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OHSU HEALTH SYSTEM

OFFICE OF CLINICAL INTEGRATION AND EVIDENCE-BASED PRACTICE

GUIDELINE FOR INPATIENT MANAGEMENT OF ALCOHOL WITHDRAWAL

Background: Alcohol is responsible for a multitude of health conditions, including Alcohol Use Disorder (AUD) and alcohol withdrawal.[1] About 50% of persons with AUD experience alcohol withdrawal symptoms (AWS) when they reduce or discontinue their alcohol consumption: in 3-5% of these persons, grand mal convulsions, severe confusion (a delirium), or both develop. [2] Individuals physically dependent on alcohol may exhibit signs and symptoms of alcohol withdrawal. [1] The goal of the OHSU Health guideline is to improve the appropriate identification and management of inpatients experiencing alcohol withdrawal. While the current clinical guideline focuses primarily on alcohol withdrawal management, it is important to note that alcohol withdrawal management is not an effective treatment for alcohol use disorder. Withdrawal management should not be conceptualized as a discrete clinical service, but rather as a component in the process of initiating and engaging patients in treatment for alcohol use disorder. [1]

Prevalence: An estimated 2- 7% of patients with heavy alcohol use admitted to the hospital will develop moderate to severe alcohol withdrawal. [3] Additionally, an estimated 32% of all trauma visits in the emergency department are alcohol related. [4] Many of these patients will develop alcohol withdrawal during their emergency department stay. [1]

Complications: Signs and symptoms of alcohol withdrawal include anxiety, sleep disturbance, headache, nausea, hallucinosis, delirium, and seizures. [1, 5] Clinical signs include sweating, elevated blood pressure, tachycardia, hyperthermia, and hyperactive reflexes. [1] Hallucinosis can range from mild perceptual distortions to frank hallucinosis with a lack of insight. [1] The most severe consequences of alcohol withdrawal include seizure, delirium, and death. [1]

Definitions:
Acute alcohol withdrawal – Physical and psychological symptoms that people can experience when they suddenly reduce the amount of alcohol they drink if they have previously been drinking excessively for prolonged periods of time. Symptoms listed in the DSM-5 include sweating and increased heart rate (over 100 beats per minute), hand tremors, insomnia, nausea and vomiting, agitation, anxiety,
and in more severe cases hallucinosis and seizures.
Alcohol hallucinosis – A rare, acute mental syndrome which may include tactile, auditory and visual hallucinosis that occur shortly after the cessation or reduction of alcohol consumption.
Fixed-dose treatment – Pharmacologic treatments are given on a regular schedule, regardless of presence of symptoms of alcohol withdrawal
Symptom-triggered treatment – Pharmacologic treatments are given on an as-needed basis for alcohol withdrawal symptoms
Mild alcohol withdrawal – CIWA score of 10 or less
Moderate alcohol withdrawal – CIWA score from 10 to 18
Severe alcohol withdrawal– CIWA score of more than 18
Delirium tremens – Acute confusional state occurring during withdrawal from alcohol, characterized by rapid pulse, clouding of consciousness, dehydration, delirium, elevated body temperature, sweating, extreme fear, hypertension, tachycardia, tremor, and hallucinosis.
Alcohol withdrawal seizures – Occurring early (usually 7-24 hours after the last drink). Grand mal in type and usually occur as a single episode.
BAL – Blood alcohol level
CIWA (Revised CIWA-Ar) – The Clinical Institute Withdrawal Assessment of Alcohol Scale (CIWA or CIWA-Ar) is a 10-item questionnaire that measures the current degrees of severity of an individual's alcohol withdrawal symptoms with scores ranging from 0-67 points

Guideline Eligibility Criteria:
- Patients 18 years of age or older
- Patients seen in in-patient care and emergency settings
- A diagnosis of alcohol withdrawal with or without other health conditions

Guideline Exclusion Criteria:
- Patients under age 18
- Outpatient care, primary care, home management
- Patients who are pregnant or breastfeeding

Clinical Practice Recommendations:

Identification

Incorporate universal screening for unhealthy alcohol use into medical settings using a validated scale to help identify patients with or at risk for alcohol withdrawal **(**American Society of Addiction Medicine (ASAM) Recommendation I.1; **Strong Recommendation, Moderate Quality Evidence)**. [1]

For patients known to be using alcohol recently, regularly, and heavily, assess their risk of developing alcohol withdrawal even in the absence of signs and symptoms **(**ASAM I.2; **Strong Recommendation, Moderate Quality Evidence)**. [1]

Initial assessment for risk factors for alcohol withdrawal:

Determine whether a patient is at risk of developing severe and/or complicated alcohol withdrawal, or complications from alcohol withdrawal. In addition to current signs and symptoms, a validated risk assessment scale and an assessment of individual risk factors should be utilized **(**ASAM II.1; **Strong Recommendation, Moderate Quality Evidence)**. [1, 6]

The Prediction of Alcohol Withdrawal Severity Scale (PAWSS) can be helpful for assessing for the risk of severe alcohol withdrawal **(**From ASAM II.10; **Conditional Recommendation, Low Quality Evidence)**. [1, 6, 7]

Individual risk factors to consider include (from the Prediction of Alcohol Withdrawal Severity Scale [8]): **(Strong Recommendation, Moderate Quality Evidence)**. [1, 6, 9-11]

- Previous episodes of AWS
- Previous withdrawal seizures
- History of delirium tremens
- History of alcohol rehabilitation treatment
- Previous episodes of blackouts
- Concomitant use of CNS depressants
- Concomitant use of illicit substances
- Recent episode of alcohol intoxication
- Elevated admission blood alcohol level
- Signs of increased autonomic activity

A history and physical examination should be included as part of the comprehensive assessment process. Clinicians should conduct this examination themselves or ensure that a current physical examination is contained within the patient's medical record **(**ASAM II.2; **Consensus based on external guidelines)**. [1]

