Nurses working in medical-surgical hospital settings or emergency departments commonly provide care for clients receiving withdrawal treatment for alcohol, opioids, or other substances. Furthermore, clients frequently underreport alcohol and substance use, so nurses must be aware of signs of withdrawal in clients receiving medical care for other issues and notify the health care provider.\(^1\)

**Withdrawal management**, also called detoxification, includes interventions aimed at managing the physical and emotional symptoms that occur after a person suddenly stops using a psychoactive substance. Withdrawal symptoms vary in intensity and duration based on the substance(s) used, the duration and amount of use, and the overall health of the individual. Some substances, such as opioids, sedatives, and tranquilizers, produce significant physical withdrawal effects, especially if they have been used in combination with heavy alcohol use. Rapid or unmanaged cessation from these substances can result in longer than expected course of withdrawal with seizures and other health complications.

Assessment and treatment of alcohol withdrawal and opioid withdrawal symptoms will be further discussed in the following sections.

### Alcohol Withdrawal

The prevalence of alcohol use disorder is estimated to be as high as 40 percent among hospitalized clients. Approximately half of clients with alcohol use disorder experience alcohol withdrawal when they reduce or stop drinking, with as many as 20 percent experiencing serious manifestations such as hallucinations, seizures, and delirium tremens.\(^2\) Severe alcohol withdrawal is considered a medical emergency that is best managed in an intensive care unit.

Symptoms of early or mild alcohol withdrawal include anxiety, minor agitation, restlessness, insomnia, tremor,
diaphoresis, palpitations, headache, and alcohol craving. Clients often experience loss of appetite, nausea, vomiting, and diarrhea. Their risk for falls often increases when they try to go unassisted to the bathroom with these gastrointestinal symptoms. Physical signs include sinus tachycardia, systolic hypertension, hyperactive reflexes, and tremor. Without treatment, symptoms of mild alcohol withdrawal generally begin within 6 to 36 hours after the last drink and resolve within one to two days.\textsuperscript{3}

Some clients develop moderate to severe withdrawal symptoms that can last up to six days, such as withdrawal hallucinations, seizures, or delirium tremens:

- **Hallucinations** typically occur within 12 to 48 hours after the last drink. They are typically visual and commonly involve seeing insects or animals in the room, although auditory and tactile phenomena may also occur.\textsuperscript{4}
- **Alcohol withdrawal-related seizures** can occur within 6 to 48 hours after the last drink. Risk factors for seizures include concurrent withdrawal from benzodiazepines or other sedative-hypnotic drugs.\textsuperscript{5}
- **Delirium tremens (DTs)** is a rapid-onset, fluctuating disturbance of attention and cognition that is sometimes associated with hallucinations. In its most severe manifestation, DTs are accompanied by agitation and signs of extreme autonomic hyperactivity, including fever, severe tachycardia, hypertension, and drenching sweats. DTs typically begin between 48 and 96 hours after the client’s last drink. Mortality rates from withdrawal delirium have been historically as high as 20 percent, but with appropriate medical management, the mortality rate is between 1 and 4 percent. Death is attributed to cardiovascular complications, hyperthermia, aspiration, and severe fluid and electrolyte disorders.\textsuperscript{6}

### Clinical Institute Withdrawal Assessment for Alcohol Scale (CIWA-Ar)

The Clinical Institute Withdrawal Assessment for Alcohol Scale (CIWA-Ar) is the most widely used scale to determine the need for medically supervised withdrawal management. It is used in a wide variety of settings, including outpatient, emergency, psychiatric, and general medical-surgical units when there is a clinical concern regarding a client’s alcohol withdrawal.

The CIWA-Ar scale is typically utilized in association with a protocol containing medications to guide symptom-triggered treatment. Clients with an alcohol use disorder who have a CIWA-Ar score of less than 10 do not typically require medical management.\textsuperscript{7}

There are ten questions on the CIWA-Ar related to nausea/vomiting, tremor, paroxysmal sweats, anxiety, agitation, tactile disturbances, auditory disturbances, visual disturbances, headache, and level of orientation. The questions are rated from 0 to 7, except for orientation that is rated from 0 to 4. View the full CIWA-Ar scale in the following box.

View the [CIWA-Ar](https://med.libretexts.org/Bookshelves/Nursing/Nursing%3A_Mental_Health_and_Community_Concepts_(OpenRN)/14%3A_Algohol/) on the MDCalc medical reference website.

