</td>
<td>True</td>
<td>False</td>
</tr>
<tr>
<td>I enjoy sex more when I’m high.</td>
<td>True</td>
<td>False</td>
</tr>
<tr>
<td>Drinking or using drugs helps me forget about my problems and relax.</td>
<td>True</td>
<td>False</td>
</tr>
<tr>
<td>I have never used drugs and alcohol at the same time.</td>
<td>True</td>
<td>False</td>
</tr>
<tr>
<td>I have sometimes alternated taking uppers and downers.</td>
<td>True</td>
<td>False</td>
</tr>
</tbody>
</table>
Patient And Provider Relationship

A crucial element in the assessment process is the relationship between the patient and the provider. Patients are often hesitant to disclose their substance abuse status, and will experience even greater difficulty if the relationship with the clinician is lacking (68). It is the responsibility of the provider to establish a relationship with the patient and maintain a treatment environment that provides the greatest opportunity for success. Therefore, the approach and attitude of the provider is an important element in the treatment process.

Clinicians, physicians, and other practitioners should approach patients who have an addiction in an honest and respectful manner (69). It is the responsibility of the provider to deal appropriately with his or her own attitudes and emotional reactions to a patient. For assessment to be effective, personal biases and opinions about drug use, individuals who have addictions, sexual behavior, lifestyle differences, and other emotionally laden issues must be set aside or dealt with openly and therapeutically (56).

Certain characteristics of treatment providers facilitate effective evaluation and treatment of addiction. The following is a list of the attributes of an effective addiction treatment provider: (70)

- Ability to establish a helping alliance
- Good interpersonal skills
- Non-possessive warmth
- Friendliness
- Genuineness
- Respect
- Affirmation
• Empathy
• Supportive style
• Patient-centered approach
• Reflective listening
• Targeted, open-ended questions about the use of drugs and alcohol will elicit more information than simple, closed-ended, “yes” or “no” or single-answer questions (see below).

The success of the structured interview relies greatly on the type of questions asked. Most patients are willing and able to provide reliable, factual information regarding their drug use; however, many cannot articulate their reasons or motivation for using drugs. An effective interview should focus on drug use, patterns and consequences of use, past attempts to deal with problems, medical and psychiatric history (the “what, who, when, where, how”) — not on the reasons (the “why”) of addiction problems. Questions should be asked in a direct and straightforward manner, using simple language and avoiding street terms. Assumptive or quantifiable questions, as shown in the section below, yield more accurate responses in the initial phases of the interview (71, 72).

Targeted, Open-Ended Questions About Drug and Alcohol Use:

• “How has heroin use affected your life?”
• “How has hydrocodone affected your life?”
• “In the past, what factors have helped you stop using?”
• “What specific concerns do you have today?”
Quantifiable Interview Questions:
- “At what age did you first use alcohol or other drugs?”
- “How many days of the week do you drink alcohol?”
- “How often do you use heroin?”
- “When was the last time you were high?”
- “How many times did you use last month?”

Comprehensive Health History

A key component of the structured interview involves a thorough and comprehensive medical, social, and drug use history. This is crucial for determining the patient’s use patterns and previous attempts at recovery.

Components of a complete substance abuse assessment history include the following: (73)
- Substance use history (e.g., age of first time substances used, change in effects over time, history of tolerance, overdose, withdrawal, attempts to quit, current problems with compulsivity or cravings)
- Addiction treatment history (e.g., previous treatments for addiction, types of treatments tried, outcomes of treatment attempts)
- Psychiatric history (e.g., patient’s diagnoses, psychiatric treatments recommended or attempted, outcomes of treatments)
• Family history (e.g., substance use disorders in family, family medical and psychiatric history)

• Medical history (e.g., detailed review of systems, past medical or surgical history, sexual history [for women, determine likelihood of pregnancy], current and past medications, pain history)

• Social history (e.g., quality of recovery environment, family or living environment, substance use by members of support network)

• Readiness to change (e.g., patient’s understanding of his or her substance use problem, stage of change the patient is in, patient’s current interest in treatment, whether treatment is coerced or voluntary).

**Laboratory tests**

An important element in the assessment process is laboratory testing. While laboratory tests are not used to diagnose addiction, they will help determine the physical status of the patient and guide treatment decisions. They will also provide a baseline evaluation for future treatment monitoring (74).

The following is a list of the various laboratory tests that may be used in patient assessment. However, it is important to note that the specific tests used will vary between patients. Some substances have a greater physical impact on the patient and will require more extensive screening than other substances. It is important that the
necessary laboratory tests be identified by the provider during the interview process (75). Primary laboratory tests include:

- Serum electrolytes
- BUN and creatinine
- CBC with differential and platelet count
- Liver function tests (GGT, AST, ALT, PT or INR, albumin)
- Lipid profile
- Urinalysis
- Pregnancy test (for women of childbearing age)
- Toxicology tests for drugs of abuse
- Hepatitis B and C screens

The following additional laboratory evaluations should be considered and offered as indicated: (56)

- Blood alcohol level (using a breath testing instrument or a blood sample)

- Infectious disease evaluation:
  - HIV antibody testing
  - Hepatitis B virus (HBV) and hepatitis C virus (HCV) screens
  - Serology test for syphilis—Venereal Disease Research Laboratories (VDRL)
  - Purified protein derivative (PPD) test for tuberculosis, preferably with control skin tests

In addition to the laboratory test listed above, additional laboratory screens may be required based upon the patient’s medical and/or substance use history, as well as the physical examination. If other conditions or medical problems are identified, those should be
addressed and treated alongside the substance abuse treatment. Laboratory findings are especially relevant in polysubstance abuse cases, as the presence of certain conditions or complications may affect treatment (74).

**Physical examination**

Every patient assessment should include a thorough physical examination to identify any medical complications related to substance abuse. This is necessary for three reasons: (76)

1) The patient may be suffering from physical complications that require immediate medical attention. This is especially common in patients who have been using opioids.

