

TABLE 289-2 Errors and Cautions in the Diagnosis of Conversion Disorders

- Misdiagnosis based upon physician errors
- A finding in the evaluation is "unbelievable."
- A finding has "never been seen before" by the examiner.
- A finding is nonanatomic.
- The examination is inconsistent, effort is poor, classic feigning signs are present (Table 288-1).
- The patient exhibits *la belle indifférence*.
- There is an "obvious" psychological explanation.

Cautions to avoid misdiagnosis

- Neurologic symptoms can be bizarre.
- A physician's "neurologic clinical experience" may be limited.
- A physician may be unfamiliar with true anatomic pathology.
- There are many reasons for inconsistent effort, including neurologic pathology and examiner input.
- *La belle indifférence* may be the expression of neurologic problems or due simply to individual variation.
- Physicians often fall into the trap of jumping to a psychological explanation for a confusing entity.
- Avoid giving unnecessary thrombolytics to patients with conversion disorder presenting as stroke.

Some patients develop a chronic form of the disorder with complications, including contractures and atrophy of muscle groups. In addition, unnecessary diagnostic tests may lead to iatrogenic complications.

REFERENCES

The complete reference list is available on the included DVD or online at www.TintinalliEM.com

CHAPTER**289****Alcohol and Other Drugs of Abuse**

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In EDs around the world, on every shift, patients present for our care because of the consequences of unhealthy drinking or drug use. Sometimes, the cause of the presenting problem is obvious, but, just as often, the connection of substance use with its medical consequences remains undiscovered. Emergency physicians are experts in stabilization, diagnosis, and treatment of acute alcohol and drug emergencies and their secondary complications, but often fail to ask about drinking and substance abuse. ED failure to screen and detect substance abuse could contribute significantly to adverse drug reactions or delays in instituting appropriate treatment. Management and disposition are often challenging and frustrating because of factors outside our control that co-vary with unhealthy alcohol and drug use, such as psychiatric illness, homelessness, low level of health literacy, lack of insurance coverage or ability to pay for medications, criminal justice involvement, and absence of family support for caregiving.

The scope of substance abuse includes alcohol, even in moderate drinkers; illicit drugs; and nonmedicinal use of prescription drugs. Treatment for substance abuse is as effective as treatment for diabetes, hypertension, and other chronic diseases,¹ but only a small fraction of those needing

treatment actually get it.² Over the last 25 years, the science of addiction has evolved and encouraged us to view substance abuse as a chronic medical problem, much like asthma, hypertension, and diabetes. Addiction is thought to result from the interaction of (1) genes with the environment, (2) the duration and intensity of drug exposure, and (3) an individual's balance between personal risk and socioeconomic protective factors in the home, school, and community. Emergency medicine now faces the challenge to bring our practice in line with the current scientific knowledge of addiction and other alcohol and drug use disorders.

This chapter covers the definitions of alcohol and substance abuse, acute treatment of withdrawal, and guidelines for referral for detoxification and rehabilitation.

DEFINITIONS**■ UNHEALTHY ALCOHOL USE**

The term "*unhealthy alcohol use*" describes a spectrum of alcohol consumption ranging from "risky" or hazardous use (no consequences experienced), to harmful or abuse (experience of consequences), to alcohol dependence (life organized from drink to drink).¹⁴ The National Institute on Alcohol Abuse and Alcoholism (NIAAA) has defined drinking limits.¹⁵ For men, the limit of low-risk drinking is defined as no more than 14 drinks per week, and no more than four drinks on a given 2-hour occasion. Women of all ages and men >65 years old are advised to drink no more than seven drinks per week, and no more than three drinks on a given 2-hour occasion because of gender and age differences in volume of distribution and concentrations of alcohol dehydrogenase in the liver. NIAAA defines binge drinking as a pattern of alcohol consumption that results in a blood alcohol level over the legal limit of 0.08 gram/dL, which for the average male is the result of more than four drinks in 2 hours, and for the average female is more than three drinks in a 2-hour period. Abstinence is advised for pregnant women, and lower limits or abstinence is advised for patients with chronic conditions exacerbated by alcohol or who are taking medications with a known alcohol interaction.¹⁶

■ SUBSTANCE ABUSE

According to *Diagnostic and Statistical Manual of Mental Disorders*, fourth edition (text revision) (*DSM-IV-TR*) guidelines, a substance abuse diagnosis requires one of four of the following symptoms in the last 12 months:

1. Failure to fulfill major obligations at work, school, or home
2. Recurrent use in situations in which it is physically hazardous
3. Recurrent substance-related legal problems
4. Continued use despite persistent social or interpersonal problems

■ SUBSTANCE DEPENDENCE

According to *DSM-IV-TR* criteria, the diagnosis of drug and/or alcohol dependence requires that at least three of seven criteria be present during a 12-month period:

1. Tolerance
2. Withdrawal
3. Substance often taken in larger amounts or over longer period than intended
4. Persistent desire or unsuccessful efforts to cut down or control use
5. Great deal of time spent in activities necessary to obtain, use, or recover from the substance
6. Important social, occupational, or recreational activities given up or reduced
7. Continued use despite knowledge of having a persistent or recurrent physical or psychological problem likely to have been caused or exacerbated by the substance¹⁷

Although there is no linear relationship between number of criteria met and severity of dependence, and many combinations of these crite-

ria can be used to establish the diagnosis of dependence, an analysis of national epidemiologic alcohol survey data showed that those with all seven criteria began drinking earlier, had earlier onset of dependency and longer duration, a higher percent of days drinking five or more drinks, and lower functioning.¹⁸

ALCOHOL WITHDRAWAL

Conditions mimicking alcohol intoxication or withdrawal are commonly encountered in the ED and result in considerable morbidity when unrecognized. The most commonly missed diagnoses include:

- Toxic-metabolic abnormalities (e.g., hyponatremia, hypoglycemia)
- Prescription or illicit drug ingestions (e.g., methanol, opiate analgesics, sedative-hypnotics, antihistamines)
- Neurologic abnormalities (primary generalized seizures, withdrawal seizures)
- Trauma (subdural or epidural hematoma)
- Infectious diseases (e.g., meningitis, sepsis)

Patients presumed to be alcohol or drug intoxicated should be evaluated with great caution. Alternative diagnoses may mimic, or coexist with, alcohol or drug abuse.

