A Quality Improvement Project to Increase Adherence to a Pain, Agitation, and Delirium Protocol in the Intensive Care Unit

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Background: In recent years, the incidence of delirium has grown to epidemic proportions in the intensive care setting with up to 80% of mechanically ventilated patients being affected. This can lead to adverse patient outcomes such as increased lengths of hospital stay, increased mortality rates, and increased long-term cognitive impairment.

Objectives: The objective of this project is to determine whether a quality improvement project can increase adherence to an existing pain, agitation, and delirium (PAD) protocol for enhanced patient outcomes.

Methods: Chart audits were conducted to determine baseline compliance, use of the PAD protocol was measured, and the type of medications administered to each mechanically ventilated patient was assessed. Using the Knowledge-to-Action framework, a multidisciplinary, multidimensional educational module was then developed and implemented that included an online tutorial, point-of-care reminders, written materials, and verbal coaching. A 3-month postimplementation chart audit was conducted to determine whether increased protocol competence was achieved.

Results: Protocol use unexpectedly decreased from 74% to 41% (P < .01); however, compliance with medication recommendations did increase despite the decrease in use. Intravenous opioid use increased from 12% to 40% (P ≤ .001), whereas sedative propofol infusions decreased from 82% to 35% (P ≤ .001).

Conclusions: The implementation of a multidimensional, multidisciplinary project was successful in increasing compliance to the clinical practice guidelines for the

management of PAD in adult intensive care unit patients, despite a decrease in protocol use. This unanticipated decrease in protocol use indicates the need for additional research in this area. Future recommendations also include a review of the existing PAD protocol to determine whether revisions could be made to better suit the needs of the staff while also improving patient outcomes in the arena of delirium experienced during critical care stays.

Keywords: ICU delirium, PAD guidelines, Quality improvement

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● INTRODUCTION

Background Knowledge

Pain, agitation, and delirium (PAD) are a triad of illnesses that have affected patients within the intensive care unit (ICU) as a result of patient injury, disease, medications, and treatment regimens.[1-3] Although each entity is a separate condition, all 3 are interrelated. The most commonly experienced of these conditions in the ICU setting is pain.[4] When left untreated or undertreated, patients may develop agitation and delirium as a result.[3] Agitation may then lead to the inadvertent removal of monitors, intravenous (IV) catheters, and endotracheal tubes by the patient, thus making effective patient care difficult and, in some circumstances, life threatening. Should delirium ensue, the literature indicates that patient outcomes are further compromised: hospital length of stay is increased, mortality rates increase, and long-term cognitive impairment and disability rates increase.[5]

The recognition of these poor patient outcomes has led to extensive changes in the management and care of critical care patients. Previously, ICU patients were placed on mechanical ventilation and heavy sedation during a critical illness.[6] However, recent studies have shown that these levels of deep sedation may indeed be a causative factor in the eventual development of delirium.[1] This method of patient sedation may also be the reason why the prevalence of delirium is disproportionately high, with 45% to 87% of critical care patients being affected.[7] The growing evidence against deep sedation has led to an evolution in patient care guidelines. Today, the goals of care are to limit the amount of time and depth of sedative medications used.[6]

Furthermore, PAD protocols have been shown to be an effective mechanism for pain management and delirium prevention interventions.[1] However, adherence to these protocols has been low with only 60% of ICUs in the United States having adopted these recommendations.[1] A survey conducted with Society of Critical Care Medicine members supports this low level of protocol use, with approximately 64% of survey respondents having worked in a hospital that has a sedation protocol in place.[8]

Analgosedation is a pain-first approach where IV opioids are initially used to treat patient pain and agitation.[3] This has been shown to be an effective technique in PAD management as it provides a lighter sedation level, decreases the length of time spent on mechanical ventilation, and decreases the use of sedative medications that can increase delirium rates.[3] To combat the potential negative consequences, protocol-based analgesia and sedation recommendations have been developed. In 2013, the American College of Critical Care Medicine released the clinical practice guidelines for the management of PAD in adult patients in the ICU.[1] These guidelines focus on the importance of using standardized assessment tools, early intervention to maintain patient well-being, and the use of an analgosedation protocol to provide lighter sedation levels.[1]

Problem Description

In 2016, a PAD protocol was implemented in the ICU associated with this project. This protocol was designed to standardize care and bring evidence-based practice to the bedside, and included assessment tools for measuring PAD were standardized with the Critical Care Pain Observation Tool, the Richmond Agitation-Sedation Scale, and the Confusion Assessment Method in the ICU. The protocol specified the process for managing an intubated patient, and it consisted of interventions to decrease the incidence of delirium. All of these elements were compiled into an order set, which focused on lighter sedation levels with IV opioids as the first line of treatment. Deep sedation was limited to cases of agitation where IV opioids were insufficient in managing patient discomfort and the calculated Richmond Agitation-Sedation Scale score was greater than +1.

