DukeHealth

Guideline: DUHS: Alcohol Withdrawal Pathway Guideline

Document ID: 6951	Revision Number: 2	Status: Published
Origination Date: 05/03/2022	Effective Date: 06/05/2024	

Approved By	Date Approved
DUHS Clinical Practice Council (DUHS CPC)	5/9/2024

Review History: 05/20/2022; 05/09/2024

Applicability:

- ☐ Ambulatory Surgery Center Arringdon
- ☐ Davis Ambulatory Surgery Center (DASC)
- ☐ Duke Health Integrated Practice (DHIP)
- ☐ Duke Health Technology Services (DHTS)
- ☐ Duke HomeCare & Hospice (DHCH)
- ☐ Duke Primary Care (DPC)
- ☒ Duke Regional Hospital (DRH)
- ☒ Duke University Hospital (DUH) (both campuses)
  - ☐ Durham Campus Only
  - ☐ Duke Raleigh Campus Only
- ☐ Patient Revenue Management Organization (PRMO)
- ☐ Population Health Management Office (PHMO)

Purpose:
Provide guidelines for safe and consistent management of alcohol withdrawal, which usually onsets within 48-96 hours following abrupt reduction or cessation of alcohol intake. Symptoms of alcohol withdrawal are often not recognized and adequately treated in acute care facilities. Untreated alcohol withdrawal syndrome has been associated with an increase in adverse events and potential for increased length of hospital stay. Severe alcohol withdrawal syndrome (AWS) is potentially life threatening and is common among hospitalized patients.

Level:

☒ Interdependent - asterisked [*] items require an order from a health care practitioner licensed to prescribe medical therapy.

☐ Independent – no provider order required.