ALCOHOL WITHDRAWAL SYMPTOMS

Alcohol withdrawal symptoms develop in individuals with a history of heavy and prolonged consumption of alcohol, who abruptly stop or reduce their drinking. The spectrum of mild to moderate alcohol withdrawal symptoms includes hand tremors, headache, loss of appetite, nausea and vomiting, diaphoresis, insomnia, tachycardia, hypertension, fever, psychomotor agitation, craving, and anxiety as well as the more serious manifestations of seizures, hallucinations, and delirium. The abrupt withdrawal of alcohol from the brain of chronic heavy drinkers is thought to reduce inhibitory and enhance excitatory neurotransmission, but not all heavy drinkers experience withdrawal when stopping or cutting back their consumption.^{19,20}

DSM-IV-TR criteria for the diagnosis of alcohol withdrawal and alcohol withdrawal delirium are listed in **Table 289-1**. Two or more of the symptoms impairing function and not attributable to other medical conditions must be present to meet diagnostic criteria for alcohol withdrawal.

ALCOHOL WITHDRAWAL SEIZURES

Alcohol withdrawal seizures are tonic-clonic seizures. According to the landmark observations by Victor and Brausch²¹ (**Table 289-2**), alcohol withdrawal seizures occur as early as 6 hours after the last drink, and 90% occur within 48 hours of the last drink. Approximately 40% have a single seizure, and 60% have multiple generalized seizures. A total of six seizures was observed in 93% of alcohol withdrawal patients, and 78% had four seizures or less. In patients with multiple seizures, in 85%, the interval between the first and last seizure was 6 hours. Victor and Brausch reported that one third of patients with alcohol withdrawal seizures go on to develop full-blown delirium tremens (DTs), and the seizures terminated before the development of delirium. The diagnosis of alcohol withdrawal seizures requires the exclusion of traumatic brain injury, hypoxia, hypoglycemia, structural lesions, infections, use of illicit drugs, idiopathic epilepsy, withdrawal from other recreational drugs, and withdrawal from prescription medications. Focal seizures suggest a focal cerebral lesion. Noncompliance with antiseizure medications (in those with idiopathic seizures) should also be considered.²²

ALCOHOL WITHDRAWAL HALLUCINATIONS

Another manifestation of alcohol withdrawal is auditory and visual hallucinations without clouding of sensorium. These events may develop as an isolated finding 12 to 48 hours after cutting back or abstaining from alcohol. Auditory hallucinations predominate, and alcohol psychosis may last from days to weeks. Patients with hallucinations lasting >6 months

TABLE 289-1 *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision, Diagnostic Criteria for Alcohol Withdrawal and Alcohol Withdrawal Delirium*

Alcohol withdrawal

- A. Cessation of (or reduction in) alcohol use that has been heavy and prolonged.
- B. Two (or more) of the following, developing within several hours to a few days after criterion A:
 1. Autonomic hyperactivity (e.g., sweating or pulse rate 100/min)
 2. Increased hand tremor
 3. Insomnia
 4. Nausea or vomiting
 5. Transient visual, tactile, or auditory hallucinations or illusions
 6. Psychomotor agitation
 7. Anxiety
 8. Grand mal seizures
- C. The symptoms in criterion B cause clinically significant distress or impairment in social, occupational, or other important areas of functioning.
- D. The symptoms are not due to a general medical condition and are not better accounted for by another mental disorder. Specify whether with perceptual disturbances.

Alcohol withdrawal delirium*

- A. Disturbance of consciousness (i.e., reduced clarity of awareness of the environment), with reduced ability to focus, sustain, or shift attention.
- B. A change in cognition (such as memory deficit, disorientation, or language disturbance) or the development of a perceptual disturbance that is not better accounted for by a preexisting, established, or evolving dementia.
- C. The disturbance develops in a short period (usually hours to days) and tends to fluctuate during the day.
- D. There is evidence from the history, physical examination, or laboratory findings that the symptoms in criteria A and B developed during, or shortly after, a withdrawal syndrome.

*This diagnosis should be made instead of a diagnosis of substance withdrawal only when the cognitive symptoms are in excess of those usually associated with the withdrawal syndrome and when the symptoms are sufficiently severe to warrant independent clinical attention.

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duration have the worst prognosis—10% to 20% may progress to a chronic schizophrenia-like syndrome.²³

ALCOHOL WITHDRAWAL DELIRIUM

The most serious presentation is alcohol withdrawal delirium, which is characterized by acute and fluctuating disturbances in consciousness, and inattention and impairment in cognitive and perceptual function unrelated to preexisting or established dementia. Patients often develop life-threatening fluid, metabolic, and electrolyte imbalances. Among the risk factors associated with alcohol withdrawal delirium are past withdrawal seizure and delirium, severe dependence and prior detoxification history, higher and longer duration of alcohol intake, older age, use of other drugs, and comorbidity.^{19,20} Evaluate such patients for co-occurring illness that can cause de-

TABLE 289-2 *Typical Features of Alcohol Withdrawal Seizures*

Onset after last drink	6–48 h
Multiple seizures	60% of patients
Interval between first and last seizure	6 h
Number of seizures	1–6

irium such as aspiration or community-acquired pneumonia, urinary tract infections, sepsis, occult trauma, subdural hemorrhage, meningitis, pancreatitis, hepatitis, GI bleeding, hypoglycemia, Wernicke encephalopathy, and ingestions of toxic alcohol or other drugs. The gathering of collateral history, thorough serial examinations of the undressed patient, repeated monitoring of vital signs, measurement of oxygen saturation and bedside finger stick for blood glucose, laboratory assessment of metabolic conditions, and diagnostic radiography as clinically indicated can detect most other life-threatening and treatable causes of delirium.

MANAGEMENT OF ALCOHOL WITHDRAWAL

The mainstay of therapy for alcohol withdrawal is to substitute a long-acting benzodiazepine for alcohol. Although there is no evidence that any one of the sedative hypnotics is superior to the others, some benzodiazepines have certain advantages. Oral diazepam has a shorter onset than other oral benzodiazepam formulations. The onset of IV diazepam is less than a few minutes, its peak action is achieved in <15 minutes, and it has a longer duration of action.¹⁹ Lorazepam is shorter acting, is excreted by the kidneys, and can be given IV or IM with good IM absorption. Diazepam and chlordiazepam should not be given IM because of poor and erratic absorption by this route. Oxazepam and lorazepam are sometimes preferred for elderly patients and those with impaired hepatic function, because of fewer active metabolites.