2) The patient may have a medical condition that can be exacerbated by detoxification or medication assisted therapy. Prior to starting either, it is important to determine the patient’s physical status.

3) Several physical findings may lead the health provider to suspect addiction in patients who deny drug use or have equivocal screening results.

The following includes aspects of the physical examination and findings suggestive of addiction or its complications. (56)

- **General:**
  - Odor of alcohol on breath
  - Odor of marijuana on clothing
  - Odor of nicotine or smoke on breath or clothing
o Poor nutritional status
o Poor personal hygiene

• Behavior:
  o Intoxicated behavior during exam
  o Slurred speech
  o Staggering gait
  o Scratching

• Skin:
  o Signs of physical injury
  o Bruises
  o Lacerations
  o Scratches
  o Burns
  o Needle marks
  o Skin abscesses
  o Cellulitis
  o Jaundice
  o Palmar erythema
  o Hair loss
  o Diaphoresis
  o Rash
  o Puffy hands

• Head, Eyes, Ears, Nose, Throat (HEENT):
  o Conjunctival irritation or injection
  o Inflamed nasal mucosa
  o Perforated nasal septum
- Blanched nasal septum
- Sinus tenderness
- Gum disease, gingivitis
- Gingival ulceration
- Rhinitis
- Sinusitis
- Pale mucosae
- Burns in oral cavity

- Gastrointestinal:
  - Hepatomegaly
  - Liver tenderness
  - Positive stool hemoccult

- Immune:
  - Lymphadenopathy

- Cardiovascular:
  - Hypertension
  - Tachycardia
  - Cardiac arrhythmia
  - Heart murmurs, clicks
  - Edema
  - Swelling

- Pulmonary:
  - Wheezing, rales, rhonchi
  - Cough
  - Respiratory depression
• Female reproductive/endocrine:
  o Pelvic tenderness
  o Vaginal discharge

• Male reproductive/endocrine:
  o Testicular atrophy
  o Penile discharge
  o Gynecomastia

• Neurologic:
  o Sensory impairment
  o Memory impairment
  o Motor impairment
  o Ophthalmoplegia
  o Myopathy
  o Neuropathy
  o Tremor
  o Cognitive deficits
  o Ataxia
  o Pupillary dilation or constriction

**Polysubstance Abuse Evaluation Factors**

There are a number of evaluation factors that should be considered when assessing a patient with suspected polysubstance abuse problems. The following section provides an overview of the specific factors that should be considered and the rationale.
Substances consumed

It is important to understand and be able to identify the various drugs that may be abused. The following chart, from the National Institute on Drug Abuse, is provided here as a quick reference for clinicians. The chart outlines the different substances, commercial and street names, Drug Enforcement Administration (DEA) schedule, and how the substances are used (77) (refer to pages 67 – 76).

Tobacco

<table>
<thead>
<tr>
<th>Category &amp; Name</th>
<th>Examples of Commercial &amp; Street Names</th>
<th>DEA Schedule</th>
<th>How Administered</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nicotine</td>
<td>Found in cigarettes, cigars, bidis, and smokeless tobacco (snuff, spit tobacco, chew)</td>
<td>Not scheduled</td>
<td>Smoked, snorted, chewed</td>
</tr>
</tbody>
</table>

Alcohol

<table>
<thead>
<tr>
<th>Category &amp; Name</th>
<th>Examples of Commercial &amp; Street Names</th>
<th>DEA Schedule</th>
<th>How Administered</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcohol (ethyl alcohol)</td>
<td>Found in liquor, beer, and wine</td>
<td>Not scheduled</td>
<td>Swallowed</td>
</tr>
</tbody>
</table>

Cannabinoids

<table>
<thead>
<tr>
<th>Category &amp; Name</th>
<th>Examples of Commercial &amp; Street Names</th>
<th>DEA Schedule</th>
<th>How Administered</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marijuana</td>
<td>Blunt, dope, ganja, grass, herb, joint, bud, Mary Jane, pot, reefer, green trees, smoke, sinsemilla, skunk, weed</td>
<td>Schedule I drugs have a high potential for abuse. They require greater storage security and have a quota on</td>
<td>Smoked, swallowed</td>
</tr>
</tbody>
</table>
Schedule I drugs have a high potential for abuse. They require greater storage security and have a quota on manufacturing, among other restrictions. Schedule I drugs are available for research only and have no approved medical use.

### Hashish

**Examples of Commercial & Street Names**
- Boom, gangster, hash, hash oil, hemp

**How Administered**
- Smoked, swallowed

### Opioids

<table>
<thead>
<tr>
<th>Category &amp; Name</th>
<th>Examples of Commercial &amp; Street Names</th>
<th>DEA Schedule</th>
<th>How Administered</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heroin</td>
<td><em>Diacetylmorphine</em>: smack, horse, brown sugar, dope, H, junk, skag, skunk, white horse, China white; cheese (with OTC cold medicine and antihistamine)</td>
<td>Schedule I drugs have a high potential for abuse. They require greater storage security and have a quota on manufacturing, among other restrictions. Schedule I drugs are available for research only and have no approved medical use.</td>
<td>Injected, smoked, snorted</td>
</tr>
</tbody>
</table>
Opium

Laudanum, paregoric: big O, black stuff, block, gum, hop

Schedule II drugs have a high potential for abuse. They require greater storage security and have a quota on manufacturing, among other restrictions. Schedule II drugs are available only by prescription (nonrefillable) and require a form for ordering. Schedule III drugs are available by prescription, may have five refills in 6 months, and may be ordered orally. Some Schedule V drugs are available over the counter.

