



General Principles of Medical Detoxification: A Clinical Monograph

Rev. December 2008 (version 2)

Section I - Overview

Purpose

This monograph provides updated information on medical detoxification of patients physiologically dependent on substances of abuse. The goal is to assist providers and Magellan clinician reviewers in the delivery of high quality care for these patients.

Treatment Philosophy

The primary objective of medical detoxification is to provide the patient with a medically safe and comfortable withdrawal from the substance of dependence in the least restrictive setting possible.

Definitions

There is a lack of standardization of the definitions of many terms used in the field of substance abuse treatment. This paper will use the following working definitions:

- 1. Physiologic Dependence.** A cellular neuroadaptation to the presence of a specific agent characterized by the development of **tolerance** (the agent produces diminishing biological or behavioral effects such that higher doses are required to achieve the same effects as the individual experienced initially) and **withdrawal** (a predictable constellation of signs and symptoms that result from abrupt removal of the agent).
- 2. Substance Dependence.** According to the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR), the essential features of substance dependence is a cluster of cognitive, behavioral, and physiological symptoms indicating that the individual continues use of the substances despite significant substance-related problems. **Compulsive drug use** by itself, characterized by continued substance use despite significant adverse biopsychosocial consequences, is sufficient to warrant the diagnosis of dependence.
- 3. Substance Abuse.** According to the DSM-IV-TR, the essential features of substance abuse is a maladaptive pattern of substance use manifested by recurrent and significant adverse consequences related to the repeated use of substances.
- 4. Medical Detoxification.** The process by which an individual who is physiologically dependent on a substance is withdrawn from the substance using medical interventions and supervision. This process most commonly occurs by the gradual administration of decreasing doses (**tapering administration**) of an agent that is **cross-tolerant** (a substance of the same class that can be substituted to prevent withdrawal) to the drug of dependence, or by **symptom-**

targeted administration of a cross-tolerant agent (the agent is given only when signs of detoxification are present- see CIWA-Ar, below). The primary objective of medical detoxification is to provide the patient with a medically safe and comfortable withdrawal from the substance of dependence in the least-intensive, least-restrictive setting possible, while at the same time optimizing the patient's acceptance of rehabilitation.

5. **Delirium Tremens (a.k.a. "DTs" or Alcohol Withdrawal Delirium).** A syndrome characterized by the onset of clouding of consciousness, difficulty sustaining attention, disorientation to surroundings and situation, agitation, excessive sweating and autonomic hyperactivity (vital sign instability with tachycardia, elevated blood pressure, and low grade fever) occurring upon the abrupt discontinuation of alcohol. In addition, one may experience hallucinations of a visual and/or tactile nature such as formication ("ants crawling all over me"). The onset of the DTs typically peaks within two days post cessation of alcohol and abates within four to five days. In unusual cases, the onset may not occur for three to five days post cessation and last up to 10 days. This condition has a high mortality rate and death is usually a result of severe dehydration from excessive sweating.
6. **Alcoholic Hallucinosiis.** The occurrence of auditory, visual, and/or tactile hallucinations in a clear sensorium.
7. **Blood Alcohol Level (BAL) or Blood Alcohol Content (BAC).** A quantitative measure of the content of alcohol in the blood as measured in either mg/dl or mg percent (100 mg/dl equals 0.1 mg percent, the limit of legal intoxication in many states). BAL can be used to assess an individual's level of tolerance to alcohol and predict the relative severity of subsequent withdrawal. For example, an individual with a BAL of 300 mg/dl (0.3 mg percent) who doesn't have slurred speech or a gait disturbance, has a high degree of tolerance and can be expected to experience significant withdrawal symptomatology (400 mg/dl, or 0.4 mg percent would put many into a coma). As a rule of thumb, use of a quart of vodka, a gallon of wine, or a case of beer per day, or findings of a BAL over 150 mg/dl (0.15 mg percent) without external evidence of intoxication, demonstrates tolerance and are likely indicators of alcoholism.

Scope

The National Household Survey on Drug Abuse (NHSDA) is a nationwide survey that looks at the prevalence and incidence of illicit drug, alcohol, and tobacco use. According to the 2006 NHSDA, about 3.8 million people were dependent on illicit drugs (and this figure does not take into account those individuals physiologically dependent on prescribed medication). Another 15.6 million people were dependent on alcohol.

