Implementing Evidence-Based Alcohol Withdrawal Protocols to Improve Patient and Staff Safety

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Background

Alcohol withdrawal syndrome (AWS) remains a complex clinical challenge, particularly in hospitalized patients with incomplete alcohol histories or severe withdrawal (Patel et al., 2021). Use of the Clinical Institute Withdrawal Assessment for Alcohol-Revised (CIWA-Ar) to assess AWS has been problematic. Its subjective scoring, lack of objective physiologic measures, and impact of patients not cooperating with the assessment have led to a high alcohol withdrawal protocol failure rate (Patel et al., 2021). Ineffective AWS management increases patient morbidity, intensive care unit (ICU) transfers, workplace violence, and staff burnout (Bradley et al., 2023). Audits of the CIWA-Ar-based protocol at Salinas Valley Health Medical Center revealed a protocol failure rate of 98% before mandatory nursing education and a persistent failure rate of 71% after education on the CIWA-Ar protocol was provided. The persistent failure rate led to a multiyear evidence-based initiative to identify and implement the ideal alcohol withdrawal protocol at the medical center.

Purpose Statement

The goal of this evidence-based practice (EBP) initiative is to improve patient outcomes, reduce ICU admissions, and decrease the incidence of workplace violence resulting from the mismanagement of AWS.

Methods

Guided by the Johns Hopkins Evidence-Based Practice (JHEBP) Model for Nurses and Healthcare Providers (Johns Hopkins Medicine, 2025), our practice question was: "What are evidence-based strategies to improve clinical outcomes for hospitalized patients diagnosed with alcohol withdrawal?" With help from our medical librarian, the project leads (LB, KGM) searched the literature in the Cochrane Library, CINAHL®, PubMed®, and MEDLINE. The following search terms were used: "alcohol withdrawal," "CIWA-Ar," "MINDS," "Minnesota Detoxification Scale," "SEWS," "Severity of Ethanol Withdrawal Scale," "PAWS," "Prediction of Alcohol Withdrawal Severity Scale," "workplace violence," "ICU admissions," and "length of stay," configured with the Boolean operators "AND," "OR," and "NOT." This yielded 58 articles, which were then sorted by reading the titles and abstracts; 51 were eliminated and seven articles were selected based on their relevance and quality, and appraised using the JHEBP research appraisal tool. The level and quality of each source were identified. The literature synthesis of the remaining seven articles demonstrated support for the use of high-dose benzodiazepine MINDS protocols to reduce ICU length of stay, mechanical ventilation, and adjunctive medication use. Evidence also indicated that the use of phenobarbital was beneficial for patients experiencing alcohol withdrawal.

An interprofessional Alcohol Withdrawal Committee was formed, which included nurses and physicians. Members synthesized findings from the literature review into protocol components. We reviewed protocol sources from another medical center and evaluated internal data. The Prediction of Alcohol Withdrawal Severity Scale (PAWS), Sedation-Agitation Withdrawal Scale (SEWS), Minnesota Detoxification Scale (MINDS), and CIWA-Ar were evaluated for relevance in the Med-Surg, Progressive Care, and ICU units and the Emergency Department. We selected the SEWS protocol for Med-Surg units and the MINDS protocol for ICU and Progressive Care units. High-dose, front-loading benzodiazepine medication protocols were designed and approved by the critical care intensivists and Pharmacy Therapeutics Committee for the MINDS protocol, and oral benzodiazepine therapy was approved for the SEWS protocol. Phenobarbital was approved as an adjunct medication for high-risk ICU and Progressive Care patients refractory to high-dose benzodiazepine therapy. The new protocols incorporated objective measures, such as vital signs and Richmond Agitation Sedation Scale (RASS) scores, and a structured escalation pathway. The PAWS scale was implemented to screen patients over the age of 18 on admission to identify potential alcohol abuse to prevent severe AWS.

Nurses from each unit were designated as superusers and educated extensively on the new protocols. They also offered valuable feedback to revise the protocols, making them easier to understand and follow. Education about the protocols was provided by nursing education and the project leads to all inpatient staff. The RASS scale, previously used in the ICU only, was taught to nurses using SEWS and MINDS to provide an objective way to measure sedation. The protocols went live on April 8, 2025.

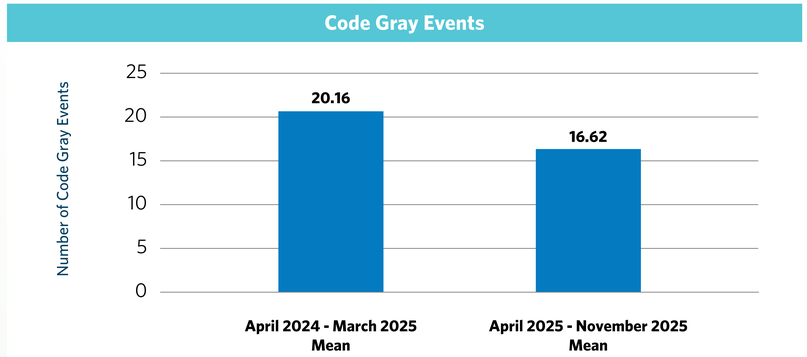
To evaluate the impact of the new protocols, monthly data were collected to evaluate system-level safety and escalation events associated with alcohol withdrawal management prior to and after implementation of the revised protocol. Outcomes included code gray events, alcohol-related workplace violence incidents, and alcohol-related transfers to the ICU. In our organization, code gray is activated when a patient is exhibiting aggression and/or violence that cannot be deescalated and imposes a threat to staff safety. Code gray events were from all inpatient units, and workplace violence data were from employee health tracking of events for all staff. We chose all inpatient units and violence against all staff because we believed this best reflected the impact of the protocols being implemented across acute care units.