Stimulants

<table>
<thead>
<tr>
<th>Category &amp; Name</th>
<th>Examples of Commercial &amp; Street Names</th>
<th>DEA Schedule</th>
<th>How Administered</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cocaine</td>
<td>Cocaine hydrochloride: blow, bump, C, candy, Charlie, coke, crack, flake, rock, snow, toot</td>
<td>Schedule II drugs have a high potential for abuse. They require greater storage security and have a quota on manufacturing, among other restrictions. Schedule II drugs are available only by prescription</td>
<td>snorted, smoked, injected</td>
</tr>
<tr>
<td>Amphetamine</td>
<td>Biphetamine, Dexedrine: bennies, black beauties, crosses, hearts, LA turnaround, speed, truck drivers, uppers</td>
<td>Schedule II drugs have a high potential for abuse. They require greater storage security and have a quota on manufacturing, among other restrictions. Schedule II drugs are available only by prescription (nonrefillable) and require a form for ordering.</td>
<td></td>
</tr>
<tr>
<td>-------------</td>
<td>-------------------------------------------------</td>
<td>--------------------------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Methamphetamine</td>
<td>Desoxyn: meth, ice, crank, chalk, crystal, fire, glass, go fast, speed</td>
<td>Schedule II drugs have a high potential for abuse. They require greater storage security and have a quota on manufacturing, among other restrictions. Schedule II drugs are available only by prescription (nonrefillable) and require a form for ordering.</td>
<td></td>
</tr>
</tbody>
</table>
### Club Drugs

<table>
<thead>
<tr>
<th>Category &amp; Name</th>
<th>Examples of Commercial &amp; Street Names</th>
<th>DEA Schedule</th>
<th>How Administered</th>
</tr>
</thead>
<tbody>
<tr>
<td>MDMA</td>
<td>Ecstasy, Adam, clarity, Eve, lover's speed, peace, uppers</td>
<td>Schedule I drugs have a high potential for abuse. They require greater storage security and have a quota on manufacturing, among other restrictions.</td>
<td>swallowed, snorted, injected</td>
</tr>
<tr>
<td>Flunitrazepam **</td>
<td><strong>Rohypnol</strong>: forget-me pill, Mexican Valium, R2, roach, Roche, roofies, roofinol, rope, rophies</td>
<td>Schedule IV drugs are available by prescription; five refills in 6 months, and may be ordered orally.</td>
<td>swallowed, snorted</td>
</tr>
<tr>
<td>GHB **</td>
<td><strong>Gamma-hydroxybutyrate</strong>: G, Georgia home boy, grievous bodily harm, liquid ecstasy, soap, scoop, goop, liquid X</td>
<td>Schedule I drugs have a high potential for abuse. Require greater storage security; have a quota on manufacturing; are available for research only and have no approved medical use.</td>
<td>swallowed</td>
</tr>
</tbody>
</table>
### Dissociative Drugs

<table>
<thead>
<tr>
<th>Category &amp; Name</th>
<th>Examples of Commercial &amp; Street Names</th>
<th>DEA Schedule</th>
<th>How Administered</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ketamine</td>
<td><em>Ketalar SV</em>: cat Valium, K, Special K, vitamin K</td>
<td>Schedule III drugs are available by prescription, may have five refills in 6 months, and may be ordered orally.</td>
<td>Injected, snorted, smoked</td>
</tr>
<tr>
<td>PCP and analogs</td>
<td><em>Phencyclidine</em>: angel dust, boat, hog, love boat, peace pill</td>
<td>Schedule I &amp; II drugs have a high potential for abuse. They require greater storage security &amp; have a quota on manufacturing. Schedule I drugs are available for research only &amp; have no approved medical use; Schedule II drugs are only by prescription.</td>
<td>Swallowed, smoked, injected</td>
</tr>
<tr>
<td>Salvia divinorum</td>
<td>Salvia, Shepherdess’s Herb, Maria Pastora, magic mint, Sally-D</td>
<td>Not Scheduled</td>
<td>Chewed, swallowed, smoked</td>
</tr>
<tr>
<td>Dextromethorphan (DXM)</td>
<td>Found in some cough and cold medications: Robotripping, Robo, Triple C</td>
<td>Not Scheduled</td>
<td>Swallowed</td>
</tr>
<tr>
<td>Category &amp; Name</td>
<td>Examples of Commercial &amp; Street Names</td>
<td>DEA Schedule</td>
<td>How Administered</td>
</tr>
<tr>
<td>-----------------</td>
<td>---------------------------------------</td>
<td>--------------</td>
<td>------------------</td>
</tr>
<tr>
<td>LSD</td>
<td>Lysergic acid diethylamide: acid, blotter, cubes, microdot, yellow sunshine, blue heaven</td>
<td>Schedule I drugs have a high potential for abuse. They require greater storage security and have a quota on manufacturing, among other restrictions. Schedule I drugs are available for research only and have no approved medical use.</td>
<td>swallowed, absorbed through mouth tissues</td>
</tr>
<tr>
<td>Mescaline</td>
<td>Buttons, cactus, mesc, peyote</td>
<td>Schedule I drugs have a high potential for abuse. They require greater storage security and have a quota on manufacturing, among other restrictions. Schedule I drugs are available for research only and have no approved medical use.</td>
<td>swallowed, smoked</td>
</tr>
<tr>
<td>Psilocybin</td>
<td>Magic mushrooms, purple passion, shrooms, little smoke</td>
<td>Schedule I drugs have a high potential for abuse. They require greater storage security and have a quota on</td>
<td>swallowed</td>
</tr>
</tbody>
</table>
Other Compounds

<table>
<thead>
<tr>
<th>Category &amp; Name</th>
<th>Examples of Commercial &amp; Street Names</th>
<th>DEA Schedule</th>
<th>How Administered</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anabolic steroids</td>
<td>Anadrol, Oxandrin, Durabolin, Depo-Testosterone, Equipoise: roids, juice, gym candy, pumpers</td>
<td>Schedule III drugs are available by prescription, may have five refills in 6 months, and may be ordered orally.</td>
<td>Injected, swallowed, applied to skin</td>
</tr>
<tr>
<td>Inhalants</td>
<td>Solvents (paint thinners, gasoline, glues); gases (butane, propane, aerosol propellants, nitrous oxide); nitrites (isoamyl, isobutyl, cyclohexyl): laughing gas, poppers, snappers, whippets</td>
<td>Not scheduled</td>
<td>Inhaled through nose or mouth</td>
</tr>
</tbody>
</table>

In addition to the substances listed above, many individuals abuse prescription drugs. Prescription drug abuse and drug diversion is a significant problem that affects numerous individuals. As the availability and scope of prescription drugs has expanded to include a range of opiates, non-opiate depressants, stimulants, and potent cold
medicines so has the dependence on these substances and the tendency to use them recreationally.