### Treatment of Alcohol Withdrawal

Benzodiazepines are used to treat the psychomotor agitation most patients experience during alcohol withdrawal and prevent progression from minor symptoms to severe symptoms of seizures, hallucinations, or delirium tremens. Diazepam (Valium), lorazepam (Ativan), and chlordiazepoxide (Librium) are used most frequently to treat or prevent
alcohol withdrawal symptoms. 
Review information about benzodiazepines in the "Antianxiety Medications" section of the “Psychotropic Medications” chapter.

Anticonvulsants may be used concurrently or instead of benzodiazepines. Anticonvulsants decrease the probability of withdrawal seizures.
Review information about anticonvulsants in the “Treatments for Bipolar Disorders” section of the “Bipolar Disorders” chapter.

Chronic alcohol use is associated with depletion of thiamine and magnesium. Clients receiving alcohol withdrawal treatment typically receive intravenous thiamine, along with dextrose, to prevent Wernicke’s encephalopathy. Wernicke’s encephalopathy is an acute, life-threatening neurological condition characterized by nystagmus, ataxia, and confusion caused by thiamine (B1) deficiency associated with alcohol use disorder. If untreated, Wernicke’s encephalopathy can progress to Korsakoff’s syndrome, a chronic, irreversible memory disorder resulting from thiamine deficiency.

Treatment of other electrolyte deficiencies may be included during alcohol withdrawal treatment.

Opioid Withdrawal

Medically supervised opioid withdrawal, also known as detoxification, involves administering medication to reduce the severity of withdrawal symptoms that occur when an opioid-dependent client stops using opioids. However, supervised withdrawal alone does not generally result in sustained abstinence from opioids, nor does it address reasons the client became dependent on opioids.

Clients may undergo detoxification for several reasons:

• Initiating the process to “get clean and stay clean” from opioids. Some clients may follow up with inpatient or outpatient treatment after completing the detoxification process.
• Treating withdrawal symptoms when a client dependent on opioids or heroin becomes hospitalized and lacks access to the misused substance.
• Beginning the first step in treating opioid use disorder and transitioning to medication-assisted treatment like methadone or suboxone treatment.
• Establishing an abstinent state without withdrawal symptoms required for the client’s setting or status (e.g., incarceration, probation, or a drug-free residential program).

Clinical Opiate Withdrawal Scale

The Clinical Opiate Withdrawal Scale (COWS) is used in both inpatient and outpatient settings for the monitoring of withdrawal symptoms during opioid detoxification. It can be serially administered to track changes in the severity of withdrawal symptoms over time or in response to treatment.

Symptoms of opioid withdrawal include drug craving, anxiety, restlessness, gastrointestinal distress, diaphoresis, and tachycardia. COWS rates the severity of 11 signs and symptoms of opioid withdrawal on a scale from 0 to 5, as

described in the following box.

View the COWS on the MedCalc medical reference website.

Treatment of Opioid Withdrawal

A calm, quiet environment with supportive and reassuring staff is instrumental for helping clients overcome most symptoms of acute opioid withdrawal and can decrease the need for pharmacologic interventions. Clients who have associated diarrhea, vomiting, or sweating should be monitored for dehydration and have fluid levels maintained with oral and/or intravenous fluids.\(^\text{[14]}\)

Medications used to treat withdrawal symptoms include opioid agonists such as buprenorphine and methadone, as well as Alpha-2 adrenergic agonists such as clonidine and lofexidine. Other medications may be prescribed to treat specific symptoms.\(^\text{[15]}\)

**Buprenorphine**

Buprenorphine is an effective treatment for opioid withdrawal symptoms. A disadvantage of buprenorphine is it can worsen opioid withdrawal symptoms if not administered carefully. To avoid this situation, the client must be in a state of mild to moderate withdrawal before receiving their first dose of buprenorphine (i.e., have a COWS score greater than 10). The first dose of buprenorphine is typically 2 to 4 mg sublingually.\(^\text{[16]}\)

Buprenorphine can cause respiratory depression. Common side effects include sedation, headache, nausea, constipation, and insomnia.\(^\text{[17]}\)

**Buprenorphine/Naloxone**

The combination medication buprenorphine/naloxone (Suboxone) is used for detoxification, as well as maintenance of abstinence from opioids. It may be used in outpatient settings as an opioid-blocker.\(^\text{[18]}\)

**Methadone**

Methadone is a long-acting, synthetic opioid that reduces opioid craving and withdrawal symptoms by blocking the effect of opioids. It is typically prescribed in one of two ways\(^\text{[19]}\):

- **Substitution Therapy:** Methadone is prescribed to replace the use of an opioid and then is gradually tapered to prevent severe withdrawal symptoms.
- **Maintenance Therapy:** It is prescribed long-term as a one component of a comprehensive medication-assisted treatment plan for opioid use disorder. With counseling and other behavioral therapies, methadone helps individuals achieve and sustain recovery and lead active and meaningful lives.