Individualized symptom-triggered therapy is recommended, and a validated scale has been broadly used in inpatient settings to assess the severity of withdrawal and guide treatment. Symptom-triggered regimens are reported to require less drug and shorter duration of treatment than fixed drug dosing, but have not resulted in any differences in incidence of seizures or delirium. Because length of stay may average as long as 10 hours with the standard ED approach, it is important to consider the benefits of symptom-triggered benzodiazepines.²⁴ The Clinical Institute Withdrawal Assessment for Alcohol—revised (CIWA-Ar) (Figure 289-1) is the most often used, validated, and best current example of a structured instrument for guiding treatment once a diagnosis of alcohol withdrawal is established. It has not, however, been studied in the ED. The CIWA-Ar scores 10 domains of symptoms. Nine of the items have a range of 0 to 7 and the 10th item (orientation and clouding of sensorium) is scored as 0 to 4. The maximum score is 67; scores ≥ 8 suggest the need for medication. However, if the total score is below 10 after a first dose of benzodiazepine, no further treatment is recommended. **The target goal is to reduce and maintain the score in the range of 0 to 7.** It is important when applying these criteria to exclude other conditions, such as shock, that may cause alteration of vital signs and mental status.^{25,14}

Drug Therapy for Uncomplicated Alcohol Withdrawal For those patients meeting criteria for uncomplicated alcohol withdrawal without seizures, hallucination, or delirium, the recommended treatment, unless the patient is vomiting, is to administer oral diazepam, 10 to 20 milligrams orally, or oral chlordiazepoxide, 50 to 100 milligrams orally, or IV lorazepam, 2 to 4 milligrams IV every 1 to 2 hours until CIWA-Ar scores are < 8 .¹⁴

Drug Therapy for Alcohol Withdrawal Seizures Long-acting benzodiazepines reduce the incidence of seizures during alcohol withdrawal from 8.0% to 0.5%, a 93% reduction.¹⁹ High doses of diazepam and chlordiazepoxide orally administered in divided doses are effective in preventing recurrent alcohol withdrawal seizures. Lorazepam, 2 milligrams IV, can prevent recurrent seizures. A prospective randomized ED trial demonstrated a 3% seizure recurrence rate with a single dose of IV lorazepam, 2 milligrams, compared with 24% among patients receiving placebo. Phenytoin is not recommended for prevention of further alcohol-related seizures and should not be used unless the patient has an underlying structural lesion. Repeated loading of phenytoin may, in fact, lower the seizure threshold.²⁶

Drug Therapy for Alcohol Withdrawal Hallucinoses The treatment of isolated alcohol hallucinosis has not been established. A large case report of 104 patients treated with neuroleptics (primarily haloperidol) had good outcomes and no seizures were reported.¹⁴

Drug Therapy for Alcohol Withdrawal Delirium Alcohol withdrawal delirium develops within 3 to 5 days of the last drink and generally lasts 48 to

72 hours, but may last longer. Evidenced-based treatment guidelines have reduced mortality from 20% to $< 1\%$ (Table 289-3). The current practice guideline published by the American Society of Addiction Medicine recommends the use of sedative-hypnotics in high enough doses to quickly control agitation, minimize adverse events, and achieve light somnolence with arousal when stimulated. Benzodiazepines decreased the incidence of DTs from 6% to 2%, a 67% reduction.²⁷ Sedative hypnotic agents (diazepam, chlordiazepoxide) are recommended over neuroleptics (anti-psychotics) for reducing duration of symptoms and mortality. Some neuroleptics can be associated with longer duration of symptoms, lower seizure threshold, and higher mortality because of a prolonged QT interval (see Chapter 285, Psychotropic Medications and Rapid Tranquilization). However, if agitation persists and the patient is a danger to self or others despite a reasonable trial of benzodiazepines, the judicious use of agents such as haloperidol, droperidol, or ziprasidone is recommended. Propofol infusion has been used successfully in patients refractory to high doses of benzodiazepines.²⁷ Its central nervous system mechanism of action is thought to be similar to that of ethanol. It is given as a continuous IV infusion, titrated to keep the patient asleep but arousable with light tactile stimuli; however, prolonged use of propofol > 48 hours and > 5 milligrams/kg/h can be associated with toxic cardiac effects (propofol infusion syndrome).²⁸

The treatment of alcohol withdrawal delirium may require cumulative doses of several grams of diazepam. Patients with delirium require thorough diagnostic assessment and aggressive treatment of co-occurring illnesses, monitoring of fluid and electrolytes, and the correction of documented deficits such as hypomagnesemia, hypophosphatemia, and hypokalemia. Thiamine, 100 milligrams, and folate, 1 milligram, may be replaced in the malnourished patient. Physical restraints may be temporarily needed until chemical restraint is achieved; a quiet, calm, supportive environment with low stimuli contributes to successful management.^{19,20}

DISPOSITION AND FOLLOW-UP OF ALCOHOL-DEPENDENT PATIENTS WITH ALCOHOL WITHDRAWAL

Patients with mild (CIWA 0–7) or moderate (CIWA 8–15) uncomplicated alcohol withdrawal that responds well to initial ED treatment, without major medical comorbidities, and with no suicidal or homicidal ideation, can be managed successfully in a detoxification unit or with discharge to a supportive family and referral to an outpatient program. It is the practice of these authors to provide a prescription for oral benzodiazepines if the patient wishes to stop drinking, until placement can be arranged in a detoxification facility. Indications for admission include a CIWA score > 15 , advanced age, mild or moderate withdrawal that does not respond well to ED treatment, the presence of active medical comorbidities, a prior history of DTs, and alcohol withdrawal seizures that require prolonged observation.

