Embracing a Nurse-Driven Alcohol Withdrawal Protocol Through Quality Improvement

John Barrett, MA, BSN, RN ○ Maria Jansen, PharmD ○ April Cooper, PharmD ○ Matthew Felbinger, PharmD, BCPS ○ Faith Waters, MSN, RN, NEA-BC

Abstract

Background: Alcohol withdrawal can lead to severe complications including seizures, delirium tremens, and death if not treated appropriately. Nurses are critical to the safety and outcomes of these patients.

Objective: The objective of this retrospective study was to determine if nursing education on a community hospital's alcohol withdrawal protocol led to improved nursing compliance.

Methods: This is a quality improvement project involving a two-part retrospective review—an initial needs assessment followed by nursing education and a subsequent posteducation retrospective review. The initial needs assessment included 65 patients. The subsequent posteducation group included 50 patients.

Results: Nursing compliance of 1-hour assessments increased after the educational intervention; however, there was no statistically significant difference in 6-hour assessment or medication administration protocol compliance between preeducation and posteducation groups.

Conclusion: Nursing education is a good place to start in improving compliance with an alcohol withdrawal protocol, but physicians need to be included to increase standardization within the institution. Future study should look at the effectiveness of different assessment frequency intervals and its impact on patient-centered outcomes.

Keywords: Alcohol withdrawal, alcohol withdrawal protocol, CIWA-Ar, interdisciplinary project, needs assessment, nursing compliance, nursing education, quality improvement project, symptoms-based alcohol withdrawal treatment

John Barrett, MA, BSN, RN, Duke University School of Nursing, Durham, NC. Maria Jansen, PharmD, Matthew Felbinger, PharmD, BCPS, and Faith Waters, MSN, RN, NEA-BC, Duke Regional Hospital, Durham, NC. April Cooper, PharmD, Duke Regional Hospital, Durham, and College of Pharmacy and Health Sciences, Campbell University, Buies Creek, NC.

The authors report no conflicts of interest. The authors alone are responsible for the content and writing of the article.

Correspondence related to content to: John Barrett, MA, BSN, RN, Duke University School of Nursing, 307 Trent Drive, Durham, NC 27710. **E-mail:** john.barrett@duke.edu

DOI: 10.1097/JAN.0000000000000142

Approximately 17 million adults experience an alcohol use disorder in the United States, with an economic burden of 223 billion dollars annually (NIH, National Institute on Alcohol Abuse and Alcoholism, 2014). In 2011, the number of alcohol-induced deaths in the United States, excluding accidents and homicides, was 26,652 (Murphy, Xu, & Kockanek, 2013). People who experience alcohol use disorders are more likely to experience alcohol withdrawal—a major problem that has affected nearly every community in the United States. Because alcohol causes physical dependence, chronic drinkers are at an increased risk for complications. These complications, including seizures and delirium tremens, are preventable with appropriate treatment. Because alcohol is a factor in over 200 diseases, many patients admitted for other medical conditions could likely be dependent on alcohol (NIH, National Institute on Alcohol Abuse and Alcoholism, 2014). In fact, it is estimated that nearly 25% of all patients admitted to the hospital have a history of alcohol abuse (Coffey, Kulisek, Tanda, & Chipps, 2011).

Patients dependent on alcohol generally do not show symptoms of withdrawal until 6–12 hours after their last drink (Bayard, McIntyre, Hill, & Woodside, 2004). Symptoms of alcohol withdrawal include sweating, anxiety, headache, nausea, and visual/auditory hallucinations (Bayard et al., 2004). These are also symptoms of other medical conditions further complicating a diagnosis of alcohol withdrawal.

Symptom-triggered protocols have been shown to be more effective at decreasing alcohol withdrawal complications compared with fixed-scheduled treatment regimens (Amato, Minozzi, & Davoli, 2011; Amato, Minozzi, Vecchi, & Davoli, 2010; Riddle, Bush, Tittle, & Dilkhush, 2010). The Clinical Institute Withdrawal Assessment for Alcohol Revised (CIWA-Ar) is the most widely accepted assessment tool for alcohol withdrawal syndrome (Kattimani & Bharadwaj, 2013). The tool was originally developed in 1978 and revised in 1989. It consists of 10 common signs and symptoms of alcohol withdrawal and can be administered at the bedside in approximately 5 minutes.

