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Increasing Education and Staff Knowledge of Delirium Care: An Evidence-Based Quality Improvement Project

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Increasing Education and Staff Knowledge of Delirium Care: An Evidence-Based Quality Improvement Project

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INTRODUCTION At a small, community hospital in Massachusetts a gap analysis was conducted leading to a quality improvement project to increase staff education and knowledge regarding delirium and evidence-based best practices for delirium care. Delirium is a growing, often under recognized medical condition that occurs in hospitalized patients (Loftus & Wiesenfeld, 2017). Delirium is characterized by acute changes in cognition, level of consciousness, and attention (Loftus & Wiesenfeld, 2017). A better understanding of this condition is expected to result in improved patient care.

METHODS The clinical microsystem studied in this gap analysis project was assessed by using the AHRQ Gap Analysis tool, a Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis, stakeholder feedback, and resource allocation.

INTERVENTION Following discussion with the nursing education department, a gap was identified in the care for delirium patients within the microsystem. A pre-intervention delirium knowledge assessment was given to nursing staff which supported the need for increased education on this topic. The data from the survey showed that between 26.6- 53.3% of the risk factors and signs and symptoms tested on the survey were not identified correctly. A delirium “QuickNotes” tool was created as a method to provide easily accessible information on delirium care.

RESULTS A post-intervention knowledge assessment survey was given to nursing staff following the presentation of the QuickNotes tool to the nursing staff. 100% of respondents were able to correctly identify the definition of delirium. Of the 13 risk factor questions on the survey, 12 had 100% correct responses. Additionally, on the signs and symptoms portion of the survey, 8 of the 12 signs and symptoms had 100% correct responses. A free response text question was
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included in the survey asking respondents to name an adequate non-pharmacologic intervention for delirium which 100% of the respondents did correctly.

Discussion The intervention of the delirium “QuickNotes” tool was successful in increasing staff knowledge and awareness of delirium in the hospitalized patient. The gap analysis project has succeeded in its objectives and has facilitated discussion for next steps involving delirium care including the use of a validated screening tool in the future as well as continued education on this topic.

Keywords Delirium, best practices, interventions, non-intensive care, evidence-based guidelines, gap analysis, quality improvement
Introduction

Problem Description

The microsystem examined in this quality improvement (QI) project is an in-patient, medical surgical unit within a community hospital in Massachusetts. While this is a small, local facility, it is affiliated with a larger healthcare network in Massachusetts. There are many different types of patients cared for on this unit however, the large majority of patients are categorized as surgical, orthopedic, and geriatric.

Delirium is a state of new onset confusion that is usually reversible however, can have negative impacts on patients including but not limited to, longer lengths of stay, falls, and increased rates of readmission (Cody et al., 2021). A gap has been detected in the identification of and care for patients experiencing delirium in this microsystem (E. Massey, personal communication, February 12, 2024). A review of hospital policies and procedures revealed that there is a lack of policy on delirium care. Additionally, a staff survey provided information that most staff report they do not use a screening tool in their own practice and that there was a gap in the staffs’ knowledge of delirium care. The results of the delirium knowledge assessment survey provided useful data that an increase in delirium education is indicated.

Adequately caring for patients experiencing delirium will result in enhanced patient-centered care. The first step in this process is identifying the onset of delirium in a timely manner. Due to lack of policy and understanding of this matter, a gap analysis was performed to determine evidence-based, best practices for caring for patients with delirium.

Available Knowledge

Delirium is a common complication experienced by hospitalized patients that presents as an acute condition with deterioration in attention, level of consciousness, perception, and overall
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cognition (Thomas et al., 2021). Due to an alteration in behavior and mentation, delirium has negative effects on patients such as increased rates of falls, functional decline, longer length of stay, increased re-admission rates, additional medical expenses, and an increase in both morbidity and mortality (Cody et al., 2021). According to Cody and others (2021), over 30% of patients 65 years and older who are in the hospital will develop delirium. Patients who are most at risk for acquiring delirium are 65 years or older, have an existing cognitive condition, and increased severity in illness (Cody et al., 2021). Other risk factors also include immobility, physical restraints, polypharmacy, infection, post-anesthesia, fractures, and sensory disturbances such as hearing or sight deficits (Cody et al., 2021).