According to studies sponsored by the National Institute on Alcohol Abuse and Alcoholism (NIAAA) and the White House Office of Drug Control Policy, the total economic costs of alcohol abuse and drug abuse in the United States totaled \$328 billion in 1998. Alcohol abuse accounted for 56.3 percent of the total economic costs; 43.7 percent were attributable to drug abuse. More than 55,000 deaths were attributable to substance abuse, 65 percent of them to alcohol. Treatment of alcohol and drug dependence, including resources devoted to the process of medical detoxification, exacts a significant economic toll annually. Total medical costs related to alcohol and drug abuse (\$31.8 billion) were approximately two-and-a-half times that spent on substance abuse treatment (\$12.9 billion). The DSM-IV identifies the following 11 distinct classes of substances that can lead to a syndrome of substance dependence. However, only the eight classes bolded below are associated with withdrawal phenomena:

• <u>Alcohol</u>	• Inhalants
• Amphetamines	• Nicotine
• Caffeine	• Opioids
• Cannabis	• Phencyclidine
• Cocaine	• <u>Sedative-hypnotics</u>
• Hallucinogens	

Furthermore, of these eight classes of substances, only two (underlined above) are associated with potentially life-threatening withdrawal syndromes: alcohol and the sedative-hypnotics (benzodiazepines and barbiturates). In the case of alcohol withdrawal, only a small minority (5 percent) of this population will manifest life-threatening seizures and/or delirium tremens. Grand mal seizures and delirium occur more frequently in the case of sedative-hypnotic withdrawal (up to 30 percent of high-dose withdrawal cases). Withdrawal from the remaining substances may be uncomfortable and unpleasant to varying degrees, but it is generally not life-threatening. This includes withdrawal from opioids.

Because of life-threatening safety concerns and the varying needs for medical and nursing supervision, the focus of this monograph will be placed on alcohol and sedative-hypnotic withdrawal. Opioid withdrawal also will be discussed due to the fact that there are occasions when medical detoxification is indicated. Withdrawal from other substances causing dependence does not generally require more than an outpatient level of care for safe medical detoxification.

Medical detoxification is not itself a treatment of substance dependence as it does not itself affect the course of the illness. It is merely the first of many interventions that the dependent individual will require to achieve and sustain abstinence.

Section II - Patient Evaluation

A. Psychosocial Assessment

1. **Substance Abuse Assessment.** This assessment focuses upon the frequency, quantity, and duration of use of various substances. This assessment also explores prior treatment episodes and responses, periods of abstinence, and circumstances that contribute to abstinence or relapse. This assessment also focuses on prior attempts at withdrawal and whether or not complications occurred. Finally, it explores family history of substance abuse/dependence.
2. **Psychosocial Assessment.** The importance of a psychosocial assessment in the medical detoxification process is primarily to determine the degree of family/significant other support for situations when the detoxification process occurs on a partial hospital or outpatient basis.
3. **Psychiatric Evaluation.** There is a high degree of psychiatric comorbidity associated with drug and alcohol abuse/dependence. Commonly seen are anxiety disorders and depression. What often is not clear is whether the psychiatric condition is a result of the abuse/dependence (a 'substance-induced disorder'), or would exist on its own. Other psychiatric comorbidities include bipolar disorder and schizophrenia. Individuals with these disorders are known to have higher rates of abuse and dependence than the general population. In addition, they often need specialized and integrated treatment interventions (i.e. - both mental health and substance abuse services).

B. General Physical Assessment

1. **Physical Examination.** The physical examination is important to determine the existence of potential comorbid medical conditions that might be exacerbated by the withdrawal process or may themselves become the primary focus of treatment requiring admission to a medical unit. Examples of alcohol-associated medical conditions requiring placement on a medical unit include hepatic decompensation (characterized by personality changes, impaired consciousness, hyperreflexia and the Babinski response) and acute pancreatitis (characterized by severe unremitting abdominal pain, nausea and vomiting, diaphoresis, tachycardia, elevations in serum amylase levels, white blood count, aspartate aminotransferase, and blood urea nitrogen). Of course, it is also important to assess physical signs of dependence and withdrawal (see below).
2. **Laboratory.** Urine drug screens (UDS) and BALs are important in identifying, and even quantifying, the substance(s) an individual may be taking but not divulging in an accurate history.

C. Sign and Symptoms of Withdrawal

1. **Clinical Institute Withdrawal Assessment for Alcohol, revised (CIWA-Ar).** This clinical assessment tool is a 10-item quantitative measure of both objective and subjective criteria that assists the clinician in making decisions about pharmacologic interventions. The CIWA-Ar, or other equivalently valid and reliable withdrawal assessment instrument, should be a standard part of any medically supervised alcohol detoxification program. As a general rule, CIWA-Ar scores of 10 or less do not require pharmacologic interventions.
2. **Clinical Opiate Withdrawal Scale (COWS).** An 11-item clinician-administered instrument used to assess a patient's level of opioid withdrawal and to make inferences about their level of physical dependence on opioids. The COWS, or other equivalently valid and reliable withdrawal assessment instruments, should be used to determine the appropriateness of office-based or other opioid agonist treatment as part of a comprehensive patient assessment.