OPIATE WITHDRAWAL

Symptoms of opiate withdrawal include dilated pupils and tearing, sneezing and running nose, nausea, vomiting, diarrhea and abdominal cramps, yawning, piloerection (goose bumps), and myalgias. Heroin or short-acting opiate withdrawal symptoms appear within 36 to 72 hours after decreasing or stopping the agent, and may last for 7 to 10 days. Oxycodone or crushed and injected OxyContin® resembles heroin in this regard. OxyContin® (long-acting oxycodone) and buprenorphine are intermediate-acting opiates, and peak withdrawal symptoms occur in a time frame between heroin and methadone. Methadone withdrawal symptoms appear at 72 to 96 hours and may last for 14 days. The ED physician has had few options for treating opiate withdrawal. Clonidine in doses of 0.2 milligram three times a day can reduce autonomic symptoms to some degree, but it is not very effective with other symptoms. Patients who stop clonidine abruptly may develop severe rebound hypertension. Symptomatic relief of anxiety and muscle spasms can be achieved with muscle relaxants or benzodiazepines, and GI symptoms can be managed with antispasmodic and antiarrhythmic medication.²⁰ Buprenorphine has been used effectively in the ED.²⁹

The Drug Addiction Treatment Act of 2000 established office-based opioid treatment in an effort to integrate treatment options into comprehensive

Patient: _____ Date: _____ Time: _____	
Pulse or heart rate, taken for 1 minute: _____ Blood pressure: _____	
<p style="text-align: center;">TACTILE DISTURBANCES</p> <p>Ask: "Have you any itching, pins and needles sensations, any burning, any numbness, or do you feel bugs crawling on or under your skin?"</p> <p>Observation:</p> <p>0 ___ None</p> <p>1 ___ Very mild itching, pins and needles, burning or numbness</p> <p>2 ___ Mild itching, pins and needles, burning or numbness</p> <p>3 ___ Moderate itching, pins and needles, burning or numbness</p> <p>4 ___ Moderately severe hallucinations</p> <p>5 ___ Severe hallucinations</p> <p>6 ___ Extremely severe hallucinations</p> <p>7 ___ Continuous hallucinations</p>	<p style="text-align: center;">NAUSEA AND VOMITING</p> <p>Ask: "Do you feel sick to your stomach? Have you vomited?"</p> <p>Observation:</p> <p>0 ___ No nausea and no vomiting</p> <p>1 ___ Mild nausea with no vomiting</p> <p>2 ___</p> <p>3 ___</p> <p>4 ___ Intermittent nausea with dry heaves</p> <p>5 ___</p> <p>6 ___</p> <p>7 ___ Constant nausea, frequent dry heaves and vomiting</p>
<p style="text-align: center;">AUDITORY DISTURBANCES</p> <p>Ask: "Are you more aware of sounds around you? Are they harsh? Do they frighten you? Are you hearing anything that is disturbing to you? Are you hearing things you know are not there?"</p> <p>Observation:</p> <p>0 ___ Not present</p> <p>1 ___ Very mild harshness or ability to frighten</p> <p>2 ___ Mild harshness or ability to frighten</p> <p>3 ___ Moderate harshness or ability to frighten</p> <p>4 ___ Moderately severe hallucinations</p> <p>5 ___ Severe hallucinations</p> <p>6 ___ Extremely severe hallucinations</p> <p>7 ___ Continuous hallucinations</p>	<p style="text-align: center;">TREMOR</p> <p>Arms extended and fingers spread apart</p> <p>Observation:</p> <p>0 ___ No tremor</p> <p>1 ___ Not visible, but can be felt fingertip to fingertip</p> <p>2 ___</p> <p>3 ___</p> <p>4 ___ Moderate, with patient's arms extended</p> <p>5 ___</p> <p>6 ___</p> <p>7 ___ Severe, even with arms not extended</p>
<p style="text-align: center;">VISUAL DISTURBANCES</p> <p>Ask: "Does the light appear to be too bright? Is its color different? Does it hurt your eyes? Are you seeing anything that is disturbing to you? Are you seeing things you know are not there?"</p> <p>Observation:</p> <p>0 ___ Not present</p> <p>1 ___ Very mild sensitivity</p> <p>2 ___ Mild sensitivity</p> <p>3 ___ Moderate sensitivity</p> <p>4 ___ Moderately severe hallucinations</p> <p>5 ___ Severe hallucinations</p> <p>6 ___ Extremely severe hallucinations</p> <p>7 ___ Continuous hallucinations</p>	<p style="text-align: center;">PAROXYSMAL SWEATS</p> <p>Observation:</p> <p>0 ___ No sweat visible</p> <p>1 ___ Barely perceptible sweating, palms moist</p> <p>2 ___</p> <p>3 ___</p> <p>4 ___ Beads of sweat obvious on forehead</p> <p>5 ___</p> <p>6 ___</p> <p>7 ___ Drenching sweats</p>
<p style="text-align: center;">HEADACHE, FULLNESS IN HEAD</p> <p>Ask: "Does your head feel different? Does it feel like there is a band around your head? Do not rate for dizziness or light-headedness. Otherwise, rate severity.</p> <p>0 ___ Not present</p> <p>1 ___ Very mild</p> <p>2 ___ Mild</p> <p>3 ___ Moderate</p> <p>4 ___ Moderately severe</p> <p>5 ___ Severe</p> <p>6 ___ Very severe</p> <p>7 ___ Extremely severe</p>	<p style="text-align: center;">ANXIETY</p> <p>Ask: "Do you feel nervous?"</p> <p>Observation:</p> <p>0 ___ No anxiety, at ease</p> <p>1 ___ Mild anxious</p> <p>2 ___</p> <p>3 ___</p> <p>4 ___ Moderately anxious, or guarded, so anxiety is inferred</p> <p>5 ___</p> <p>6 ___</p> <p>7 ___ Equivalent to acute panic states as seen in severe delirium or acute schizophrenic reactions</p>
<p style="text-align: center;">ORIENTATION AND CLOUDING OF SENSORIUM</p> <p>Ask: "What day is this? Where are you? Who am I?"</p> <p>0 ___ Oriented and can do serial additions</p> <p>1 ___ Cannot do serial additions or is uncertain about date</p> <p>2 ___ Disoriented for date by no more than 2 calendar days</p> <p>3 ___ Disoriented for date by more than 2 calendar days</p> <p>4 ___ Disoriented for place/or person</p>	<p style="text-align: center;">AGITATION</p> <p>Observation:</p> <p>0 ___ Normal activity</p> <p>1 ___ Somewhat more than normal activity</p> <p>2 ___</p> <p>3 ___</p> <p>4 ___ Moderately fidgety and restless</p> <p>5 ___</p> <p>6 ___</p> <p>7 ___ Paces back and forth during most of the interview, or constantly thrashes about</p>
<p>Total CIWA-Ar Score: _____</p> <p>Maximum Possible Score: 67</p> <p>Rater's Initials: _____</p>	

FIGURE 289-1. Clinical Institute Withdrawal Assessment of Alcohol Scale, Revised (CIWA-Ar). The **CIWA-Ar** is not copyrighted and may be reproduced freely. This assessment for monitoring withdrawal symptoms requires approximately 5 minutes to administer. The maximum score is 67 (see instrument). Patients scoring <10 do not usually need additional medication for withdrawal.