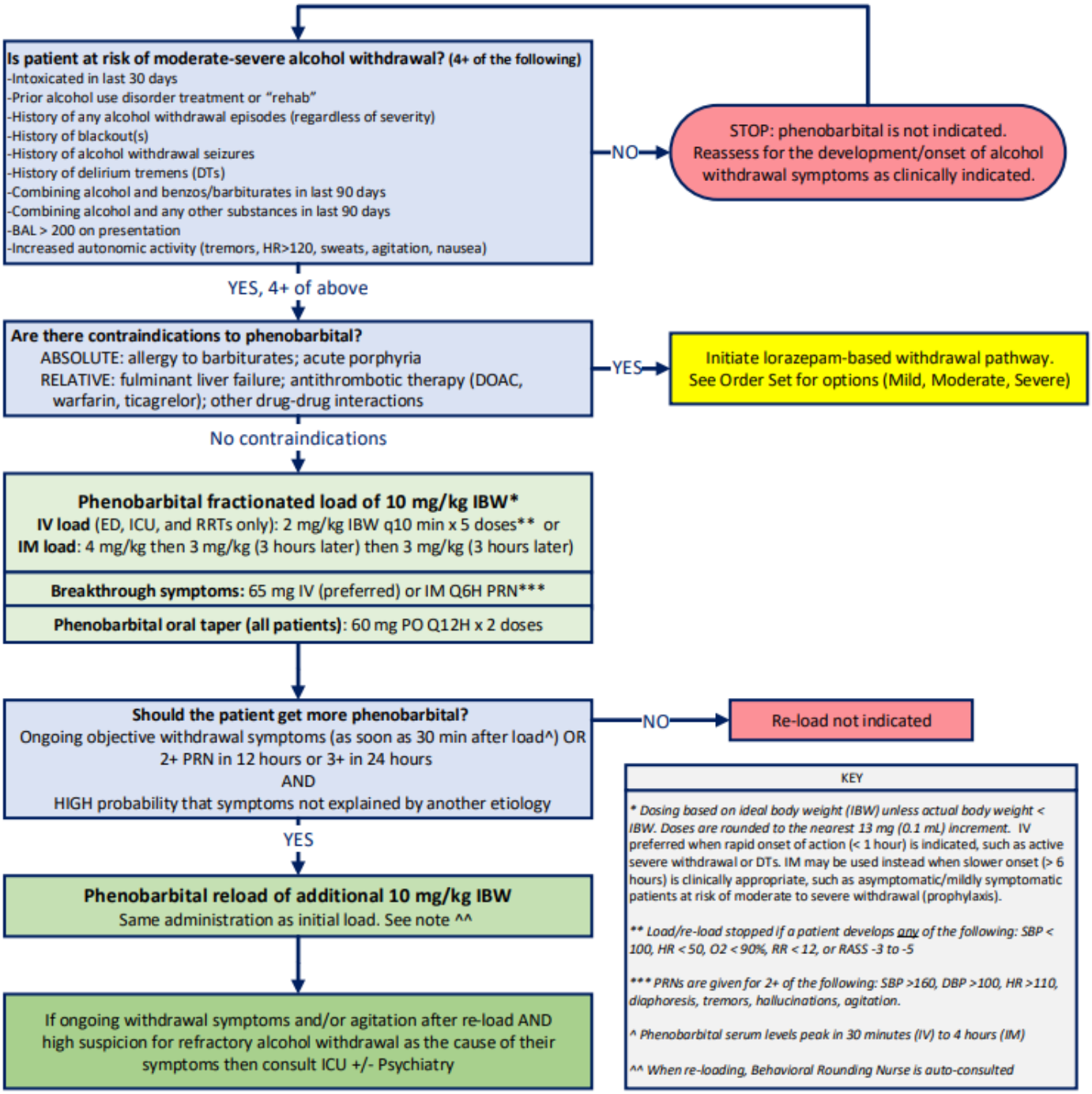
Personnel: Nurses

Competencies/Skills:

- A Provider determines whether or not to use phenobarbital or lorazepam for alcohol withdrawal prevention or treatment based on an assessment of the patient's risk of alcohol withdrawal severity
- Once the provider determines need for alcohol withdrawal treatment and orders Alcohol Withdrawal Pathway in Maestro, the orders are put into action by the nurse
- Nurse is to notify provider when withholding scheduled medication or when patient assessment indicates a change in pathway is needed (increased or tapering dosages)
- Nurse performs Alcohol Withdrawal Assessment(s) and vital signs (including O2 saturation) as indicated on the Alcohol Withdrawal Pathway orders

DUHS Alcohol Withdrawal Pathway

revised 6/2024



I. Phenobarbital Pathway

A. Phenobarbital Loading

- Phenobarbital is given as IM or IV loading doses followed by an oral taper.
- IV loading occurs over 50 to 60 minutes and close monitoring is needed during this time with attention to vitals and RASS, with strict hold parameters.
  i. Due to close monitoring requirement, IV loading is performed in ED, ICU, or during RRT
- When close monitoring is available, IV loading is preferred because a therapeutic level is reached more rapidly than with IM loading
- Rapid achievement of a therapeutic level reduces need for additional treatments and minimizes potential confusion related to transitions of care during a 6-hour IM loading period
- Initial loading doses are height-based (mg/kg ideal body weight (IBW)) and are 10mg/kg IBW
  *Dosing is based on ideal body weight (IBW) unless actual body weight is less than IBW. Doses are rounded to the nearest 0.5 mL interval (nearest 65-mg increment)
- Breakthrough doses are given q6 hours PRN for two (2) or more of the following: SBP >160, DBP > 100, HR > 110; diaphoresis; tremors; hallucinations; agitation
  - Higher breakthrough doses may be required in some cases (i.e. in patients with refractory withdrawal).
- Hold loading doses for any of the following: SBP < 100, HR < 50, RR < 12, or RASS -3 to -5

B. Use of phenobarbital:

- Monitor vitals Q2 hours for the first 24-hours of phenobarbital administration, and then every six (6) hours thereafter
- All patients started on phenobarbital should complete the planned load, even if they appear much improved after the first dose, unless they develop an adverse reaction to this medication (i.e., allergy, RASS < -2, or respiratory rate < 12).
- Frequently, patients with alcohol dependence will have a therapeutic response initially and then rapidly metabolize the drug
- Nurse must continue to assess the patient for increased significant somnolence and respiratory depression and notify the provider of these changes
  - Patient hypo-ventilates (respiratory rate < 12)
  - Becomes somnolent (RASS < -2), after the first or second IM dose
  - Contact the provider for further order to hold any planned additional doses (i.e., hold parameters are: RASS < -2, or respiratory rate < 12) until the patient's mental status and respiratory rate normalize.
- **Note: transferring the patient to a higher level of care maybe necessary if airway protection is needed.**
- Note: for intubated patients in the ICU, the responding clinician can choose to override these hold parameters and continue administration even in the setting of hypoventilation or somnolence

C. Unique considerations during phenobarbital loading

- If IV loading: IV phenobarbital could theoretically precipitate if given very slowly. To eliminate this risk, IV dose can be administered as an IV push at a rate of 50-60mg/min.
- If IM loading: Onset of phenobarbital is slow when given IM
  - While waiting for patient to become therapeutic on phenobarbital, can provide pharmacologic treatment for agitation, including haloperidol, quetiapine, and/or (dexmedetomidine in ICU setting only) if ordered by provider.