Additional information about risk factors can be gleaned by interviewing family, friends, and caregivers about a patient's history of alcohol withdrawal, seizures, and delirium, as appropriate. Whenever possible in non-emergent situations, obtain written or verbal consent from the patient before speaking with or consulting with collateral sources **(**ASAM II.3; **Consensus based on external guidelines)**. [1]

Clinicians should seek information about the time elapsed since the patient's cessation of (or reduction in) alcohol use. The timeline of symptom onset and severity helps determine the risk window for developing severe or complicated withdrawal **(**ASAM II.4; **Consensus based on external guidelines)**. [1]

Risk Factors for Severe or Complicated Withdrawal

Assess the following factors associated with increased patient risk for complicated withdrawal or complications of withdrawal: **(**from ASAM II.5; **Strong Recommendation, Moderate Quality Evidence)**. [1, 3, 7, 12-17]

- History of alcohol withdrawal delirium or alcohol withdrawal seizure
- Numerous prior alcohol withdrawal episodes in the patient's lifetime
- Increased age (>65)
- Long duration of heavy and regular alcohol consumption
- Seizure(s) during the current withdrawal episode
- Marked autonomic hyperactivity on presentation
- Dependence on GABAergic agents such as benzodiazepines or barbiturates
- Comorbid psychiatric disorders that would be destabilized by alcohol withdrawal

Practice Implication

- Consult with addiction consult service; and
- Consult with psychiatry if patient has history of psychosis unrelated to alcohol withdrawal or acute delirium unrelated to alcohol withdrawal or there is a concern for a primary psychiatric condition.

The following individual factors may increase patient's risk for complicated withdrawal or complications of withdrawal: **(**ASAM II.6; **Conditional Recommendation, Low Quality Evidence)**. [1, 3, 7, 12-17]

- Concomitant use of other addictive substances
- Positive blood alcohol concentration in the presence of signs and symptoms of withdrawal
- Signs or symptoms or a co-occurring psychiatric disorder are active and reflect a moderate level of severity

Patients' risk for complicated withdrawal or complications of withdrawal is increased by the presence of multiple risk factors. **(**ASAM II.7; **Consensus based on external guidelines)**. [1]

Symptom assessment Scale

OHSU Health recommends the Clinical Institute of Withdrawal Assessment for Alcohol Scale (CIWA-Ar) to assess alcohol withdrawal severity. Consider the risk for scores on an alcohol withdrawal severity assessment scale to be confounded by causes other than alcohol withdrawal. If risk factors are present, interpret the results of the scale with caution. Rely on objective signs of withdrawal (autonomic activity) if a patient has difficulty communication symptoms **(Strong Recommendation, Low Quality Evidence)**. [1, 12, 18-23]

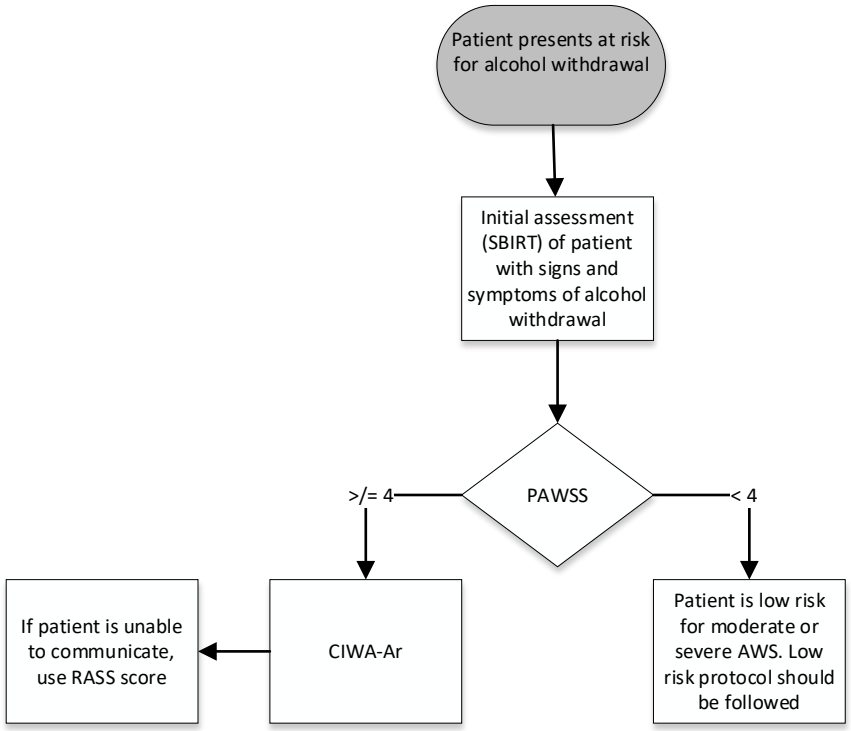
For patients in severe withdrawal, recommend using an ICU sedation scale (either the Richmond Agitation Sedation Score or Riker Sedation Analgesia score) for initial stabilization in the ICU and ED **(Consensus)**.

In general, clinicians may consider patients at risk of severe or complicated withdrawal if they are experiencing at least moderate alcohol withdrawal on presentation (e.g. CIWA-Ar score >/= 10) **(Consensus based on external guidelines)**. [1]

CIWA-Ar

Severity Category	***Associated CIWA-Ar Range***
Mild	CIWA-Ar < 10
Moderate	CIWA-Ar 10 – 18
Severe	CIWA-Ar >/=19
Complicated	CIWA-Ar >/= 19

Assessment algorithm



Predication of Alcohol Withdrawal Severity Scale (PAWSS) Risk Factors
- Previous episodes of AWS
- Previous withdrawal seizures
- History of delirium tremens
- History of alcohol rehabilitation treatment
- Previous episodes of blackouts
- Concomitant use of CNS depressants
- Concomitant use of illicit substances
- Recent episode of alcohol intoxication
- Elevated admission blood alcohol level
- Signs of increased autonomic activity

