

Improving Nursing Knowledge of Alcohol Withdrawal

Second Generation Education Strategies

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Christiana Care Health System implemented a Care Management Guideline for Alcohol Withdrawal Symptom Management, which provided direction for inpatient screening for alcohol withdrawal risk, assessment, and treatment. Nurses educated on its use expressed confusion with the use of the assessment tools, pharmacokinetics, and pathophysiology of alcohol withdrawal and delirium tremens. Reeducation was provided by nursing professional development specialists. Pre- and postsurveys revealed that nurses were more confident in caring for patients with alcohol withdrawal.

The National Survey of Drug Use and Health, conducted from 2008 to 2012, reveals that 7.1% of Delawareans aged 12 or older describe themselves

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as dependent upon alcohol or abusive of alcohol in the previous year. In addition, 7.4% of these individuals considered themselves heavy users of alcohol, and yet only 3.8% received treatment—trends that are comparable to national averages (Substance Abuse and Mental Health Services Administration, 2013). Throughout the nation, the number of adults admitted to a hospital with an alcohol use disorder increased significantly from 2006 to 2010 (National Institute on Alcohol Abuse and Alcoholism, 2013), translating to approximately one in five admitted adult patients (Elliott, Geyer, Lionetti, & Doty, 2013).

If untreated, up to 6% of patients with an alcohol use disorder will experience alcohol withdrawal when alcohol is withheld, with up to 10% of those progressing to delirium tremens (DT), a potentially life-threatening complication (Melson, Kane, Mooney, McWilliams, & Horton, 2014). Screening and early management of alcohol withdrawal prevents progression of symptoms and further deterioration to DT (Pecoraro et al., 2012). Before implementing the Care Management Guideline (CMG) for Alcohol Withdrawal Symptom Management, patients admitted to the largest healthcare system in Delaware were not evaluated for the potential of experiencing alcohol withdrawal, nor were they assessed or recognized until their behavior escalated to a crisis. The CMG for Alcohol Withdrawal Symptom Management is a hospital system tool developed by an interdisciplinary care team used to aid clinicians and providers in the management of this patient population. Prior to program implementation, severe symptoms arose before staff knew that patients were experiencing alcohol withdrawal. Delay in diagnosis and treatment resulted in suboptimal patient outcomes. Because of the absence of a protocol, patients experiencing escalating alcohol withdrawal were often transferred to an intensive care unit (ICU). Consequently, nurses and providers working outside of ICU were not prepared or educated to adequately manage the complexity of these patients.

The model of change that served as the framework of this process was Lewin's change model. Kurt Lewin, a social psychologist, postulated a three-stage theory of change: unfreezing, change, and freezing or refreezing (Lewin, 1947). For change to be successful, the driving forces for the change must be strengthened (Shirey, 2013). For this project, such

forces included safety considerations for nurses and patients, a desire on the part of the hospital to better manage patients with alcohol withdrawal, thus preventing DT and decreasing use of ICU and rapid response teams for this subset of patients. The nurses caring for patients experiencing alcohol withdrawal were unaware of the physiology of alcohol withdrawal and DT, and lacked confidence in caring for this patient population. They also felt that it would require more time to care for these patients, thus depriving other patients of their “share” of the nurse’s time. According to Lewin’s theory, these attitudes and beliefs are known as restraining forces, and these must be weakened in order for the change to occur successfully (Shirey, 2013).

PHASE I: EDUCATION BEFORE IMPLEMENTATION OF THE CMG

Nursing professional development (NPD) specialists educated nurses and providers on the use of the new protocol before implementation. Education was provided by NPD specialists using small groups on individual patient care units, and larger groups of nurses from multiple units in a classroom setting.