Drug diversion can occur with a wide range of drugs. However, it is most common for diverters to seek out drugs in the categories listed below: (78)

- Opioids
- Pseudoephedrine and Ephedrine
- Dextromethorphan
- Central Nervous System Depressants
- Stimulants

**Physical effects and organ damage**

The cause and effect relationship between drug abuse and specific medical syndromes may not always be clear. Yet, there are certain generalizations that can be made between specific drugs, or drug groups, and related medical problems.

In general, the following medical problems, described on a drug-group by drug-group basis, may occur as a result of abuse or addiction. The examining provider should investigate a medical problem potentially linked to substance abuse and closely consider the patient's use of psychoactive substances, including alcohol and tobacco (79). The following table outlines particular substance abuse and physical conditions associated with each.
<table>
<thead>
<tr>
<th>ALCOHOL-RELATED PROBLEMS</th>
<th>Malnutrition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcohols and other addicts entering treatment may present with malnutrition. They may require a formal nutritional assessment in some cases, however, height/weight ratio and serum albumen will be sufficient in most cases. Multivitamins and thiamin are generally a good addition during and after detoxification, while other supplements, such as niacin, pyridoxine, folic acid, and/or magnesium may be called for. Care should be taken in supplementing vitamin A, toxic in high doses, and calcium and vitamin D for possible hypercalcemia and calcium nephrolithiasis. Ideally, a dietitian/nutritionist should be part of the treatment team.</td>
<td></td>
</tr>
</tbody>
</table>

**Neurological Problems**

Neurological problems may include periods of memory loss, or blackouts during heavy drinking episodes. Wernicke-Korsakoi syndrome and dementia are common, but care should be taken to distinguish alcohol-induced dementia and such other causes as hypothyroidism, syphilis, vitamin B12 deficiency, lesions of the central nervous system (CNS), infections, or degenerative conditions.

Other alcohol related problems may include alcoholic cerebellar degeneration, marchiafava-bignami disease and other degenerations of the corpus callosum, central pontine myelinolysis, and such neuropathies as tobacco alcohol amblyopia (producing double vision and decreased acuity) sensory neuropathy (presenting with burning dysesthesias of the feet and hands), motor neuropathy (proximal weakness) and autonomic neuropathy (with abnormalities). The most common neurologic problems involve orthostatic hypotension and possible seizures, but prescribing drugs that reduce seizure threshold should be done with care. Underlying hypertension and coagulopathies may lead to hemorrhagic and thrombotic strokes.
**Gastrointestinal System**
Alcohol is particularly irritating to the gastrointestinal (GI) system and can produce stomatitis, esophagitis, gastritis and duodenitis, exacerbate and retard healing of peptic ulcers and promote the development of Helicobacter pylori. Patients with dysphagia, early satiety, early morning abdominal pain, and/or anemia should be evaluated for alcoholism.

**Hepatic Problems**
The liver, which does much of the work in digesting alcohol, is highly vulnerable to acute fatty metamorphosis, alcoholic hepatitis, perivenular fibrosis, and cirrhosis. Enzyme studies should be repeated every 2 to 4 weeks with such patients.

**Hematological Problems**
Alcohol can produce a variety of anemias: microcytic from upper gastrointestinal blood loss and iron deficiency, macrocytic secondary to membrane defects, premature release of red cells from bone marrow, liver disease or folate deficiency, or normochromic secondary to marrow suppression and/or chronic disease. Mild thrombocytopenia is often seen in alcoholics and usually returns to normal within a week of abstinence.

**Cardiovascular Problems**
Alcohol ingestion can result in supraventricular arrhythmias, including paroxysmal atrial fibrillation or `holiday heart." Increased levels of catecholamines during withdrawal can precipitate supraventricular and ventricular arrhythmias. Long-term heavy drinking can result in congestive cardiomyopathy characterized by signs of congestion including insidious but progressive dyspnea, intolerance to exercise and edema. Chronic alcohol use is also associated with arterial hypertension, while withdrawal can significantly elevate blood pressure.
Endocrine, Metabolic, and Miscellaneous Problems

Various endocrine and metabolic comorbidities can result from acute alcohol ingestion, which may produce pyertriglyceridemia, lipemic serum and in some, painful abdominal crises. Hyperuricemia resulting in gout and other sequelae may occur when alcohol interferes with urate excretion, while a myriad of metabolic imbalances including hypoglycemia, inhibited vasopressin levels and elevated release of corticotrophin may occur. Loss of magnesium through increased urination may reduce parathyroid hormone secretion and hypocalcemia, while loss of both magnesium and calcium can lead to muscle weakness, tetany, seizures, and cardiac arrhythmias.

Production of male and female sex hormones can be reduced, resulting in impaired fertility, menstrual irregularities or amenorrhea in women and decreased spermatogenesis, infertility and erectile dysfunction in men.

Miscellaneous problems related to alcohol addiction include aspiration pneumonia, nocturnal sleep apnea, long abscess, pulmonary tuberculosis, acute and chronic myopathy, rhabdomyolysis, myoglobinuria, hypophosphatemia, osteoporosis with resulting fractures, and a number of cancers, including oropharyngeal, esophageal, gastric, pancreatic, hepatic, colon, and breast cancer.

