

Abstract # 167

Platform Category B3

IMPACT OF IMPLEMENTING A NEW INPATIENT ALCOHOL WITHDRAWAL MONITORING SCALE

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Helena, MT
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IRB Exempt



DISCLOSURES

- Taylor Hopson
- Potential conflict of interest: none
- Sponsorship: none
- Proprietary information or results of ongoing research may be subject to different interpretations
- Speaker's presentation is educational in nature and indicates agreement to abide by the non-commercialism guidelines provided
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 - Julie Petre, PharmD., BCPS.
 - Heidi Simons, PharmD., BCPS., BCCCP.
 - Shea Fanning, PharmD., BCPS.



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LEARNING OBJECTIVES

By the end of this presentation, you will be able to:

- Explain the potential benefits in utilizing the SEWS assessment tool for Alcohol Withdrawal Syndrome.



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ST. PETER'S HEALTH

- Nonprofit, community-owned
- 123-bed hospital
- Serves an estimated 97,000 people across five counties
- Wide variety of specialty services and clinics



AWS Management at SPH

- Clinical Institute Withdrawal Assessment for Alcohol (CIWA-Ar) monitoring
 - Lorazepam for symptom-triggered doses
 - Scheduled phenobarbital plus symptom-triggered doses



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LEARNING ASSESSMENT QUESTION #1

Which time frame represents the highest risk of severe alcohol withdrawal (from time of last drink)?

- a. 6 hours
- b. 12-48 hours
- c. 48-72+ hours
- d. All of the above



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LEARNING ASSESSMENT QUESTION #2

Why is St. Peter's Health switching from CIWA to SEWS monitoring for alcohol withdrawal?

- a. Because of ease of use
- b. Because literature outlines improved patient outcomes
- c. Because it is more accurate in terms of assessments
- d. All of the above



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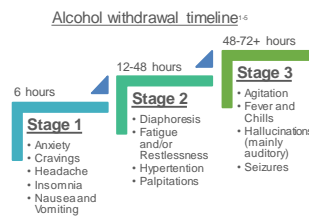
LEARNING ASSESSMENT QUESTION #3

In what way did utilization of medications change when using CIWA monitoring for alcohol withdrawal versus SEWS?

- Patients used more medications while on SEWS
- Patients used more medications while on CIWA
- Patients used roughly the same amount of medications for both CIWA vs. SEWS
- Comparing the two monitoring tools in terms of medication utilization is clinically insignificant

BACKGROUND

- Alcohol use disorder (AUD) in ~11-32% of hospitalized patients³
 - Alcohol Withdrawal Syndrome (AWS)
- Pharmacologic intervention sooner rather than later³
 - Decreased risk for severe consequences
- Symptomatically triggered pharmacotherapy^{1,2,4-6}
 - Gabamimetic medications
 - Supportive therapies



BACKGROUND (cont.)

- Recent literature February 2023
 - New alcohol withdrawal screening tool, the Severity of Ethanol Withdrawal Scale (SEWS)¹
- SEWS
 - Literature findings:^{1,2}
 - Reduced time on medication protocol ($p < 0.0001$)
 - Patients received half as much medication within the first 24 hours ($p < 0.05$)
 - More assessments were made when using CIWA in a 24-hour period ($p < 0.01$)
 - Nursing reported:
 - Easier to use
 - More accurate in terms of patient assessment

BACKGROUND (cont.)

Comparison of CIWA vs. SEWS¹

CIWA	Score
Anxiety "Nervous"	0-7
Nausea OR Vomiting	0-7
Sweats	0-7
Tremor	0-7
Agitation	0-7
Orientation: Addition	0-4
Tactile Hallucination	0-7
Auditory Hallucination	0-7
Visual Hallucination	0-7
Headache/Fullness	0-7
None	

SEWS	Item Weight
Acute Anxiety	0 or 3
Nausea AND Vomiting	0 or 3
Sweats	0 or 2
Tremor	0 or 2
Agitation	0 or 3
Orientation: Weighted	1 or 3
ANY Hallucination	1 or 3
Deleted	
Vital Signs: Weighted	0 or 3

PURPOSE

- Develop and implement a new SEWS-based monitoring protocol to guide symptom-triggered medication administration.
- Provide new prospective data to compare with retrospective analysis to evaluate the outcomes of patient care using each scale (CIWA vs. SEWS).