There was much resistance to this initial education, both by NPD specialists and staff nurses. The short time frame designated for educating all of the nurses was challenging, and most NPD specialists had not previously used the Clinical Institutes Withdrawal Assessment-Alcohol revised (CIWA-Ar). The CIWA-Ar is a symptom-based assessment tool that quantifies the level of alcohol withdrawal symptoms, and helps determine appropriate Benzodiazepine dosing when the patient has a history of alcohol use. It is a freely distributed and widely used tool easily accessed via the Internet. The CIWA-Ar is widely used in both acute care and outpatient settings because of its high level of interrater reliability and ease of use. It is comprised of 10 questions and indicates the level of withdrawal the patient may be experiencing (Sarff & Gold, 2010). Although relatively uncomplicated to administer, the CIWA-Ar does require instruction and a level of familiarity with its questions. Therefore, the NPD specialists needed instruction on how to properly perform the assessment and how to appropriately intervene. An educational slide presentation on risk assessment and the CIWA-Ar tool was reviewed with the NPD specialists by one of the advance practice nurses (APN) leading the project. Education included Nursing Grand Rounds and a *No Harm Intended* session. Nursing Grand Rounds is a presentation developed by nurses, and focuses on specific case studies and lessons learned. *No Harm Intended* sessions are presented by an interdisciplinary team for all healthcare team members, and cover actual or potential issues within the healthcare system. Providing education using an interdisciplinary approach allows a free exchange of ideas across fields, fosters an appreciation and understanding of others’ areas of expertise, and provides all those involved with an opportunity to learn from each other. Alcohol withdrawal served as a topic for both of these forums, and concentrated on situations

where inpatients placed themselves or staff at high risk for injury. Nurses from inpatient units recounted difficult experiences with patients actively withdrawing from alcohol. Content experts provided information about the history of alcohol abuse management, basic pathophysiology of alcohol abuse, and current practice within our healthcare system. Key aspects of the new alcohol withdrawal CMG were introduced. The CMG included the Alcohol Withdrawal Risk Assessment (AWRA), the CIWA-Ar, order sheet, and algorithms. Completed on admission, the AWRA determines the risk for alcohol withdrawal. A score of 5 or greater prompts the nurse to complete the CIWA-Ar.

Many nurses felt the care of patients experiencing alcohol withdrawal was extremely difficult to manage and required increased nursing resources. Often times, these patients required high dosages of medication to alleviate their withdrawal symptoms, which many floor nurses were uncomfortable administering. In addition, there were several instances of patients attempting to harm themselves or harm others while withdrawing from alcohol, which contributed to nurses’ fear for patient and staff safety. Unfortunately, completing the AWRA and following the CMG were viewed as simply additional tasks for them to perform. The benefits of treating patients with alcohol withdrawal on the medical surgical units, rather than in the ICUs, were not clear to the nurses. These were some of the restraining forces that had to be addressed in order to successfully implement this new process.

INITIAL EVALUATION OF CMG IMPLEMENTATION

Documentation Review

Point prevalence assessment conducted via chart review hospital-wide one month after implementation helped to determine compliance. Nurses gathered data and were asked to determine if the AWRA was completed on admission. If the AWRA score was 5 or greater, nurses were instructed to complete a baseline CIWA-Ar. In addition, the provider was to be contacted to initiate the appropriate treatment plan and order set. In March of 2010, of the 184 charts that were reviewed, 96 (52%) had the AWRA completed. All of the patients who scored 5 or greater on the AWRA had the CIWA-Ar initiated. In April of 2010, charts for 224 patients were reviewed. Of those, 141 (63%) had the AWRA completed. Again, all of the patients who scored 5 or greater on the AWRA had the CIWA-Ar initiated. The results also showed that five patients scored 8 or greater on the CIWA-Ar; however, two of these patients did not have the CMG initiated. Moreover, these findings revealed opportunities for additional education regarding use of the AWRA and the CMG.

Focus Group

An APN involved in the alcohol withdrawal task force led a focus group to determine concerns or problems that staff

nurses encountered related to implementation of the CMG. The format of the focus group included eight open-ended questions to solicit information and keep the discussion focused. Nurse managers sent staff from their units to provide representative opinions from their respective units. Two APNs with knowledge of the CMG and experience in leading focus groups facilitated, and two nurses not involved in the discussion documented the sessions.