OTHER SEDATIVE-HYPNOTIC DRUGS

While these drugs have similar effects to those of alcohol, they have not been identified with the scope of related medical problems that alcohol has. One property that can be considered a sequelae is the synchronistic effect these drugs may have when taken with alcohol or one another.

Essentially, drugs such as the benzodiazepines, which may be safe at relatively high dosages when taken on their own, can
become deadly when taken in combination with alcohol or other drugs in this group, producing respiratory depression, coma and death. This reaction has to do with variable rates of metabolization and how these affect blood-brain levels of different drugs. The liver is preferential in its digestion of certain chemicals, and given a choice between breaking down alcohol and a benzodiazepine it will concentrate on the alcohol, allowing the benzodiazepine to build up to a potentially fatal level in the brain.

Sedative hypnotics can produce cognitive impairments including amnesia, visual tracking, and reflex responses. Meprobamate overdose can cause a gelatinous bezoar in the gut that may require endoscopic removal, while glutethimide can produce marrow suppression and pancytopenia.

**OPIOIDS**

Aside from causing sedation and constipation, opioids are relatively non-toxic when used as prescribed. In abuse, non-cardiac pulmonary edema and heroin-induced nephropathy with glomerulonephritis leading to renal insufficiency, and various neurological syndromes including multifocal leukoencephalopathy and myelopathies may occur. The metabolites of meperidine, propoxyphene and pentazocine, can result in seizures, even at therapeutic levels.

In the late 1970s, faulty synthesis of a street-preparation of meperidine introduced an industrial neurotoxic called MPPP. That contaminates directly attacked dopamine-producing cells in the *substantia nigra* area of users' brains, producing Parkinson-like sequelae that paralyzed its victims. Parkinson medication provided some relief and paradoxically the cases and a study of the MPPP action provided much information on how Parkinson disease develops.
| STIMULANT DRUGS | Cocaine and other stimulants, including amphetamine and methamphetamine are capable of producing serious and extensive organ toxicity. These drugs produce extensive vasoconstriction and can produce profound acute vascular and cardiovascular problems: severe hypertension, cardiac arrhythmias, angina, myocardial infarction, and sudden death are seen as well as cerebrovascular accident with stroke.

Seizures are common with cocaine injection or smoking and may be accompanied by acute hyperthermia, muscle rigidity, severe rhabdomyolysis myoglobinura, and renal failure. Metabolites produced by the combining of cocaine and alcohol may exacerbate these problems.

Chronic nasal insufflation of cocaine can produce ischemic necroses resulting in septum perforation, while smoking can result in reduced pulmonary diffusing capacity with hypoxia and dyspnea and potential pulmonary edema. Other problems can include pneumothorax and pneumomediastinum from vigorous inhalation, pulmonary infarction, alveolar hemorrhage, vascular thrombosis, ischemia of the GI tract and hepatic damage. The main difference between cocaine and the amphetamines is that the latter has a longer half-life or effectiveness and may have correspondingly longer periods of complications. |
<p>| TOBACCO | The smokable stimulant nicotine is in and of itself a systemic poison that can produce or exacerbate a full spectrum of pulmonary diseases including emphysema and lung cancer. It is also responsible for producing cancers of the mouth, esophagus, and other organs. It has also been implicated in a variety of heart ailments. Overall, it has been reported by a number of sources that tobacco is responsible for over 400,000 deaths annually in the United States alone. |</p>
<table>
<thead>
<tr>
<th>MARIJUANA</th>
<th>The smoking of marijuana can produce a variety of respiratory and pulmonary sequelae. Older users may experience tachycardia and angina while increased head and neck cancers have been reported in some users. A number of other problems have been claimed for relation to gonadal dysfunction, immune suppression, and long-term psychiatric problems but such have not been proven.</th>
</tr>
</thead>
<tbody>
<tr>
<td>HALLUCINOGENS</td>
<td>Similarly, medical problems resulting from hallucinogen use appear to be rare. LSD, mescaline, psilocybin, and psilocin may produce tachycardia and the possibility of cerebrovascular constriction. Evidence that MDMA and other psychedelic stimulants may be necrotic to serotonin receptor sites is still controversial. Several deaths have occurred that are related to idiosyncratic reactions to these drugs. The most problems have been seen with phencyclidine (PCP), which is often included with the hallucinogens. Besides severe psychotic reactions, PCP can cause hyperthermia, rhabdomyolysis, renal failure, and intractable seizures.</td>
</tr>
<tr>
<td>INHALANTS</td>
<td>The volatile substances that include organic solvents, anesthetic gases, nitrites, glues, refrigerants, and other industrial materials can produce extreme neurotoxicity up to and including permanent cognitive dysfunction and neuropathy. Propellant fluorocarbons can produce cardiac arrhythmias and sudden death. Paint thinner, gasoline, butane, etc., may produce pulmonary, hepatic, renal, and hematologic toxicity. Misuse of anesthetic gases can cause asphyxiation and arrhythmias. The nitrites can produce profound cyanosis and dyspnea as well as dangerously low blood pressure due to their vasorelaxant properties.</td>
</tr>
</tbody>
</table>
Some of the medical complications found in polysubstance users are the result of needle use or of substances used to cut or bulk out drugs. These complications are responsible for long-term damage to the individual and also provide some of the most easily recognizable signs of substance use: (80)

1) Needle-track scars are caused by unsterile techniques and the injection of fibrogenic particulate matter.

2) Attempts to sterilize the needle by heating the tip with a match causes the deposit of carbon, which causes mild inflammatory reaction; subsequent repeated injection with such a needle causes tattooing or dark pigmentation at the point of entry of the needle. However, macrophages pick up the carbon, and the tracks become progressively lighter. Although most common on the arms, tracks can be found on almost any part of the body, because abusers realize that the arms are the first area to be checked. Even the penile veins have been used for injection. The subcutaneous scars found on the thighs and arms are due to chronic abscesses.