Only a few studies evaluate the impact of nursing education on decreasing alcohol withdrawal complications. One study attempted to increase nurses' knowledge of alcohol and substance use; however, this did not correlate

to an increase in their ability to recognize alcohol withdrawal symptoms (Tran, Stone, Fernandez, Griffiths, & Johnson, 2009). The authors found that nurses felt inadequately prepared to identify, refer, manage, or provide clinical and educational interventions to patients experiencing withdrawal. Another study implemented a new alcohol withdrawal pathway and used a variety of methods to educate their staff—team-based training modules, grand rounds, system-wide information posters, intranet site, and consultation (Repper-DeLisi et al., 2008). Education, along with the new pathway, correlated with an improvement in patient outcomes including a decrease in length of stay and delirium (Repper-DeLisi et al., 2008).

BACKGROUND
Identifying the Problem
Currently, our hospital has an in-house alcohol withdrawal protocol that follows evidence-based practice using a symptoms-based treatment plan (Amato et al., 2010, 2011; Riddle et al., 2010). This protocol includes CIWA-Ar assessments followed by benzodiazepine administration based on the patient's CIWA-Ar score. The protocol is provider ordered and nurse driven.

Despite having this protocol in place, our clinical pharmacists noticed that patients were not receiving adequate treatment for alcohol withdrawal—specifically, they believed that patients were not getting appropriately timed doses of benzodiazepines according to the protocol. We discussed the problem and believed a nursing educational program would best improve the current situation.

Before providing education, we needed to do two things: perform a needs assessment and enlist the support of nursing leadership. We met with our nursing administrators who gave us their full support and placed a member of their team on our study. We developed three aims for our study: Aim 1, identify and confirm the problem; Aim 2, develop an intervention; and Aim 3, analyze the results of the intervention.

For Aim 1, we developed an extensive needs assessment to identify and confirm the problem. The needs assessment identified multiple areas for improvement, so for Aim 2, we prioritized the most important areas and developed an educational intervention. The intervention was a nursing educational program designed to improve nursing compliance with the alcohol withdrawal protocol. For Aim 3, we completed a postintervention analysis after the educational intervention to determine if protocol compliance improved, thus leading to better patient-centered outcomes.

Study Question
The primary study objective was to determine if nursing education would improve nursing compliance. Secondary objectives included evaluating the severity of alcohol withdrawal symptoms and length of stay before versus after nursing education and evaluating the difference in length of stay and alcohol withdrawal symptom severity between patients receiving good, adequate, and poor compliance.

METHOD
Setting and Subjects
This study was conducted at a 369-bed community hospital in the southeastern United States. The Duke University Health System Institutional Review Board approved it, and waiver of consent and Health Insurance Portability and Accountability Act (HIPAA) authorization was granted.

For the needs assessment, a retrospective chart review was conducted for patients discharged between March 1 and July 31, 2014, with a primary or secondary discharge diagnosis of alcohol withdrawal or related International Statistical Classification of Diseases and Related Health Problems (ICD-9) code. Patients were included if they were admitted to a medical, surgical, or critical care unit and had an active CIWA assessment order during admission. Patients were excluded if they were admitted to a psychiatric or rehabilitation unit. An identical posteducation chart review of patients discharged between February 1 and May 31, 2015, was completed after the training. Some patients had multiple qualifying admissions, with each admission considered a separate case.

Needs Assessment
The needs assessment indicated multiple areas for improvement in the treatment of alcohol withdrawal (see Table 1 for criteria evaluated for the needs assessment).

First, we discovered that the hospital could improve the screening process for newly admitted patients in alcohol withdrawal. The mean time from patient admission to nursing acknowledgement of CIWA assessment order was 10.3 hours. A longer time from admission to order acknowledged correlated to a longer length of stay ($p = .015$). We decided not to address this with our training because we believed an increase in nursing compliance was needed before improved screening.