D. Substance-Specific Signs and Symptoms

1. **Alcohol.** Withdrawal symptoms typically begin upon discontinuation of alcohol, but may also occur during drops in the BAL (so they may be seen even during continued alcohol consumption). Early signs and symptoms of mild to moderate alcohol withdrawal include tremulousness, general irritability, nausea and vomiting occurring several hours after the last drink. Most individuals (95 percent) experience only mild to moderate withdrawal. These early symptoms can progress into tachycardia and hypertension, so vital signs must be continuously monitored. In less than 5 percent of cases, these symptoms can progress into delirium tremens, hallucinosis, or generalized seizures.
2. **Sedative-Hypnotics.** Although this group also includes barbiturates, we will focus exclusively on the benzodiazepines as they are much more likely to be the reason an individual is seeking detoxification. Benzodiazepine withdrawal is of two types:
 - a) **Low-dose benzodiazepine withdrawal (a.k.a. benzodiazepine discontinuation syndrome).** Occurs in individuals taking therapeutic dosages over an extended period of time. Many individuals can discontinue therapeutic doses of benzodiazepines without withdrawal symptoms. In those who develop withdrawal symptoms, onset occurs between one and seven days and can include agitation, anxiety, tachycardia, palpitations, anorexia, blurred vision, insomnia, nightmares, confusion, muscle spasms, paresthesias, and in some cases, psychosis. Some individuals develop a protracted withdrawal syndrome with symptoms that can wax and wane in intensity over several months.
 - b) **High-dose benzodiazepine withdrawal.** Occurs in individuals taking higher than therapeutic doses over a period of at least a month. Onset begins one to two days after discontinuation of a short-acting benzodiazepine, and three to eight days after a long-acting benzodiazepine is discontinued. Symptoms can include anxiety, insomnia, nightmares, generalized seizures, psychosis, fever, and death.
3. **Opioids.** For short-acting opioids, like heroin, the onset of withdrawal generally begins with anxiety and craving about eight to 10 hours after discontinuation. This progresses to dysphoria, yawning, lacrimation, rhinorrhea, perspiration, restlessness, and insomnia. This is then followed by piloerection, hot and cold flashes, bone and muscle aches, muscle spasms (from which 'kicking the habit' is derived), nausea, vomiting, diarrhea, abdominal

cramps, weight loss, and low-grade fever. These symptoms peak within 36 to 72 hours and usually abate within five days. With longer-acting opioids, (methadone), symptoms are generally milder, peak between four and six days and abate within 10 to 12 days.

Section III - Treatment

A. General Principles of Medical Detoxification. Because the purpose of this monograph is to give a concise overview of medical detoxification, it does not go into great detail about specific detoxification protocols. Instead, it addresses the topic in more general terms:

1. Detoxification from Alcohol. Ideally, treatment interventions are guided by quantitative measures of withdrawal, like the CIWA-Ar. Individual level-of-care determinations have to be made using a variety of factors in the patient's entire clinical picture. However, general guidelines for the use of the CIWA-Ar follow. Individuals with CIWA-Ar scores below 10 may not need pharmacologic interventions and may usually be managed on an outpatient basis. CIWA-Ar scores between 10 and 20 usually require pharmacologic intervention and medical/nursing supervision, which may or may not be able to be managed on a less than 24 hour/day basis. CIWA-Ar scores of 20 or higher are candidates for consideration for a hospital level of medical detoxification.

- **Treatment with Benzodiazepines.** These medications are the most commonly used pharmacologic agents used to treat alcohol withdrawal. Diazepam, chlordiazepoxide and lorazepam are the most frequently used benzodiazepines to treat alcohol disorders and are equally efficacious. There are two basic approaches to the use of benzodiazepines:
 - *Fixed-schedule, tapering dosage method* - as the name indicates, the benzodiazepine is given at specified times throughout the day with the actual dosage of the benzodiazepine being decreased over time as the symptoms of alcohol withdrawal wane. For example, the physician may order 50 mg of chlordiazepoxide to be given twice daily for one day, followed by 25 mg of chlordiazepoxide given three times daily for two days, followed by 25 mg given twice daily for one or two days, and the last dosage of 25 mg to be given on the morning of the fifth or sixth day. In addition, prn dosages (25-50 mg) are written in case the fixed dosage regimen is not sufficient to control withdrawal symptoms.
 - *Symptom-targeted method* - the benzodiazepine is given only when symptoms warrant its administration (as determined by vital sign monitoring or CIWA-Ar scores, etc.). An article published in JAMA, vol. 278, No. 2, 1997 by Mayo-Smith titled "Pharmacological Management of Alcohol Withdrawal, A Meta-Analysis and Evidence-Based Practice Guideline," identifies this method as being preferable since significantly less medication is given over a significantly shorter time frame than in the tapering method.
- **Phenobarbital.** Prior to the availability of benzodiazepines, phenobarbital was perhaps the standard agent used for alcohol withdrawal. It is used today primarily to treat severe and life-threatening withdrawal states that are not responding to massive

doses of benzodiazepines and is administered as an additional agent via intravenous infusion.