Coinciding with the protocol implementation, provider education was completed through course training on the institution's continuing education system along with individual unit-based interventions. After implementation, ICU leadership noted inconsistent compliance, with an estimated utilization of less than 50%. A decision was made to investigate reasons and develop solutions to improve compliance. Further investigation revealed deep sedation with propofol infusions as the primary medication used among the mechanically ventilated patient population. Therefore, it was presumed that either the ICU providers were not ordering the PAD protocol or the nursing staff were not following the protocol steps as intended. This project was created to determine how often the protocol was ordered in the eligible population and how frequently the protocol was adhered to when ordered and to identify barriers causing a decrease in protocol adherence, with the goal of creating an online training module to increase protocol compliance.

Theoretical Framework

The translation of research evidence to bedside practice is a critical component in the evolution of health care. This process ensures that clinical care is not steeped in tradition but is based on science. One of the most well-known theoretical frameworks in evidence-based implementation is the Knowledge-to-Action (KTA) framework.[9] This structure provides a regimented approach to knowledge translation, which assists health care settings with the process of practice change.[10] The KTA framework emphasizes a process of knowledge creation and application for long-term sustainability.[11] The knowledge creation component consists of research findings, systematic reviews, and the generation of practice guidelines on a subject.[12] This wealth of knowledge spurs the initiation of the second portion of the framework, which is the action cycle.[11] This component is a series of phases that ultimately leads to the implementation and application of the knowledge discovered.[11] These phases include identifying the problem in the clinical setting, reviewing the research regarding this issue, adapting this knowledge for the setting of interest, assessing the barriers to implementation, and selecting methods of intervention to effect change.[12] In addition, the KTA framework is a cyclical model that continues to build upon the previous phases. The intervention is therefore followed by assessment phases, which include a method to monitor the use of the knowledge disseminated, an outcomes measurement to evaluate the intervention impact, and a phase of sustainability where the knowledge gained is placed in a feedback loop into the action cycle.[12] This will allow for continued use of the KTA framework as it allows for adaptation of the plan over time.

In addition to the application of the KTA framework in this project, the SQUIRE 2.0 guidelines were also observed as the standard structure for quality improvement (QI) efforts.[13] Therefore, this health care reporting configuration was adapted for the dissemination of these project findings.

Aims

This QI project aims to improve compliance to an existing PAD protocol by identifying the most common barriers to protocol utilization and implementing a multifaceted education intervention based on the KTA framework. The methodology will highlight approaches directed toward the identified barriers. Specific project aims include the following:

1. Determine the most common barriers to protocol utilization.
2. Determine the ICU staff's baseline knowledge of and compliance with the existing PAD protocol.
3. Determine the postintervention knowledge, compliance, and attitudes toward the PAD protocol for the ICU management team.
4. Provide recommendations for the ICU management team to improve continued protocol adherence throughout the organization.

METHODS

Context

The local community-based hospital selected for this project is located in the southeastern United States. This hospital is part of a larger health system and serves a mixed urban and rural population of approximately 1 million residents. Close to 180 inpatient beds are housed in this hospital with annual admissions nearing 9500 per year. The ICU contains 15 beds and provides care to medical, surgical, cardiac, and neurological patient populations. The care team consists of approximately 7 rotating intensivists, 12 nurse practitioners, and 55 registered nursing staff. All levels of the multidisciplinary team were invited and encouraged to participate in this QI project.

Interventions

Using the KTA framework, an anonymous pretest was voluntarily administered through the hospital's learning management system to all registered nurses (RNs), nurse practitioners, and physicians to gain further insight into the lack of protocol compliance issue as well as level of competence regarding the protocol. Five questions were created based on the existing PAD protocol to determine how well the staff understood the protocol directives. Three multiple-choice

questions were also used to ascertain demographic data of the survey participants such as the staff member's role in the ICU, their level of education, and the number of years in their current occupation. In addition to these questions, the pretest also contained 2 open-ended questions, which requested the staff to self-identify barriers that have contributed to decreased compliance with the existing protocol and to request suggestions for improvement to increase protocol use. Because this pretest was specific to the institution's PAD protocol, the initial survey was created by the project team because no validated tool suited the project needs. The project team disseminated the survey to topic experts for face validity before its use in the QI project. The staff were given 3 weeks to complete the initial survey.