Second, we noticed that providers used a variety of treatment plans for patients in alcohol withdrawal. Patients

TABLE 1	Criteria Evaluated for Needs Assessment[a]	
Nursing Criteria	**Patient Criteria**	**Treatment Outcomes**
Screening process	Age	Length of stay
Treatment consistency	Gender	CIWA-Ar score
Protocol compliance	Race	Rescue medication use
Admitting unit	Charlson Comorbidity Index	ICU admission
		Seizures
		Delirium tremens

Note. CIWA-Ar = Clinical Institute Withdrawal Assessment for Alcohol Revised; ICU = intensive care unit.
[a]Three categories—nursing criteria, patient criteria, and treatment outcomes—were analyzed during the needs assessment.

were assigned the nurse-driven alcohol withdrawal protocol, a scheduled medication order, an as needed order, or any combination of these. We decided to delay addressing this issue until after our study was completed. If the data from our study supported the nurse-driven protocol, we wanted to use these to convince providers to adopt a nurse-driven protocol for all patients.

Third, we found that nursing compliance with the current alcohol withdrawal protocol was low. Because the protocol guided both assessment frequency and medication dosing, we measured compliance with each of these data points. Nursing compliance was measured by the number of on-time nursing assessments and the number of appropriate versus inappropriate medication administrations. Good nursing compliance was set at >80%, adequate compliance was set at 60%–80%, and poor compliance was set at <60% for both assessment and medication metrics. These cutoffs were chosen based on the previous literature regarding alcohol withdrawal protocol compliance (Swift, Peers, Jones, & Bronson, 2010).

According to the protocol, patients required assessment at least every 6 hours or every hour depending on the severity of their CIWA-Ar score. The nursing compliance rate was 72.8% for 6-hour assessments and 6.1% for 1-hour assessments. Depending on the patient's CIWA-Ar score, nurses were required to give different doses of benzodiazepines or give no medication. Medication administration compliance was 79.1%.

These compliance rates show room for improvement for both assessment frequency and appropriate medication administration nurses. Compliance rates were compared among each unit, and we found that the need for improvement was hospital wide. Each of these issues—nursing compliance of assessment and medication administrations—could be addressed through nursing education.

Educational Intervention

We predicted that a hospital-wide training program on the current protocol would improve nursing compliance and foster better patient outcomes. A multidisciplinary team of pharmacists and nurses developed an educational intervention for nursing staff based on these findings.

We took the hospital's in-house alcohol withdrawal protocol and developed a visual algorithm (see Figure 1). This illustration was designed to simplify the protocol and guide nurses down the alcohol withdrawal pathway. We used this algorithm as the basis of our educational intervention and developed a PowerPoint presentation to go along with it. The presentation had background information, current compliance rates, an extensive section on the alcohol withdrawal algorithm, and case studies.

We delivered our PowerPoint presentation to our hospital education council that approved the material and then determined how to deliver it to our employees. Because of a multigenerational workforce and various learning styles, the information was presented in multiple formats: training packets, emails, huddles, and staff meetings. Printouts were bound and placed on all units. In addition, a copy was emailed to all the staff. Nursing leadership huddled with individual units at the beginning of the program and periodically throughout the month. In addition, large posters of the algorithm were printed and placed at the nurse's station. Nurses were required to complete the education and sign the back of each packet within the 4-week period. Nurses who were unable to complete training on-shift also had the option of completing it electronically off-site. They implemented our training across the medical and surgical units and recommended certified nursing assistants, licensed practical nurses, and registered nurses to complete the program.

Methods of Evaluation

Demographic data including, age, gender, race, and all discharge diagnoses were collected for each patient. Medication administration records, flow sheet documentation, admission and discharge dates and times, and laboratory values were collected through chart review. The primary outcome was a change in protocol nurses' compliance rates for 6-hour assessments, 1-hour assessments, and medication administration. Secondary outcomes included maximum daily CIWA-Ar scores and length of stay. Additional secondary measures included the difference in maximum daily CIWA-Ar scores and length of stay in patients receiving good, adequate, or poor compliance.

