



# Outcomes after implementation of an alcohol withdrawal protocol at a single institution

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## Background

- 8.2 million persons in the US are dependent on alcohol. The lifetime prevalence of alcohol abuse or dependence is 13.6%<sup>1,2</sup>
- Alcohol withdrawal syndrome (AWS) is a potentially fatal complication of the abrupt discontinuation of alcohol consumption
- Early symptoms of AWS include tremor, nausea, vomiting, and irritability. Patients are at risk for withdrawal seizures approximately 48 hours after alcohol cessation<sup>3</sup>

Patients are at highest risk for delirium tremens (DTs) approximately 4-5 days after ceasing alcohol use. DTs are associated with autonomic instability, disorientation, and hallucinations. Mortality rate associated with DTs is 15-20%<sup>3</sup>

- Benzodiazepines (BZDs) are the drug class of choice for managing AWS due to cross-sensitivity at the GABA<sub>A</sub> receptor<sup>2</sup>
- BZDs may be used to manage AWS via use of loading doses, scheduled BZD tapers, or symptom-based strategies
- The Clinical Institute Withdrawal – Revised (CIWA-Ar) scale is a well-validated scale which assess 10 symptoms related to AWS<sup>4</sup>

In October 2014, the Lexington VA Medical Center adopted use of the CIWA-Ar scale to monitor AWS and developed a symptom-based withdrawal protocol which called for the administration of diazepam based on nursing assessment of CIWA-Ar scores (Chart 1)

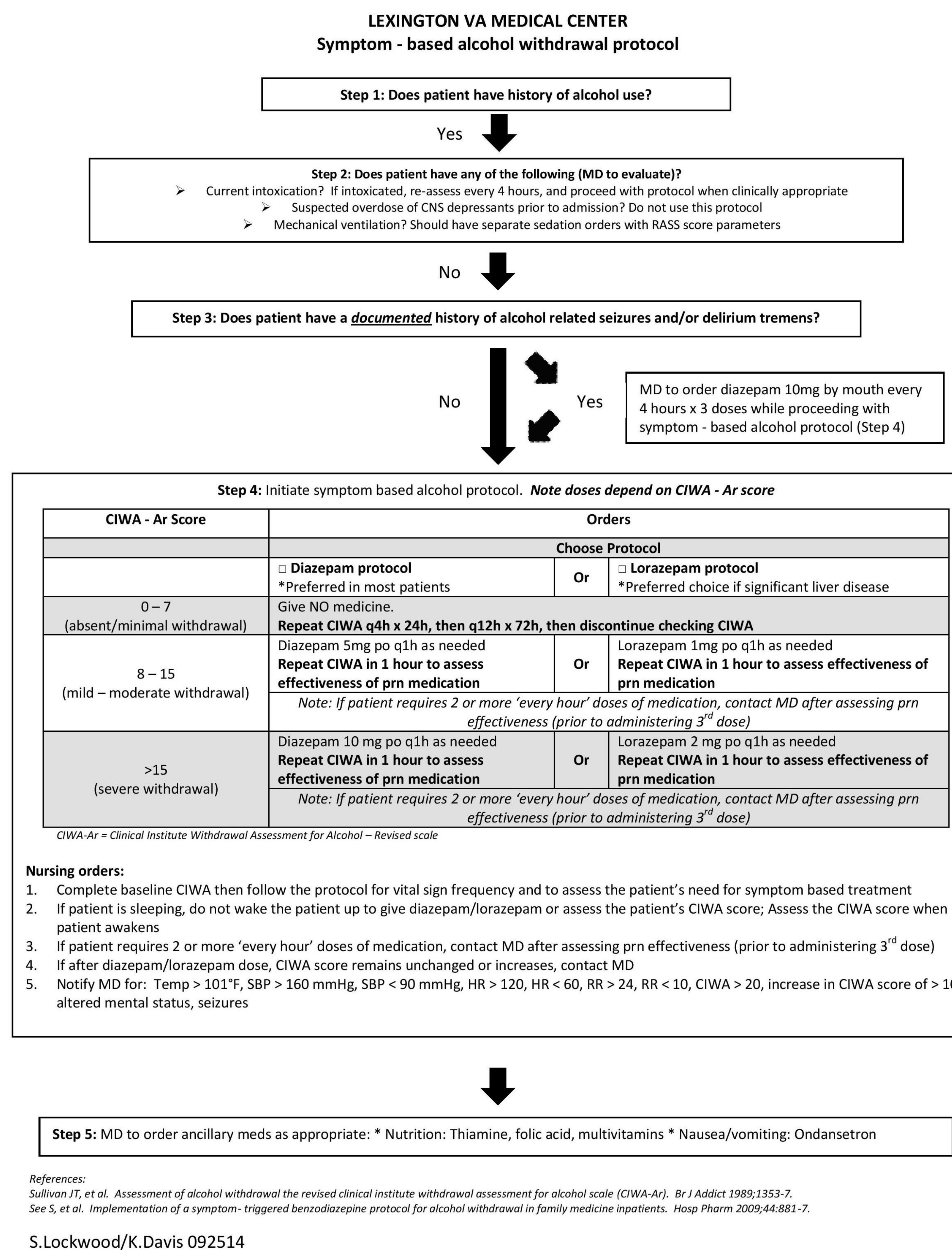
## Objectives

- Evaluate the safety and efficacy of this facility's newly implemented symptom-driven alcohol withdrawal protocol
- Add to the existing literature regarding the optimal dosing strategies of BZDs and the utility of the CIWA-Ar scale in the setting of AWS

