

# Evaluation of a CIWA- based Alcohol Withdrawal Protocol & Pre- Printed Order in Adults ≥ 70 Years Old at Vancouver General Hospital

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## Background

- Elderly (≥ 65 years) at ↑risk for AWS associated complications.
- BDZ are the drug class of choice for management of AWS.
- In March 2010, a pre-printed order & protocol was implemented on the VGH Internal Medicine units for adults ≥ 70 years.
- The protocol consists of a symptom-triggered administration of low dose lorazepam based on the CIWA-Ar scale.

## Study Objectives

- To evaluate the severity and duration of alcohol withdrawal in the pre versus post protocol implementation groups
  - Primary outcomes:** BDZ treatment duration & total dose
  - Secondary outcomes:** severe withdrawal complications, serious BDZ adverse effects, and use of adjunctive therapy.
- To evaluate quality assurance outcomes to determine areas for potential improvement

## Methods

- Design:** Retrospective chart review & nursing survey to qualitatively summarize their experience with protocol
- Population:** Pts ≥70 yrs admitted to the internal medicine units with a diagnosis of alcohol withdrawal
- Pt identification:** AWS related diagnosis codes and pharmacy computer system search for thiamine IV and BDZ codes
- Pre-protocol:** Mar 2008 – Feb 2010 **Post-protocol:** Mar 2010-2012

## Inclusion Criteria

- ≥70 years old
- Pre- protocol group: admitted to hospital from ER
- Post- protocol group: AW protocol order
- Presumed diagnosis of AW documented in the chart

## Exclusion Criteria

- Active opiate, BDZ, or stimulant withdrawal
- Concurrent psych/ seizure disorder unrelated to AWS
- Regular BDZ use (other than for sleep) within 30 days of admission
- Severe liver disease (MELD score >9 or liver cancer)
- Left against medical advise/ moved to different ward where protocol not available

## Abbreviations

**ACE:** Acute Care for Elderly unit  
**AW:** Alcohol Withdrawal  
**AWP:** Alcohol Withdrawal Protocol  
**AWS:** Alcohol Withdrawal Syndrome  
**BDZ:** Benzodiazepine  
**CIWA:** Clinical Institute Withdrawal Assessment-Alcohol revised  
**CTU:** Clinical Teaching Unit  
**Pt:** Patient  
**VGH:** Vancouver General Hospital

## Results

Table 1: Patient Characteristics

Characteristic	Pre- Protocol (N=33)	Post- Protocol (N=30)
Average age- yrs (STD)	76.9 (± 5.45)	77.7 (±5.22)
Male (%)	85	80
Nicotine or marijuana addiction (%)	32	40
Prior AWS hospital admission (%)	9	7
Previous withdrawal seizure (%)	9	7
Previous delirium tremens (%)	3	0
Alcoholism as primary diagnosis (%)	21	20
Alcoholism as secondary diagnosis (%)	82	80
Duration of hospital stay- days (STD)	24.9 (±34.9)	34.3 (±45.8)

Figure 1: Primary Outcome: Median Duration of Benzodiazepine Use (N=66)