Delirium is considered a medical emergency as it poses serious threats to patients. Therefore, it is important for nurses and healthcare providers to understand and readily identify signs and symptoms of delirium in hospitalized patients so that early intervention can take place. Early intervention and management are crucial in limiting adverse effects such as falls and will help promote better health outcomes for patients. While delirium is a widely faced problem in healthcare, there remains a gap in the identification as well as proper management and treatment. It is important as healthcare providers to review evidence-based research to find the best practices in caring for delirious patients. A literature review was conducted in order to find evidence-based answers to the question: What are the best practices for caring for patients with delirium and will increasing staff education increase the knowledge and confidence with delirium on an inpatient medical surgical unit?

**Search Methods**

To search for evidence regarding best practices of delirium care, two large databases were used, PubMed and Cumulative Index to Nursing and Allied Health Literature (CINAHL).
When searching for literature, boolean operators such as “delirium management” “NOT intensive care” “AND best practices” were used. Literature from 2014 to present were considered in order to find up to date evidence. A total of 14 sources populated from CINAHL and 3 from PubMed creating a total of 17 articles for screening. 12 articles were excluded due to one or more of the following reasons: the full text was not available, the article was not a high enough level of evidence, or the article did not produce the evidence needed for this project. Five articles were left for inclusion in this literature review. While high levels of literature such as systematic review or meta-analysis are preferred, there were not many located in this search of the databases. Therefore, additional types of sources such as quality improvement projects were also included in this review in order to obtain more information on this topic.

*Systematic Review and Qualitative Evidence Synthesis 2021*

A systematic review and qualitative evidence synthesis by Thomas et al. (2021) was analyzed. The review examined nurses’ experiences in caring for patients experiencing delirium. The purpose of the systematic review was to better understand the factors that influence nurses as they care for delirious patients and also to determine what the best practices are regarding delirium (Thomas et al. 2021). Care areas including medical and surgical units, palliative care, oncology unit, and intensive care were studied. Throughout the review four main themes were identified in nurses’ care towards patients with delirium: nurses have a deficit in knowledge regarding delirium, delirium causes increased workload and stress on nurses, there are safety concerns for nurses when caring for delirious patients, and the strategies used by nurses when caring for patients who are experiencing delirium (Thomas et al. 2021). Additionally, the review provided evidence that there is a need for increased education of delirium for nurses. In this review, they found that nurses reported the lack of proper knowledge or education regarding
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delirium. They also found that caring for a delirious patient can be challenging as they balance
the additional needs of the patient with delirium with the needs of the other patients in their
assignment. Additionally, nurses are concerned for their safety when caring for delirious patients
as agitation is a common symptom of this condition. Finally, best practices for caring for
delirium were found to include: obtain support from patient families and team members, limit the
use of restraints, implement observation when necessary, and consideration of the use of anti-
psychotic medications to control symptoms (Thomas et al., 2021).

In conclusion, this systematic review yielded helpful evidence that nurses in fact do need
increased education to fully understand and feel confident in caring for patients with delirium.
Additionally, best practices were proven to include the use of a screening tool for delirium,
familial and staff support in care, limit restraints, initiate observation when appropriate, and
medication usage in some instances. These findings are helpful in the search for the best
evidence-based practices in caring for delirium and can help guide care for delirious patients in
the future.

Evidence Implementation Initiative 2021

An evidence implementation initiative at a large hospital was also reviewed. The
objective of this implementation project was to improve the care given to patients who are both
at risk for and currently experiencing delirium in the hospital. According to this implementation
project, the use of a validated screening tool is best practice in order to identify patients who may
experience delirium. There are many validated tools for delirium screening however, in this
implementation project a few were discussed such as the Nursing Delirium Screening Scale
(NuDESC), Confusion Assessment Method (CAM) and its variations, and the Arousal,
Attention, Abbreviated mental test and Acute change tool (4AT). According to this source, once
delirium is suspected in a patient, interventions must take place in that patient’s care in order to promote better health outcomes (Cody et al., 2021). Often times this includes reversing the causative factors such as hypoxia, poor pain control, infection, sensory impairment, etc. Additionally, safety interventions need to be implemented for delirious patients such as fall precautions to prevent injury, reorientation, cognitive stimulation, early mobilization- especially after an orthopedic surgery, adequate pain management, and promotion of a good sleep cycle (Cody et al., 2021). The authors report that non-pharmacologic interventions must be prioritized before transitioning to pharmacologic treatment.