- **Anticonvulsants.** Carbamazepine and valproic acid can be used as alternatives to benzodiazepines. Carbamazepine has been successfully used in Europe for many years but has not been used widely in the United States due to the safety, efficacy and familiarity of benzodiazepines. Carbamazepine is superior to benzodiazepines in preventing rebound withdrawal symptoms and reducing post-treatment drinking. While shown to be effective for patients with a history of multiple withdrawal attempts, it is less useful in older patients or those with multiple medical problems because it interferes with medications that undergo hepatic oxidation metabolism. Valproic acid significantly affects the course of withdrawal and reduces the need for treatment with a benzodiazepine, but significant side effects (somnolence, GI disturbances, confusion and tremor) may limit its use.
- **Other medications.** Alpha-adrenergic agonists, beta-blockers and calcium channel blockers have been used to control symptoms of acute alcohol withdrawal, but have demonstrated little efficacy in the prevention of seizures or DTs.

2. Detoxification from Benzodiazepines

- **Low-dose withdrawal.** Dosages are generally tapered quickly until 25 percent of the original dosage is achieved (when individuals tend to become symptomatic). At this point, the remaining dosage is slowly tapered over several days.
- **High-dose withdrawal.** There are three general approaches:
 - 1) Substitute a long-acting benzodiazepine and taper it over one to two weeks – the favored regimen.
 - 2) Taper the dosage of the original agent of dependence; or
 - 3) Convert the dosage of the benzodiazepine in question into phenobarbital equivalents (tables exist for this purpose), and gradually withdraw the Phenobarbital – now rarely used.

3. Detoxification from Opioids.

The FDA defines two types of detoxification: short-term (less than 30 days in duration) and long-term (greater than 30 but less than 180 days in duration). We will focus on short-term detoxification, as long-term detoxification is essentially a slow tapering of methadone over 180 days.

- **Methadone tapering.** Individuals are given methadone up to 40 mg/day and dosages are decreased by 5 mg per day. The initial dose of methadone is usually 10 mg to 20 mg, and should not exceed 30 mg. On an inpatient basis, this process occurs over five to 10 days, but can be extended over a longer period on an outpatient basis to further minimize withdrawal symptoms and increase the likelihood of retention in the detoxification process.
- **Clonidine.** In this approach, the opioid is abruptly discontinued. As withdrawal symptoms emerge, they are attenuated by the administration of the alpha-adrenergic agonist, clonidine. Doses of 0.4 mg to 1.2 mg/day or higher reduce many of the autonomic components of the opioid withdrawal syndrome, but symptoms such as insomnia, lethargy, muscle aches and restlessness may not be adequately managed.

Compared with methadone-aided withdrawal, clonidine has more side effects, especially hypotension, but is less likely to lead to post-withdrawal rebound.

- **Clonidine/Naltrexone (a.k.a. rapid opioid detoxification, or ROD).** This method combines a rapid, precipitated withdrawal by naltrexone producing severe withdrawal symptoms, with high doses of clonidine and benzodiazepines administered before and after the naltrexone to ameliorate the symptoms. While shortening the withdrawal to two to three days, evidence is lacking of longer abstinence or naltrexone retention.
- **Anesthesia/Naltrexone (a.k.a. ultra rapid opioid detoxification, or UROD).** The individual is anesthetized and while unconscious is given naltrexone, which initiates immediate withdrawal. When the individual is awakened, the acute withdrawal process is complete. Internationally, over a dozen deaths have been reported usually within 72 hours of this procedure with pulmonary edema a common complication. (Important: This procedure has been determined by Magellan to be an unproven technology with a recommendation to abandon use of this procedure due to significant patient safety concerns).
- **Buprenorphine.** Buprenorphine is a partial opioid agonist. Buprenorphine-containing agents are substituted for methadone or other opioids, a process that can be completed in as brief a period as three days. Detoxification is then accomplished by the discontinuation of buprenorphine. The subsequent withdrawal from buprenorphine is mild in nature and much better tolerated than withdrawal from a full opioid agonist, like methadone. On October 8, 2002, the FDA approved two sublingual agents containing buprenorphine. The first, **Subutex**, contains buprenorphine alone and is intended for opioid detoxification purposes. The second agent, **Suboxone**, contains naloxone in addition to buprenorphine, and is intended primarily for maintenance treatment of opioid addiction.
- **Naloxone.** Since naloxone antagonizes, or blocks, the effects of opioids when injected (naloxone is not effective when ingested orally), it is intended to minimize illegal diversion of the agent. Specifically, if a tablet containing buprenorphine plus naloxone is taken as directed (i.e., sublingually), the patient will experience a predominant buprenorphine effect. However, if an opioid-dependent individual dissolves and injects the combination tablet, then the antagonist effect of naloxone predominates because of its high parenteral bioavailability. Under such circumstances, the individual should experience a precipitated withdrawal syndrome. This should decrease the likelihood of misuse and abuse of the combination tablet by the injection route. One of the principle rationales for the recent introduction of these agents is to enable qualified physicians to conduct opioid detoxification (and maintenance, when appropriate) in their private offices (office-based opioid treatment, or OBOT). The intent is to increase access and availability of treatment to individuals requiring opioid detoxification while decreasing the stigmatization of the process.