In contrast to buprenorphine, methadone does not induce withdrawal symptoms when administered to a client with opioid in their system because it has an additive effect on opioids that are already present.\(^\text{[20]}\)

A typical dose of methadone on Day 1 of withdrawal treatment varies from 10 – 20 mg orally. Injections are only
recommended for clients unable to take oral medication. Dosing is titrated to control withdrawal symptoms while avoiding oversedation and motor impairment. Common side effects of methadone include constipation, mild drowsiness, excess sweating, peripheral edema, and erectile dysfunction.\[21\]

Due to its long half-life, clients are at risk for overdose if the dose is titrated up too quickly or their starting dose is too high for their tolerance level of opioids. Overdose with methadone can be lethal due to arrhythmia or respiratory depression. It is treated with naloxone with repeated doses as needed and rapid transfer to a medical unit.\[22\]

**Alpha-2 Adrenergic Agonists**

Alpha-2 adrenergic agonists, including clonidine and lofexidine, decrease many symptoms of opioid withdrawal and effectively relieve the autonomic symptoms of sweating, diarrhea, intestinal cramps, nausea, anxiety, and irritability. They are least effective for symptoms of myalgias, restlessness, insomnia, and craving.\[23\]

Clonidine can be taken orally or administered via a clonidine patch and changed weekly. Relief from withdrawal symptoms typically occurs within 30 minutes after a dose. However, common side effects of hypotension and sedation limit the use of these drugs. Contraindications to Alpha-2 adrenergic agonists include hypotension, renal insufficiency, cardiac instability, pregnancy, and psychosis. Tricyclic antidepressants should be stopped three weeks prior to use.\[24\]

**Symptom-Specific Medications**

Various medications are prescribed to provide targeted relief for symptoms of opioid withdrawal:\[26\]:

- Anxiety, irritability, restlessness: Diphenhydramine, hydroxyzine, lorazepam, and clonazepam
- Abdominal cramping: Dicyclomine
- Diarrhea: Bismuth and loperamide
- Nausea/vomiting: Ondansetron, prochlorperazine, and promethazine
- Insomnia: Trazodone, doxepin, mirtazapine, quetiapine, and zolpidem
- Muscle aches, joint pain, and headache: Ibuprofen, acetaminophen, ketorolac, and naproxen
- Muscle spasms and restless legs: Cyclobenzaprine, baclofen, diazepam, and methocarbamol

Warm baths, rehydration, and gentle stretching are also helpful for relieving muscle aches and cramps. Use of benzodiazepines and zolpidem is not recommended for clients receiving methadone or buprenorphine therapy unless they are under close medical supervision due to the risk of oversedation.\[26\]

**Benzodiazepine Withdrawal**

Rapid recognition and treatment of benzodiazepine withdrawal is critical because it can be life-threatening. Signs and symptoms of benzodiazepine withdrawal include tremors, anxiety, general malaise, perceptual disturbances, psychosis, seizures, and autonomic instability. Withdrawal is treated with a long-acting benzodiazepine (such as diazepam) and titrated to prevent withdrawal symptoms without causing excessive sedation or respiratory depression. The dose is then tapered gradually over a period of months.\[27\]
Treatment After Withdrawal Treatment

Withdrawal management is highly effective in preventing immediate and serious medical consequences associated with discontinuing substance use, but by itself, it is not an effective treatment for any substance use disorder. It is considered stabilization, meaning the client is assisted through a period of acute detoxification and withdrawal to be medically stable and substance-free. Stabilization often prepares the individual for treatment. It is considered a first step toward recovery, similar to the acute management of a diabetic coma as a first step toward managing the underlying illness of diabetes. Similarly, acute stabilization and withdrawal management are most effective when followed by evidence-based treatments and recovery services.\[26\]

Unfortunately, many individuals who receive withdrawal management do not become engaged in treatment. Studies have found that half to three quarters of individuals with substance use disorders who receive withdrawal management services do not enter treatment. One of the most serious consequences when individuals do not begin continuing care after withdrawal management is overdose. Because withdrawal management reduces acquired tolerance, those who attempt to reuse their former substance in the same amount or frequency may overdose, especially those with opioid use disorders.\[29\]

The remaining sections of this chapter will discuss substance abuse disorders and treatments, as well as prevention strategies.

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