**One point for each risk factor*

Pharmacologic Interventions

1st line treatment

For patients with a CIWA score >/= 10, start symptom-triggered withdrawal with oral benzodiazepines to alleviate withdrawal discomfort, and prevent seizures and delirium**.** If patient is not improving, consider IV benzodiazepines **(Strong Recommendation, Moderate Quality Evidence).** [1, 23-25]

While no particular benzodiazepine agent is more effective than another, short to moderate-acting benzodiazepines should be given when utilizing symptom triggered (CIWA) withdrawal management, to avoid oversedation from dose stacking or active metabolite build up. **Additionally, use of the same agent is recommended throughout course to maintain predictability, as opposed to using multiple agents with different half-lives**. For cases of impaired hepatic metabolism, benzodiazepines (Lorazepam or Oxazepam) with less hepatic clearance are recommended **(Consensus)** [1, 24]

The dose and duration should be individually determined, according to the severity of withdrawal and the presence of other medical disorders. In general, the duration of benzodiazepine treatment should be limited to the first 3 to 7 days after the cessation of alcohol **(Strong Recommendation, Low Quality Evidence).** [24]

For patients with a contraindication for benzodiazepine use, phenobarbital, carbamazepine, or gabapentin are appropriate. The use of adjunct medications is also appropriate **(Conditional Recommendation, Moderate Quality Evidence).**

Clinicians should monitor patients taking benzodiazepines for signs of over-sedation and respiratory depression **(Consensus based on external guidelines)**. [1]

If a patient declines medication-assisted withdrawal, use a motivational approach to encourage reconsideration (**Consensus based on external guidelines)** [25]

2nd line treatment

If a patient is taking benzodiazepines and symptoms are not controlled as expected, consider increasing the dose or switching to IV benzodiazepines **(Strong Recommendation, Low Quality Evidence).** [1, 24, 26, 27]

- If over-sedation or inadequate monitoring is a concern: [1]
  - Reassess for appropriate level of care
  - Consider switching medications
  - If using benzodiazepines, Gabapentin or Clonidine may be used as an adjunct medication. Evidence for use as an adjunct medication is limited, and should not be used with patients with renal dysfunction.

For patients experiencing severe but not complicated alcohol withdrawal (CIWA score >/=19 without confusion, hallucinosis, or seizure), phenobarbital is an appropriate alternative for providers experienced with its use, and the ICU is the most appropriate setting when intubation and mechanical ventilation may be necessary. **(Conditional Recommendation, Low Quality Evidence)** **[1, 18]**

Phenobarbital monotherapy (managed by a clinician experienced with its use) is an appropriate alternative to benzodiazepines for patients who are experiencing severe alcohol withdrawal or who are at risk of developing severe or complicated alcohol withdrawal or complication of alcohol withdrawal **(Strong Recommendation, Low Quality Evidence).** [1, 28-34]

Phenobarbital monotherapy (managed by a clinician experienced with its use) is appropriate for patients with a contraindication for benzodiazepine use who are experiencing moderate or severe alcohol withdrawal or who are at risk of developing severe or complicated alcohol withdrawal or complications of alcohol withdrawal **(Strong Recommendation, Low Quality Evidence).** [1, 18, 29-34]

In an inpatient setting, if close monitoring is available, phenobarbital (managed by a clinician experienced with its use) as an adjunct to benzodiazepines is an option for patients experiencing severe alcohol withdrawal or who are at risk of developing severe or complicated alcohol withdrawal or complications of alcohol withdrawal **(Strong Recommendation, Low Quality Evidence).** [1, 29, 35]

Parenteral phenobarbital should only be used in highly supervised settings (e.g., ICU, CCU) because of risk of over-sedation and respiratory depression **(Strong Recommendation, Low Quality Evidence).** [1, 28]

<u>Inappropriate medications</u>

Alcohol should not be used for the prevention or treatment of alcohol withdrawal **(Strong Recommendation, Low Quality Evidence).** [1, 25]

Non-pharmacologic interventions

Supportive care is a critical component of alcohol withdrawal management. Frequent reassurance, re-orientation to time and place, and nursing care are recommended non-pharmacological interventions. Providers should ensure patients are educated about what to expect over the course of withdrawal, including common signs and symptoms and how they will be treated. Patients with severe alcohol withdrawal should be cared for in an evenly lit, quiet room. Patients should be offered hope and the expectation of recovery **(Consensus based on external guidelines)** [1]

Nutritional support is an important adjunctive treatment in alcohol withdrawal. Thiamine is often deficient in these patients, increasing the risk of Wernicke's encephalopathy **(Strong Recommendation, Low Quality Evidence)**. [1, 18, 24, 36-38]

For patients without concern of Wernicke's encephalopathy:

- Intravenous (IV) or intramuscular (IM) administration of thiamine is preferred, in particular for patients with poor nutritional status, malabsorption, or who are known to have severe complications of alcohol withdrawal.
- Typical dosing is 100 mg IV/IM per day for 3–5 days. Oral thiamine also can also be offered.
- Patients also receiving glucose can be administered thiamine and glucose in any order or concurrently.

For patients with hypomagnesemia, cardiac arrhythmias, electrolyte disturbances, or a previous history of alcohol withdrawal seizures, magnesium should be administered **(Strong Recommendation, Very Low Quality Evidence)**. [1, 36, 39]

If phosphorus is<1 mg/dL, supplementation should be provided. Otherwise, in the case of moderate hypophosphatemia (1-2 mg/dL), correction through proper nutrition is recommended **(Consensus based on external guidelines)**. [1, 36]

In patients who are critically ill, folate supplementation may be considered, since chronic alcohol use is associated with hyperhomocysteinemia **(Consensus based on external guidelines)** [1, 36]

Practice Implication
For patients with Wernicke's encephalopathy, monitor electrolytes and aggressively replete thiamine via an intravenous route of administration, and follow institutional treatment protocol.