The following themes emerged as listed in Table 1:

- Reeducation needs,
- Effective use of CIWA-Ar scores,
- Increased burden of caring for patients on medical-surgical units,
- Limitations of the form used for documentation, and
- Ethical dilemmas.

Themes	Key Points for Education
Reeducation	Staff nurses (including Emergency Department staff)
	Physicians
	Delirium tremens pathology
	Ativan, neurological effects
	Protocol (AWRA and CIWA-Ar)
	Include 23-hour patients
	How to fill in form
	How to dose
	When to call MD for score changes
CIWA-Ar	A much better way to manage patients
	Administer prn doses of medication
	Wake patient to assess and give Ativan if indicated
Alcohol withdrawal patients not in intensive care unit	Increased workload to manage patients on Medical or Surgical units
	Frequency of reassessments
	When to transfer to ICU
Revised form (CIWA-Ar)	Form is too busy
	Form is too wordy
	Form is difficult to read
	Make the form (process) electronic
Ethical dilemma	How to manage with differing information from the patient and family
<i>Note.</i> AWRA = Alcohol Withdrawal Risk Assessment; CIWA-Ar = Clinical Institutes Withdrawal Assessment-Alcohol revised.	

An education subcommittee of the alcohol withdrawal team was formed in order to address knowledge gaps and assist in developing second-generation education for staff using information obtained from the focus group and other feedback. The purpose of this team was to facilitate understanding among nurses through reeducation. Units with the highest incidence of patients with the discharge diagnosis of alcohol withdrawal and/or DT were chosen to pilot this second generation of education.

PHASE II: EDUCATION FOLLOWING IMPLEMENTATION OF THE CMG

Focus group feedback, staff comments, and discussion with the interdisciplinary team revealed confusion around the correct meaning of the AWRA and CIWA-Ar scores. Furthermore, the scores were being reported to the providers interchangeably. It was clear that there was a need to remedy and clarify this misunderstanding quickly. A *Safety First Alert*, a rapid communication process to disseminate key safety practices and education across the organization, was used in December 2009 to provide timely communication to the appropriate staff, and focused on clarifying the difference between the two assessment tools: the AWRA score as an initial screening tool and the CIWA-Ar score as a symptom-based assessment and management tool.

According to Lewin's Theory of Planned Change, driving forces must be identified and presented to all involved to ensure a successful transition (Shirey, 2013). In this case, these forces included increased patient safety and a decrease in the incidence of DT, ICU transfers, and rapid response teams. NPD specialists were now actively involved in the alcohol withdrawal committee, and their expertise in nursing development and education was utilized to address targeted learning needs. The educators were better able to understand nursing's various concerns and determine the focus for our educational methods in order to focus on the driving forces and bring about positive change. The goal was to educate nurses to recognize alcohol withdrawal symptoms before patients advanced to DT, and initiate treatment before the onset of severe symptoms. Therefore, education focused on increasing nurses' depth of knowledge about the differences between Alcohol Withdrawal Syndrome versus DT. On the basis of focus group results, small group discussions occurred with the alcohol withdrawal team and staff. NPD specialists presented second-generation education using educational slides and included content in the following areas:

- physiology of alcohol withdrawal and DT;
- mechanism of action of benzodiazepines, dosing, and frequency of administration for effective management of alcohol withdrawal;
- directions on how to complete the CIWA-Ar;
- correct use of the newly implemented electronic AWRA and CIWA-Ar forms; and
- mobilization of additional resources.

This second phase of education included greater sensitivity to environmental distraction, so educators used small group instruction in break rooms.

Electronic versions of the AWRA and the CIWA-Ar forms introduced a year after initial program implementation in October 2010 now sends an electronic reminder that alerts the nurse to complete the AWRA upon admission. This transformational change reminds nurses automatically to complete the CIWA-Ar and to intervene in a timely manner.

