Clinical Opioid Withdrawal Scale (COWS) with Frontline Nursing in Improving Withdrawal Management

Lilian Canamo, BSN, RN, PCCN
Trauma PCU, University of California - San Diego, San Diego, CA, USA

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BACKGROUND
Misuse of prescription opioids has become evident internationally via the 2015 Global Drug Survey in countries such as France, Germany, Australia, and the United Kingdom (Morley, Ferris, Winstock, & Lynskey, 2017). However, this issue has become a prevalent even more so in the United States. Although the United States population only represents 5% of the global population, Americans alone consume 90% of the world’s hydrocodone. Since 2008, mortality from opioid overdoses quadrupled due to drugs such as oxycodone, heroin, fentanyl, morphine, codeine, and hydrocodone, many of which are nonprescribed. Admitted patients treated for substance use disorders has increased 6-fold as well (Jones, Bruera, Abdi, Kantarjian, 2018). In San Diego County since 2015 there has been an increase in emergency department admissions related to opioid overdoses and prescription death rates (California Department of Health, 2018). Statistics indicate an increasing number of patients at risk for opiate withdrawal and a need to capture and manage the withdrawal before death occurs (Darke, Larney, and Farrell, 2017). The current healthcare system in which this pilot program is being conducted currently does not have a protocol in opioid withdrawal capture and management.

LITERATURE REVIEW
The Clinical Opioid Withdrawal Scale (COWS), an 11-item validated tool to capture opioid withdrawal. Patients who score between 5-12 are classified as mild withdrawal, 13-24 as moderate, 25-36 as moderately severe, and over 36 as severe withdrawal (Tompkins et al., 2009; Wesson & Ling, 2003). This tool has been used throughout the nation at various healthcare institutions at the inpatient level (Leach & Lieb, 2018). This tool is supported by the American Society of Addiction Medicine National Practice Guideline and World Health Organization in addition to as needed medications to help reduce opioid withdrawal symptoms (California Healthcare Foundation, 2018; Kampman & Jarvis, 2015; World Health Organization, 2009). Studies have indicated that patients who followed a non-opioid protocol for treatment of opioid withdrawal have greater chances of continuing to psychosocial rehabilitation on discharge (Rudolf et al., 2018). This pilot was implemented in a Level 1 trauma center step down unit. Data from a similar setting indicated that 20% of admitted trauma patients admitted also had a history of preexisting controlled substance abuse, thus further validating the need of implementing COWS for this patient population (Cannon et al., 2014). Expert consensus from internal pharmacology, psychology, nursing, and trauma clinicians was achieved regarding following recommended guidelines prior to going live.

METHODS
The purpose of this project was to develop a nursing-driven opioid withdrawal management tool using the validated Clinical Opioid Withdrawal Scale (COWS) to address an increase in opioid-addicted patients. The COWS protocol was excused from the institutional review board oversight.
as a low risk evidence-based practice project to improve opioid withdrawal management rates (#180877). The evidence-based practice changed was executed with the San Diego 8A’s Practice Model. In this model the following steps are taken: identifying the catalyst, assessing the problem, asking the question, acquiring the literature, appraising the literature, applying the practice change, analyzing the plan, and advancing the practice change (Brown & Ecoff, 2011). The protocol was implemented in two phases. The first phase involved training of clinical nurses on the use of the COWS tool with a case study knowledge test. Nurses were not allowed to perform the tool at bedside without a passing score of 80%. Nurses were educated on opioid withdrawal management interventions such as recommending medications for symptom management, social work referral, non-opioid pain management interventions, educating patients on safe opioid use, and communication with physicians for concern of mild to severe moderate withdrawal, all of which are in accordance to guidelines reviewed in the literature and accepted by expert clinicians. A demonstration was provided on how to record the COWS score within the electronic health record. The electronic form allowed nurses to quantify opioid severity level based on the COWS scale and view recommendation reminders. Implementation occurred during phase two. Standard of practice was changed so that the COWS scale was performed on patients with a positive urine drug screen for opiates. COWS champions were assigned to assist the nurse with any technical complications and compliance.

DATA COLLECTION
Data was collected during an 8-week period. The primary outcome evaluated was the frequency of nursing attempts at managing opioid. Process compliance was determined on the basis of a completed COWS assessment on an admitted patient with a positive urine drug screen for opiates. Audits were completed weekly to track compliance and empirical outcomes. Aggregate data was collected and compared to data prior to initiation of the project. Data was analyzed with descriptive statistics and chi squared test of proportions.

RESULTS
Between July 1, 2018 to August 31, 2018 a total of 43 patients presented with positive urine drug screens for opiates. Of those, 28 patients experienced opioid withdrawal symptoms. 27 patients scored over 0 on the COWS scale. Of the 27 patients, only 2 patients scored over 5 via COWS, thus indicating active withdrawal. All other patients indicated signs but not severe enough requiring immediate medical attention yet benefited from nursing management to reduce drug withdrawal risk. Of the two patients, both COWS scores improved over time with treatment plan changes. 1 patient was not scored due to non-compliance of providing urine toxicology results to staff, therefore, 96% process compliance outcomes was achieved. 27 out of 28 patients, or 96% had documentation of appropriate nursing management in response to a scored COWS result. A retrospective chart review was completed prior to July 1, 2018 to determine nursing attempts at customizing treatment in response to opioid withdrawal. This allowed for better comparison with a matched cohort. 28 patients were determined to be symptomatic due to a positive urine drug screen and clear indication of signs and symptoms related to opioid withdrawal. Of the 28 patients indicating opioid withdrawal symptoms, only 7, (25%) of patients had management plans changed appropriately. Overall, there was a significant improvement in appropriate changes to the treatment plan after the introduction of the COWs protocol (n= 28 pre and 28 post, chi-squared = 29, p<0.0001, 95% CI 41.71 to 83.74).