D. Warnings while on phenobarbital protocol

- **Do NOT use benzodiazepines for agitation while patient is on phenobarbital protocol**

- IM should not be used in patients with major coagulopathies (lower extremity burns, therapeutic anticoagulation, or platelet count < 50,000, INR > 2).
- Follow IM phenobarbital maximum volume dosing limits:
  - ≤ 2mL in deltoid
  - ≤ 3mL in vastus lateralis
- Minimize risks of respiratory depression:
  - If patient is somnolent or respiratory rate < 12, do NOT administer phenobarbital unless patient intubated
  - For non-intubated patients: if patient is somnolent (difficult to arouse with RASS < -2) and/or respiratory rate < 12, hold phenobarbital until these conditions normalize and notify provider.
  - **Do not use CIWA-A to determine need for breakthrough medication.**
  - **Avoid all benzodiazepines and minimize any additional sedating medications beyond phenobarbital.**

E. **Transitioning from benzodiazepines to phenobarbital:**

- Providers may decide to transition from benzodiazepines to phenobarbital and an order will be written to reflect change transitioning from benzodiazepines to phenobarbital.

F. **Seizures**

- At these doses, phenobarbital is not intended to treat seizures
- Pure alcohol withdrawal seizures are usually self-limited; status epilepticus suggests a secondary process (underlying brain injury, infection, etc.) beyond alcohol withdrawal
- In the event of status epilepticus during phenobarbital protocol (≥ 5 minutes), an order from the provider for benzodiazepines should be used per standard of care/usual seizure practice guidelines

G. **Phenobarbital serum level monitoring:**

- Serum phenobarbital levels may help guide additional dosing when patients continue to show significant signs of alcohol withdrawal with the standard dosing.
- Goal serum level for most patients with AWS is 15-25 µg/mL. Some patients with mild alcohol dependence may become therapeutic at levels lower than this.
- Monitoring is recommended in the following high-risk patient populations.
  - If serum phenobarbital level >30 µg/mL, maintenance dose may need to be adjusted
  - Severe liver disease/cirrhosis
  - Acute renal failure or ESRD
  - Combination of liver and renal disease
  - Signs and symptoms of barbiturate toxicity:
    - Hypotension
    - Bradycardia
    - Severe CNS depression
    - Respiratory depression (RR < 12 breaths per minute)
- If serum phenobarbital level >30 µg/mL, maintenance dose may need to be adjusted to achieve a level in the goal range. Contact provider for adjustment in order.

H. **Persistent AWS symptoms**

- **For patients with persistent symptoms of AWS and phenobarbital levels < 15 mg ug/ml, it is usually advisable to give additional phenobarbital loading doses to treat those symptoms.**
- If the patient remains tachycardic, hypertensive, and agitated notify provider. If an additional dose is ordered by the provider (5 mg/kg) the dose should be given as a single intramuscular injection. This is a small dose that can be given IV in Med Surg unit or in the ICU.

- Other nursing specific interventions may be required such as
  - *Restraints if patient is agitated or combative (requires provider order).
  - Suction setup in case of airway emergencies due to sedation in order to reach the goal of RASS -1
- If symptoms are not suppressed at phenobarbital levels of 30 µg/mL, consider transfer to higher level of care for further management of alcohol withdrawal. (requires provider order)
  - Patient may need escalation to higher level care for more sedation e.g. “Precedex administration"

II. Procedure: Lorazepam-based alcohol withdrawal management

A. Lorazepam pathway is for patients with a phenobarbital contraindication and at moderate to severe risk of complication withdrawal.
B. This is a step-wise pathway in which scheduled and symptom-based PRN lorazepam doses and frequency are determined by the patient’s history and current symptoms

Lorazepam Pathway
(for patients with a phenobarbital contraindication and at risk of complicated withdrawal)