3) Abscess formation (the most common septic problem) is usually easy to recognize. Repeated injections without cleansing the skin around the injection sites produce infections that are most commonly due to skin flora such as staphylococci and streptococci. Anaerobic infections, however, occur at a much higher rate in the drug user who injects. These abscesses may sometimes be recognized by the presence of a foul-smelling discharge, less often by gas formation, and by a bizarre type of cellulitis.
4) Cellulitis is characterized by a stony or wooden-hard tenseness, which progresses rapidly on an extremity, and not necessarily in association with a recent needle puncture or an infected site. Cellulitis occurs when sedative-hypnotics are injected subcutaneously. The tissue becomes reddened, hot, painful, and swollen.

5) Another complication in an extremity may be caused by intra-arterial injection. Intense pain is usually produced distal to the site of injection. Swelling, cyanosis, and coldness of the extremity indicate the onset of a medical emergency. If this condition is untreated, gangrene of the hands or fingers may develop with consequent loss of these parts.

6) Camptodactyly or permanent flexion of the fingers can result from recurrent use of the hand veins for injection. Irreversible contracture of the fingers and lymphedema may result.

**Mental Illness And Polysubstance Abuse**

Individuals with mental illness are at an increased risk of developing substance abuse problems, especially if their mental illness is severe. Substance abuse is highest among individuals with schizophrenia, bipolar disorder, depression, and other similar conditions (81). Individuals who have mood or anxiety disorders are twice as likely to develop some form of substance abuse disorder. These individuals are especially prone to nicotine dependence. According to the 2010 National Survey on Drug Use and Health, there were 9.2 million adults who have both mental illness and substance use disorders (82).
According to recent data, people with severe mental illness were about 4 times more likely to be heavy alcohol users (four or more drinks per day); 3.5 times more likely to use marijuana regularly (21 times per year); and 4.6 times more likely to use other drugs at least 10 times in their lives. Patients with severe mental illness were 5.1 times more likely to be daily smokers (83). The psychiatric disorders most often seen in dual diagnosis in combination with drug abuse are: (84)

- major depression
- schizophrenia (thought disorder)
- bipolar disorder (manic-depression)

Many treatment professionals also include other mental disorders in their definition of dual diagnosis. These include: (85)

- anxiety disorders, e.g., panic disorders, obsessive compulsive disorders, post-traumatic stress syndromes
- organic disorders
- attention deficit hyperactivity disorder (ADHD)
- developmental disorders
- somatoform disorders
- rage disorders
- other disorders, such as sexual dysfunction and anorexia

**Four patterns of dual diagnosis**

Psychoactive substance use can be related to four different patterns of dual diagnosis (86). These are listed below as:
1. Pre-existing mental illness:
   One kind of dual diagnosis involves the person who has a clearly defined mental illness and then gets involved in drugs, for example the teen with major depression that discovers amphetamines.

2. Potential mental illness:
   Another kind of dual diagnosis associated with the use of psychoactive drugs occurs when there might be an underlying psychiatric problem that is not fully developed as yet. There is no clear-cut depression nor clear-cut schizophrenia before drug use begins. There may be some unusual thought patterns but these are not significant enough to be recognized as a mental illness. When that person starts to use psychoactive drugs, the effects of those substances activate or accelerate the development of the underlying mental disturbance.

3. Permanent drug-induced mental illness:
   The third kind of dual diagnosis happens when there is not a pre-existing problem, but as a result of years of use or some extreme reaction to the drug. The user develops a chronic psychiatric problem because the toxic effects of the drug permanently imbalance the brain chemistry.

4. “Temporary" drug-induced mental illness:
   There is a fourth condition that is not really dual diagnosis which occurs when the drug itself or withdrawal from the drug causes a transient depression, temporary psychosis, or other apparent mental illness. The imbalance in the brain chemistry in this type
of diagnosis is usually temporary and, with abstinence, the mental illness will disappear within a few months to a year. This is not true with dual diagnosis but only a temporary condition resulting from the toxic emotional effects of the drug.

The prevalence of dual diagnosis depends on when the diagnosis is made. Since many mental symptoms are a temporary result of drug toxicity or drug withdrawal, an early diagnosis may merely be drug toxicity rather than dual diagnosis. Hence, the prudent chemical dependency clinician treats all dangerous symptoms but holds off making a psychiatric diagnosis until the drug user has had time to get sober and out of a state of drug intoxication or drug withdrawal (87).

The growth of licensed professionals working in the field of chemical dependency treatment has resulted in greater recognition and documentation of dual diagnosis. Increased abuse of cocaine and amphetamines has also increased the problem of dual diagnosis (67). A larger number of substance abusers mean that more of them will also be dual diagnosed. Also, since stimulants are more toxic to brain chemistry than most substances, those with fragile brain chemistry are more likely to be pushed over the edge into chronic neurochemical imbalance and mental illness (88).

It is crucial to the treatment process that an accurate diagnosis for patients with comorbid substance abuse and mental health conditions is made. Part of the diagnosis includes the differentiation between acute primary psychiatric disorders and psychiatric symptoms that may be caused by the use of alcohol and other substances (89). There are several possible relationships between substance use and
psychiatric symptoms and disorders. All of these possible relationships must be considered during the screening and assessment process, and are highlighted below (84).

- Substance use can cause psychiatric symptoms and mimic psychiatric disorders. Acute and chronic substance 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 substance use.

- Acute and chronic substance use can prompt the development, provoke the reemergence, or worsen the severity of psychiatric disorders.

- Substance use can mask psychiatric symptoms and disorders. Individuals may use substances to purposely dampen unwanted psychiatric symptoms and to ameliorate the unwanted side effects of medications. Substance use may inadvertently hide or change the character of psychiatric symptoms and disorders.