Suggested Medication Protocol for Alcohol Withdrawal Delirium

Drug	Initial Doses	Increasing Doses	Maintenance
Propofol IV	5 milligrams at 2.5 milligrams/min	Repeat in 5–10 min, then 10 milligrams for third and fourth dose.	20 milligrams for fifth and following doses until light somnolence, then 5–20 milligrams every hour as needed
Propofol IV	1–4 milligrams every 5–15 minutes	1–4 milligrams every 5–15 min.	1–4 milligrams as needed
Propofol IM	1–4 milligrams every 30–60 min	Continue until calm.	Every hour as needed for light somnolence
Haloperidol as adjunct for severe agitation IV/IM; or aripiprazole or ziprasidone	0.5–5.0 milligrams	0.5–5.0 milligrams of haloperidol every 30–60 min.	

clinical care practice and reduce stigmatization of substance abuse therapies. The prescription of methadone for treatment of addiction is limited by the federal narcotics act to licensed inpatient units or outpatient facilities licensed by the U.S. Drug Enforcement Administration, and buprenorphine is limited to certified clinicians in office- or clinic-based practices. Buprenorphine is a partial opioid agonist and a weak antagonist. It has been used for many years as an analgesic agent at a parenteral dose of 0.3 to 0.6 milligram. It has affinity for μ -receptors and has 24 to 40 times the analgesic potency of morphine. At higher doses, the antagonist effects block respiratory depression and provide a good margin of safety to treat withdrawal and provide opioid substitution therapy. Buprenorphine is well absorbed SL and is currently combined with naloxone (not absorbed SL) to prevent diversion and overdoses, because IV injection will precipitate withdrawal symptoms. Buprenorphine preparation without naloxone has resulted in fatal overdoses when injected, used in massive amounts, or combined with alcohol and/or benzodiazepines. Overdoses can be managed with naloxone.

The starting dose for treatment of opiate withdrawal is SL buprenorphine, 1 to 16 milligrams, titrated until reduction in withdrawal symptoms is achieved. The dose is maintained for 5 to 7 days, followed by a maintenance dose of 4 to 32 milligrams of buprenorphine two to three times weekly because of its prolonged effect. **Buprenorphine should not be given to a patient who used heroin in the past 24 hours because it will precipitate withdrawal.** Although there is a subjective high from buprenorphine, the physical dependence potential is lower, and heroin and other opiates can not easily displace buprenorphine from the μ -receptors. Withdrawal symptoms are experienced by patients on buprenorphine, but the withdrawal is slower in onset and milder than withdrawal from opiates.³⁰ If buprenorphine is available in the community, referral to a certified provider who will manage opioid detoxification and psychosocial treatment should be considered.

BENZODIAZEPINE WITHDRAWAL

After discontinuing chronic sedative-hypnotic drug use, symptoms of withdrawal may be delayed for up to 7 to 10 days. Patients may develop withdrawal seizures, and the clinical picture often resembles alcohol withdrawal because of hypertension, tachycardia and tachypnea, tremulousness, anxiety, agoraphobia, insomnia, and altered mental status, including delirium and hallucinations.

Mild withdrawal can be managed by a gradual taper over 10 weeks of the benzodiazepine that has been abused. A Cochrane review of the evidence-based management of benzodiazepine withdrawal recommends the use of phenobarbital because it is cross-tolerant and long acting.

However, because of its high overdose potential, it is generally used in hospitalized patients, and if IV infusion is needed, intensive care unit admission is required.³¹

COCAINE WITHDRAWAL AND OTHER STIMULANT WITHDRAWAL

Stimulant withdrawal can produce symptoms often associated with depression such as disturbances in sleep, appetite, and mood. The duration is from 8 to 48 hours. Co-occurring opiate and sedative dependency may complicate withdrawal. There is no effective evidence-supported treatment currently available for cocaine and stimulant withdrawal.

MARIJUANA WITHDRAWAL

Marijuana dependence has been associated with low energy, sleep and memory disturbances, deterioration in job and family function, and financial difficulties, but dependence is less likely than for other drugs. Marijuana withdrawal begins after 24 to 48 hours, usually lasts for 1 to 3 weeks after abstinence, and peaks within 4 to 6 days. Among the symptoms associated with withdrawal are difficulty sleeping, cravings, mood swings, depression and irritability, and decreased appetite. Withdrawal symptoms are considerably less severe than for heroin or alcohol, but nevertheless interfere with efforts to quit or seriously cut back on use.

ED SCREENING, BRIEF INTERVENTION, AND REFERRAL TO TREATMENT (BOX 289-1)

The evidence for screening, brief intervention, and referral to treatment in the ED setting is not as well established as in primary care practice, but a number of studies have shown promising short-term benefits.^{32–36}

SCREENING FOR AT-RISK AND DEPENDENT DRINKING AND SUBSTANCE ABUSE

Brief standardized screening questions have been found to have a higher sensitivity for identifying heavy and dependent drinkers and illicit drug-using patients than smell of alcohol on breath, patient self-report, or profiling based on demographics or presenting complaint. Brief screening instruments are easy to administer and may facilitate the process of matching an individual to the most appropriate treatment resource (Tables 289-4 and 289-5). Brief screening instruments include the NIAAA Quantity/Frequency/Binge and CAGE Questions, and the CRAFFT for adolescents.

Universal screening in the ED for substance abuse requires practitioners to incorporate focused questions into the social history that reflect their concern for the patient's overall health and safety. Substance abuse questions should be embedded among other preventive health issues to reduce stigma and patient resistance and encourage veracity and trust. Questions should be asked in a nonjudgmental, matter-of-fact fashion. Questions can be preceded with a statement such as: "I am going to ask you some very personal questions that I ask all my patients to improve the care I give. You do not have to answer them if you are uncomfortable."