Prior to the evidence implementation, a 143-chart review revealed there was a lack of adherence to protocols and practices regarding delirium ranging between 6-67% (Cody et al., 2021). The researchers wanted to identify what barriers may be contributing to the lack of adherence and found that the nurses reported a lack of knowledge on delirium and how to properly care for these patients. Due to this finding, the implementation initiative began with identifying “delirium champions” from the participating units. Their roles were to take on the implementation of practice changes and be an educational reference for the nurses on the units when providing care for delirium. Using the evidence to support best practices, the team of delirium champions compiled practice changes to initiate such as screening all patients with a validated tool on admission coupled with routine screening of any patient if delirium is noted. Additionally, health professionals discuss delirium with the patients and family members of at-risk patients are given information about delirium. Patients identified as at risk are monitored frequently for changes in behavior or cognition. In addition, fall precautions are initiated in at risk patients as appropriate. Furthermore, patients are also screened and assessed for potential and actual pressure injuries. Lastly, delirious patients received non-pharmacologic interventions
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as first line treatment before the use of pharmacologic interventions (Cody et al., 2021). After these changes were implemented and the staff were educated by the delirium champions, there was an increase in adherence to protocols. This implementation project yielded helpful information about practice change in nursing as well as evidence based best practices for delirium care.

**Quality Improvement Initiative 2022**

Another quality improvement initiative regarding recognition, prevention, and management of delirium was examined. The purpose of this quality improvement initiative was to implement the best practices of delirium recognition, prevention and management on two separate microsystems- a non-critical care medical unit and a surgical unit. (Hamilton et al., 2022). The 4AT delirium screening tool was administered to patients who have risk factors for delirium on several occasions: on admission to the hospital, once every shift, and as needed if patient condition changes. The project leaders then created evidence-based order sets for prevention and management of delirium to be used by the unit nurses to standardize the care by creating set protocols. The delirium prevention order set included: anticipating patient needs, providing cognitive stimulation, creating a therapeutic environment, and involving family and caregivers in patient care plans and goals. The management order set included a pharmacy or behavioral health consult, increasing pain assessments, encouraging mobility, preserving and aiding in an adequate sleep-wake cycle and more personalized interventions such as questioning removal of urinary catheters if indicated, etc. (Hamilton et al., 2022).

The 4AT tool was used to screen 285 at-risk patients in this facility. 15% of the patients screened positive and the remaining patients had a negative screening. Of the negative screenings, 19% of the patients were identified as at risk and the prevention order set was
initiated by the team in order to prevent the occurrence of delirium. After assessment by a provider, two of the positive screened patients were diagnosed with acute delirium and the management order set was initiated in their care. The researchers found that delirium detection in this facility increased after the use of the 4AT tool was implemented. According to this source, the implementation of validated screening tool is crucial in early recognition of delirium (Hamilton et al., 2022). Additionally, they found that non-pharmacologic interventions are favored to pharmaceutical in managing delirium. This source corroborates the use of a screening tool in the care of at-risk patients. Additionally, further evidence has been found from this source supporting non-pharmacologic interventions in caring for delirious patients. Information from this quality improvement project can be used in future work to improve care given to patients experiencing delirium.

**Chart Audit 2017**

A chart audit and quality improvement project was conducted on both a general medical unit and surgical unit after a deficit in delirium care was identified in a facility. 186 patient charts from a one-month period were reviewed, these patients were 50 years or older. The purpose of this QI project was to compare the care that was being given to the current best practice guidelines (BPGs) involving delirium (Loftus & Wiesenfeld, 2017). Upon the review of these charts, a reduced adherence to the BPGs on delirium was found. There was also found to be a practice gap in the nurses conducting a baseline cognitive and functional assessment. A baseline assessment is important to conduct so that changes in behavior and function can be identified by the nurses and physicians. Additionally, the nurses had very poor adherence to completing the Confusion Assessment Method (CAM) screening tool on their patients with only 7% of the patients having had any form of CAM screening (Loftus & Wiesenfeld, 2017). When patients
were screened using the CAM tool, it was not always used accurately. Through the chart review, the project leaders also found that patients with missed delirium diagnoses ended up having longer lengths of stay.