To assess the primary outcome, we compared the percentage of appropriate 6-hour assessments, 1-hour assessments, and medication administrations before and after education. For patients with a CIWA-Ar score < 20, the protocol required a 6-hour assessment frequency, and patients with a CIWA-Ar score ≥ 20 required a 1-hour frequency. Patients who had a CIWA-Ar score < 10 for 48 hours were discontinued from the protocol. Medication dosing is also based on CIWA-Ar score—a CIWA-Ar score < 10 required no medication, a CIWA score of 10–19 required lorazepam 2 mg or chlordiazepoxide 50 mg, and a CIWA-Ar score ≥ 20 required lorazepam 4 mg or chlordiazepoxide 100 mg.

If a nurse's assessment was completed within 1 hour of the required frequency, the assessment was counted as appropriate. If there was a missed assessment, we continued the assessment frequency until the next score or 48 hours as per protocol for discontinuation. Medication administration was counted as appropriate if the correct dose was within 1 hour of assessment.

Analysis

Descriptive statistics were used to describe demographic characteristics, and statistical analysis was used to explore the primary and secondary objectives. The primary outcome was measured using unpaired t tests to compare preeducation and posteducation groups for their levels of assessment and medication administration compliance. For the secondary objectives, we used patient-centered outcome measures. These included patient length of stay and CIWA-Ar score trends. These data between preeducation and posteducation groups were analyzed using unpaired t tests.
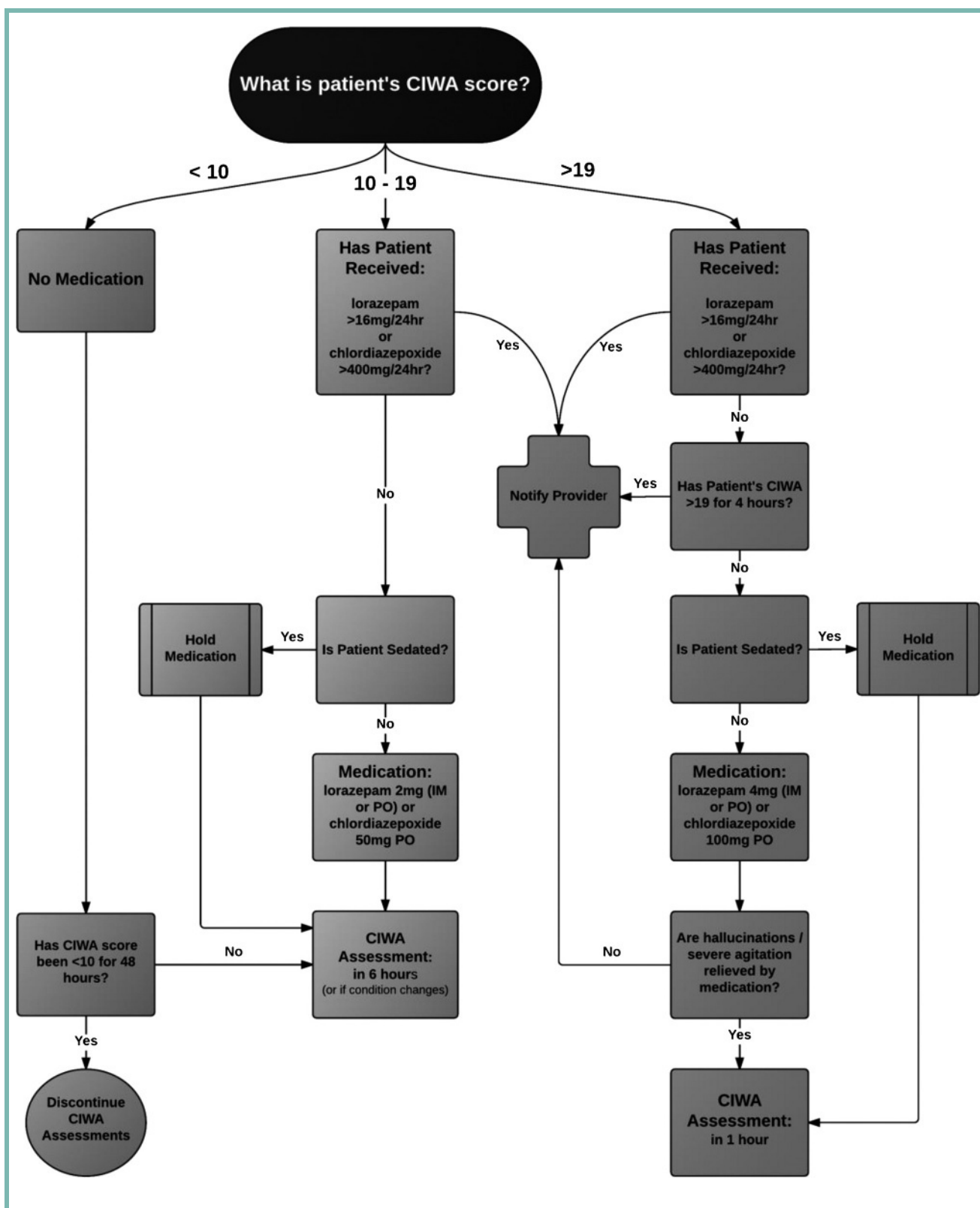
Figure 1. Alcohol withdrawal protocol algorithm. The figure illustrates our hospital's in-house alcohol withdrawal protocol. Nurses follow this algorithm to determine assessment frequency, medication dosage, and order discontinuation.