Monitoring

Patients with moderate to severe withdrawal or those requiring pharmacotherapy should be assessed at least every 1-4 hours for 24 hours **(Strong Recommendation, Low Quality Evidence)**. [1, 40]

Practice Implication
Patients who need to be assessed hourly should be managed within the highest level of care (ICU)

Once stabilized, monitoring can be extended to every 4-8 hours for 24 hours **(Strong Recommendation, Low Quality Evidence)**. [1, 40]

Patients presenting with mild withdrawal symptoms who have moderate to high risk of developing complicated withdrawal should be observed for up to 36 hours after which more severe withdrawal is unlikely to develop **(Consensus based on external guidelines)**. [1]

Monitor patients' vital signs, hydration, orientation, sleep, and emotional status including suicidal thoughts **(Consensus based on external guidelines)**. [1]

Patients receiving pharmacotherapy for alcohol withdrawal should be monitored for signs of over sedation and respiratory depression **(Consensus based on external guidelines)**. [1]

Patients with delirium, over the age of 70, or admitted with seizures should be monitored longer **(Consensus based on external guidelines)**. [1]

Comorbidities

For patients with medical comorbidities, modify the medication and/or protocol used for treating alcohol withdrawal syndrome as necessary in consultation with other specialists **(Consensus based on external guidelines)**. [1]

If patient is hypertensive, consider using clonidine and benzodiazepine. Beta-adrenergic antagonists (beta-blockers) can be used as an adjunct to benzodiazepines in select patients for control of persistent hypertension or tachycardia when these signs are not controlled by benzodiazepines alone **(Consensus)**.

If patient has history of primary psychosis, unrelated to alcohol withdrawal, consult with psychiatry **(Consensus)**.

Concurrent use of controlled substances

Benzodiazepines can be used with caution in patients with a high risk of benzodiazepine diversion including patients with a current or past benzodiazepine use disorder for the short period of acute alcohol withdrawal. **(Consensus based on external guidelines)**. [1]

Patients who are opioid dependent should be monitored closely when benzodiazepines are administered, due to the increased risk of respiratory depression. Similarly, patients taking sedative hypnotic medications exhibit tolerance to benzodiazepines and should be monitored closely for appropriate dose **(Consensus based on external guidelines)**. [1]

For patients with concomitant alcohol withdrawal and opioid use disorder, stabilize opioid use disorder (e.g., with methadone or buprenorphine) concomitantly with treating alcohol withdrawal **(Consensus based on external guidelines)**. [1]

Practice Implication
Utilize PDMP to see if patient has any active prescriptions for benzodiazepine, opioids or other controlled substances.

Consult with addiction expert team when presence of polysubstance use

Care Transitions

Consider transfer when the patient's care needs exceed the capabilities of the existing level of care, or when the patient's care needs are appropriate for a less intensive level of care **(Consensus).**

Considerations include:
- The number of IV benzo doses within the last 4 hours
- Need for phenobarbital
- Increased care needs (requiring more attention that nursing staff able to provide)
- Rapidly evolving mental status or inability to protect airway

OHSU Care Transitions:

From Acute Care

Outreach critical care service if: **(Consensus)**
- Patient received four IV benzodiazepine doses within four hours (4 IV doses X 4 hours)
- Patient needs Phenobarbital

From Emergency Department

Outreach critical care service if: **(Consensus)**
- more than 6 mgs of IV Lorazepam
- More than one dose of Phenobarbital

From Critical care service: **(Consensus)**

Outreach Acute care if:
- Patient received less than four IV benzodiazepine doses within four hours
- No longer needs Phenobarbital

HMC Care Transitions:

Consider critical care transfer if: **(Consensus)**
- Patient received four IV benzodiazepine doses within four hours (4 IV doses X 4 hours)
- Patient needs more than one dose of Phenobarbital

From PCU to ICU if: **(Consensus)**
- More than 10 mg of Lorazepam within 4 hours

From Med Surg to **PCU** if: **(Consensus)**
- More than 6 mg of Lorazepam within 4 hours

Appropriate tracking of patient based on setting: **(Consensus)**
- Every 4 hours on Med Surg
- Every 2 hours on PCU
- Every 1 hour on ICU

Use clinical judgement when considering de-escalation **(Consensus)**

Practice Implication
- For outpatient alcohol withdrawal guidance, follow OHSU Health's Alcohol Use Disorder Guideline.

Discharge

Defer discharge until symptoms attributed to alcohol withdrawal have resolved, and refer to the OHSU Health Alcohol Use Disorder Guideline for ongoing treatment recommendations. **(Consensus)**.

Refrain from discharging patients with "as needed" (prn) medications to manage symptoms following discharge. Discuss tapering plan with patient. **(Consensus)**.

Provide patients with written information and guidance to support continued abstinence from alcohol **(Consensus)**.

Follow-up

Schedule a follow-up appointment with behavioral health, expert consultation, or Primary Care Provider within one week of discharge **(Consensus)**.

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Inpatient Management of Alcohol Withdrawal Management Algorithm

First Line

Symptom-triggered withdrawal management with (Oral or PO) Benzodiazepines

*Seizure should be treated firstly

CIWA 10 -14: LORazepam 0.5-1 mg PO q 2 hrs; Reassess in 2 hrs
CIWA 15-19: LORazepam 1-2 mg PO q 1 hr; Reassess in 1 hr
CIWA 20-29: LORazepam 2-3 mg PO q 1 hr; Reassess in 1 hr Call LIP if CIWA 20-29 for 3 consecutive hrs
CIWA 30-39: LORazepam 3 mg PO q 1 hr Reassess in 1 hr; Call LIP for mandatory assessment Consider ICU admit
CIWA > 40: Call LIP immediately; Prepare for Critical Care Transfer

Supportive Care Medications
Select any of the following not previously ordered
- folic acid (FOLVITE) 1 mg, Oral, DAILY For 3 Days
- thiamine 100 mg, Oral, DAILY For 3 Days
- multivitamin 1 Cap, Oral, DAILY For 3 Days

If patient is not improving

Second Line,

Consider IV Benzodiazepines
- Diazepam IV 10-160 mg, intravenous, Every 15 minutes as needed for alcohol withdrawal symptoms
- Administer diazepam for CIWA >15 or RASS > 0. If CIWA scale cannot be used, sedate to RASS scale of 0 to -2
- Initial dose: 10mg

Consider Gabapentin or clonidine as adjunct medication

Consider Phenobarbital

For patients who are experiencing severe alcohol withdrawal or who are at risk of developing severe or complicated alcohol withdrawal. If close monitoring is available, phenobarbital as an adjunct to benzodiazepines can be considered.