OBJECTIVES

Primary outcome

- To evaluate the average patient time on medication protocol and monitor for resolution of symptoms.

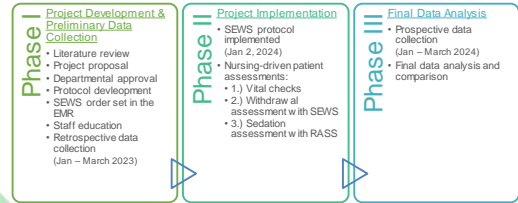
Secondary outcomes

- Quantify the amount of medication required for each protocol (CIWA-Ar vs. SEWS) and observe any need for adjunctive pharmacotherapy.
- Observe patient length of stay and/or transfer rates to higher levels of care.
- Assess symptom control based on patient scale scoring.
- Compare nursing assessment variabilities within each scale.

METHODS: STUDY DESIGN

- Cohort analysis
 - Retrospective and prospective
- Single-center
- Quality improvement project

METHODS: STUDY DESIGN (cont.)



METHODS: ELIGIBILITY CRITERIA

Inclusion Criteria	Exclusion Criteria
18 years of age or older	Confidential patient charts
Initiated on alcohol withdrawal therapy with lorazepam or phenobarbital	Left against medical advice (AMA)
	Transferred to another facility
	Discharged from the ED

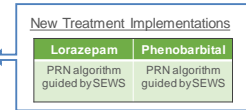
METHODS: PROTOCOL DEVELOPMENT

Monitoring

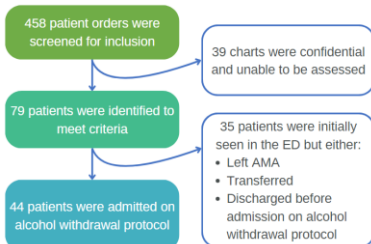
1. Vital checks
2. Withdrawal assessment: SEWS
3. Sedation Assessment: RASS

Treatment

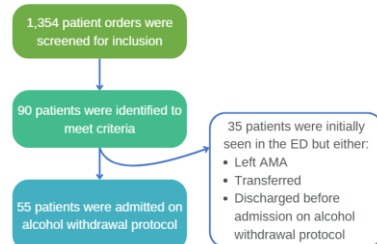
- Lorazepam
 - No previous protocol guidance
- Phenobarbital
 - Scheduled same as previous



METHODS: RETROSPECTIVE ANALYSIS



METHODS: PROSPECTIVE ANALYSIS



RESULTS: PRIMARY OUTCOME

Scale Type	Median Time on Medication Protocol
CIWA-Ar (n = 44)	101.6 hours
SEWS (n = 55)	36.5 hours

RESULTS: SECONDARY OUTCOMES

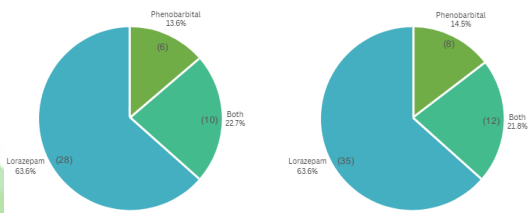
Scale Type	Adjunctive Pharmacotherapy	Patient LOS (days)	Transfer to higher LOC	Median Score
CIWA-Ar (n = 44)	52.3% (n = 23)	6	0% (n = 0)	3
SEWS (n = 55)	40% (n = 22)	4	3.6% (n = 2)	3

RESULTS: SECONDARY OUTCOMES (cont.)

Alcohol Pharmacotherapies

CIWA-Ar (n = 44)

SEWS (n = 55)



RESULTS: SECONDARY OUTCOMES (cont.)