The information obtained from the survey was then used to customize a focused online educational module to reinforce the importance of PAD protocol use, address the knowledge gaps in the standards of care, and clearly define protocol procedures. The KTA framework suggests offering educational materials in a multidimensional structure. Therefore, the intervention included the following:

- Auditory and visual cues were provided through the online educational module as well as through reminder emails and announcements during the change-of-shift report.
- Research articles to emphasize the evidence-based practice guidelines were displayed.
- Provider- and nursing-specific posters were placed in the provider offices and on the patient care unit.
- Point-of-care reminders were positioned at each computer monitor using a small placard with bullet points to serve as a reminder to use the protocol and the best medications to prevent delirium.
- Step-by-step checklists were placed at each computer station to outline the PAD protocol process.

Furthermore, the KTA framework emphasizes the need for all levels of the care team to participate for an effective change in practice. Therefore, all interventions were directed toward the nursing staff, the nurse practitioners, and the physicians. The educational module was to be completed within a 4-week time frame.

Data Collection

The impact of the interventions was reviewed using several methods of analyses. An initial survey was administered with the level of knowledge questions to determine whether the lack of protocol compliance was related to a knowledge deficit. Demographic data were also obtained to determine whether any response differences could be related to role or level of experience. The remaining questions in the survey were open-ended questions that allowed the staff to self-identify barriers related to the PAD protocol use.

The second method of analysis was the use of a retrospective and prospective chart review on all intubated patients within the ICU during the designated preimplementation and postimplementation periods. The PAD protocol should be ordered on all mechanically ventilated patients within 24 hours of intubation or admission. Exclusions to this rule are patients who are expected to be extubated within 24 hours, those on neuromuscular blockers, those with refractory intracranial hypertension, or those requiring deep sedation per the provider. The providers execute the protocol by ordering the PAD order set contained in the electronic medical record system. This order set contains multiple treatment options as specified by the PAD protocol, and the provider must select the specific treatment regimen for each individual patient. These orders should include the protocol initiation order; the sedation, agitation, and delirium assessment orders; the IV opioid orders; the sedative medication orders, which can be used after opioid trials; and nonpharmacologic strategies for delirium management. For the purposes of this study, each patient chart was reviewed to determine whether the PAD protocol order was written within the initial 24-hour time frame. To determine whether the protocol directives were followed, the medication records were then reviewed to determine whether IV opioids were administered to the patient as the first line of treatment. For those patients who did not receive an opioid, the medication records were reviewed to determine whether a sedative medication was administered as the first line of treatment. All charts were reviewed for a 3-month period before the QI project implementation, and these data were then compared with 3 months of post–project implementation data.

Finally, a postproject survey was administered using 8 knowledge-based questions and open-ended questions to evaluate the PAD protocol intervention. Similarly, to the pretest survey, no validated tool could be found on this specific PAD protocol. Therefore, the project team created the postproject survey and used several local experts for face validity before project use. This final survey was administered at the conclusion of the 3-month postintervention period. The goals of this survey were to assess for an increase in staff knowledge, assess staff perceptions of the tools offered during this project, and determine methods of improvement for future work on PAD protocols.

Data Analysis

Descriptive statistics were used to analyze the survey data obtained throughout the project. The level of knowledge questions contained in the initial survey was reviewed for the number of correct responses. The mean and standard deviation of this assessment were calculated and provided by the online survey supplier SurveyMonkey. Triangulation, using qualitative analysis of the open-ended survey data, was also conducted to establish emerging themes,

TABLE 1	Participant Demographic Results (N = 47)	
Variable		**n (%)**
Provider type		
Nurse		44 (93.6)
Nurse practitioner		2 (4.3)
Physician		1 (2.1)
Level of education		
Associate		8 (17.0)
Bachelor		35 (74.4)
Master's		2 (4.3)
Doctorate		2 (4.3)
Years of experience in current role		
0-2		19 (40.4)
3-5		12 (25.5)
6-10		11 (23.4)
>10		5 (10.7)

thus allowing for a better understanding of the problem.[14] All of the comments for each open-ended question were carefully reviewed. Categories were then created based on the themes that emerged in staff responses. Each comment was then labeled with the applicable category; comments containing multiple categories were labeled with all of the corresponding options. The categories were subsequently tallied and compared. The themes with the highest number of responses were used in the discussion of the results obtained from the 2 surveys.