1. Do you wear seat belts every time you are in a car?
2. Do you smoke?

BOX 289-1

Alcohol Screening in the ED [approved by the American College of Emergency Physicians (ACEP) Board of Directors January 2005]

The ACEP believes alcohol abuse is a significant public health problem. Furthermore, ACEP believes emergency medical professionals are positioned and qualified to mitigate the consequences of alcohol abuse through screening programs, brief intervention, and referral to treatment. ACEP encourages wide availability of resources necessary to address the needs of patients with alcohol-related problems and those at risk for them. (<http://www.acep.org/practres.aspx?id=29074>)

TABLE 289-4 Screening for Alcohol Problems

Ask current drinkers National Institute on Alcohol Abuse and Alcoholism questions

On average, how many days per week do you drink alcohol?

On a typical day when you drink, how many drinks do you have?

What's the maximum number of drinks you had on a given occasion in the last month?

	At-Risk Drinking	
	Drinks per Week	Drinks per Occasion
Men	>14	>4
Women	>7	>3
Age >65 y old	>7	>3

CAGE

- C: Have you felt you ought to CUT down on your drinking or drug use?
 - A: Have people ANNOYED you by criticizing your drinking or drug use?
 - G: Have you ever felt GUILTY about your drinking or drug use?
 - E: Have you ever had a drink or used drugs first thing in the morning (EYE OPENER) to steady your nerves, rid hangover, or get your day started?
- ≥2 positives = probable problem of abuse or dependence (sensitivity, 79%, and specificity of 77%).

Reproduced with permission from Project ED Health, D'Onofrio G, Pantalon MV, et al: Development and implementation of an emergency department practitioner performed brief intervention for hazardous and harmful drinkers in the emergency department. *Acad Emerg Med* 12: 211, 2005.

3. Do you drink beer, wine, liquor, or distilled spirits?
4. Do you feel safe in your current relationship?
5. Do you use recreational drugs or drugs as not prescribed by a physician for non-medical reasons for the feeling it gives you?

Then ask current drinkers the NIAAA quantity and frequency questions: A standard drink is 1.5 ounces of spirits, 6 ounces of wine, and 12 ounces of beer (Figure 289-2).

1. On average, how many days per week do you drink alcohol?
2. On a typical day when you drink, how many drinks do you have?
3. What is the maximum number of drinks you had on any given occasion during the last month?

If concerns about drugs and/or alcohol arise based on the screening questions or the presenting problems, a brief intervention should be performed and referral made when appropriate once the acute medical issues are addressed. Those patients who are above the "low-risk" drinking guidelines but not dependent should have an intervention performed, with the goal of having patients reduce their consumption to low-risk guidelines and a referral to primary care to reinforce the importance of drinking within these limits. For a patient with alcohol dependence, the goal of the intervention is to negotiate a referral to a specialized treatment center with, ideally, a direct linkage to the center. Nonmedical use of prescription drugs in the last month should trigger a brief conversation and more than three times a week should prompt a referral.

INTERVENTION: BRIEF NEGOTIATED INTERVIEW

Principles of Intervention The ED-based intervention, also known as the *brief negotiated interview*, consists of the following four key elements: establish rapport, provide feedback, enhance motivation, and negotiate and advise (see Figure 289-3 for algorithm; also see <http://acepeducation.org/sbi/> and <http://www.ed.bmc.org/sbirt> for more video examples of the BNI in action).

1. **Establish rapport** and ask the patient's permission to discuss his or her use of alcohol and drugs. Establish an atmosphere of trust through respect and positive regard in which the patient is not a problem but a person who has a problem.

TABLE 289-5 The CRAFFT Questions: A Brief Screening Test for Adolescent Substance Abuse

- Have you ever ridden in a CAR driven by someone (including yourself) who was "high" or had been using alcohol or drugs?
- Do you ever use alcohol or drugs to RELAX, feel better about yourself, or fit in?
- Do you ever use alcohol or drugs while you are by yourself, ALONE?
- Do your family or FRIENDS ever tell you that you should cut down on your drinking or drug use?
- Do you ever FORGET things you did while using alcohol or drugs?
- Have you gotten into TROUBLE while you were using alcohol or drugs?

Notes: Two or more positive answers indicate need for further assessment. A CRAFFT score of 2 or higher was optimal for identifying any problem (sensitivity, 0.76; specificity, 0.94; PPV, 0.83; and NPV, 0.91), any disorder (sensitivity, 0.80; specificity, 0.86; PPV, 0.53; and NPV, 0.96), and dependence (sensitivity, 0.92; specificity, 0.80; PPV, 0.25; and NPV 0.99).