Refractory to Benzodiazepines
- PHENobarbital injection 65-260 mg, intravenous, EVERY 15 MINUTES AS NEEDED for severe alcohol
- withdrawal (refractory to benzodiazepines)

PHENobarbital IV PRN (Single Response)
For PRN doses, use IBW to determine the appropriate order to select with the following formulas
- Men: Ideal Body Weight (kg) = 50 kg + 2.3 kg per inch over 5 feet.
- Women: Ideal Body Weight (kg) = 45.5 kg + 2.3 kg per inch over 5 feet.

Supportive Care Medications
Select any of the following not previously ordered
- folic acid (FOLVITE) 1 mg, Oral, DAILY For 3 Days
- thiamine IV 500 mg, Every 8 hours for 9 doses, followed by 100 mg, Oral, Daily
- multivitamin 1 Cap, Oral, DAILY For 3 Day

Transition of care considerations

Acute Care to ICU if:
- 4 x 4 criteria met (4 IV doses in 4 hours)
- Patient needs Phenobarbital

Emergency Department to ICU if:
- more than 6 mgs of IV Lorazepam
- If more than one dose of Phenobarbital is given

ICU to Acute Care if
- Patient received less than four IV benzodiazepine doses within four hours
- No longer needs Phenobarbital

Quality Measures:

Process

- Transfers between Emergency Department, Acute Care and Critical Care
- Pharmacologic agent prescribed
    - Agent
    - Dosing
    - Sequence

Outcome

- Length of stay
- Readmissions

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Guideline Preparation

This guideline was prepared by the Office of Clinical Integration (CI) and Evidence-Based Practice (EBP) in collaboration with content experts across OHSU Healthcare.

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Development Process

This guideline was developed using the process outlined in the CI and EBP Manual (2016). The review summary documents the following steps:

1. Review Preparation
   - PICO questions established
   - Evidence search confirmed with content experts
2. Review of Existing Internal and External Guidelines
   - Literature Review of Relevant Evidence
3. Critically Analyze the Evidence
4. Summarize the Evidence by preparing the guideline, and order sets

Evaluating the Quality of the Evidence

Published clinical guidelines were evaluated for this review using the **University of Pennsylvania's Trustworthy Guideline Rating Scale**. The summary of these guidelines are included in the evidence summary. The rating scale is based on the Institute of Medicine's "Standards for Developing Trustworthy Clinical Practice Guidelines" (IOM), as well as a review of the AGREE Enterprise and Guidelines International Network domains. This scale evaluates a guideline's transparency, conflict of interest, development group, systematic review, supporting evidence, recommendations, external review and currency and updates. The purpose of this scale is to focus on the weaknesses of a guideline that may reduce the trust a clinical user can have in the guideline, and distinguish weaknesses in documentation (e.g. guideline does not have a documented updating process) from weaknesses in the guidance itself (e.g. recommendations are outdated).

The **GRADE (Grading of Recommendations, Assessment, Development and Evaluation)** criteria were utilized to evaluate the body of evidence used to make clinical recommendations. The table below defines how the quality of the evidence is rated and how a strong versus conditional recommendation is established. The evidence summary reflects the critical points of evidence.

Recommendation	
STRONG	Desirable effects clearly outweigh undesirable effects or vice versa
WEAK	Desirable effects closely balanced with undesirable effects
Quality	**Type of Evidence**
High	Consistent evidence from well-performed RCTs or exceptionally strong evidence from unbiased observational studies
Moderate	Evidence from RCTs with important limitations (e.g., inconsistent results, methodological flaws, indirect evidence, or imprecise results) or unusually strong evidence from unbiased observational studies
Low	Evidence for at least 1 critical outcome from observational studies, from

	RCTs with serious flaws or indirect evidence
Very Low	Evidence for at least 1 critical outcome from unsystematic clinical observations or very indirect evidence

Recommendations
Recommendations for the guidelines were directed by the existing evidence, content experts, and consensus. Patient and family preference were included when possible. When evidence is lacking, options in care are provided in the guideline and the order sets that accompany the guideline.

Approval Process
Guidelines are reviewed and approved by the Content Expert Team, Office of CI and EBP, Knowledge Management and Therapeutics Committee, Professional Board, and other appropriate hospital committees as deemed appropriate for the guideline's intended use. Guidelines are reviewed and updated as necessary every 2 to 3 years within the Office of CI and EBP at OHSU. Content Expert Teams will be involved with every review and update.

Disclaimer
Guideline recommendations are made from the best evidence, clinical expertise and consensus, in addition to thoughtful consideration for the patients and families cared for within the Integrated Delivery System. When evidence was lacking or inconclusive, content experts made recommendations based on consensus. Expert consensus is implied when a reference is not otherwise indicated.

The guideline is not intended to impose standards of care preventing selective variation in practice that is necessary to meet the unique needs of individual patients. The physician must consider each patient and family's circumstance to make the ultimate judgment regarding best care.

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Appendix A: Predication of Alcohol Withdrawal Severity Scale (PAWSS)

Prediction of Alcohol Withdrawal Severity Scale (PAWSS)

Maldonado et al., 2014

Part A: Threshold Criteria: (1 point either)

1. Have you consumed any amount of alcohol (i.e., been drinking) within the last 30 days?

   OR did the patient have a "+" BAL upon admission? _____

   IF the answer to either is YES, proceed with test:

Part B: Based on patient interview: (1 point each)

2. Have you ever experienced previous episodes of alcohol withdrawal? _____
3. Have you ever experienced alcohol withdrawal seizures? _____
4. Have you ever experienced delirium tremens or DT's? _____
5. Have you ever undergone of alcohol rehabilitation treatment? _____

   (i.e., in-patient or out-patient treatment programs or AA attendance)
6. Have you ever experienced blackouts? _____
7. Have you combined alcohol with other "downers" like benzodiazepines or barbiturates during the last 90 days? _____
8. Have you combined alcohol with any other substance of abuse during the last 90 days? _____

Part C: Based on clinical evidence: (1 point each)

9. Was the patient's blood alcohol level (BAL) on presentation > 200? _____
10. Is there evidence of increased autonomic activity?