Prior to implementation, baseline data demonstrated frequent and variable alcohol withdrawal–related events, with recurrent spikes in code gray activations and ICU transfers, as well as intermittent workplace violence events. This variability suggested inconsistent symptom control and reliance on reactive escalation strategies.

Results

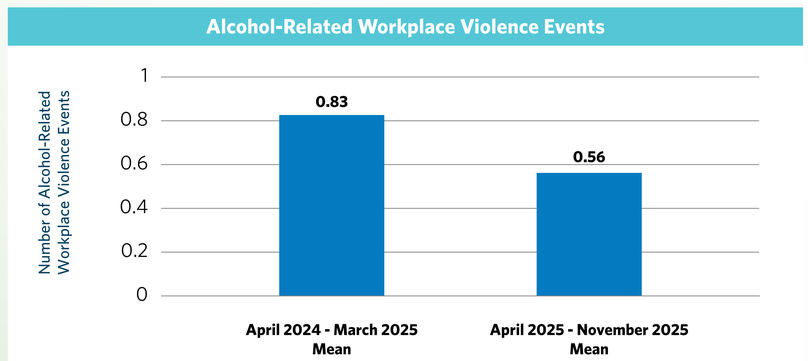
Following protocol implementation in April 2025, all outcomes improved. We compared 1 year of available pre-intervention data to post-intervention data by calculating means for each time period. Pre-intervention data included monthly data from April 2024 to March 2025 and post-intervention data included monthly data from April 2025 to November 2025. Go-live was on April 9, 2025; thus, we elected to include this month in our post-intervention data. Code gray events decreased from a pre-implementation mean of 20.16 to 16.62 post-implementation (see Figure 1). Alcohol-related workplace violence events decreased from a pre-implementation mean of 0.83 to 0.56 post-implementation (see Figure 2). Alcohol-related transfers to the ICU decreased from a pre-implementation mean of 5.66 to 3.63 post-implementation (see Figure 3). Staff feedback has been positive, and the AWS patients are reportedly easier to manage with the new protocols in place.

Figure 1



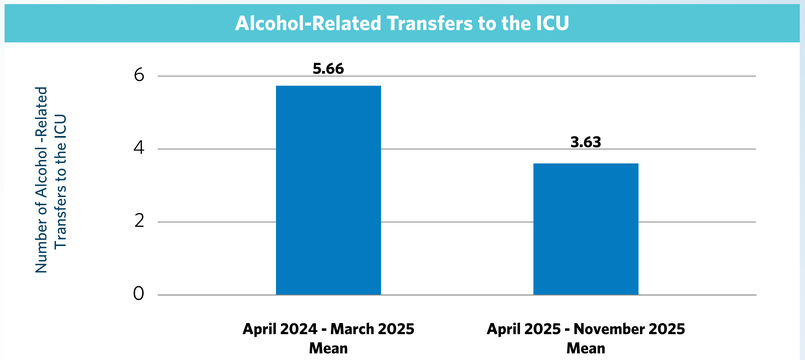
Note. Means were calculated using monthly data for the year before the intervention go-live and from the 8 months after go-live. Go-live was in April 2025.

Figure 2



Note. Means were calculated using monthly data for the year before the intervention go-live and from the 8 months after go-live. Monthly events ranged from 0 to 4 pre-implementation and 0 to 1 post-implementation. Go-live was in April 2025.

Figure 3



Note. Means were calculated using monthly data for the year before the intervention go-live and from the 8 months after go-live. Go-live was in April 2025.

Conclusions

We replaced CIWA-Ar with the evidence-based AWS protocols SEWS for Med-Surg, MINDS for ICU, and adjunctive phenobarbital medication for select high-risk patients. All outcomes improved, most notably with alcohol-related ICU transfers. The decrease in alcohol-related transfers to the ICU suggests that there are fewer incidences of AWS cases that develop withdrawal symptom severity requiring an ICU level of care. We believe this is due to improved management of AWS in the Med-Surg and Progressive Care units. While code gray data were not stratified by alcohol-related and non-alcohol related events, the overall reduction in code gray events improved with early identification and management of AWS. Staff safety has improved with fewer code grays and alcohol-related workplace violence events.

Use of objective AWS protocols supports staff safety, minimizes patient harm, and aligns clinical practice with emerging evidence (Bradley et al., 2022). Like our findings, Patel et al. (2021) found that use of the MINDS scale combined with a high-dose, front-loading diazepam protocol reduced ICU transfers among hospitalized patients with alcohol withdrawal. Ongoing monitoring ensures that the protocols are enculturated. Protocol compliance is currently being tracked via monthly chart audits and will continue through 2026. The project leads and the ICU educator visit the floors weekly to assist and support staff.

References

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