We also compared these patient-centered outcomes with nursing compliance rates. We used one-way ANOVA tests to compare length of stay between patients receiving poor (<60%), adequate (60%–80%), or good (>80%) compliance. We used chi-square test to compare CIWA-Ar scores between compliance groups.

RESULTS

Two hundred twenty staff, including 73% of our hospital's registered nurses, completed the training program.

For the post-education intervention analysis, we controlled for confounding variables. Demographic characteristics were similar between the two groups. There were 65 patients in the preeducation group and 50 patients in the posteducation group. Median age was 54 years for both groups. Median age-adjusted Charlson Comorbidity Index was 2 for the preeducation group and 4 for the posteducation group. Men made up 75% and 72% of the preeducation and posteducation groups, respectively. Patient race was 42% Black, 52% White, and 6% other or unknown in the preeducation group and 44% Black, 50% White, and 6% unknown or other in the posteducation group. In the preeducation group, 83% of the patients were admitted to a medical unit, 10% were admitted to a surgical unit, and 6% were admitted to the intensive care unit. In the posteducation group, 90% of the patients were admitted to a medical unit, 1% were admitted to a surgical unit, and 8% were admitted to the intensive care unit.

Protocol compliance was divided into three categories: 6-hour assessment compliance, 1-hour assessment compliance, and medication administration compliance. We compared each of these three categories in the preeducation and posteducation group. There was a statistically significant improvement in 1-hour assessment compliance rate ($p < .001$). There was no statistically significant difference in 6-hour assessment or medication administration compliance rates. This is illustrated in Table 2.

Mean hospital length of stay was shorter for the posteducation group versus the preeducation group but was not statistically significant (4.4 vs. 5.2 days, $p = .184$). To compare the severity of patients' alcohol withdrawal for both groups, we used the patients' daily maximum CIWA-Ar score for the first 4 days in the hospital. Preeducation and posteducation means

of maximum CIWA-Ar scores were 8.1 and 11.1, respectively, for Day 0 ($p = .142$); 8.01 and 10.3, respectively, for Day 1 ($p = .184$); 8.3 and 10.3, respectively, for Day 2 ($p = .286$); and 6.3 and 6.7, respectively, for Day 3 ($P = 0.815$).