    (e.g., HR > 120 bpm, tremor, sweating, agitation, nausea) _____

Total Score:_____

Notes: Maximum score = 10. This instrument is intended as a SCREENING TOOL. The greater the number of positive findings, the higher the risk for the development of alcohol withdrawal syndromes. A score of ≥ 4 suggests HIGH RISK for moderate to severe AWS; prophylaxis and/or treatment may be indicated.

Appendix B: Clinical Institute Withdrawal Assessment Alcohol Scale Revised (CIWA-Ar)

Alcohol Withdrawal Assessment Scoring Guidelines (CIWA - Ar)

Nausea/Vomiting - Rate on scale 0 - 7

0 - None
1 - Mild nausea with no vomiting
2
3
4 - Intermittent nausea
5
6
7 - Constant nausea and frequent dry heaves and vomiting

Tremors - have patient extend arms & spread fingers. Rate on scale 0 - 7.
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 w/ arms not extended

Anxiety - Rate on scale 0 - 7
0 - no anxiety, patient at ease
1 - mildly anxious
2
3
4 - moderately anxious or guarded, so anxiety is inferred
5
6
7 - equivalent to acute panic states seen in severe delirium or acute schizophrenic reactions.

Agitation - Rate on scale 0 - 7
0 - normal activity
1 - somewhat normal activity
2
3
4 - moderately fidgety and restless
5
6
7 - paces back and forth, or constantly thrashes about

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

Orientation and clouding of sensorium - Ask, "What day is this? Where are you? Who am I?" Rate scale 0 - 4
0 - Oriented
1 – cannot do serial additions or is uncertain about date

2 - disoriented to date by no more than 2 calendar days

3 - disoriented to date by more than 2 calendar days
4 - Disoriented to place and / or person

Tactile disturbances - Ask, "Have you experienced any itching, pins & needles sensation, burning or numbness, or a feeling of bugs crawling on or under your skin?"
0 - none
1 - very mild itching, pins & needles, burning, or numbness
2 - mild itching, pins & needles, burning, or numbness
3 - moderate itching, pins & needles, burning, or numbness
4 - moderate hallucinations
5 - severe hallucinations
6 - extremely severe hallucinations
7 - continuous hallucinations

Auditory Disturbances - Ask, "Are you more aware of sounds around you? Are they harsh? Do they startle you? Do you hear anything that disturbs you or that you know isn't there?"
0 - not present
1 - Very mild harshness or ability to startle
2 - mild harshness or ability to startle
3 - moderate harshness or ability to startle
4 - moderate hallucinations
5 - severe hallucinations
6 - extremely severe hallucinations
7 - continuous hallucinations

Visual disturbances - Ask, "Does the light appear to be too bright? Is its color different than normal? Does it hurt your eyes? Are you seeing anything that disturbs you or that you know isn't there?"
0 - not present
1 - very mild sensitivity
2 - mild sensitivity
3 - moderate sensitivity
4 - moderate hallucinations
5 - severe hallucinations
6 - extremely severe hallucinations
7 - continuous hallucinations

Headache - Ask, "Does your head feel different than usual? Does it feel like there is a band around your head?" Do not rate dizziness or lightheadedness.

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

Procedure:

1. Assess and rate each of the 10 criteria of the CIWA scale. Each criterion is rated on a scale from 0 to 7, except for "Orientation and clouding of sensorium" which is rated on scale 0 to 4. Add up the scores for all ten criteria. This is the total CIWA-Ar score for the patient at that time. Prophylactic medication should be started for any patient with a total CIWA-Ar score of 8 or greater (ie. start on withdrawal medication). If started on scheduled medication, additional PRN medication should be given for a total CIWA-Ar score of 15 or greater.
2. Document vitals and CIWA-Ar assessment on the Withdrawal Assessment Sheet. Document administration of PRN medications on the assessment sheet as well.
3. The CIWA-Ar scale is the most sensitive tool for assessment of the patient experiencing alcohol withdrawal. Nursing assessment is vitally important. Early intervention for CIWA-Ar score of 8 or greater provides the best means to prevent the progression of withdrawal.