EVALUATION OF THE CMG IMPLEMENTATION AFTER PHASE II EDUCATION

For three consecutive quarters following completion of secondary education, charts of patients with a discharge diagnosis of alcohol withdrawal or DT were reviewed as delineated in Table 2. Increases in the percentage of AWRA completed were seen (79% in the fourth quarter of 2010, 87% in the first quarter of 2011, and 90% in the second quarter of 2011). The CIWA-Ar was administered in 94%, 100%, and 98% of patients whose charts were reviewed. One reason more patients had a greater number of CIWA-Ar completed than AWRA is that AWRA is not always completed in critical care units. Often times in these units, patients are unable to communicate verbally during the admissions process, thereby preventing an accurate assessment. Families are requested to provide the information, but are often times unable to offer a thorough history. Patients may have been admitted to these units and then later transferred to noncritical care areas.

Instrument

NPD specialists knew it was important to evaluate the effectiveness of the education. The survey instrument and education plan were developed by the NPD specialists and validated by the alcohol withdrawal team. The preeducation survey consisted of four questions with Likert scale responses from 1 to 4, with 1 being *none* and 4 being *extensive*. As shown in Table 3, one additional question was added to the posteducation survey regarding the impact of the electronic version of the CIWA-Ar.

Quarter	4th Q 2010	1st Q 2011	2nd Q 2011
Number of charts reviewed	63	60	62
AWRA in record	50 (79%)	52 (87%)	56 (90%)
CIWA-Ar administered	59 (94%)	60 (100%)	61 (98%)

Note. AWRA = Alcohol Withdrawal Risk Assessment; CIWA-Ar = Clinical Institutes Withdrawal Assessment-Alcohol revised.

TABLE 3 Items on Pre- and Postsurvey

Rate your knowledge of the use of Ativan in patients who are actively withdrawing from alcohol.
Rate your comfort level of caring for patients who are withdrawing from alcohol.
Rate your knowledge of the use of the CIWA-Ar assessment when managing a patient actively withdrawing from alcohol.
Rate your comfort level in using the Alcohol Withdrawal Treatment Algorithm and the Alcohol Withdrawal Precautions Algorithm in the Care Management Guideline.
To what degree have the electronic CIWA-Ar assessment tasks improved your ability to effectively manage care for these patients? ^a
<i>Note.</i> CIWA-Ar = Clinical Institutes Withdrawal Assessment-Alcohol revised. ^a Additional item for post survey only.

Results

Surveys were conducted using Zoomerang and were distributed to approximately 250 nurses on five medical units. These units were selected based on the number of patients with a discharge diagnosis of alcohol withdrawal. Preeducation surveys were conducted in October 2010, and posteducation surveys were conducted in January 2011. Responses were obtained from 88 nurses in the preeducation survey and 92 in the posteducation survey.

DISCUSSION

As shown in Figure, Supplemental Digital Content 1, <http://links.lww.com/JNPD/A6>, the preeducation survey revealed that many nurses rated their knowledge of the CIWA-Ar assessment tool as moderate, substantial, or extensive. This was unexpected based on the feedback from the focus group discussion, as we expected the ratings to be much lower. The posteducation survey showed that nurses' ratings of their knowledge of the CIWA-Ar assessment tool increased. The greatest changes occurred in the moderate, substantial, and extensive categories with a decrease in the number of nurses rating their knowledge as moderate and an increase in the number of nurses rating their knowledge as either substantial or extensive. There were improvements in ratings for all questions despite the high preeducation ratings. The second-generation education was designed to overcome the lack of knowledge needed in order to adequately care for patients at risk for or experiencing alcohol withdrawal.