The findings of the current processes in these units involving delirium care revealed a practice gap and need for improvement. The information found was given to key stakeholders to elicit involvement in improving care. There were multiple changes made within this facility in order to improve their care of delirious patients including the nurses’ completion of online modules for caring for geriatric patients with attention to delirium care. Additionally, the nurses were trained to accurately use the CAM tool. Nurses also were asked to complete baseline assessments of cognition and function and to document accordingly. Finally, standardized nursing care plans were curated for use when patients are experiencing delirium. The care plan focused on evidence-based non-pharmacologic interventions. The researchers in this source found a lack of high-level evidence in terms of BPGs in delirium management. The use of a screening tool such as the CAM tool is highly recommended in patients 65 years or older when admitted to the hospital (Loftus & Wiesenfeld, 2017). The implications for nursing practice include the use of a validated screening tool allows healthcare staff to timely identify delirium and implement interventions appropriately.

**Best Practice Guidelines 2016**

Lastly, a source highlighting both pharmacologic and non-pharmacologic methods for prevention and treatment of delirium was reviewed. The authors reviewed current evidence-based best practices for delirium care. Delirium is a common condition of neuropsychiatric symptoms that often goes unrecognized leading to increased morbidity and mortality (Schwartz et al., 2016). The use of a valid screening tool is important in practice in order to identify
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delirium early (Schwartz et al., 2016). Many prevention methods can be used in attempts to prevent the occurrence of delirium such as daily visitor programs, stimulating cognition and communication, adequate sleep protocols, promote sensory adaptations, early mobilization, pain control, hydration, assessing for hypoxia, monitor lab values, etc. (Schwartz et al., 2016). In order to successfully prevent delirium, thorough and comprehensive assessments must take place.

If delirium does occur, there are suggested practices to manage and treat the condition. First, it is imperative to identify and treat any causative factors such as poor pain control or hypoxia (Schwartz et al., 2016). It is important to limit the use of physical and chemical restraints when caring for delirious patients. Reduce items that may tether the patient to the bed as best as possible, this includes urinary catheter tubing, intravenous pump tubing, and keeping all four side rails of the bed elevated. Try to place delirious patients in rooms that are as close to the nursing station as possible to promote frequent monitoring and swift response to call bells or fall alarms. Implementing safety sitters or observation when indicated is helpful in managing delirium by preventing falls and injuries (Schwartz et al., 2016). When caring for patients with delirium, it suggested to utilized non-pharmacologic treatments as first line before moving to medication. However, in some patient cases the use of medication may be indicated in the setting of agitation, delusions, hallucinations, etc. as these are distressing for patients (Schwartz et al., 2016). If medication is necessary, anti-psychotics like haloperidol are the first line choice. Haloperidol is often chosen because it does not have effects on hemodynamics and or respiratory effort (Schwartz et al., 2016). Schwartz and the co-authors (2016) reviewed evidence-based literature and have summarized their findings in these suggested practice for delirium care.
Accurately treating, managing, and reversing delirium in patients is crucial to preserve function and promote improved health outcomes.

**Synthesis of Evidence**

When reviewing these sources, common themes in delirium care have been identified such as the importance of understanding risk factors, best practices for management, and the routine use of screening tools. What causes delirium can include fractures, infection, poor pain control, hypoxia, and increased severity of illness (Thomas et al., 2021). The first step in managing and treating delirium is to reverse the causing factor. Pain control, respiratory distress, and infections need to be addressed and rectified in order to reduce the symptoms of delirium and prevent worsening of condition (Schwartz et al., 2016).

The use of a screening tool is widely encouraged and supported (Cody et al., 2021). There are many different delirium screening tools including the CAM and its variations, the NuDESC, 4AT and more. All of these sources share the idea that in order to identify delirium in a patient, a screening tool is helpful and standardizes how patients are screened within facilities.

Non-pharmacologic interventions are favored to pharmacologic by all of the sources in this review. Examples of non-pharmacologic interventions that should be used when caring for a patient with delirium include encouraging and providing cognitive stimulation, early mobilization, implementing fall precautions, assessing for pressure injuries, creating a therapeutic environment, limit use of restraints, and providing the patient with a clock and calendar (Hamilton et al., 2022). These interventions are less invasive than implementing the use of medications. These interventions can also easily be applied into a patient’s care plan by the nurse and care team members. However, not all cases of delirium may be managed effectively solely with non-pharmacologic strategies. Unfortunately, delirium may cause patients to become
agitated and or experience hallucinations which can be very distressing for patients and their families. In these circumstances, medications such as haloperidol may be indicated in order to preserve patient safety (Schwartz et al., 2016).