Average Medication Amounts

(for CIWA and SEWS per day on medication protocol)



DISCUSSION: INTERPRETATION OF RESULTS

- Decreased TOMP
 - Difference of ~2.7 days
- Decreased LOS
 - Difference of 2 days
- Similar ratios of therapies
- Decreased average medication amounts (per patient TOMP)
- Ease of use for nursing
- Nursing variability with doses

DISCUSSION: STRENGTHS

- Regimented protocol
- Improved overall patient care
 - Streamlined patient care
 - Accurate patient care

DISCUSSION: LIMITATIONS

- Transition in EMR
 - Retrospective report from old system
 - Documentation
- Lorazepam Shortages
 - Shortages in 2023 & 2024
- Adjustments
 - Doses/substitutions
- Order set changes
- Re-education(s)

CONCLUSION

- Overall improved patient care
 - Streamlined process
 - Regimented protocolization
 - AWS management
- There were more observed escalations of care

FUTURE DIRECTIONS/FOLLOW-UP

- Present results to stakeholder groups at SPH
- Offer ongoing education/guidance where needed
- Continual patient monitoring and follow-up

ACKNOWLEDGEMENTS

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 - Rachel Moore, PharmD., BCPS.
 - Julie Petre, PharmD., BCPS.
 - Heidi Simons, PharmD., BCPS., BCCCP.
 - Shea Fanning, PharmD., BCPS.
- Informaticist
 - Anthony Huot, RPh

LEARNING ASSESSMENT QUESTION #1

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QUESTIONS?

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SUPPLEMENTARY MATERIAL: SEWS

SEVERITY OF ETHANOL WITHDRAWAL SCALE	
SEVERITY OF ETHANOL WITHDRAWAL SCALE (SEWS)	YES
ANXIETY: Do you feel that something bad is about to happen to you right now?	3
NAUSEA and DRY HEAVES or VOMITING?	3
SWEATING (includes moist palms, sweating now?)	2
TREMOR: with arms extended, eyes closed	2
AGITATION: fidgety, restless, pacing	3
ORIENTATION Name and place date: all three NO POINTS Any two only	1
Any one only	3
HALLUCINATIONS Visual, tactile, olfactory, gustatory	3
VITAL SIGNS: ANY of the following Pulse >120 Diastolic BP >90 Temp >99.6	3
Total score 3-6: Mild withdrawal Total score 7-12: Moderate withdrawal Total score >13: Severe withdrawal	

SUPPLEMENTARY MATERIAL: PROTOCOL DEVELOPMENT

Risk Factors for Withdrawal

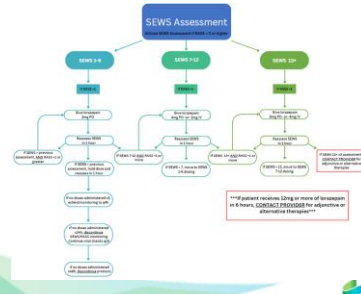
Complication	Risk Factors
Sedation	>65 years of age
	Hepatic dysfunction or cirrhosis
	Concomitant or recent use of opioids, benzodiazepines, or other sedatives
Respiratory compromise	Head injury
	Pneumonia
	Coexisting pulmonary disease such as COPD, asthma, interstitial lung disease, pulmonary fibrosis
	Rib fractures
	Chest tubes
Risk factors for severe withdrawal	Pulmonary contusion
	C-collar/brace
	PAWSS score ≥ 4
ICU admission	ICU admission
	History of seizures, delirium tremens, and/or hallucinations
	SEWS score ≥ 7

Guidance for Withdrawal Therapy

Presentation	Lorazepam	Phenobarbital
PAWSS Score	< 4	≥ 4
Hepatic encephalopathy	Lorazepam preferred	
Response to benzos	Response to < 10 mg lorazepam	Requiring > 10 mg lorazepam
Drug interaction potential		Strong CYP3A4 inhibitor
High risk for respiratory compromise*		Phenobarbital preferred
High risk for seizure* High risk for severe withdrawal*	Lorazepam preferred	Phenobarbital preferred
History of EtOH withdrawal at SPH	Previous lorazepam use	Previous phenobarbital use

SUPPLEMENTARY MATERIAL: PROTOCOL DEVELOPMENT (cont.)

Algorithm #1: Lorazepam Dosing for SEWS Assessments



SUPPLEMENTARY MATERIAL: PROTOCOL DEVELOPMENT (cont.)

Algorithm #2: Initial Phenobarbital Regimen for AWS

Consider higher dosing for obese patients



PRN Phenobarbital Dosing