The Treatment Improvement Protocol (TIP) developed by the Center for Substance Abuse Treatment, Substance Abuse and Mental Health Services Administration (SAMHSA) - *Clinical Guidelines for the Use of Buprenorphine in the Treatment of Opioid Addiction (2004)* provides guidance to physicians on the office-based buprenorphine

treatment of opioid dependence. The TIP consensus panel recommends that the buprenorphine/naloxone combination be used for induction treatment and stabilization/maintenance for most patients. However, pregnant women who are determined to be appropriate candidates for buprenorphine should be inducted and maintained on buprenorphine monotherapy. In addition, patients who desire to change from long-acting opioids to buprenorphine should be inducted using buprenorphine monotherapy before switching to combination buprenorphine/naloxone treatment for stabilization, tapering and discontinuance. Patients may initially request buprenorphine detoxification and then subsequently change their minds a few weeks later and request maintenance. This may not be an unreasonable request since the rate of relapse post-withdrawal is high. As buprenorphine is becoming more widely used, it has been noted that it is relatively easy to detoxify *with* buprenorphine than it is to detoxify *from* it. Therefore, withdrawal should not exceed 2-3 weeks, if maintenance is not the ultimate goal.

- **Buprenorphine Monotherapy Dosing:** (1) At induction, the patient should be in withdrawal off short-acting opioids for at least 12 to 16 hours; for long-acting ones at least 36 hours. (2) The initial dose is 2 mg to 4 mg; a second dose is given one hour later and then 4 mg given six to eight hours later. (3) If any dose worsens withdrawal symptoms, the buprenorphine should be temporarily halted and the symptoms treated with a dose of oral clonidine 0.1 mg to 0.2 mg. (4) By day two or three, a dose of 12 to 16 mg is usually reached and resolves most withdrawal symptoms. (5) The usual maintenance dose of buprenorphine is 16 to 24 mg/day (although some patients are comfortable at 8 to 12 mg and others need 24 to 32 mg).
- **Combination Buprenorphine/Naloxone Dosing:** (1) An initial 4/1 mg dose of buprenorphine/naloxone is recommended and can be followed in two to four hours with a second dose of 4/1 mg. (2) Over the next two days, the dose of buprenorphine/naloxone should be increased to 12/3 to 16/4 mg per day, up to a maximum dose of 32/8 mg, if the patient shows continued withdrawal symptoms (3) The dose-reduction phase begins only after the patient has completely discontinued use of illicit opioids. (4) Detoxification takes place over a 10 to 14 day period, usually by gradually decreasing the initial stabilization dose by 2 mg every two to three days for a moderate-period reduction. (5) Short-period dose reduction is not generally recommended, but may be done over three days for patients with a compelling reason to achieve an opioid-free state quickly.

B. Parameters Influencing Level of Care Determinations

The provider and clinician reviewer should consider the following parameters when making decisions about level of care:

- **Prior history of withdrawal complications.** If there is a prior history of significant withdrawal complications, such as generalized seizures or delirium tremens, then it is likely that this individual will require intensive medical and nursing interventions on a 24 hour/day basis.
- **Comorbid medical conditions.** If an individual has a chronic stable medical condition that the detoxification process would significantly exacerbate, more intensive medical and

nursing supervision and intervention is in order. Additionally, when there is a history of an unstable medical problem (e.g., uncontrolled insulin-dependent diabetes, uncontrolled hypertension), or there is serious organ damage from the substance (e.g., acute alcoholic pancreatitis, hepatic decompensation), then more intensive medical and nursing supervision is indicated.