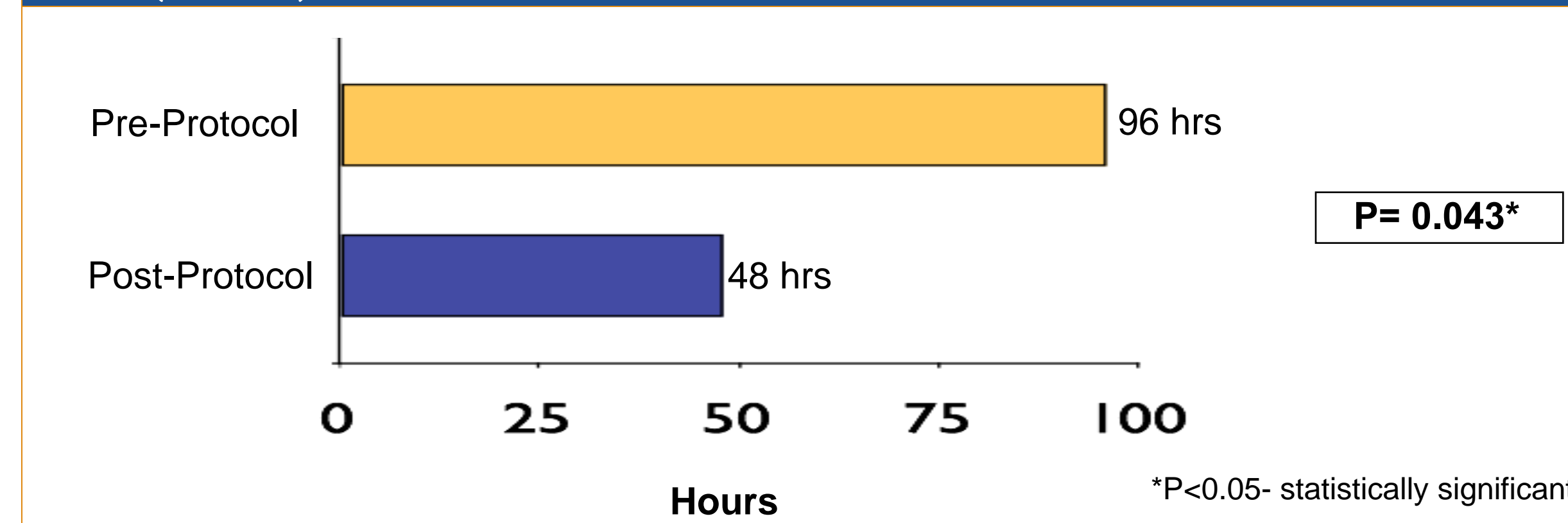


Figure 2: Primary Outcome: Median Dose of Benzodiazepine Administered (N=66)