- Substance withdrawal can cause psychiatric symptoms and mimic psychiatric syndromes. Cessation of substance 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 substance disorders can coexist. One disorder may prompt the emergence of the other, or the two disorders may exist independently. Determining whether the disorders are
related may be difficult, and may not be of great significance with a patient who has long-standing combined disorders. Consider a 32-year-old patient with bipolar disorder whose first symptoms of alcohol abuse and mania started at age 18, and who continues to experience alcoholism in addition to manic and depressive episodes. At this point, the patient has two well-developed independent disorders that both require treatment.

- Psychiatric behaviors can mimic behaviors associated with substance problems. Dysfunctional and maladaptive behaviors that are consistent with substance 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 substance disorders.

The relationship between substance problems and psychiatric disorders can change over time, and will vary throughout the addiction process. Changes in severity, chronicity, disability, and degree of impairment in functioning are common and must be understood as the patient begins the treatment and recovery process (90). Each condition will have an individual effect on the patient that will range in severity, yet both conditions will also affect the other thereby potentially increasing the severity or extent of the symptoms. The extent and severity of both conditions may change over time, depending on the patient’s status and adherence to treatment and recovery (88).

It is important to note that patients with mental disorders are at an increased risk of developing polysubstance abuse. In addition,
substance users are at an increased risk of developing mental health issues (91). Each condition must be handled accordingly. When working with patients with co-morbid conditions it is important to note the following:

“... compared with patients who have a mental health disorder or an substance use problem alone, patients with dual disorders often experience more severe and chronic medical, social, and emotional problems. Because they have two disorders, they are vulnerable to both substance relapse and a worsening of the psychiatric disorder. Further, addiction relapse often leads to psychiatric decompensation, and worsening of psychiatric problems often leads to addiction relapse. Thus, relapse prevention must be specially designed for patients with dual disorders. Compared with patients who have a single disorder, patients with dual disorders often require longer treatment, have more crises, and progress more gradually in treatment.” (81)

**Mental disorders associated with substance abuse**

*Schizophrenia*

Schizophrenia is a thought disorder and believed to be mostly inherited. It is characterized by: (92)

- hallucinations (false visual, auditory, or tactile sensations and perceptions)
- delusions (false beliefs)
- an inappropriate affect (an illogical emotional response to any situation)
- autistic symptoms (a pronounced detachment from reality)
- ambivalence (difficulty in making even the simplest decisions)
- poor association (difficulty in connecting thoughts and ideas)
- poor job performance
- strained social relations
- an impaired ability to care for oneself

Several substances of abuse can mimic schizophrenia and psychosis, producing symptoms that are easily misdiagnosed. Cocaine and amphetamines, especially when used to excess, will cause a toxic psychosis that is almost indistinguishable from a true paranoid psychosis (93). Steroids can also cause a psychosis. Drug induced paranoia can be indistinguishable from true paranoia. Most drugs, particularly the psychostimulants, such as MDMA (methyleneedioxy-methamphetamine) also known as ecstasy and related stimulant or hallucinogens, including marijuana, can cause paranoia (63).

The psychedelics, such as LSD, peyote, psilocybin (mushroom), and the multi-reaction drug PCP, are known to disassociate users from their surroundings. It is critical that healthcare providers be aware that all hallucinogen abuse can also be mistaken for a thought disorder. Also, withdrawal from depressants or “downers” can be mistaken for a thought disorder because of the extreme agitation that results. Many of the psychiatric symptoms should disappear as the body's drug levels subside upon treatment and detoxification (67).

**Major depression**

Major depression is classified as an affective disorder along with bipolar affective disorder and dysthymia (mild depression). A major depression is likely to be experienced by 1 in 20 individuals in the U.S. during their lifetime (94). It is characterized by the following: (95)
• depressed mood
• diminished interest and diminished pleasure in most activities
• disturbances of sleep patterns and appetite
• decreased ability to concentrate
• feelings of worthlessness
• suicidal thoughts

All of these symptoms may persist without any life situation to provoke them. For an accurate diagnosis to be made, these feelings have to occur every day and most of the day for at least 2 weeks (96). Organic causes, such as an illness or drug abuse, should rule out a diagnosis of major depression, as should natural reactions to the death of a loved one, separation, or a strained relationship. Withdrawal symptoms that occur with most stimulant addictions (cocaine or amphetamine) and the come down or resolution phase of a psychedelic drug, such as LSD, result in temporary drug-induced depression which is almost indistinguishable from that of major depression (97).

Bipolar affective disorder (manic depression)

This illness is characterized by alternating periods of depression, normalcy, and mania. The depression phase is described above. The depression is as severe as any depression seen in psychiatry. If untreated, many bipolar patients frequently attempt suicide. The mania, on the other hand, is characterized by the following mood symptoms and conditions: (94)

• a persistently elevated, expansive, and irritated mood
• inflated self-esteem or grandiosity;
• decreased need for sleep
- more talkative than usual or pressure to keep talking
- flight of ideas
- distractibility
- increase in goal-directed activity or psychomotor agitation
- excessive involvement in pleasurable activities that have a high potential for painful consequences (e.g., drug abuse, gambling, or inappropriate sexual advances)

These mood disturbances are severe enough to cause marked impairment in job, social activities, and relationships. Bipolar affective disorder usually begins in a person during the second decade of life and it affects men and women equally (98). Many researchers believe this disease is genetic. When evaluating a mood disturbance, it is important for the health provider to consider potential toxic effects of stimulants or psychedelic abuse, which often resemble a bipolar disorder. Users experience mood swings, from mania to depression, depending upon the phase of the drug's action, the patient's surroundings, and the patient’s own subconscious beliefs (99).