Finally, many of these sources highlight that nurses often report a lack of knowledge on the best practices for delirium, and this causes a practice gap in caring for these patients. According to the systematic review conducted by Thomas and others, it is important that nurses are educated to assess for delirium and are comfortable with interventions to provide in order to improve health outcomes (2021). Delirium is a serious and common complication in the hospital setting and it can increase mortality by 33% (Thomas et al., 2021). By increasing education and awareness of delirium, nurses will be able to provide better care for their patients.

Rationale

According to Davis-Ajami et al., (2014) there are four steps in a quality improvement project model: identify and classify the problem, identify and define best practice, measure and benchmark, perform a strength, weaknesses, opportunities, and threats (SWOT) analysis and survey stakeholder perspectives. These steps were followed in the process of this project. In the problem identification step, a practice gap for delirium care was identified through discussion with key stakeholders. In the identification of best practice, a literature review was conducted. To measure benchmarks, a pre-intervention survey was conducted. Finally, the AHRQ gap analysis tool, SWOT analysis tool, and stakeholder feedback was gathered to inform best practice.

After conversation with key stakeholders and reviewing data from the pre-intervention survey, a potential practice gap was identified. As a result, the project and intervention were supported.
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Specific Aims

The purpose of this gap analysis quality improvement project was to increase staff knowledge of delirium and how to care for patients experiencing delirium. By increasing knowledge of this syndrome, support will be provided to staff and improved patient care is expected as a result.

Methods

Context

The microsystem in this gap analysis quality improvement project is 30 bed, non-critical medical and surgical unit. The unit is staffed by nurses, nursing assistants, a nurse manager, respiratory, physical, and occupational therapists. The large majority of patients cared for on this unit have one or more risk factors for delirium.

When implementing practice change, it is important to consider the resources needed in order to facilitate the change process. In this case, a gap was identified in the microsystem in the identification of and care for patients experiencing delirium. Through discussion with staff in the nursing education department and a review of hospital policies, a lack of policy regarding delirium care was identified. Additionally, a delirium knowledge assessment survey was given to nursing staff of the microsystem which yielded crucial data supporting the need for increased education on this topic.

Resource Allocation

Considering resource allocation is an important step in quality improvement work and when implementing practice changes. It is beneficial to identify necessary resources or materials for the change to occur. Resources needed for the future of delirium care in this facility include the cost and service of the information technologies department to incorporate a screening tool
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into the electronic charting system. Additionally, further educational material may be needed during the onboarding and orientation process. Yearly competence modules including information on delirium may be considered. Finally, the nursing education department shared the volunteer group of the hospital are working to create a cart including puzzles, drawing, and other activities to provide cognitive stimulation to patients experiencing delirium, a cart like this would require financial resources either from the facility or as donations.

Stakeholder Feedback

Human Resources

Obtaining stakeholder feedback and support (buy-in) is an important step in quality improvement work. For practice changes and implementation, the support of those who are directly affected by these changes will aid in the success of the project. To obtain stakeholder feedback, the project goals were discussed with staff in the nursing education department and the nurse manager of the microsystem. Additionally, an anonymous survey was sent to nursing staff.

Four questions were asked in this survey to obtain stakeholder feedback. To the question “Do you believe there is room for improvement for care given to patients experiencing delirium?” all respondents answered “yes”. To the question “Do you believe increased education on delirium would be beneficial to your own nursing practice?” all respondents answered “yes”. Another question “Do you believe increased education on delirium would improve patient care?” was asked to which all survey respondents answered “yes”. Finally, the question “Do you believe our current strategies for managing patients who are experiencing delirium are efficient? Yes or No? If no, why?” Respondents were given the option to provide a free text answer to this question. Three themes were identified from the free text responses including a perceived lack of
training on the topic, a perceived lack of resources, and confusion about the difference in the care for patients with delirium compared to patients with dementia.

**Theme One: Little Training on Delirium.** Stakeholders shared that there is a perceived lack of or little education or training on how to manage delirium. There is also a perceived lack of education on delirium itself including the etiology, pathology, and treatments. An anonymous text response from a survey respondent shared helpful insight on this matter “No- there is no /very little training about ways to help. Also, even less time /train behind etiology, pathology, treatments (secondary), or psych aides” (Martinath, S. 2024. Delirium Education Initiative [Data Set]).