- **Comorbid behavioral conditions.** Patients who present with significant psychiatric comorbidities, with or without significant detoxification needs, present unique complexities concerning decisions of location of treatment. If the patient has a significant psychiatric disorder such as major depression with suicidal ideation, combined with minimal detoxification needs, then the location for treatment would most likely be a psychiatric inpatient setting that could also manage the substance detoxification. On the other hand, if the same patient presented with a dangerous level of withdrawal needing intensive medical (non-psychiatric) supervision, then the likely location would be a medical (non-psychiatric) inpatient setting that could accommodate suicidal precautions.
- **Social support system.** Outpatient detoxification is recommended when the patient has a support person(s) capable of assuring that he/she will have transportation to the program. In addition, the support person(s) should not be actively involved in substance abuse.
- **Patient's level of motivation and cooperation.** For patients to effectively participate in outpatient detoxification programs, they must express and exhibit a willingness to adhere to program requirements and expectations.
- **Polysubstance dependence.** The patient abusing more than one substance presents certain challenges in determining the most appropriate level of care for the detoxification process. One of the more important considerations is the actual pattern of substance use preceding entry into the detoxification process. Individuals who are alcohol dependent but only sporadically use benzodiazepines may not have a dependence on the benzodiazepine, and hence may be safely managed on an ambulatory basis, depending on the other parameters. On the other hand, individuals actively dependent on alcohol and benzodiazepines will require an intensive level of medical and nursing supervision and intervention for detoxification and, as a general rule, may require an inpatient level of care.

Clinical Institute Withdrawal Assessment of Alcohol Scale, Revised (CIWA-Ar)

Patient: _____ **Date:** _____ **Time:** _____ (24 hour clock, midnight = 00:00)

Pulse or heart rate, taken for one minute: _____ **Blood pressure:** _____

NAUSEA AND VOMITING -- Ask "Do you feel sick to your stomach? Have you vomited?" Observation.

- 0 no nausea and no vomiting
- 1 mild nausea with no vomiting
- 2
- 3
- 4 intermittent nausea with dry heaves
- 5
- 6
- 7 constant nausea, frequent dry heaves and vomiting

TACTILE DISTURBANCES -- Ask "Have you any itching, pins and needles sensations, any burning, any numbness, or do you feel bugs crawling on or under your skin?" Observation.

- 0 none
- 1 very mild itching, pins and needles, burning or numbness
- 2 mild itching, pins and needles, burning or numbness
- 3 moderate itching, pins and needles, burning or numbness
- 4 moderately severe hallucinations
- 5 severe hallucinations
- 6 extremely severe hallucinations
- 7 continuous hallucinations

TREMOR -- Arms extended and fingers spread apart. Observation.

- 0 no tremor
- 1 not visible, but can be felt fingertip to fingertip
- 2
- 3
- 4 moderate, with patient's arms extended
- 5
- 6
- 7 severe, even with arms not extended

AUDITORY DISTURBANCES -- 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?" Observation.

- 0 not present
- 1 very mild harshness or ability to frighten
- 2 mild harshness or ability to frighten
- 3 moderate harshness or ability to frighten
- 4 moderately severe hallucinations
- 5 severe hallucinations
- 6 extremely severe hallucinations
- 7 continuous hallucinations

PAROXYSMAL SWEATS -- Observation.

- 0 no sweat visible
- 1 barely perceptible sweating, palms moist
- 2
- 3
- 4 beads of sweat obvious on forehead
- 5
- 6
- 7 drenching sweats

VISUAL DISTURBANCES -- 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?" Observation.

- 0 not present
- 1 very mild sensitivity
- 2 mild sensitivity
- 3 moderate sensitivity
- 4 moderately severe hallucinations
- 5 severe hallucinations
- 6 extremely severe hallucinations
- 7 continuous hallucinations

Clinical Institute Withdrawal Assessment of Alcohol Scale, Revised (CIWA-Ar)

ANXIETY -- Ask "Do you feel nervous?" Observation.

0 no anxiety, at ease

1 mild anxious

2

3

4 moderately anxious, or guarded, so anxiety is inferred

5

6

7 equivalent to acute panic states as seen in severe delirium or acute schizophrenic reactions

HEADACHE, FULLNESS IN HEAD -- Ask "Does your head feel different? Does it feel like there is a band around your head?" Do not rate for dizziness or lightheadedness. Otherwise, rate severity.

0 not present

1 very mild

2 mild

3 moderate

4 moderately severe

5 severe

AGITATION -- Observation.