To determine if good nursing compliance led to better patient outcomes for all patients, we combined the preeducation and posteducation groups into one collection. For our first patient-centered outcome, we compared length of stay with the three compliance measures—6-hour assessment compliance, 1-hour assessment compliance, and medication administration compliance. Looking at the 6-hour assessment compliance, mean lengths of stay were 5.1, 4.2, and 5.2 days for patients receiving good, adequate, and poor compliance, respectively. For medication administration, mean lengths of stay were 4.2, 7.5, and 4.8 days for patients receiving good, adequate, and poor compliance, respectively. There was a statistically significant difference in length of stay between patients receiving adequate and good compliance ($p = .006$). The sample size was too small for the 1-hour assessment analysis.

For the second patient-centered outcome, we compared maximum CIWA-Ar scores for all patients with nursing compliance for medication administration and assessment. Patients receiving good medication administration compliance had statistically significant lower CIWA-Ar scores for Hospital days 0, 1, and 2 than those who did not receive good compliance. These results are shown in Figure 2.

There was no statistically significant difference between CIWA-Ar scores during the first 4 hospital days for patients receiving poor, adequate, or good 6-hour assessment compliance. For Hospital day 0, the means of maximum CIWA-Ar scores were 14.2, 14.6, and 11.8 for patients receiving good, adequate, and poor compliance, respectively. For Hospital day 1, scores were 10.6, 8.2, and 7.7; for Hospital day 2, scores were 10.7, 8.8, and 6.9; and for Hospital day 3, scores were 7.9, 6.1, and 4.4. Results are not presented for the 1-hour assessment because the sample was too small.

DISCUSSION

This was a multidisciplinary quality improvement project involving nursing and pharmacy. The disciplines worked together to identify an opportunity to improve alcohol withdrawal treatment hospital wide by implementing a nursing educational program. Nurses liked the educational method and gave positive feedback on the patient cases provided during the education. One-hour assessment improved from 6.1% preeducation to 18.8% posteducation. Although there is still significant room for improvement in this outcome, it is moving in the correct direction. Although not statistically significant, mean length of stay for the posteducation group was 0.8 days shorter than the preeducation group.

There was a trend toward higher CIWA-Ar scores for Hospital days 0–2 in the posteducation group compared with the preeducation group. This could be because of change in nursing scoring because they were more aware of the protocol.

During our needs assessment, we learned that there were additional orders that could be used for patients in alcohol

TABLE 2	Nursing Protocol Compliance		
Compliance Category	Preeducation	Posteducation	*p* Value
Medication administration	79.1%	75.1%	.118
6-hour assessment	72.8%	76.4%	.135
1-hour assessment	6.1%	18.8%	.0002
Note. Nursing compliance rates for assessment and medication administration preeducation and posteducation.			

Medication Compliance and Maximum CIWA-Ar Scores
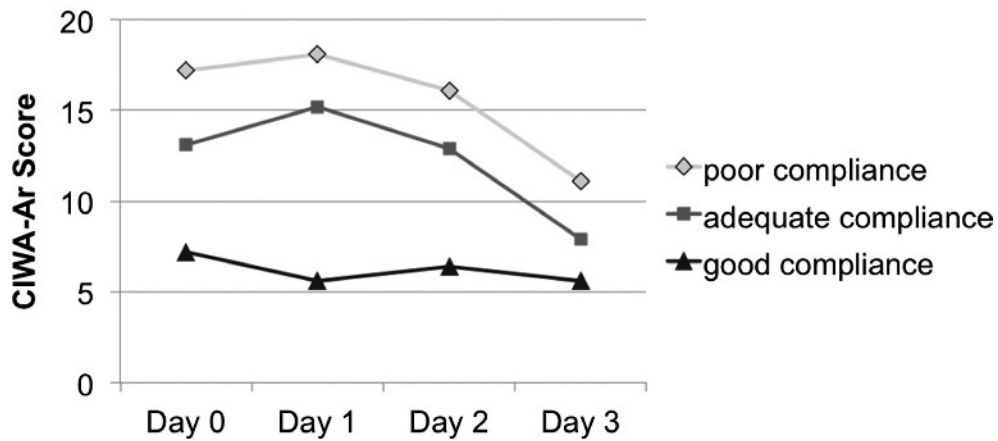
Day 0: poor vs good compliance ($P = .004$), adequate vs good compliance ($P = .018$)
Day 1: poor vs good compliance ($P < .001$), adequate vs good compliance ($P < .001$)
Day 2: poor vs good compliance ($P = .001$), adequate vs good compliance ($P = .008$)