Nurses were asked to rate their comfort level in caring for alcohol withdrawal patients and in using the alcohol withdrawal algorithm before and after education. Nurses rated their comfort level as none, limited, moderate, substantial, or extensive. As shown in Figure, Supplemental Digital Content 2, <http://links.lww.com/JNPD/A7> statistically significant differences were found in comfort level caring for alcohol

withdrawal patients, with six nurses rating their comfort limited on the presurvey and choosing that rating on the postsurvey, a decrease in nurses rating their comfort level as moderate (45 pre; 32 post) and an increase in those rating their comfort level as substantial (38 pre; 47 post). There was no change in nurses rating their comfort level as extensive (11 pre and post). Mann–Whitney *U* test was performed, and differences from pre to post were statistically significant ($p = .051$). Comfort level with the alcohol withdrawal algorithm showed a similar pattern of change; however, this was not statistically significant, with a Mann–Whitney *U* test of $p = .073$.

Additional analysis revealed the impact of electronic assessment on the nurses' ability to manage patients experiencing alcohol withdrawal. Figure, Supplemental Digital Content 3, <http://links.lww.com/JNPD/A8> illustrates the majority (68%) of nurses rated the electronic CIWA-Ar task as having substantially or extensively improved their ability to care for this patient population. Of the remaining nurses who responded to the survey, 24% indicated moderately, 7% limited, and only 1% rated the impact as none.

Several lessons were learned from this project related to implementing change across multiple patient care units. Initially, we did not emphasize the rationale for the practice change or the physiology of alcohol withdrawal and treatment modalities. Consequently, the initial education lacked several key components and was inhibited by hastened time line for implementation. In listening to staff, the need for additional education was noted. Recognizing the value of our nurse educators in the development and planning of learning content to address behavior change, their involvement was requested. Lastly, we failed to appreciate the benefit of conducting a pilot as a means of discovering the shortcomings of our practice change.

Lewin theorized that, in order to move through the stages of change successfully, there needs to be a comprehensive action plan to engage those experiencing the transition (Shirey, 2013). Unfortunately because of the pressing nature of the issues at hand, this step was overlooked in the original education plan, and therefore, the project was set up to fail. When the second generation of education was implemented, the alcohol withdrawal team and NPD specialists made great efforts to ensure that frontline staff understood the necessity and benefit of the change. By utilizing the focus groups and surveys, nurses felt their voices had been heard and were now able to unfreeze their behaviors and successfully navigate the transition. Over the past year, members of the alcohol withdrawal task force and education committee have informally rounded with bedside nurses. The conversations they have had throughout the organization support these results. These discussions revealed that they now consider themselves experts in caring for patients with alcohol withdrawal. One nurse stated, "We are seasoned nurses and we know how to take care of patients with alcohol withdrawal." These statements indicate that nurses have "refrozen" their beliefs and

new behaviors. Because of these findings and our commitment to our change model, similar education was later provided to nurses throughout the health system.

Use of the CMG has changed the course for patients admitted to the hospital at risk for alcohol withdrawal and has also increased the confidence level of nurses caring for patients at risk for alcohol withdrawal. Successful education, planning, and proper execution of the CMG by nurses and providers had direct positive impact on this patient population.

PATH FORWARD

Results of the pre- and postsurveys revealed successful re-education efforts, and education for the remainder of the medical, surgical, and stepdown units was based on these results. A simulation involving a standardized patient experiencing alcohol withdrawal and DT was part of a collaborative learning project for resident physicians and novice nurses. Currently, an additional alcohol withdrawal simulation scenario, coupled with didactic classroom content, is incorporated into nursing orientation. Future strategies will include incorporation of alcohol withdrawal into a Web-based education module for all nurses to complete on an annual basis, and development of a video about a patient experiencing alcohol withdrawal. Through the provision of nursing education regarding alcohol withdrawal, nurses' comfort level in caring for alcohol withdrawal patients has improved. By increasing their knowledge, nurses are more confident in caring for patients suffering from alcohol withdrawal, potentially improving multidisciplinary communication and clinical outcomes.

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