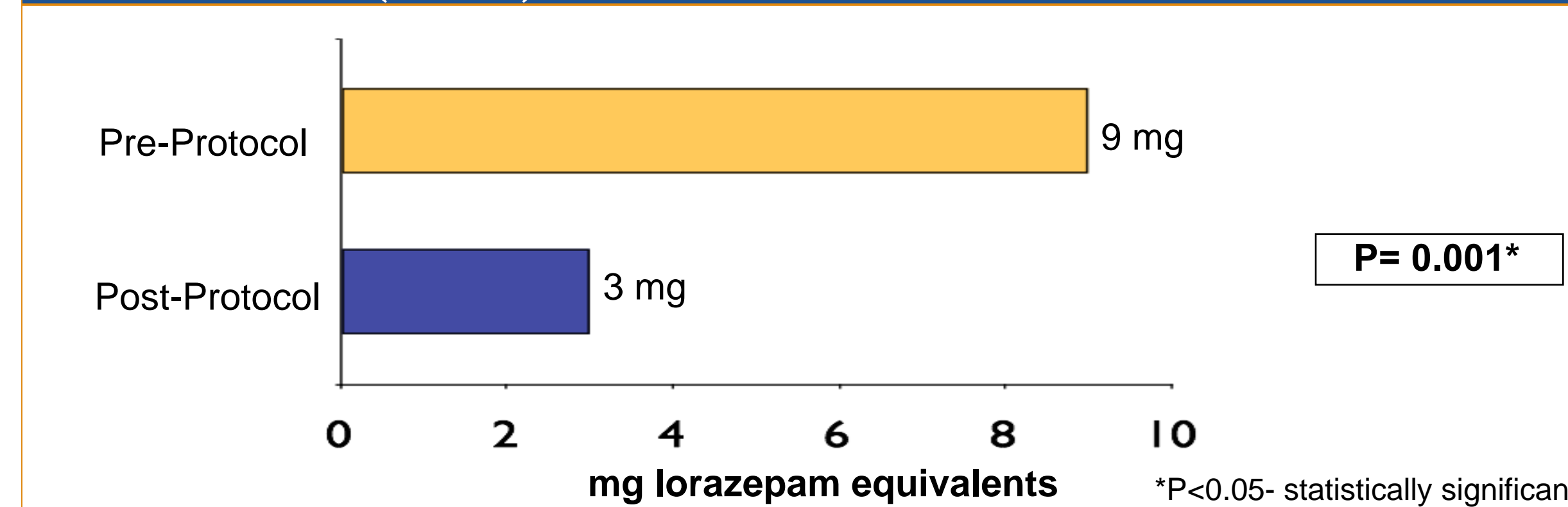


Figure 3: Nursing Survey Outcomes

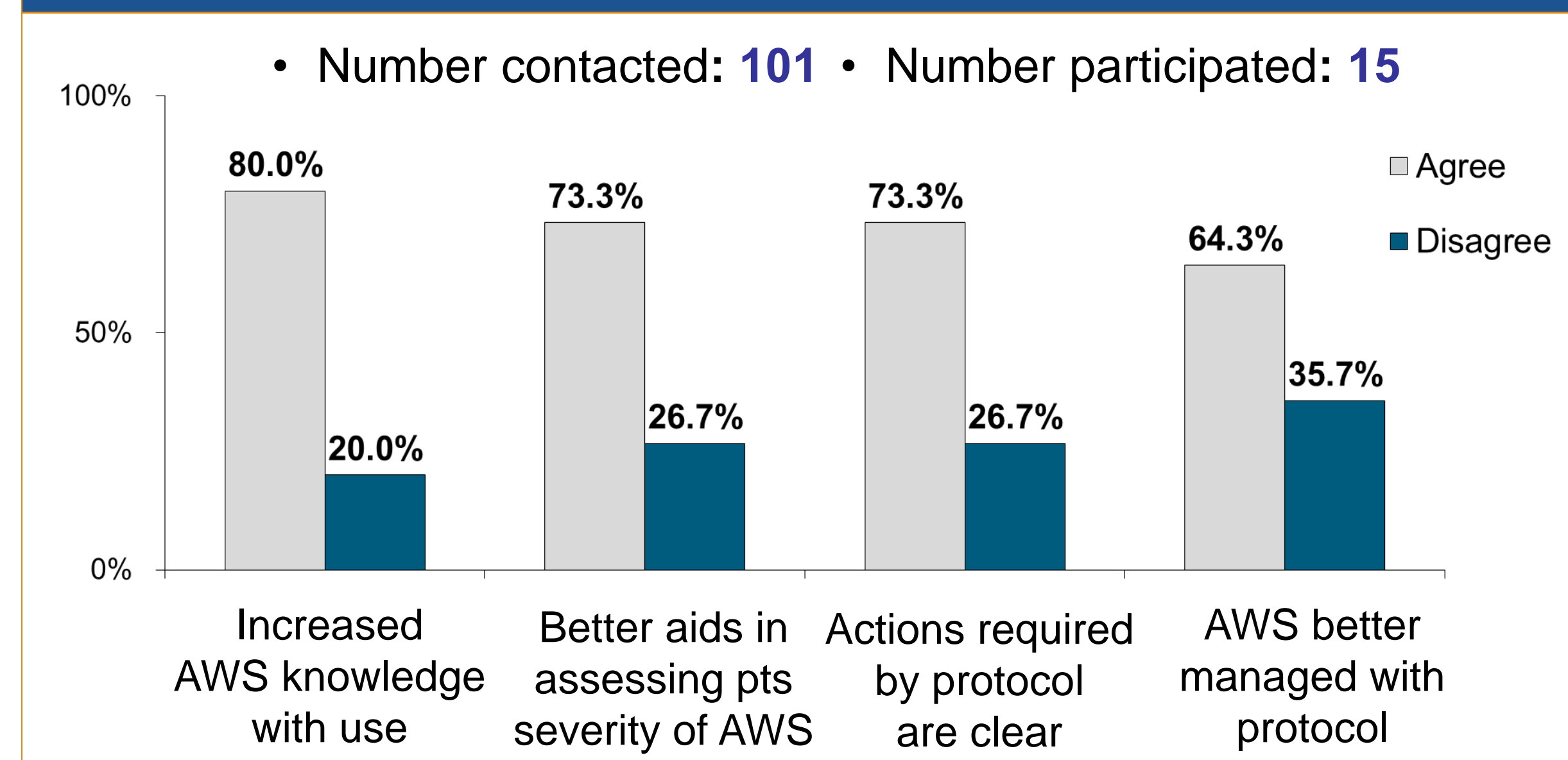


Figure 3: Secondary Outcomes

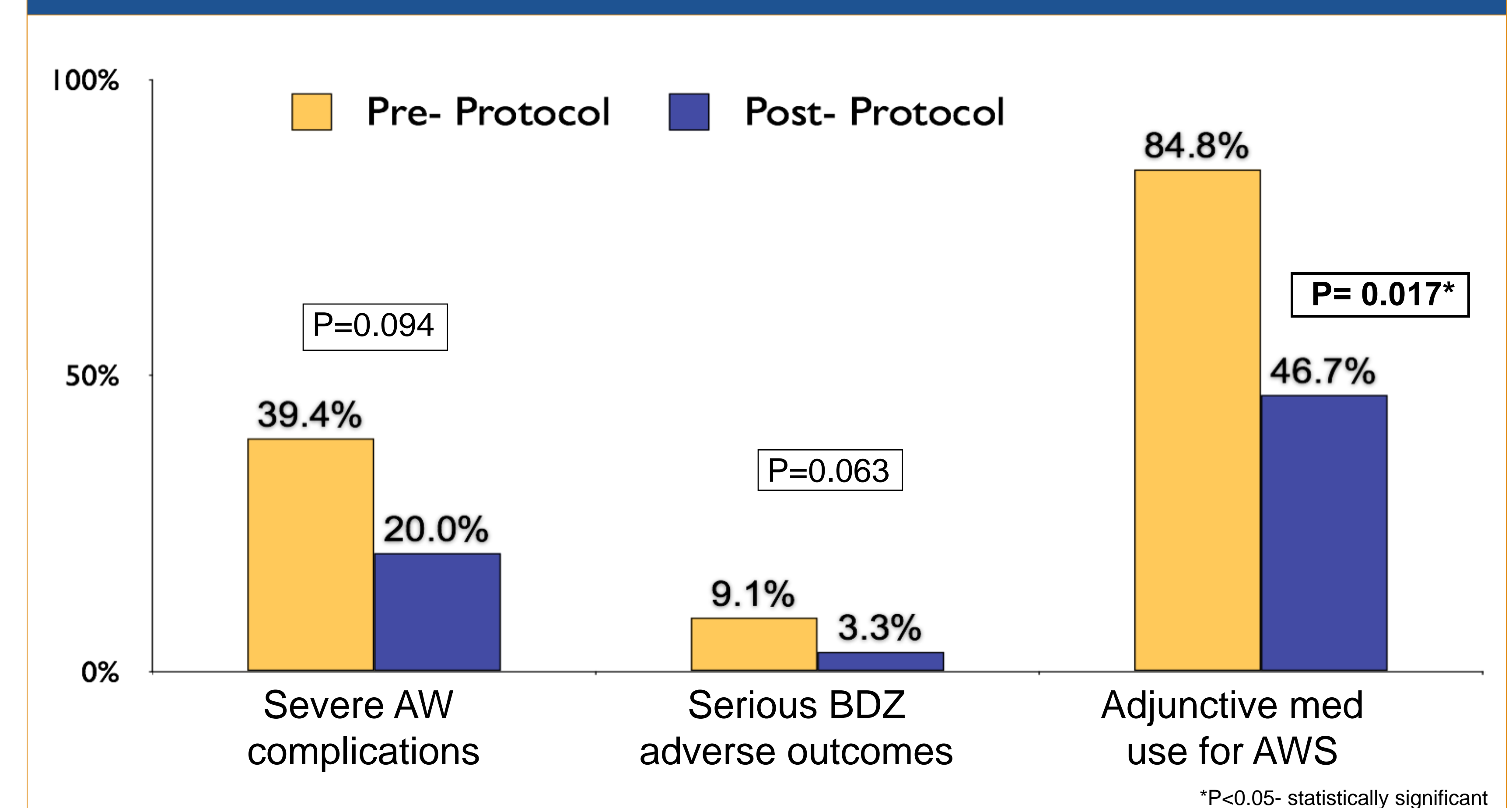


Table 3: Quality Assurance Outcomes (N=30)

Median time from AWS diagnosis to AWP order- hrs (IQR)	7.0 (3.2-20.4)
Median time from AWS diagnosis to first CIWA- Ar score- hrs (IQR)	10.5 (6.5- 25.3)
Mean # of prn BDZ doses admin despite CIWA- Ar score < 10 (SD)	3.4 (±6.1)
Mean # of prn BDZ doses admin without evaluation of CIWA- Ar (SD)	3.8 (±5.9)
CIWA-Ar monitoring done as per protocol- no. (%)	12 (40)
Confusion assessment screening done as per protocol- no. (%)	1 (3.3)
# of pts receiving regular sch. BDZ in addition to protocol- no. (%)	4 (13.3)

## Conclusions

- Implementation of AWP showed a statistically significant ↓ in the total duration of BDZ use, cumulative BDZ dose, & use of adjunctive meds in the treatment of AWS.
- Expansion of protocol & order set in the ER would improve diagnosis to treatment times.
- Further nursing education on use of protocol & CIWA monitoring is warranted.

## Limitations

- Retrospective observational study with potential differences between study populations
- Potential assessment inconsistencies & documentation inaccuracies with the chart review process
- CIWA-Ar scores unavailable for pre- protocol group to compare AWS severity & course of withdrawal
- CIWA-Ar not validated in a hospital, non- detoxification setting