0 normal activity

1 somewhat more than normal activity

2

3

4 moderately fidgety and restless

5

6

7 paces back and forth during most of the interview, or constantly thrashes about

ORIENTATION AND CLOUDING OF SENSORIUM -- Ask "What day is this? Where are you? Who am I?"

0 oriented and can do serial additions

1 cannot do serial additions or is uncertain about date

2 disoriented for date by no more than 2 calendar days

3 disoriented for date by more than 2 calendar days

4 disoriented for place/or person

Total **CIWA-Ar** Score _____

Rater's Initials _____

Maximum Possible Score 67

*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 less than 10 do not usually need additional medication for withdrawal.*

Sullivan, J.T.; Sykora, K.; Schneiderman, J.; Naranjo, C.A.; and Sellers, E.M. Assessment of alcohol withdrawal: The revised Clinical Institute Withdrawal Assessment for Alcohol scale (**CIWA-Ar**). *British Journal of Addiction* 84:1353-1357, 1989.

OPIATE WITHDRAWAL SIGNS AND SYMPTOMS

<i>Objective Signs</i> (observable and not easily feigned)	<i>Subjective Symptoms</i> (not directly observable and easily feigned)
• Increased blood pressure	• Nausea
• Increased pulse rate	• Muscle (bone) aches
• Increased temperature	• Abdominal (stomach) cramps
• Piloerection (gooseflesh)	• Irritability
• Increased pupil size	• Anorexia
• Rhinorrhea	• Weakness/tiredness
• Lacrimation	• Restlessness
• Tremor	• Headache
• Insomnia	• Dizziness/lightheadedness
• Diarrhea	• Sneezing
• Vomiting (sometimes may be self-induced)	• Hot or cold flashes
	• Drug craving

Clinical Opiate Withdrawal Scale

For each item, circle the number that best describes the patient's signs or symptoms. Rate on just the apparent relationship to opiate withdrawal. For example, if heart rate is increased because the patient was jogging just prior to assessment, the increase pulse rate would not add to the score.

Patient's Name: _____ Date and Time ____/____/____:_____	
Reason for this assessment _____	
Resting Pulse Rate: _____beats/minute <i>Measured after patient is sitting or lying for one minute</i> 0 pulse rate 80 or below 1 pulse rate 81-100 2 pulse rate 101-120 4 pulse rate greater than 120	GI Upset: over last 1/2 hour 0 no GI symptoms 1 stomach cramps 2 nausea or loose stool 3 vomiting or diarrhea 5 multiple episodes of diarrhea or vomiting
Sweating: over past 1/2 hour not accounted for by room temperature or patient activity. 0 no report of chills or flushing 1 subjective report of chills or flushing 2 flushed or observable moistness on face 3 beads of sweat on brow or face 4 sweat streaming off face	Tremor observation of outstretched hands 0 no tremor 1 tremor can be felt, but not observed 2 slight tremor observable 4 gross tremor or muscle twitching
Restlessness <i>Observation during assessment</i> 0 able to sit still 1 reports difficulty sitting still, but is able to do so 3 frequent shifting or extraneous movements of legs/arms 5 unable to sit still for more than a few seconds	Yawning <i>Observation during assessment</i> 0 no yawning 1 yawning once or twice during assessment 2 yawning three or more times during assessment 4 yawning several times/minute
Pupil Size 0 pupils pinned or normal size for room light 1 pupils possibly larger than normal for room light 2 pupils moderately dilated 5 pupils so dilated that only the rim of the iris is visible	Anxiety or Irritability 0 none 1 patient reports increasing irritability or anxiousness 2 patient obviously irritable anxious 4 patient so irritable or anxious that participation in the assessment is difficult
Bone or Joint Aches <i>If patient was having pain previously, only the additional component attributed to opiates withdrawal is scored</i> 0 not present 1 mild diffuse discomfort 2 patient reports severe diffuse aching of joints/ muscles 4 patient is rubbing joints or muscles and is unable to sit still because of discomfort	Gooseflesh Skin 0 skin is smooth 3 piloerection of skin can be felt or hairs standing up on arms 5 prominent piloerection
Runny Nose or Tearing <i>Not accounted for by cold symptoms or allergies</i> 0 not present 1 nasal stuffiness or unusually moist eyes 2 nose running or tearing 4 nose constantly running or tears streaming down cheeks	Total Score _____ The total score is the sum of all 11 items Initials of person completing assessment: _____

Score: 5-12 = mild; 13-24 = moderate; 25-36 = moderately severe; more than 36 = severe withdrawal