## Methods

- Inclusion criteria: received at least one dose of diazepam for AWS between Feb 2013 – May 2013 (pre-protocol) or Nov 2014-May 2015 (post-protocol)
- Retrospective chart review was performed to determine total dose of diazepam received during admission along with length of stay (LOS) and occurrence of any serious consequences of AWS
- Primary outcome: change in mean daily and cumulative dose of diazepam during hospital stay
- Secondary outcomes: change in LOS or occurrence of seizures or DTs

## Chart 1: Symptom-Based Alcohol Withdrawal Protocol



## Clinical Implications

- Implementation of a symptom-based alcohol withdrawal protocol resulted in significantly less BZD usage without impacting safety
- Use of this protocol across all services hospital-wide adds to the current literature supporting implementation of such protocols
- Benefits of reduced BZD doses include lower risk of falls, over-sedation, and respiratory depression
- Decreased duration of BZD, and therefore faster resolution of AWS, may allow providers to shift attention to admitting diagnosis or other co-morbidities faster
- Implementation of this protocol involved significant staff development by clinical nurse experts, therefore, this protocol may not be feasible at all institutions

Figure 1: Change in Mean Diazepam Dose After Implementation of an Alcohol Withdrawal Protocol (n=174)

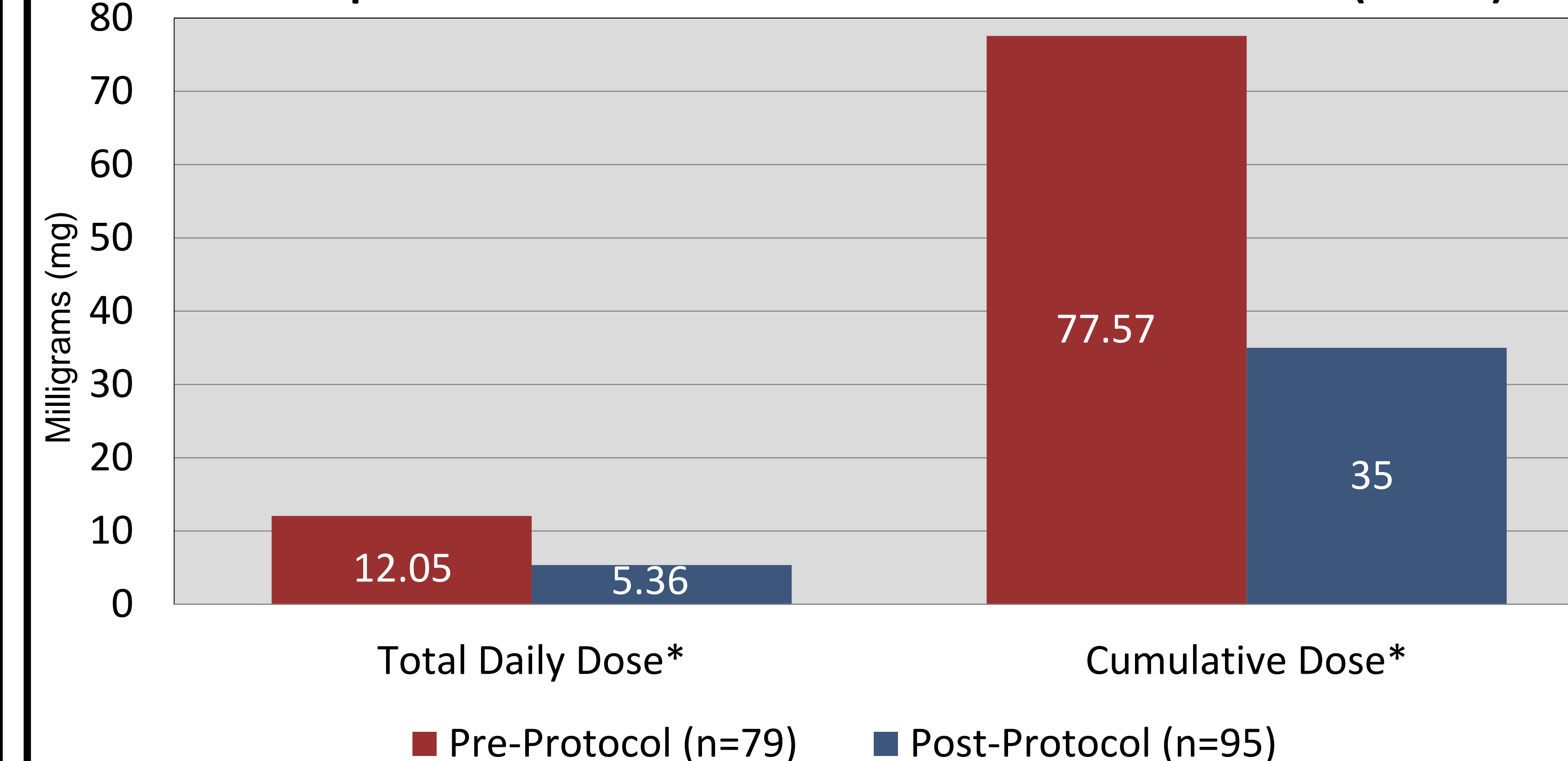
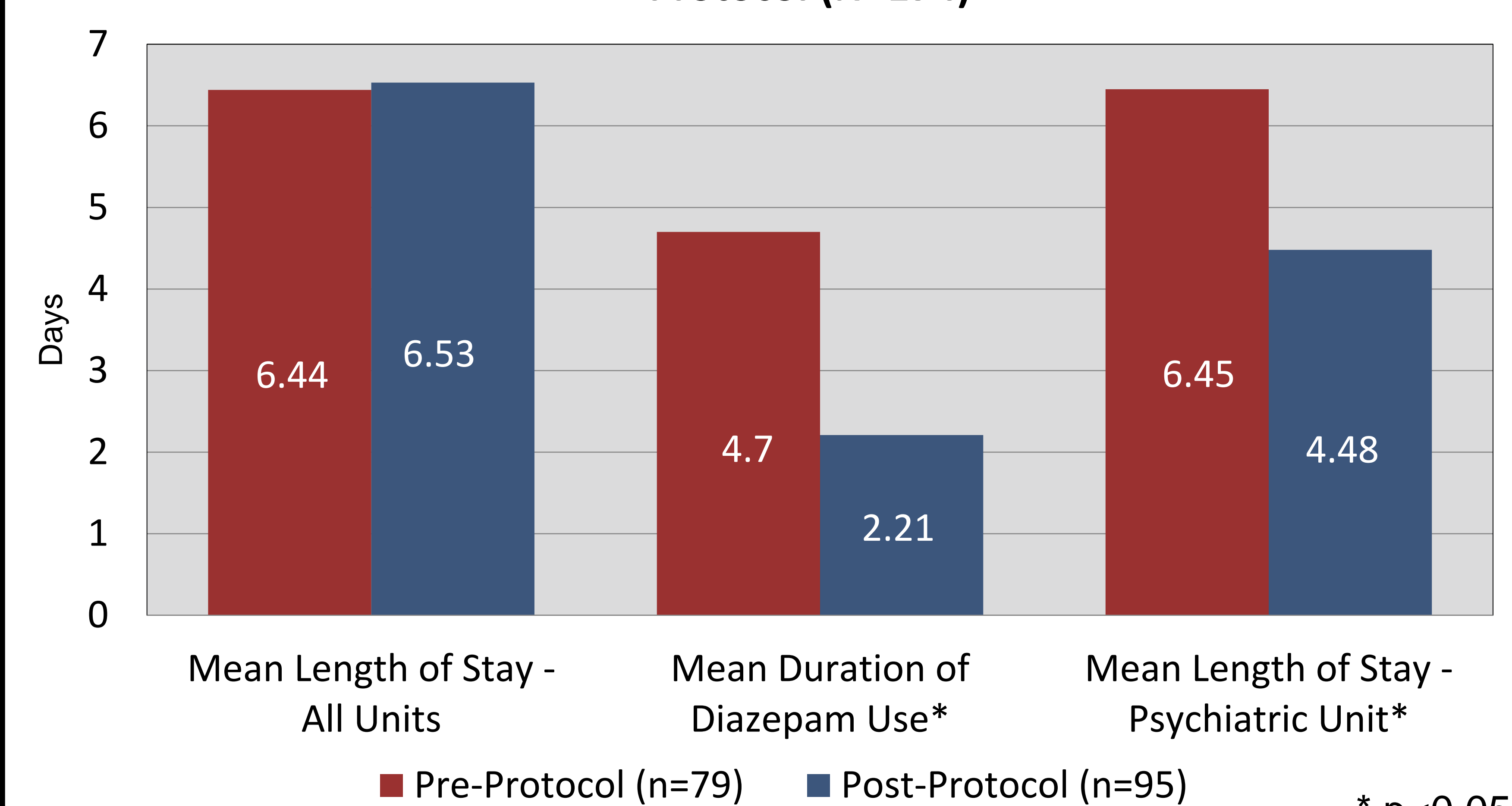


Figure 2: Change in Length of Stay and Duration of Diazepam Use After Implementation of an Alcohol Withdrawal Protocol (N=174)



## References

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## Disclosures:

- This material is the result of work supported with resources and the use of facilities at the Lexington VA Medical Center
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