# 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

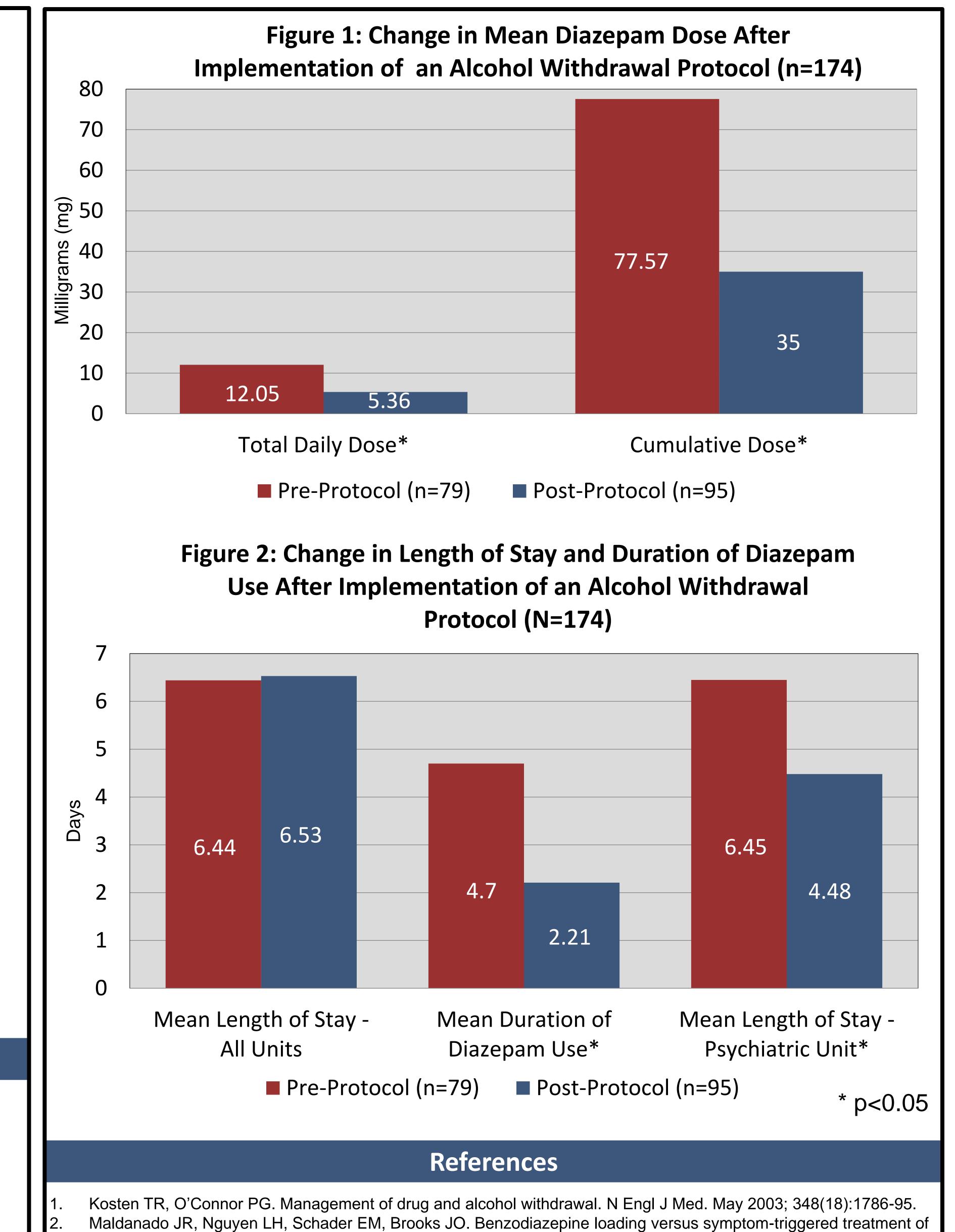
#### Methods

- 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
- <u>Secondary outcomes:</u> change in LOS or occurrence of seizures or DTs

# Chart 1: Symptom-Based Alcohol Withdrawal Protocol **LEXINGTON VA MEDICAL CENTER** Symptom - based alcohol withdrawal protocol Step 1: Does patient have history of alcohol use? Step 4: Initiate symptom based alcohol protocol. Note doses depend on CIWA - Ar score CIWA - Ar Score **Choose Protocol** \*Preferred choice if significant liver disease \*Preferred in most patients Repeat CIWA q4h x 24h, then q12h x 72h, then discontinue checking CIWA (absent/minimal withdrawal) Diazepam 5mg po q1h as needed Repeat CIWA in 1 hour to assess effectiveness Repeat CIWA in 1 hour to assess Note: If patient requires 2 or more 'every hour' doses of medication, contact MD after assessing prn effectiveness (prior to administering 3<sup>rd</sup> dose) Diazepam 10 mg po q1h as needed orazepam 2 mg po q1h as needed Or Repeat CIWA in 1 hour to assess effectiveness Repeat CIWA in 1 hour to assess effectiveness of prn medication prn medication Note: If patient requires 2 or more 'every hour' doses of medication, contact MD after assessing prn effectiveness (prior to administering 3<sup>rd</sup> dose) Complete baseline CIWA then follow the protocol for vital sign frequency and to assess the patient's need for symptom based treatment If patient is sleeping, do not wake the patient up to give diazepam/lorazepam or assess the patient's CIWA score; Assess the CIWA score when If patient requires 2 or more 'every hour' doses of medication, contact MD after assessing prn effectiveness (prior to administering 3<sup>rd</sup> dose) If after diazepam/lorazepam dose, CIWA score remains unchanged or increases, contact MD Notify MD for: Temp > 101°F, SBP > 160 mmHg, SBP < 90 mmHg, HR > 120, HR < 60, RR > 24, RR < 10, CIWA > 20, increase in CIWA score of > 10, Step 5: MD to order ancillary meds as appropriate: \* Nutrition: Thiamine, folic acid, multivitamins \* Nausea/vomiting: Ondansetron See S, et al. Implementation of a symptom-triggered benzodiazepine protocol for alcohol withdrawal in family medicine inpatients. Hosp Pharm 2009;44:881-7 S.Lockwood/K.Davis 092514

# **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, oversedation, 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



# Disclosures:

Malonado JR. An approach to the patient with substance use and abuse. Med Clin N Am. 2013;94: 1169-205.

Reoux JP, Miller K. Routine hospital alcohol detoxification practice compared to symptom triggered management with

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