DATE: September 2022

Assessment Protocol a. Vitals, Assessment Now. b. If initial score ≥ 8 repeat q1h x 8 hrs, then if stable q2h x 8 hrs, then if stable q4h. c. If initial score < 8, assess q4h x 72 hrs. If score < 8 for 72 hrs, d/c assessment. If score ≥ 8 at any time, go to (b) above. d. If indicated, (see indications below) administer prn medications as ordered and record on MAR and below.	**Date**												
	Time												
	Pulse												
	RR												
	O_2 sat												
	BP												
Assess and rate each of the following (CIWA-Ar Scale):		**Refer to reverse for detailed instructions in use of the CIWA-Ar scale.**											
Nausea/vomiting (0 - 7) 0 - none; 1 - mild nausea ,no vomiting; 4 - intermittent nausea; 7 - constant nausea , frequent dry heaves & vomiting.													
Tremors (0 - 7) 0 - no tremor; 1 - not visible but can be felt; 4 - moderate w/ arms extended; 7 - severe, even w/ arms not extended.													
Anxiety (0 - 7) 0 - none, at ease; 1 - mildly anxious; 4 - moderately anxious or guarded; 7 - equivalent to acute panic state													
Agitation (0 - 7) 0 - normal activity; 1 - somewhat normal activity; 4 - moderately fidgety/restless; 7 - paces or constantly thrashes about													
Paroxysmal Sweats (0 - 7) 0 - no sweats; 1 - barely perceptible sweating, palms moist; 4 - beads of sweat obvious on forehead; 7 - drenching sweat													
Orientation (0 - 4) 0 - oriented; 1 - uncertain about date; 2 - disoriented to date by no more than 2 days; 3 - disoriented to date by > 2 days; 4 - disoriented to place and / or person													
Tactile Disturbances (0 - 7) 0 - none; 1 - very mild itch, P&N, ,numbness; 2-mild itch, P&N, burning, numbness; 3 - moderate itch, P&N, burning ,numbness; 4 - moderate hallucinations; 5 - severe hallucinations; 6 – extremely severe hallucinations; 7 - continuous hallucinations													
Auditory Disturbances (0 - 7) 0 - not present; 1 - very mild harshness/ ability to startle; 2 - mild harshness, ability to startle; 3 - moderate harshness, ability to startle; 4 - moderate hallucinations; 5 severe hallucinations; 6 - extremely severe hallucinations; 7 - continuous hallucinations													
Visual Disturbances (0 - 7) 0 - not present; 1 - very mild sensitivity; 2 - mild sensitivity; 3 - moderate sensitivity; 4 - moderate hallucinations; 5 - severe hallucinations; 6 - extremely severe hallucinations; 7 continuous hallucinations													
Headache (0 - 7) 0 - not present; 1 - very mild; 2 - mild; 3 - moderate; 4 - moderately severe; 5 - severe; 6 - very severe; 7 - extremely severe													
Total CIWA-Ar score:													
PRN Med: (circle one) Diazepam Lorazepam	**Dose given (mg):** **Route:**												
Time of PRN medication administration:													
Assessment of response (CIWA-Ar score 30-60 minutes after medication administered)													
RN Initials													

Scale for Scoring:
Total Score =
0 – 9: absent or minimal withdrawal
10 – 19: mild to moderate withdrawal
more than 20: severe withdrawal

Indications for PRN medication:
a. Total CIWA-AR score 8 or higher if ordered PRN only (Symptom-triggered method).
b. Total CIWA-Ar score 15 or higher if on Scheduled medication. (Scheduled + prn method)
Consider transfer to ICU for any of the following: Total score above 35, q1h assess. x more than 8hrs required, more than 4 mg/hr lorazepam x 3hr **or** 20 mg/hr diazepam x 3hr required, or resp. distress.

Patient Identification (Addressograph)

Signature/ Title	Initials	Signature / Title	Initials

Alcohol Withdrawal Assessment Flowsheet (revised Nov 2003)

Appendix C: Dosing Tables

1st Line: Benzodiazepines

Lorazepam (Ativan) 0.5-3 mg**:** Consider tapering the medication over 48 hours after the last dose of medication on CIWA scale (due to increased chance of seizure with abrupt discontinuation).	
Oral, AS NEEDED per CIWA Protocol** • If the patient decreases CIWA score range, administer the lowest dose range for that score. • If the patient stays in the same CIWA score range, administer the higher dose range for that score. • If the patient increases CIWA score range, administer the lowest dose range for that score.	
CIWA 10 -14	LORazepam 0.5-1 mg PO q 2 hrs Reassess in 2 hrs
CIWA 15-19	LORazepam 1-2 mg PO q 1 hr Reassess in 1 hr
CIWA 20-29	LORazepam 2-3 mg PO q 1 hr Reassess in 1 hr Call LIP if CIWA 20-29 for 3 consecutive hrs
CIWA 30-39	LORazepam 3 mg PO q 1 hr Reassess in 1 hr Call LIP for mandatory assessment Consider ICU admit
CIWA > 40	Call LIP immediately Prepare for Critical Care Transfer
Supportive Care Medications Select any of the following not previously ordered • folic acid (FOLVITE) 1 mg, Oral, DAILY For 3 Days • thiamine 100 mg, Oral, DAILY For 3 Days • multivitamin 1 Cap, Oral, DAILY For 3 Days	

2nd Line: If patient is not improving

• Consider PHENobarbital IV if CIWA >15 or RASS > 0 after diazepam dose of 160 mg or LORazepam dose of 32 mg. • Consider propofol and preparation for intubation if CIWA >15 after PHENObarbital	
Benzodiazepines *(Single Response)* • diazepam (VALIUM) IV 10-160 mg, intravenous, EVERY 15 MINUTES AS NEEDED for alcohol withdrawal symptoms • Administer diazepam for CIWA >15 or RASS > 0. If CIWA scale cannot be used, sedate to RASS scale of 0 to -2 • Initial dose: 10 mg	
CIWA >15 or RASS > 0	give no medication
CIWA >15 or RASS > 0 and LESS than 1 hour since last dose of medication	dose at NEXT level
CIWA >15 or RASS > 0 and MORE than 1 hour since last dose of medication	dose at SAME level
CIWA >15 or RASS > 0 and MORE than 4 hours since last dose of medication	reduce dose by 1 level