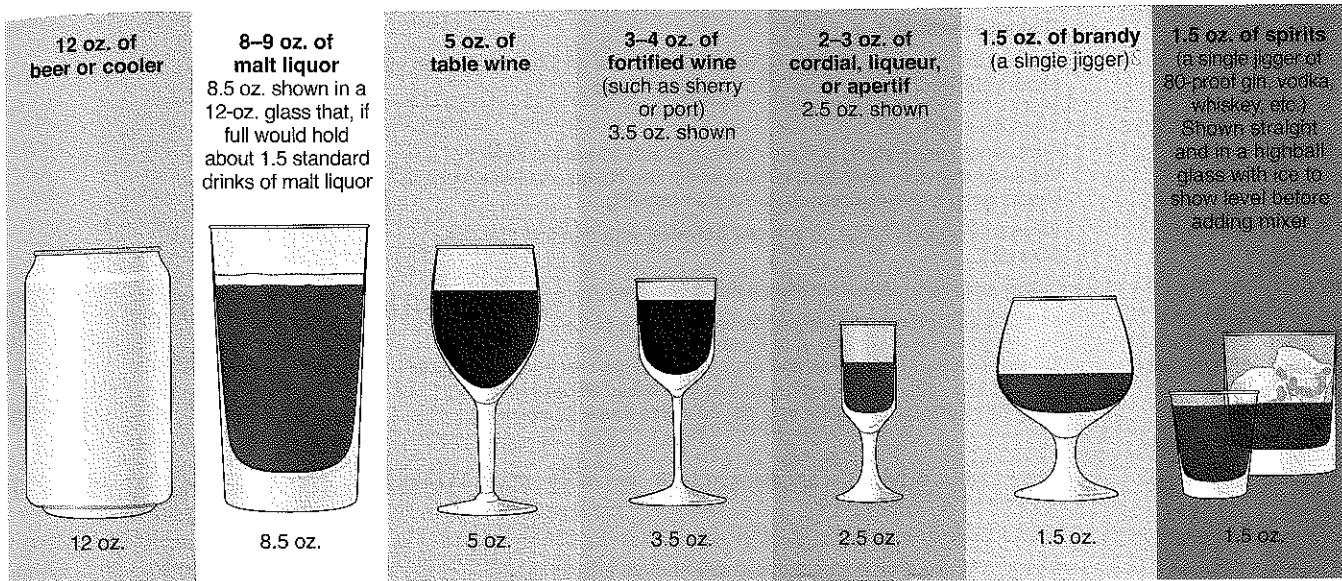
Reproduced with permission from Center for Adolescent Substance Abuse Research at Children's Hospital, Boston. Knight JR, Sherritt L, Shrier LA, et al: Validity of CRAFFT substance abuse screening test among adolescent clinic patients. *Arch Pediatr Adolesc Med* 156: 607, 2002, © Children's Hospital, 2001. Contact information: CeASER@childrens.harvard.edu, <http://www.ceasar-boston.org/clinicians/crafft.php>.

2. **Provide feedback.** Review current drinking and drug use based on the NIAAA low-risk drinking questions and CAGE for adults and CRAFFT for adolescents. Present NIAAA guidelines and express concern that by drinking in excess of safe limits, they could put themselves at risk for injury or illness. Solicit their reaction to the guidelines. Assist patients to make a connection between alcohol and/or drug use and their quality of life, including possible negative consequences related to health, family, legal system and employment, and, if applicable, to the current ED visit or injury. If appropriate, discuss physical dependence, withdrawal, and the cycle of behaviors to obtain more drugs.

3. **Enhance motivation.** Assess readiness to change on a readiness ruler (Figure 289-4). Patients are asked to mark on a drawing of a ruler, with a scale of 1 to 10, how ready they are to change, cut back, or quit their alcohol and/or drug use. If they say 5, give affirmation and say that "you are 50% on the way," and ask, "Tell me why didn't you mark a 2 or 3, a lesser number?" Here is where we try to elicit change talk/reasons and motivation for change. Repeat what the patient has shared with you and follow up with, "It sounds like you have some important reasons to change, so what small steps can you take to stay healthy and safe?" If the patient shows resistance to the readiness ruler, or the score is <2, then explore the pros and cons of current use. A decisional balance exercise is used to promote self-questioning and draw attention to discrepancy to tip the scale toward change. Use open-ended questions such as: "Help me to understand (or see it through your eyes) what you like about your use of alcohol?" Listen carefully and reflect back what you hear so the patient knows you have understood what is being said. Then inquire what the patient likes less about use. Explore the importance to the patient of the issues that emerge. Establish which of the pros and cons has the greatest salience to concentrate on those with the highest priority. Use reflective listening to summarize what you think the patient said to verify your interpretation. "On the one hand, you like the taste, how it helps you to loosen up and forget your problems, and it is something to do when you're bored. On the other hand, you said you don't like how you feel the next day, and wrecking your car in the crash and ending up in the ED is no fun. You also told me you are spending a lot of money on drinking and are concerned about not meeting some responsibilities. So then in the balance, where does that leave you?"

Other questions to promote change talk include: What would make this a problem for you? What would it take to help you be more ready to change? How important would it be for you to prevent that from happening? Have you ever done anything you wish you hadn't while drinking?

4. **Negotiate and advise:** Negotiate an action plan. Explore with patients what life might be like if they made these changes . . . what would be the



For beer, the approximate number of standard drinks in

- 12 oz. = 1
- 16 oz. = 1.3
- 22 oz. = 2
- 40 oz. = 3.3

For malt liquor, the approximate number of standard drinks in

- 12 oz. = 1.5
- 16 oz. = 2
- 22 oz. = 2.5
- 40 oz. = 4.5

For table wine, the approximate number of standard drinks in

- a standard 750 mL (25 oz.) bottle = 5

For 80-proof spirits, or “hard liquor,” the approximate number of standard drinks in

- a mixed drink = 1 or more
- a fifth (25 oz.) = 17
- a pint (16 oz.) = 11
- 1.75 L (59 oz.) = 39

FIGURE 289-2. What's a standard drink?

benefits of change and what would be the challenges? Add the steps they would need to take to address challenges and explore and support confidence in ability to make a change. Offer a menu of options and resources to assist with the change plan, including, if appropriate, referrals to primary care providers and substance abuse treatment. Document the plan. Ask the patient to state in her or his own words the agreed-on steps and document them on a piece of paper or discharge instructions as a reminder of goals (a prescription for change). Reflect back to the patient and reinforce reasons for, and steps toward, change.

Afterward, take a minute for self-assessment. To what degree did you provide Feedback? Did you Listen carefully? Did you ask Open-ended questions? Did you offer Affirmations and Alternatives? Did the patient have enough Time to talk? These skills make up the mnemonic FLOAT; if you follow them, you and your patient are more likely to move toward a plan for change that the patient can actually accomplish. Remember to expect resistance when you talk with patients about change and roll with the resistance rather than push back.

REFERRALS TO TREATMENT: “SEALING THE DEAL”

Quality care cannot be given without institutional support, system improvements, and collaborative practice. If we hope to improve the care we give patients with substance abuse, an ED staff trained in screening, brief intervention, and referral to treatment needs to build and maintain a referral/resource service network to facilitate patient access to services and support and encourage health behavior change and help-seeking.

Current practice in most EDs is to provide patient and family members with a list of detoxification or treatment resources in the community, if available. Each ED should post a resource list and provide a handout for patients with the names, addresses, and phone numbers of treatment programs. The Center for Substance Abuse Treatment (CSAT) at the U.S. Department of Health and Human Services has also an online resource locator (<http://dasis3.samhsa.gov>). The resource list includes specialized facilities for patients with mental illness, inpatient and outpatient detoxification, acupuncture, buprenorphine providers and methadone maintenance programs, outpatient individual and group counseling, intensive

outpatient or partial hospitalization, recovery residents, residential communities, Alcoholics and Narcotics Anonymous, and programs focused on the needs of women, culture-specific programs, and programs designed for gay, lesbian, and transgender clients.