SEDATIVE-HYPNOTIC-ANXIOLYTIC WITHDRAWAL SIGNS AND SYMPTOMS

<i>Objective Signs</i>	<i>Subjective Symptoms</i>
• Tremors	• Weakness
• Hyperreflexia	• Anorexia, nausea
• Agitation	• Irritability
• Hypertension	• Anxiety, restlessness
• Tachycardia	• Headache
• Insomnia	• Muscle aches
• Vomiting	• Depression
• Diaphoresis	• Tinnitus
• Cognitive impairment (memory loss, decreased ability to concentrate)	• Depersonalization
	• Paranoid delusions
• Seizures	• Hypersensitivity to touch, light, sound

ALCOHOL CALCULATIONS

(1.5 OZ. ALCOHOL = PHENOBARBITAL 30 MG)

TYPE OF DRINK	AMOUNT	VOLUME OF ALCOHOL IN OUNCES
Beer	12 oz	0.6
80 Proof Spirits	1.5 oz (cocktail)	0.36
	200 cc (6.8 oz.)	2.7
	500 cc (16.9 oz.)	6.8
	750 cc (25.4 oz.)	10.2
	1 liter (33.8 oz.)	13.5
Wine (11%)	750 cc (25.4 oz.)	2.8
	Standard wine glass 5.6 oz	0.62

Anxiolytics, Sedatives and Hypnotics Classified by Half-Life

	Proprietary Name	Generic Name	Half-Life (hours)	Usual Adult Dosage	Usual Dosing Schedule
Short-Acting	Halcion	Triazolam	Short (<6)	0.125 mg or .250 mg/d	At bedtime
	Versed	Midazolam	Short (<6)	0.07-0.08 mg/kg IM (5 mg) 1mg -5 mg IV	IM dose given 30-60 minutes before surgery /IV given immediately prior
Intermediate-Acting	Xanax	Alprazolam	Intermediate (6-20)	0.25mg – 0.5 mg Up to 4 mg/d	Three times per day
	Ativan	Lorazepam	Intermediate (6-20)	2mg-3mg 1mg – 10 mg/d	Two to three times per day
	Serax	Oxazepam	Intermediate (6-20)	10mg – 30 mg 120mg/d	Three to four times per day
	Restoril	Temazepam	Intermediate (6-20)	15mg-30 mg 30 mg/d	At bedtime

Note: Table is not a complete listing of anxiolytic, sedative or hypnotic drugs

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Anxiolytics, Sedatives and Hypnotics Classified by Half-Life

Proprietary Name	Generic Name	Half-Life (hours)	Usual Adult Dosage	Usual Dosing Schedule	
Long-Acting	Librium	Chlordiazepoxide	Demethylchlordiazepoxide (6-20) - Intermediate Demoxepam (20) - Long Nordiazepam (>20) - Long	5mg-10mg or 20mg-25mg 100mg/d	Three to four times per day
	Klonopin	Chlonazepam	Metabolites >20	0.125 to 0.25 mg 1mg/d (Up to 4mg/d)	Two times per day
	Tranxene	Clorazepate	Initial agent – 6; Nordazepam >20	7.5mg-15mg 30mg/d (Up to 60mg/d)	Two to three times per day
	Valium	Diazepam	Nordiazepam >20	2mg-10mg Up to 40 mg/d	Two to three times per day
	ProSom	Estazolam	4-hydroxyestazolam (6-20)	1mg-2mg/d	At bedtime
	Dalmane	Flurazepam	N-hydroxyethylfluroazepam (< 6) - Short N-desalkylflurazepam (>20) – Long	15mg-30mg/d	At bedtime
	Centrax	Prazepam	Initial agent – 6; Nordazepam >20	10mg 10mg-60mg	Two to three times per day
	Doral	Quazepam	2-oxoquazepam-N-Desalkylflurazepam >20	7.5mg-15mg 15 mg/d	At bedtime

Note: Table is not a complete listing of anxiolytic, sedative or hypnotic drugs. Long Acting category: Initial agents may be of short or intermediate half-life, but metabolites are of long duration.

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Anxiolytics, Sedatives and Hypnotics Classified by Half-Life

Proprietary Name	Generic Name	Half-Life (hours)	Usual Adult Dosage	Usual Dosing Schedule
Ambien	zolpidem	Short (<6)	5mg-10mg 10mg/d	At bedtime
Rozeram	ramelteon	Short (<6)	8mg/d	At bedtime
Sonata	zaleplon	Short (<6)	10mg-20mg 20mg/d	At bedtime
Lunesta	eszopiclone	Intermediate (6-20)	2mg-3mg 3mg/d	At bedtime
chloral hydrate	chloral hydrate	Metabolite trichloroethanol Intermediate (6-20)	.5g-1g/d	At bedtime

Note: Table is not a complete listing of non-benzodiazepine sedative-hypnotic drugs.

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