**Theme Two: Lack of Resources.** Stakeholders report a perceived lack of resources to aid in providing care to patients experiencing delirium. For example, suggested resources include “volunteers to interact with them/games/etc. for example as they are usually confused and lonely in their rooms alone.” (Martinath, S. 2024. Delirium Education Initiative [Data Set])

**Theme Three: Difference Between Delirium and Dementia.** Stakeholders expressed confusion between the evidence-based plan of care for patients with delirium contrasted with the plan of care for patients with dementia, “I think there is confusion with dementia vs delirium” (Martinath, S. 2024. Delirium Education Initiative [Data Set])

**Environmental Resources**

Resources that enhance safety for patients experiencing delirium can be considered environmental resources. This may include obtaining more equipment for falls precautions such as chair or bed pad alarms. There are also camera monitors that can be obtained for patients requiring constant visual monitoring (patients who may make frequent, unsafe attempts out of bed). These types of resources would require additional finances as well.
Material Resources

In order to improve delirium care, material resources such as games, puzzles, volunteers and/or visitors would be helpful in achieving this goal. Additionally, clocks, calendars, and books can also be considered material resources to improve delirium care. Additionally, the future use of a validated delirium tool within the microsystem would be considered a material resource.

Intervention

Various interventions to increase education on delirium were considered before implementation such as education and implementation of a validated screening tool. Ultimately, the use of a “QuickNotes” tool was decided on after discussion with the nursing education department. A “QuickNotes” tool is an educational reference used in this facility to share education on nursing topics in a quick, easily accessible, and visual manner (Elizabeth, Massey, personal communication, March 15, 2024). Staff in this facility are familiar with “QuickNotes” tools and it was decided that this tool was a successful method for education in this facility. The intervention for this project was to create a delirium “QuickNotes” tool that can be presented to staff as well as displayed in the break room and on the education bulletin board for easy reference.

Gap Analysis

The AHRQ Gap Analysis tool was used to compare best practices strategies from that of the microsystem as well as to identify any implementation barriers. The AHRQ Gap Analysis table depicts the gap between the evidence-based best practices and the current practices of the microsystem (Table 1). Support for implementation of an educational component was notified immediately while next steps would include implementation of the use of a screening tool.
Table 1

*Gap Analysis*

<table>
<thead>
<tr>
<th>Best Practices (References)</th>
<th>Best Practice Strategies</th>
<th>How Your Practices Differ from Best Practice</th>
<th>Barriers to Best Practice Implementation</th>
<th>Will Implement Best Practice: Yes/No, Why Not?</th>
</tr>
</thead>
</table>
| Utilize a validated screening tool to screen patients at risk of developing delirium. (Cody et al., 2021; Hamilton et al., 2022; Loftus & Wiesenfeld, 2017; Schwartz et al., 2016) | Consider validated screening tools and determine which tool nursing education would like to utilize in this facility, potentially add into EPIC for easy access for staff. | Currently, there is no delirium screening tool being used in this microsystem. | -Requires education on how to accurately use screening tools.  
-Requires potentially adding the tool into the electronic charting system.  
-Requires providers becoming involved with use of screening tool and how to intervene when patients screen positive. | Yes, nursing education have stated they plan to include a screening form in the electronic charting when they switch to EPIC later this year. |
| Utilize non-pharmacologic interventions for delirium before the use of medication. (Schwartz et al., 2016; Hamilton et al., 2022) | -Once delirium is detected, consider causative factors and attempt to reverse them (hypoxia, pain, allow increased visitation from family, encourage and aid with adequate sleep/wake cycle, etc.)  
-Assess neuro and cognitive function more | -There is not currently increased visitation hours for delirium patients.  
-Current state does not draw attention to risk factors/potential causes of reversible delirium. | Requires practice changes which are not always easy to adapt to. | Yes, with increased staff education on delirium, an increase in interventions may occur. |
In decreasing education and staff knowledge of delirium care frequently. Baseline is Q8 hours and with any change in patient behavior, consider Q4 hours for patients at risk and/or already experiencing delirium. - Implement fall precautions as indicated using a fall risk assessment tool - Aid in early mobilization (once anesthesia has fully worn off and vital signs are stable) especially for post-anesthesia patients. - Provide and assist with sensory adaptations such as hearing aids and glasses. - Reorient patient, provide clocks and calendars in patient rooms. - Provide pain control, both pharmacologic and non-pharmacologic interventions as appropriate. - Implement safety sitters as needed, such as
for patients making frequent attempts out of bed unassisted.