	Mild withdrawal	Moderate withdrawal	Severe withdrawal: Alcohol withdrawal delirium (DTs)
Withdrawal symptoms: - agitation - tremors - diaphoresis - hallucinations	• 2+ withdrawal symptoms AND • One VS **mildly** abnormal (T normal and SBP 140-160 or DBP 90-110 or HR 80-120)	• 2+ withdrawal symptoms AND • One VS **moderately** abnormal (T > 38.3 or SBP > 160 or DBP > 110 or HR > 120)	• 2+ withdrawal symptoms AND • **Two** or more VS moderately abnormal (T > 38.3, SBP > 160, DBP > 110, HR > 120) AND • Altered mental status or seizure
Scheduled Lorazepam (Provider chooses route)	1 mg PO/IV Q4H Hold for: RR < 12, SBP < 100, O2 ≤ 89%, or RASS -2 to -5	2 mg PO/IV Q4H Hold for: RR < 12, SBP < 100, O2 ≤ 89%, or RASS -2 to -5	n/a
Nurse to notify provider:	when holding 2nd scheduled dose		n/a
PRN Lorazepam (for 2 or more of the following): HR > 110, SBP > 160, DBP > 100, tremor, diaphoresis, agitation, hallucinations	1 mg PO/IV Q2H PRN	2 mg PO/IV Q2H PRN	4 mg PO/IV Q2H PRN Hold for RASS -3 to -5
Nurse to notify provider:	If 4 or more PRN doses given OR ≥ 10 mg lorazepam in the last 24 hours	If 4 or more PRN doses given OR ≥ 15mg lorazepam in the last 24 hours	If 4 or more PRN doses given OR ≥ 20 mg lorazepam in the last 12 hours ***consider Rapid Response/ICU consult***
Nurse to notify provider:	Daily at 9am IF no more than 1 PRN lorazepam dose given in the last 24 hours		
Assessment Frequency: *Vital signs AND Alcohol Withdrawal Symptom Assessment: Nurse to document "Alcohol Withdrawal" assessment flowsheet to determine need for PRN lorazepam*	Q2H while awake		Q1H and before each lorazepam dose

REFERENCES:

Gold JA, et al. (2007). A Strategy of Escalating Doses of Benzodiazepines and Phenobarbital Administration Reduces the Need for Mechanical Ventilation in Delirium Tremens. Critical Care Medicine, 35(3): 724-730.

Hendey GW, et al. (2011). A Prospective, Randomized, Trial of Phenobarbital Versus Benzodiazepines for Acute Alcohol Withdrawal. American Journal of Emergency Medicine, 29(4): 382-385.

Ives TJ, et al. (1991). Pharmacokinetic Dosing of Phenobarbital in the Treatment of Alcohol Withdrawal Syndrome. Southern Medical Journal, 84(1): 18-21.

Kosten TR, et al. (2003). Management of drug and alcohol withdrawal. New England Journal of Medicine, 348: 1797-95.

Latt N, et al. (2014). Thiamine in the Treatment of Wernicke Encephalopathy in Patients with Alcohol use Disorders. Journal of Internal Medicine, 44(9): 911-5.

Maldonado JR, et al. (2014).The "Prediction of Alcohol Withdrawal Severity Scale" (PAWSS): Systematic literature review and pilot study of a new scale for the prediction of complicated alcohol withdrawal syndrome. Alcohol, 48: 375-390.

Mayo-Smith MF, et al. (2004). Management of Alcohol Withdrawal Delirium: An Evidence-Based Practice Guideline. Arch Intern Med. 164(13):1405-1412.

Rees E, et al. (2013). Supplementary Thiamine is Still Important in Alcohol Dependence. Alcohol and Alcoholism, 48(1): 88–92.

Sarai M, et al. (2013). Magnesium for Alcohol Withdrawal. The Cochrane Database of Systemic Reviews, doi: 10.1002/14651858.

Schuckit MA. (2014). Recognition and Management of Withdrawal Delirium (Delirium Tremens). New England Journal of Medicine, 371: 2109-211

Shah S, et al. (2012). Alcohol-related predictors of delirium after major head and neck cancer surgery. Archives of Otolaryngology- Head & Neck Surgery. 138(3):266-71.

Thomson AD, et al. (2006). The treatment of patients at risk of developing Wernicke's encephalopathy in the community. Alcohol and Alcoholism, 41(2): 159-167. ● https://emcrit.org/pulmcrit/phenobarbital-reloaded/

Alcohol withdrawal - EMCrit Project

Associated Policies:

Attachment Names:

-Alcohol Withdrawal Pathway Nursing Reference
-ED Nursing Supplemental Learning Alcohol Withdrawal Pathway
-Inpatient Nursing Supplemental Learning Alcohol Withdrawal Pathway