Statistical comparisons were used for the chart audit data. Totals and percentages were calculated for the 3 primary data points of protocol orders, IV opioid use, and sedative medication use. This was conducted for both the 3-month preimplementation period and the 3-month postimplementation period. Fisher exact test in SPSS was then used to analyze and determine the statistical significance of these findings.

Ethical Considerations

This QI project met all of the requirements of a QI project submitted through the health organization's Director of Nursing Research; all QI projects are required to be approved by this office per the institution. All ICU participants were voluntarily requested to participate in this project, and no form of compensation was provided for their cooperation. All patient data were collected solely by the authors. Any identifying patient information was removed during the data collection process, and no personal information was recorded for the purposes of this project. The data that were recorded were stored in a secured electronic folder on the university server. Access to

this folder was only granted through a secure electronic pathway that is password protected and was only accessible by the authors.

RESULTS

Responses to the initial survey were reviewed for level of knowledge as well as demographic data. This showed high nursing participation with 44 RNs (93.6%) having completed the assessment tool. This was followed by 2 nurse practitioners (4.3%) and 1 physician (2.1%), with a total (N) of 47 participants. Most participants were prepared at the bachelor's level at 74.4% (n = 35), with a large number of these participants (40.4%) with 2 years or less of experience in their current ICU role. Additional data on the level of education and the number of years in his/her current role are displayed in Table 1.

Five knowledge-based questions on the PAD protocol were provided on the initial evaluation. The protocol-specific questions are displayed in Table 2 along with the number and percentage of correct response scores. The overall average score on the knowledge-based survey was 65% ± 18% before the educational intervention. After the multidimensional PAD implementation, the participants

TABLE 2	Participant Level of Knowledge Survey Results
Question	**n (%) With Correct Response**
1. Based on your current PAD protocol, what is your first step in managing an intubated patient with a Clinical Pain Observation Tool (CPOT) score of 6?	24 (51.0)
2. When caring for an intubated patient who is on a propofol infusion, you notice that the patient is resting comfortably. You tell the patient you are going to help him turn to the other side and he does not respond. You need to shake his shoulder before he opens his eyes. His level of sedation is?	35 (74.0)
3. You conduct a CAM-ICU assessment and note the following: a fluctuation in RASS scores over the past 12 hours, positive inattention assessment, and a current RASS of +1. What does this mean?	39 (83.0)
4. What medication should you administer first upon initiation of the PAD protocol?	12 (26.0)
5. Your patient has been given fentanyl 50 mcg IV push 4 times in the last hour, they point to the ETT, and nod when you ask if they are in pain. What is your next step according to the PAD protocol?	43 (91.0)

Abbreviations: CAM-ICU, Confusion Assessment Method in the Intensive Care Unit; ETT, endotracheal tube; PAD, pain, agitation, and delirium; RASS, Richmond Agitation-Sedation Scale.

were asked to complete a secondary survey that contained 8 knowledge-based questions. The average score increased to 82% ± 14%.

The initial survey also provided insight into protocol-related barriers recorded in the responses to the open-ended questions. Three distinct barriers were acknowledged by the staff. First, staff members reported a lack of education or understanding of the PAD protocol. Comments regarding the protocol included "confusing," "not easy to follow," and "complicated." Several staff members requested additional education on the protocol to learn the proper way to manage a PAD protocol patient and decrease the significant variability noted between staff members. Second, the surveys revealed a lack of understanding on why the PAD protocol was valuable or necessary. Not all staff were aware of the benefits of reducing rates of delirium, decreasing hospital stays, and improving patient outcomes. Finally, some logistical issues were identified by the staff that hindered their ability to adhere to the protocol. These issues included the protocol being "too slow" to effectively treat an agitated patient, the difficulty in obtaining the correct medication dosage as other staff were required to waste the excess medications dispensed, and the acuity of patient assignments when 15-minute assessments and medication dosing were necessary on both patients in a given assignment. Given these challenges, the staff also reported that propofol was significantly easier to use in this patient population.