CIWA >15 or RASS > 0 and MORE than 8 hours since last dose of medication	CONTACT PROVIDER FOR DOSING INSTRUCTIONS
Refractory to Benzodiazepines • PHENobarbital injection 65-260 mg, intravenous, EVERY 15 MINUTES AS NEEDED for severe alcohol • withdrawal (refractory to benzodiazepines)	
Level 0	Diazepam 10 mg (initial dose)
Level 1	Diazepam 20 mg
Level 2	Diazepam 40 mg
Level 3	Diazepam 80 mg (CONTACT PROVIDER)
Level 4	Diazepam 160 mg (CONTACT PROVIDER)
Level 5	Diazepam 160 mg AND Phenobarbital 65 mg (CONTACT PROVIDER IF PHENOBARBITAL ORDER NEEDED)
Level 6	Diazepam 160 mg AND Phenobarbital 130 mg (CONTACT PROVIDER)
Level 7	Diazepam 160 mg AND Phenobarbital 260 mg (CONTACT PROVIDER)
Level 8	Diazepam 160 mg AND Phenobarbital 260 mg (CONTACT PROVIDER FOR ADDITIONAL ORDERS IF NEEDED)
LORazepam (ATIVAN) IV 2-32 mg, intravenous, EVERY 15 MINUTES AS NEEDED for alcohol withdrawal symptoms • Administer LORazepam for CIWA >15 or RASS > 0. If CIWA scale cannot be used, sedate to RASS scale of 0 to -2. • Reassess in 15 minutes. • Initial dose: 2 mg	
If CIWA <15 or RASS < 0	give no medication
CIWA >15 or RASS > 0 and LESS than 1 hour since last dose of medication	dose at NEXT level
CIWA >15 or RASS > 0 and MORE than 1 hour since last dose of medication	dose at SAME level
CIWA >15 or RASS > 0 and MORE than 4 hours since last dose of medication	reduce dose by 1 level
If CIWA >15 or RASS > 0 and MORE than 8 hours since last dose of medication	CONTACT PROVIDER FOR DOSING INSTRUCTIONS.
Level 0	LORazepam 2 mg (initial dose)
Level 1	LORazepam 4 mg
Level 2	LORazepam 8 mg
Level 3	LORazepam 16 mg (CONTACT PROVIDER)
Level 4	LORazepam 32 mg (CONTACT PROVIDER)
Level 5	LORazepam 32 mg AND Phenobarbital 65 mg (CONTACT PROVIDER IF PHENOBARBITAL ORDER NEEDED)
Level 6	LORazepam 32 mg AND Phenobarbital 130 mg (CONTACT PROVIDER)
Level 7	LORazepam 32 mg AND Phenobarbital 260 mg (CONTACT PROVIDER)

Level 8	LORazepam 32 mg AND Phenobarbital 260 mg (CONTACT PROVIDER FOR ADDITIONAL ORDERS IF NEEDED)
• Administer PHENobarbital in conjunction with diazepam OR LORazepam • for benzodiazpine refractory severe EtOH withdrawal for CIWA >15 or RASS > 0. • If CIWA scale cannot be used, sedate to RASS scale of 0 to -2.	

	PHENobarbital IV loading dose 260 mg, intravenous, ONCE IV push over 5 minutes (max 60 mg/min)
PHENobarbital IV PRN *(Single Response)* For PRN doses, use IBW to determine the appropriate order to select with the following formulas • Men: Ideal Body Weight (kg) = 50 kg + 2.3 kg per inch over 5 feet. • Women: Ideal Body Weight (kg) = 45.5 kg + 2.3 kg per inch over 5 feet. * Contact pharmacy if patient is under 5 ft tall to discuss if patient meets inclusion criteria for phenobarbital use.	
PHENobarbital IV (40-60 kg IBW) 130 mg, intravenous, EVERY 15 MINUTES AS NEEDED for RASS >1, for 4 doses	IV push over 3 minutes (max 60 mg/min) Allow for a minimum of 15 min between the load and initial PRN dose Maximum cumulative dose 15 mg/kg based on ideal body weight (IBW) Contact provider when administering final ordered dose
PHENobarbital IV (60-80 kg IBW) 130 mg, intravenous, EVERY 15 MINUTES AS NEEDED for RASS >1, for 6 doses	IV push over 3 minutes (max 60 mg/min) Allow for a minimum of 15 min between the load and initial PRN dose Maximum cumulative dose 15 mg/kg based on ideal body weight (IBW) Contact provider when administering final ordered dose
PHENobarbital IV (greater than 80 kg IBW) 130 mg, intravenous, EVERY 15 MINUTES AS NEEDED for RASS >1, for 8 doses	IV push over 3 minutes (max 60 mg/min) Allow for a minimum of 15 min between the load and initial PRN dose Maximum cumulative dose 15 mg/kg based on ideal body weight (IBW) Contact provider when administering final ordered dose
Supportive Care Medications	
folic acid *(Single Response)*	folic acid (FOLVITE) tablet 1 mg, oral, DAILY for 3 doses folic acid in dextrose (D5) IV 1 mg, intravenous, DAILY for 3 doses
thiamine	thiamine (VITAMIN B-1) IV 500 mg, intravenous, EVERY 8 HOURS, for 9 doses Followed by thiamine tablet 100 mg, oral, DAILY
multivitamin	(THERA VITAMIN) 1 tablet, oral, DAILY for 3 doses
diazepam with PHENobarbital for severe ETOH	

Level: 0: Diazepam 10 mg (initial dose) 1: Diazepam 20 mg 2: Diazepam 40 mg 3: Diazepam 80 mg (CONTACT PROVIDER) 4: Diazepam 160 mg (CONTACT PROVIDER) 5: Diazepam 160 mg AND PHENobarbital 65 mg (CONTACT PROVIDER) 6: Diazepam 160 mg AND PHENobarbital 130 mg (CONTACT PROVIDER) 7: Diazepam 160 mg AND PHENobarbital 260 mg (CONTACT PROVIDER) 8: Diazepam 160 mg AND PHENobarbital 260 mg (CONTACT PROVIDER FOR ADDITIONAL
LORazepam with PHENobarbital Level: 0: LORazepam 2 mg (initial dose) 1: LORazepam 4 mg 2: LORazepam 8 mg 3: LORazepam 16 mg (CONTACT PROVIDER) 4: LORazepam 32 mg (CONTACT PROVIDER) 5: LORazepam 32 mg AND PHENobarbital 65 mg (CONTACT PROVIDER) 6: LORazepam 32 mg AND PHENobarbital 130 mg (CONTACT PROVIDER) 7: LORazepam 32 mg AND PHENobarbital 260 mg (CONTACT PROVIDER) 8: LORazepam 32 mg AND PHENobarbital 260 mg (CONTACT PROVIDER FOR ADDITIONAL ORDERS IF NEEDED)
propofol (DIPRIVAN) injection 10 mg/mL 20 mg, intravenous, EVERY 15 MINUTES AS NEEDED for severe alcohol withdrawal (refractory to benzodiazepines)