If patients are not ready to enter specialized treatment or attend Alcoholics Anonymous or Narcotics Anonymous, then try to provide information and negotiate a safety plan such as the identification of a designated driver or use of a taxicab when drinking heavily, or avoiding drinking while taking medications. The injecting drug user who is not ready to accept a treatment referral may accept a referral to a needle exchange program. Such programs have documented effectiveness in reducing the spread of the human immunodeficiency virus and hepatitis B and C and facilitating entry into the drug treatment system. Recently, because of the rise in opiate poisoning hospitalizations and deaths, a number of our nation's health departments have supported innovative training programs in overdose prevention, CPR, and the distribution to users of nasal or injectable naloxone.³⁷

Fewer than 10% of ED patients diagnosed in need of substance services are receiving them,³⁸ and the ED can provide leadership for correcting this disparity by instituting system changes.³⁹ EDs employ social workers, psychologists, addiction nurse specialists, volunteers from Alcoholics Anonymous or Narcotics Anonymous, or health promotion advocates to enhance patient motivation and to assist with identifying treatment options.

THE MEDICAL CLEARANCE EXAMINATION

EDs often function as sources for the medical clearance examination before patient transfer to a substance treatment facility. There is considerable variability in the levels of medical care provided in such facilities, ranging from facilities that manage an array of chronic health problems to those with minimal nursing support only for very stable patients. Medical clearance does not mean that the patient has no medical problems, but it does mean that “within reasonable medical certainty there is no medical emergency.”⁴⁰ It means that patients are stable for transfer (in the short term rather than long term), with normal baseline vital signs and oxygen saturation, that they are ambulatory, can take oral

BNI Steps	Dialogue/Procedures
1. Raise subject	Hello, I am _____. Would you mind taking a few minutes to talk with me about your alcohol use? <<PAUSE and LISTEN>>
2. Provide feedback	<p>From what I understand you are drinking [insert screening data]... We know that drinking above certain levels can cause problems, such as [insert facts]... I am concerned about your drinking.</p> <p>What connection (if any) do you see between your drinking and this ED visit?</p> <p><i>If pt sees connection:</i> reiterate what pt has said</p> <p><i>If pt does not see connection:</i> make one using facts</p> <p>These are what we consider the upper limits of low risk drinking for your age and sex. By low risk we mean that you would be less likely to experience illness or injury if you stayed within these guidelines.</p>
3. Enhance motivation	<p>[Show readiness ruler] On a scale from 1–10, how ready are you to change any aspect of your drinking?</p> <p><i>If patient says:</i></p> <p>≥2 ask Why did you choose that number and not a lower one?</p> <p><2 or resistance ask pros and cons</p> <p>Help me to understand what you enjoy about drinking?</p> <p><<PAUSE AND LISTEN>></p> <p>Now tell me what you enjoy less about drinking.</p> <p><<PAUSE AND LISTEN>></p> <p>On the one hand you said, <<RESTATE PROS>></p> <p>On the other hand you said, <<RESTATE CONS>></p> <p>So tell me, where does this leave you?</p>
4. Negotiate and advise	<p>What's the next step?</p> <p>What do you think you can do to stay within the safe drinking guidelines? If you can stay within these limits you will be less likely to experience [further] illness or injury related to alcohol use.</p> <p>This is what I've heard you say... Here is a drinking agreement I would like you to fill out, reinforcing your new drinking goals. This is really an agreement between you and yourself.</p> <p>Provide drinking agreement [pt keeps 1 copy]</p> <p>Suggest Primary Care f/u to discuss drinking level/pattern</p> <p>Thank patient for his/her time</p>

FIGURE 289-3. Screening, brief intervention, and referral to treatment algorithm as taught in the standardized ED curriculum. BNI = brief negotiated interview; f/u = follow-up; NIAAA = National Institute on Alcohol Abuse and Alcoholism; PC = primary care; pt = patient. (Developed in 1994 for Project ASSERT at the Boston Medical Center ED with Dr. Stephen Rollnick; D'Onofrio, Pantalon, et al. developed the intervention as an algorithm for Project ED Health. Reproduced with permission from Academic ED SBIRT Research Collaborative: The impact of screening, brief intervention, and referral for treatment on emergency department patients' alcohol use. *Ann Emerg Med* 50: 699, 2007.)

medications, and are not suicidal.⁴⁰ Patients on medications should bring them or be given prescriptions or provided with several doses. Psychiatrically stable patients with dual diagnoses who are not suicidal or acutely psychotic can be medically cleared for transfer—as long as they have a supply of necessary nonpsychiatric medications and are reliable and compliant in their administration.

Historically, stigma wanes when people understand why and how a disease develops. Striking examples include the conceptual rehumanizing of people with leprosy and epilepsy when science accounted for those diseases' disturbing manifestations. Today, researchers and informed, creative clinicians are achieving the understanding and management skills that eventually will erase the stigma surrounding drug addiction. We are witnessing another instance of one of the great moral achievements of science: establishing the right of people who have been regarded as hopeless or untouchable to full consideration as human beings.⁴¹

Nora D. Volkow, MD, Director of National Institute of Drug Abuse

Emergency medicine now faces the challenge to bring our practice in line with the current scientific knowledge of addiction and other alcohol and drug use disorders.

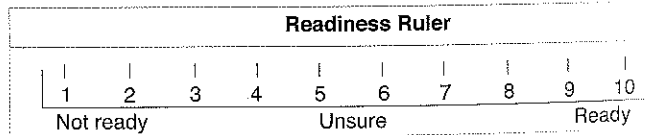


FIGURE 289-4. Readiness ruler. [Reproduced from Miller WR, et al: Treatment Improvement Protocols Series (TIPS) #35 Enhancing motivation to change in substance abuse treatment. Rockville, MD DHHS SAMHSA CSAT, Publication No (SMA) 99-3354, 1999. Ruler developed by Stephen Rollnick.]

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REFERENCES

The complete reference list is available on the included DVD or online at www.TintinalliEM.com