The second component of this project was a review of the electronic medical records to ascertain protocol compliance rates. During the course of the project, a total of 92 patient chart audits were conducted on all intubated patients residing in the ICU. Thirty-four baseline observations were conducted during the 3 months before the project implementation. The remaining 58 patients were assessed during the 3-month postimplementation period. During the preimplementation period, the PAD protocol was ordered within the 24-hour specified time frame at a rate of 73.5%. During the postimplementation period, this number unexpectedly dropped to 41.4% ($P < .01$).

To further delineate between ordering the protocol and providing care based on the PAD protocol directives, the medications administered to each patient during their ICU stay were reviewed. Whereas protocol use had unexpectedly decreased, the application of protocol-based interventions had significantly increased. Baseline data showed that patients were given IV opioids as their initial treatment in only 11.8% of cases. After the project implementation, the use of IV opioids first increased to 39.7% ($P \leq .001$). Likewise, primary use of sedative medications began at a rate of 82.3% and significantly decreased to a rate of 34.5% ($P \leq .001$). Although protocol use did not increase as desired, the interventions provided were successful at increasing IV opioid use and decreasing sedative use in this ICU population.

At the conclusion of this QI project, responses to the final evaluation's open-ended questions included "It was helpful. Education needs to be provided on a regular basis as reinforcement"; "It was a great reminder of PAD protocol usage, benefits, and risks"; and "The protocol works really well if we all know how to use it…continuous education helps our ICU." When asked which aspects were the most beneficial toward increasing protocol use, statements overwhelmingly highlighted that the clear explanations, the visual step-by-step tools, and the use of multiple reminder methods were all critical in increasing adherence.

The respondents were also asked what aspects of the QI project were disliked for future improvement efforts. Comments included ensuring that the timing of this education not coincide with annual competency requirements so that the nurses did not split their focus on 2 competing activities. The staff reiterated that the protocol was still slow to treat agitated patients, time and resource constraints still made adherence challenging, and obtaining and wasting medications was still a factor. All of these issues will be important considerations for future modifications of the PAD protocol.

DISCUSSION

Interpretation

This project examined the knowledge and practices of a single ICU in a community-based hospital and sought to improve adherence to a PAD protocol. Through the initial survey and knowledge-based questions, a lack of knowledge regarding the PAD protocol was identified as a component of the issue. On average, the staff scored 65% on the protocol content questions. The staff also self-identified that further education was needed to increase protocol compliance. Therefore, a large component of the online educational module was focused on reeducating the staff on the protocol details and the process of applying this protocol in the clinical setting. As anticipated, the knowledge-based questions at the conclusion of the intervention showed an overall increase in this area with a change in scores from 65% to 82%.

In addition, the initial chart audit highlighted that ordering the PAD protocol was not the primary barrier to complying with evidence-based practice initiatives, as previously presumed. On the contrary, this critical care unit had an existing PAD protocol in place, and it was discovered that the order was used frequently (73.5%) before the start of this QI project. Instead, the lack of adherence to the recommendations was more complex. As noted in the initial survey results, the staff found the protocol confusing and self-identified logistical issues that hindered protocol use. These factors were more likely the causes for nonadherence.

After the large educational effort in this QI project, one of the anticipated outcomes was an increase in the use of the PAD protocol. However, instead of seeing a larger percentage of patient charts containing this order, a decrease from 73.5% to 41.4% was seen. It is unclear why this order usage dropped considering that the use of the recommended medication therapies had increased. It is possible that the providers recognized the inability of the existing protocol to meet the needs of their patients and therefore stopped ordering an ineffective protocol. In the study by Bair et al,[15] a sedation guideline that was implemented in the ICU was only adhered to in 23% of observed patients. The rationale for noncompliance in this study cited patient-specific factors that led to alternative medication orders outside the implemented guidelines. Furthermore, this study cited the staff learning curve related to the new recommendations and the ordering provider's medication preferences as other reasons for not following the sedation guidelines.[8,15]

Instead of ordering the PAD protocol, the ordering providers placed individual medication orders for a number of mechanically ventilated patients. These new medication orders focused on IV opioid medications as the initial treatment while sedative medications were avoided. This practice was confirmed by the postimplementation chart audits. Significant improvements were seen in the provision of the correct type of medications recommended by the national guidelines. Analgosedation methods increased from 11.8% to 39.7% where IV opioids were the first line of treatment for many more patients than previously seen. Likewise, the use of sedative medications such as propofol as the first line of treatment dramatically dropped from 82.3% to 34.5%. This demonstrated a significant change in the PAD-related efforts by the staff and showed that the project intervention was positive in generating a practice change.