**SWOT Analysis**

In research and quality improvement work, a review of strengths, weaknesses, opportunities, and threats (SWOT analysis) is a helpful tool to use prior to implementation. It is beneficial to reflect on the strengths and opportunities in a project and use them to an advantage throughout the process. Analyzing the various weaknesses or threats is also helpful in order to identify ways to prevent potential barriers. This analysis was created in order to assess the internal and external origins that may affect the implementation of an educational tool regarding delirium in the microsystem (Table 2). During the analysis, it was encouraging to learn that staff are interested in learning more about and how to improve nursing care regarding delirium. Additionally, the facility and team members value evidence-based practice which is a strength. When looking at the weaknesses and threats to the QI project, a plan was made with nursing education to attempt to avoid that barrier. This plan included presenting the educational tool at the monthly staff meeting to share with off-shift staff members, however the team was unable to make this happen. However, the QuickNotes tool has been displayed throughout the microsystem, made readily available to all staff members. Using a SWOT analysis tool provides helpful insight when performing quality improvement work.

**Table 2**

**SWOT Analysis**

<table>
<thead>
<tr>
<th>Internal Origins: Organizational Attributes</th>
<th>What is helpful in achieving the objective?</th>
<th>What is harmful in achieving the objective?</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Strengths</strong></td>
<td></td>
<td><strong>Weaknesses</strong></td>
</tr>
</tbody>
</table>
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- Staff open to learning more about delirium
- Facility utilizes an evidence-based approach to practice
- Support from nursing education and leadership, achieved stakeholder buy-in
- “Quick Notes” are a tool that is already used in the facility, staff are familiar to learning with this tool
- Being able to share education to all staff, including off shifts

<table>
<thead>
<tr>
<th>External Origins: Environmental Attributes</th>
<th>Opportunities</th>
<th>Threats</th>
</tr>
</thead>
<tbody>
<tr>
<td>• To improve patient care and safety by increasing staff knowledge of delirium</td>
<td>• Encourage other staff to utilize evidence-based literature when considering practice changes</td>
<td>• Some staff may be reluctant to incorporate some of the interventions suggested when caring for delirium</td>
</tr>
<tr>
<td>• Encourage staff involvement in educational and quality improvement opportunities</td>
<td>• Leadership involvement</td>
<td></td>
</tr>
</tbody>
</table>

Study of Intervention

To study whether or not the educational intervention using the QuickNotes format was effective, a post-intervention survey was distributed to the nursing staff. A comparison of post-intervention survey responses to their response prior to the intervention would help to determine the impact and success of the intervention.
Measures

Results from a survey prior to the educational intervention. The survey was created by the project lead and asked for baseline information such as whether or not the respondents used a delirium screening tool in their practice. Another question included definitions of delirium to test baseline knowledge. The participant was also asked to identify risk factors and signs and symptoms of delirium. Questions of the surveys included categorical yes/no responses with a free text element in the fourth question.

Analysis

Descriptive statistical analysis was conducted to note frequency and percentage for the yes/no questions as the responses were categorical in nature. Qualitative analysis was utilized to note themes and patterns within the free text section.

Ethical Considerations

A gap analysis is a form of a quality improvement project and is exempt from full institutional review board (IRB) review. An ethical consideration is that the participation in the educational component and surveys were not mandatory for the nursing staff. Additionally, no personal demographic information that could compromise identity was asked. Finally, this project has been reviewed by both the faculty and practice mentor.

Results

Prior to the intervention, the staff completed a survey which supported for the need of increasing education on delirium. Of the 18 respondents to the survey, 15 respondents (83%) reported they do not use a delirium screening tool in their practice, the other three respondents did not answer this question. All 18 (100%) of respondents were able to identify the correct definition of delirium. Additionally, the survey asked staff to identify risk factors and signs and
symptoms of delirium. There were areas for increased education, for example, 8 out of 18 (43%) respondents identified age 50 years or older as a risk factor of delirium, when the risk factor is actually age 65 years or older. Four respondents incorrectly chose the female gender is a risk factor. Regarding signs and symptoms, four respondents stated that lethargy is not a sign of delirium. Mood stability and restlessness were also not identified as signs or symptoms of delirium by six respondents. The results of the delirium knowledge assessment survey provided useful data that an increase in delirium education is indicated.