Figure 2. Medication compliance compared with patient withdrawal severity. Day 0: poor versus good compliance ($p = .004$), adequate versus good compliance ($p = .018$). Day 1: poor versus good compliance ($p < .001$), adequate versus good compliance ($p < .001$). Day 2: poor versus good compliance ($p = .001$), adequate versus good compliance ($p = .008$). This figure compares medication compliance rates with patients' maximum CIWA-Ar scores. Patients who received good medication compliance from their nurses had lower maximum CIWA-Ar scores. Lower CIWA-Ar scores equate to less severe alcohol withdrawal symptoms.

withdrawal. This left a combination of eight different treatment plans for these patients. As an example, a patient could be placed on the symptoms-based CIWA protocol, receive scheduled doses of benzodiazepines, and have an additional PRN order all at the same time. We found that patients on only the CIWA protocol had a significantly shorter length of stay. These CIWA-only patients had a mean length of stay of 3.4 days, whereas patients on all other treatment plans had a length of stay of 5.8 days ($p = .019$). We also evaluated the need to control for confounding variables including comorbidities (see Table 3). This supports findings that favor symptom-based alcohol withdrawal treatment over fixed-scheduled treatment regimens (Amato et al., 2010). We decided to educate our nurses before addressing this problem because we wanted to make sure the protocol makes a difference before getting providers on board. Although these data are encouraging, we do not know why physicians choose specific treatment plans, and thus, it is difficult for us to draw conclusions from the data alone. Now that we have addressed nursing education, we hope to talk with providers and determine how to best approach treatment plans for patients.

Limitations
This quality improvement project has limitations. First, it was a retrospective single-center review with a small sample size.

Second, we did not reach all of the nursing staff with our education. On that note, we were only able to train nursing staff on one of the eight order treatment plans. With more time, we would have worked with medicine and nursing leadership to adopt a unified treatment plan before training nurses.

TABLE 3	Evaluation of Potential Confounding Variables		
Potential Confounding Variables	**Outcome Measure**	**Significance Value**	**Statistical Test**
Charleston Comorbidity Index	Length of stay	$p = .115$	Spearman's rho test
Age	Length of stay	$p = .539$	Spearman's rho test
Gender	Length of stay	$p = .717$	Mann–Whitney U test
Race	Length of stay	$p = .198$	Kruskal–Wallis test
Note. This table illustrates the potential confounding variables and their significance compared with length of stay.			

CONCLUSION

Moving forward, we believe that providers and nursing staff should adopt a hospital-wide consensus for the treatment of alcohol withdrawal. With a relatively small number of patients experiencing alcohol withdrawal, it is unrealistic to expect nurses to be completely proficient in eight different treatment plans. Having consistent orders, we believe, would increase nursing proficiency and lead to better patient-centered outcomes.

Future studies should also look at the effectiveness of different assessment frequency intervals and its impact on patient-centered outcomes. Because there is no accepted standard of alcohol withdrawal assessment frequency, a controlled study may provide insight that could standardize alcohol withdrawal treatment across the board.

REFERENCES

Amato, L., Minozzi, S., & Davoli, M. (2011). Efficacy and safety of pharmacological interventions for the treatment of the Alcohol Withdrawal Syndrome. *The Cochrane Database of Systematic Reviews*, (6), CD008537. doi:10.1002/14651858.CD008537.pub2

Amato, L., Minozzi, S., Vecchi, S., & Davoli, M. (2010). Benzodiazepines for alcohol withdrawal. *The Cochrane Database of Systematic Reviews*, (3), CD005063. doi:10.1002/14651858.CD005063.pub3

Bayard, M., McIntyre, J., Hill, K. R., & Woodside, J., Jr. (2004). Alcohol withdrawal syndrome. *American Family Physician*, 69(6), 1443–1450.