This QI project was successful in targeting 2 of the 3 adherence barriers identified by the staff. The multimodal framework offered specific education to bolster the staff's knowledge regarding the use of the PAD protocol while also offering the research evidence to support the importance and relevance of its use in clinical practice. As a result of this intervention, statistically significant changes occurred with the types of medications administered to this patient population. Although the lighter sedation levels with opioids used in the protocol can be more time intensive than the use of a propofol infusion, the staff changed their practice. As for the third barrier to protocol adherence related to logistical issues, further research into these problems and their possible solutions will be necessary for future work on the PAD protocol. Other administrative staff and potentially other departments such as the pharmacy may also need to be involved.

Limitations

This study had several limitations that could affect its generalizability to other ICUs. First, this study was conducted in a single community hospital ICU in the southeast United States. The ICU population and staff may not reflect the overall characteristics seen across the nation, and therefore, the results obtained may not be noted if applied to an alternate setting. It is a recommendation to expand this project further to include more clinical settings that could create a more generalizable project population.

Second, although a statistically significant practice change was seen with this intervention, the results of this study could be improved further. One factor may have been the lack of unit-based staff participating in the implementation. The project team consisted of ICU managers, an ICU nurse practitioner, and a doctoral student who was not a staff RN. Because the project team was not on the ICU on a day-to-day basis, continued momentum for the project could not be maintained. The use of staff champions may have improved this factor as staff involvement has been shown to increase staff buy-in.[16] Another factor could have been that online training does remove the discussion portion of an educational offering, limiting the staff's opportunity to ask questions. The use of unit champions would have been more consistent with the KTA framework's cyclical model of reassessment and modification to increase levels of success.

Third, the data collected during this project were obtained through retrospective chart reviews, and there was difficulty in determining whether patients met the exclusion criteria. Most exclusions such as the use of neuromuscular blockade, oscillation ventilation, status epilepticus, and refractory intracranial hypertension were clear and easily excluded from the project data. However, the population of planned short-term mechanical ventilation and those who the provider deemed deep sedation necessary were more difficult to delineate. Alternative methods of data collection should be considered moving forward as the inclusion of these additional patients may inaccurately increase the rates of protocol nonadherence.

Finally, the data obtained were only for 3 months before implementation and only 3 months after implementation. Although the number of patients assessed was similar in both groups, a longer assessment period would be useful in determining the long-term adherence rates after this intervention. More patient assessments could assist in ensuring a sufficient patient mix in the pre and post groups, long-term PAD protocol use would reflect the longevity of the intervention, and the full KTA framework of assessment and modification in a cyclical model could be realized.

Future Implementation

Future work in this area should involve a reexamination of the PAD protocol with the involvement of bedside staff. Their input would be invaluable in the identification and

resolution of the numerous logistical difficulties noted in this QI project. Furthermore, these involved staff members would make ideal staff champions for future implementations. The involvement of the multidisciplinary team should also be continued. The providers will be instrumental in discussions regarding the change in protocol use, as well as the alternative medication orders that were used outside the PAD protocol. In addition, the limitations noted in this study should also be addressed, should this PAD protocol project continue. Expanding the study population, lengthening the assessment period, and developing a method to ensure that the proper excluded patients are not included in the study results will all strengthen the new data obtained. By addressing the barriers noted by the staff and modifying the PAD protocol to meet their needs, the use of protocol orders can increase substantially. This in turn could improve the management of mechanically ventilated patients, decrease the rates of delirium, and eventually lead to improved patient outcomes. Ideally, an expansion of this QI project would measure these patient outcomes to further support the staff's use of the PAD protocol. Measured decreases in patient length of stay, mortality rates, and disability rates in the existing patient population could inspire the staff to make a long-term practice change.

Conclusions

This study has shown that the use of a multidimensional, multidisciplinary educational module was effective in increasing adherence to a PAD protocol within an ICU setting. The health institution of interest had already instituted a PAD protocol throughout the health system; however, compliance was below the institution's expectations. Given both the national guidelines and a heightened awareness regarding the negative effects and increased costs associated with delirium during an ICU stay, it is imperative that all health organizations do their part to combat this deadly syndrome. Through this project, it is clear that more can be done to further delirium prevention techniques.

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