**Anxiety disorders**

Anxiety disorders are the most common psychiatric disturbances seen in primary practice and are listed as: (100)

- Panic disorder with and without agoraphobia (fear of open spaces);
- Agoraphobia without history of panic disorder (a generalized fear of open spaces);
- Social phobia (fear of being seen by others to act in a humiliating or embarrassing way, such as eating in public);
- Simple phobia (irrational fear of a specific thing or place);
• Obsessive-compulsive disorder (uncontrollable, intrusive thoughts and irresistible, often distressing actions, such as cutting one's hair or repeated hand washing);
• Post-traumatic stress disorder (persistent re-experiencing of the full memory of a stressful event outside usual human experience, e.g., combat, molestation, car crash). It is usually triggered by an environmental stimulus, i.e., when a car backfires causing the combat veteran's mind to relive the stress and memory of combat. This disorder can last a lifetime and be very disabling;
• Generalized anxiety disorder (unrealistic worry about several life situations that lasts for 6 months or more).

It can be extremely difficult to differentiate between anxiety disorders. Many are defined more by symptoms than specific psychiatric categorizations. Some of the more common symptoms in anxiety disorders are shortness of breath, muscle tension, restlessness, stomach irritation, sweating, palpitations, restlessness, hypervigilance, difficulty in concentrating, and excessive worry (101). Often anxiety and depression are mixed together. Some health providers believe that many anxiety disorders are really a symptom of depression (102). Toxic effects of stimulant drugs and withdrawal from opioids, sedatives, and alcohol or other depressant substance, also cause symptoms similar to those described in anxiety disorders and can be easily misdiagnosed as anxiety (103).

Organic mental disorders

These are problems of brain dysfunction brought on by physical changes in the brain caused by aging, miscellaneous diseases, injury
to the brain, or psychoactive drug toxicities. Alzheimer's disease is a condition affecting mostly older individuals. They suffer unusual rapid death of brain cells resulting in memory loss, confusion, and loss of emotion, which leads to gradual loss of the individuals’ ability to care for themselves. Alzheimer’s disease is an example of an organic mental disorder. Mental confusion from heavy marijuana use in an elderly patient may mimic symptoms of this disorder (104).

*Developmental disorders*

Development disorders include conditions such as mental retardation, eating disorders, gender identity disorders, attention deficit disorders, autism spectrum disorders, speech disorders, and disruptive behavior disorders. Heavy and frequent use of psychedelics such as LSD or PCP can be mistaken for developmental disorders (105).

*Somatoform disorders*

These disorders have physical symptoms without a known or discoverable physical cause and are likely to be psychologically caused, such as hypochondria (abnormal anxiety over one's health accompanied by imaginary symptoms of illness). Cocaine, amphetamine, and stimulant psychosis experienced by someone abusing substances create a delusion that the skin is infested with bugs when no infection exists (106).

*Passive-aggressive, antisocial, and borderline personality disorders*

Passive-aggressive, anti-social and personality disorders are characterized by inflexible behavioral patterns that lead to substantial distress or functional impairment. Most individuals with such
behavioral traits exhibit conduct patterns with an angry, hostile tone, and that violate social conventions resulting in negative consequences. Anger is a component of all three of these personality disorders, in addition to chronic feelings of unhappiness and alienation from others, conflicts with authority, and family discord (107). These disorders frequently coexist with substance abuse and are particularly hard to treat because of associated conduct by the substance user that may lead to relapse and disruption to the treatment plan (20).

**Patient commitment**

Patient commitment is a key factor in the assessment and treatment process. If a patient is unwilling to make changes to his or her lifestyle, the chances of recovery are minimal. Detoxification and recovery require a complete modification to the patient’s daily habits and practices, and they will cause significant physical and emotional symptoms that will be difficult for the patient in terms of coping. If a patient is not committed to the process and goals of the treatment plan, he or she will be unable to maintain sobriety throughout the detoxification and treatment process. It is important that the clinician include an assessment of the patient’s commitment level as part of the initial evaluation (108).

**Support system**

Research indicates that patients who have a strong support system will be better able to manage recovery than those who have no support system in place (109). Therefore, part of the initial assessment and evaluation will include attempts to identify and establish a support system for the patient. This system will typically include friends and family members, case managers, self-help groups, and other
individuals who will support the individual throughout the recovery process. In addition to establishing a strong support system, it is important to recognize negative influences in the patient’s life. Many patients will struggle with their recovery when spending time with those that they previously joined in substance abuse activities. Therefore, part of the assessment process includes identifying “triggers” that may cause the patient to resort to using substances.

**SUMMARY**

Substance abuse associated with comorbid physical and psychiatric disorders are a common clinical challenge for the health team. Conditions and corresponding symptoms can change and often vary throughout the addiction diagnosis and treatment planning process. The health team must anticipate changes in the severity, chronicity, disability, and degree of functional impairment in the individual addicted to substances all throughout the treatment and recovery process. Polysubstance abuse treatment and recovery must be individualized to address the range in symptom severity that may occur.

This study discussed additional aspects of the evaluation process important to the development of an individualized substance abuse treatment plan. Polysubstance Abuse Part III will cover approved medical and maintenance treatment programs. Treatment and recovery is presented as an ongoing process that requires continuous monitoring and routine adjustment by the treatment team.

*Please take time to help the NURSECE4LESS.COM course planners evaluate nursing knowledge needs met following completion of this course by completing the self-assessment Knowledge Questions after reading the article. Correct Answers, pg 56.*
1. Components of the assessment of a patient with polysubstance abuse include:
   a. Complete history
   b. Physical examination
   c. Mental status examination
   d. All of the above

2. True or False. The transtheoretical model targets specific questions and responses to the stages of change during the diagnostic interview.
   a. True
   b. False

3. Drug diversion most commonly occur in drug categories except:
   a. Opioids
   b. Central Nervous System Depressants
   c. Stimulants
   d. Selective Serotonin Reuptake Inhibitors (SSRIs)

4. A psychiatric disorder not commonly seen in dual diagnosis in combination with drug abuse is:
   a. major depression
   b. anorexia nervosa
   c. schizophrenia
   d. bipolar disorder

5. True or False. It is important that the clinician include an assessment of the patient’s commitment level as part of the initial evaluation.
   a. True
   b. False
Correct Answers:

1. d
2. a
3. d
4. b
5. a
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