DISCUSSION
The purpose of this evidence-based practice project was to improve management of opioid withdrawal management. The primary outcome measured follows state, national, and
international guidelines. The aim was to affect and improve opioid withdrawal management practice given the current local state and national opioid crisis. Additionally, the Joint Commission has recently implemented standard LD.04.03.13 requiring all major healthcare systems manage patients using opioids appropriately (Joint Commission, 2018). This regulatory standard helped to achieve buy-in from frontline nurses, leaders, and other inter-professional healthcare workers involved with this patient population. As the protocol becomes permanently implemented with the results of the pilot study attempts will be made to disseminate this protocol at other units who may also see this patient population.

CONCLUSION
Results from this pilot supports the continued used of COWS to manage and improve opioid withdrawal results. Multidisciplinary communication and input were essential to ensuring any concerns were addressed and success of this project was achieved. Further data collection is necessary to ensure continued compliance over longer periods of time. The evidence-based protocol is safe and effective in ensuring nursing care and accountability for opioid withdrawal management.

LINKING EVIDENCE TO ACTION
Use of the COWS tool with corresponding interventions by trauma nurses is feasible and results in improved withdrawal management. This evidence-based practice change has the potential to be implemented in other specialty units that encounters the opioid withdrawal population. Opioid withdrawal management requires comprehensive and interdisciplinary care that is well-coordinated and led by frontline nursing.

Title: Clinical Opioid Withdrawal Scale (COWS) With Frontline Nursing to Improve Withdrawal Management

Keywords: Clinical Opioid Withdrawal Scale, Evidence Based Practice and Opioid crisis

References:


**Abstract Summary:**
The opioid crisis has shown evidence worldwide. There was no protocol to detect opioid withdrawal at this organization. The purpose of this project was to develop a nursing-driven opioid withdrawal management protocol using the validated Clinical Opioid Withdrawal Scale (COWS) to address an increase in opioid-addicted patients.

**Content Outline:**

**BACKGROUND/INTRODUCTION**

1. Misuse of prescription opioids has become evident internationally via the 2015 Global Drug Survey in countries such as France, Germany, Australia, and the United Kingdom

2. Statistics indicate an increasing number of patients at risk for opiate withdrawal and a need to capture and manage the withdrawal before death occurs

**BODY**

**LITERATURE REVIEW**

1. The Clinical Opioid Withdrawal Scale (COWS), an 11-item validated tool to capture opioid withdrawal.
1. This tool is supported by the American Society of Addiction Medicine National Practice Guideline and World Health Organization in addition to as needed medications to help reduce opioid withdrawal symptoms.

2. This tool has been used throughout the nation at various healthcare institutions at the inpatient level.

3. Following a non-opioid protocol for treatment of opioid withdrawal have greater chances of continuing to psychosocial rehabilitation on discharge.

2. Trauma patient population

1. Data from a similar setting (level 1 trauma center) indicated that 20% of admitted trauma patients admitted also had a history of preexisting controlled substance abuse.

**METHODS**

1. Phase 1

   1. Training of clinical nurses on the use of the COWS tool
   2. A demonstration was provided on how to record the COWS score within the electronic health record
   3. Opioid withdrawal management interventions such as recommending medications for symptom management, social work referral, non-opioid pain management interventions, educating patients on safe opioid use, and communication with physicians for concern of mild to severe moderate withdrawal

2. Phase 2

   1. Standard of practice was changed so that the COWS scale was performed on patients with a positive urine drug screen for opiates
   2. COWS champions were assigned to assist the nurse with any technical complications and compliance.

3. Data Collection

   1. Process compliance of COWS on symptomatic patients with a positive urine drug screen
   2. Empirical outcomes on frequency of opioid management interventions with use of COWS

**RESULTS**

1. Pre-COWS with 28 symptomatic patients with a positive urine drug screen of opiates, only 25% of the patients had management plans documented

2. Post-COWS with 28 symptomatic patients with a positive urine drug screen of opiates, 96% of the patients had management plans documented

3. Overall, there was a significant improvement in appropriate changes to the treatment plan after the introduction of the COWs protocol (n= 28 pre and 28 post, chi-squared = 29, p<0.0001, 95% CI 41.71 to 83.74).

**DISCUSSION**

1. Standards of practice

   1. Joint Commission LD.04.03.13
   2. State, national, and international guidelines
   2. Linking Evidence to Practice

   1. COWS with interventions are feasible and results in improved withdrawal management
   2. Requires comprehensive and interdisciplinary care led by frontline nursing

**CONCLUSION**

1. Results from the pilot support continued use of COWS to manage opioid withdrawal and improve results.
2. This evidence-based protocol is safe and effective in ensuring nursing care and accountability with opioid management

III. CONCLUSION
1. Results from the pilot support continued use of COWS to manage opioid withdrawal and improve results
2. This evidence-based protocol is safe and effective in ensuring nursing care and accountability with opioid management

First Primary Presenting Author

Primary Presenting Author
Lilian Canamo, BSN, RN, PCCN
University of California - San Diego
Trauma PCU
Clinical Nurse III
San Diego CA
USA

Author Summary: Lilian Canamo is a trauma step down nurse at UC San Diego's Level 1 Trauma Center and a current graduate student at Johns Hopkins University for their master's program in Health Systems Management. Although Lilian has been a nurse for only 4 years she strives to combine both her nursing knowledge with information technology to help teach and advance both the students and patients she cares for.