Coffey, R., Kulisek, J., Tanda, R., & Chipps, E. (2011). Impact of the implementation of an alcohol withdrawal guideline on patients with burn injuries. *Clinical Nurse Specialist*, 25(6), 286–293. doi:10.1097/NUR.0b013e318233ea75

Kattimani, S., & Bharadwaj, B. (2013). Clinical management of alcohol withdrawal: A systematic review. *Industrial Psychiatry Journal*, 22(2), 100–108. doi:10.4103/0972-6748.132914

Murphy, S. L., Xu, J., & Kockanek, K. D. (2013). *National vital statistics reports: Deaths final data for 2010*. Retrieved from http://www.cdc.gov/nchs/data/nvsr/nvsr61/nvsr61_04.pdf

NIH, National Institute on Alcohol Abuse and Alcoholism. (2014). *Alcohol facts and statistics*. Retrieved from http://pubs.niaaa.nih.gov/publications/AlcoholFacts&Stats/AlcoholFacts&Stats.pdf

Repper-DeLisi, J., Stern, T. A., Mitchell, M., Lussier-Cushing, M., Lakatos, B., Fricchione, G. L., … Bierer, M. (2008). Successful implementation of an alcohol-withdrawal pathway in a general hospital. *Psychosomatics*, 49(4), 292–299. doi:10.1176/appi.psy.49.4.292

Riddle, E., Bush, J., Tittle, M., & Dilkhush, D. (2010). Alcohol withdrawal: Development of a standing order set. *Critical Care Nurse*, 30(3), 38–47. doi:10.4037/ccn2010862

Swift, R. A., Peers, E. A., Jones, B. L., & Bronson, M. V. (2010). Utilisation of a purpose-designed chart for the nursing management of acute alcohol withdrawal in the hospital setting. *Australasian Emergency Nursing Journal*, 13(3), 70–77. doi:10.1016/j.aenj.2010.04.001

Tran, D. T., Stone, A. M., Fernandez, R. S., Griffiths, R. D., & Johnson, M. (2009). Changes in general nurses' knowledge of alcohol and substance use and misuse after education. *Perspectives in Psychiatric Care*, 45(2), 128–139. doi:10.1111/j.1744-6163.2009.00213.x

---

For more than 33 additional continuing education articles related to Addiction topics, go to NursingCenter.com/CE.

Instructions:

- Read the article. The test for this CE activity can only be taken online at www.NursingCenter.com/CE/JAN. Tests can no longer be mailed or faxed. You will need to create (it's free!) and login to your personal CE Planner account before taking online tests. Your planner will keep track of all your Lippincott Williams & Wilkins online CE activities for you.
- There is only one correct answer for each question. A passing score for this test is 13 correct answers. If you pass, you can print your certificate of earned contact hours and access the answer key. If you fail, you have the option of taking the test again at no additional cost.

- For questions, contact Lippincott Williams & Wilkins: 1-800-787-8985.

Registration Deadline: December 31, 2018.

Disclosure Statement:
The authors and planners have disclosed that they have no financial relationships related to this article.

Provider Accreditation:
Lippincott Williams & Wilkins, publisher of *Journal of Addictions Nursing,* will award 2.0 contact hours for this continuing nursing education activity.

Lippincott Williams & Wilkins is accredited as a provider of continuing nursing education by the American Nurses Credentialing Center's Commission on Accreditation.

This activity is also provider approved by the California Board of Registered Nursing, Provider Number CEP 11749 for 2.0 contact hours. Lippincott Williams & Wilkins is also an approved provider of continuing nursing education by the District of Columbia and Florida, CE Broker #50-1223. Your certificate is valid in all states.

Payment:
- The registration fee for IntNSA members is $17.95; for nonmembers, $21.95.
- IntSNA members receive a 30% discount on the price of CE in this journal. Go to the ''members only'' section on the IntSNA website to take advantage of this benefit.