The intervention with the delirium QuickNotes tool was accepted eagerly by the staff and the nurse manager of the microsystem. Two daily safety huddle meetings were attended and the QuickNotes tool was presented. Staff were very welcoming of this education and eager to learn more about delirium. Following the intervention, staff were asked to complete a post-intervention delirium knowledge assessment survey, the results from this survey were positive. All respondents correctly identified the definition of delirium. Of the 13 risk factor questions on the survey, 12 had 100% correct responses. Additionally, on the signs and symptoms portion of the survey, 8 of the 12 signs and symptoms had 100% correct responses. By contrast, there was signification confusion about the risk factors of age and gender prior to the intervention. Finally, a free response text question was included in the survey asking respondents to name an adequate non-pharmacologic intervention for delirium which 100% of the respondents did correctly. The work from this project has opened discussion for future improvements such as the use of a delirium screening tool and creation of a cart with activities for patients such as puzzles, coloring, and more. There is now more awareness of delirium within the microsystem and hopes of this work spreading across the entire facility.
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Discussion

Summary

The specific aim of this project was to increase staff knowledge of delirium and how to care for patients experiencing delirium. This aim was met by the end of the project. A delirium QuickNotes tool was created to provide additional education on delirium. Discussions with the nursing education department were enlightening and encouraging throughout this process. The Delirium QuickNotes tool was well received and enjoyed by all involved in this project. After short presentations on this material, staff retained the information and already have a perceived better understanding of this condition. Further practice changes regarding delirium can be expected in this facility in the future. Overall, this project was well received and appreciated by those involved and the goals of this project were met.

Interpretation

The findings of this project were consistent with the literature as there was limited knowledge and no routine use of a validated screening tool within the microsystem. According to an evidence implementation initiative, the use of a validated screening tool is highly encouraged in delirium care (Cody et al., 2021). Additionally, Thomas et al. (2021) noted that nurses often report a lack of knowledge regarding delirium care.

Limitations

This gap analysis project was limited by a lack of time to truly follow through on the process. At the beginning of this project, there was a delay in finding a practice mentor with the credentials to oversee this project, this delayed the identification of a gap and start of the project. Once an intervention and project goal were established, there was less time to actually follow
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through the steps. Additionally, a limitation of this project is the inability to assess the outcomes of the recommended practice changes involving delirium education moving forward.

Conclusion

The goal of this project was to increase staff education on delirium. A thorough literature review was conducted to discover the best evidence-based practices for delirium care so that knowledge may be taught to the staff. A Delirium QuickNotes tool was created with the evidence gathered to form a visual educational guide on this topic. This tool informed presentations given to nursing staff during safety huddle meetings. Ultimately, the project goal was met with the data from the post-intervention survey to support it. There is an abundance of usefulness in this work as the population cared for within this microsystem are at risk for acquiring delirium during their hospital admission. The work from this project has better informed the nursing staff which will allow them to provide more patient-centered care. Improving delirium care is certainly a sustainable task with continued education on this topic. Additionally, the process from this project having been successful may lead to additional education on other topics using this format.

Next Steps

The work from this project has opened discussion for future improvements such as the use of a delirium screening tool and creation of a cart with activities for patients such as puzzles, coloring, and more. There is now more awareness of delirium within the microsystem and hopes of this work spreading across the entire facility.

Anticipated Results

Although the use of the delirium “QuickNotes” tool is expected to increase staff knowledge on this topic, continued intervention and implementation are required to truly
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increase staff knowledge of delirium and improve patient care. Firstly, the nursing education department may consider conducting an additional literature review in two to three years to find possible updates in the literature. However, the literature review critical appraisal from this project has been disseminated to key stakeholders. Additionally, routine screening for delirium is not a standard process at this facility so research and discussion between nursing education, providers, and unit managers should continue to occur to discuss the benefits of using a validated screening tool in practice. If a validated screening tool is agreed upon, collaboration with the information technology (IT) department would be necessary to potentially implant the tool into the electronic charting system for easy use by nursing staff.

The staff of the nursing education department could potentially create a policy or procedure for delirium care, this could potentially include order sets or interventions approved by providers. Finally, continued reinforcement of education on delirium to the nursing staff would be beneficial. Currently, it is required for dementia and delirium to be covered during onboarding orientation for new staff. A way to increase knowledge on this topic would be to incorporate more education during orientation and new graduate nurse residency programs. This would require the staff of the nursing education department to create educational materials and potentially simulation exercises.
References


