Identifying Delirium in the Geriatric Population

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Note from the Author

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Abstract

Delirium is a severe change in brain function that can have short and long-term consequences for the hospitalized geriatric patient. Untreated delirium can lead to increased lengths of stay, falls, reduced function post-discharge, and even increased mortality. Delirium screening with a validated tool is the first step in the early detection and treatment of delirium for the geriatric population. The purpose of this project is to implement a standardized delirium screening tool for all patients age sixty-five and over on a family medicine unit at a large teaching hospital. This project pilot included educating staff nurses on a medicine unit to use the brief Confusion Assessment Method (bCAM) screening tool to identify geriatric patients with signs of delirium. The goal was 90% nursing compliance in using the bCAM screen daily for all patients 65 years of age and older. Over twelve weeks, 912 of the 1,431 patients sixty-five years of age or older identified as eligible for screening received a complete delirium screen. Eight geriatric patients had a positive screen without a previous diagnosis of delirium on the hospital problem list. Several limitations and barriers were identified and addressed during the biweekly PDSA evaluations. Findings from this project paired with nursing feedback laid a foundation for a delirium education rollout organization-wide, standardized delirium screening for patients sixty-five years and older, and the development of a nurse-driven protocol to treat patients with a positive screen.

Keywords: delirium, geriatric, delirium screening

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Section I. Introduction

Background

Delirium is one of the most frequent and least recognized adverse events during hospitalization. This altered brain function, which causes a change in mental status, is present in nearly half of hospitalized patients over the age of 65 (Maldonado, 2017). This is not merely a change in behavior but a severe alteration in brain activity with short and long-term consequences (Marcantonio, 2017). Delirium leads to extended hospital stays, decreased function post-discharge, and repeated acute admissions (Hshieh et al., 2017). Delirium also remains a reversible cause of falls in hospitalized patients (Babine et al., 2016).

Although grave, delirium can be treated and prevented in a majority of cases with appropriate screening and diagnosis (Maldonado, 2017). With a validated tool, delirium screening can identify patients at high risk and subsequently reduce falls and the length of stay (Babine, 2016). The Confusion Assessment Method (CAM) is one such validated tool that has been tested for accuracy and favors reliable data collection (Marcantonio, 2017).

Organizational Needs Statement

Clinicians within a family medicine service in a large teaching hospital currently seek to advance delirium recognition and treatment. A current analysis of existing documentation found nurse-driven CAM delirium screening virtually non-existent outside of critical care ([redacted], personal communication, February 26, 2020). A CAM screen, specific to the intensive care unit, is completed every shift for patients located in the critical care unit, but that screening stops once the patient moves to the general floor. Several attempts to launch a nurse-driven education resource and documentation revision over the last three years have been unsuccessful because of expert unavailability and staff turnover ([redacted], personal

communication, February 26, 2020). Delirium cannot be adequately addressed without identifying those at risk or currently exhibiting symptoms.

The initial step in improvement is ensuring accurate screening documentation by the nursing staff through a partnership with a family practice geriatrician. Although many adverse events arise from failure to recognize and treat delirium, literature linking the diagnosis to hospital-specific outcomes is limited. There are no national benchmarks specifically addressing delirium screening, but indirect goals and guidelines are available.

Nationally driven support for this endeavor includes Healthy People 2030 and clinical guidelines recommended by the American Academy of Neurology (AAN). Healthy People 2030 seeks to reduce the number of admissions for geriatric patients with dementia (Office of Disease Prevention and Health Promotion, 2020). Patients with underlying dementia remain at high risk for inpatient delirium and subsequent readmissions (LoGiudice et al., 2016). Identifying and reducing delirium through early screening can reduce the readmission rate in patients with underlying dementia. Neurological Clinical Guidelines developed by the AAN recommend all patients receive delirium screening on admission and at defined intervals throughout their hospitalization (Josephson et al., 2017). Patients at high risk for delirium should receive non-pharmacological preventive interventions. Daily nurse-driven delirium screening aligns with these AAN guidelines.

The Triple Aim ensures a quality project will improve the patient's care, shows financial promise, and serves others with similar problems (Whittington et al., 2015). Early delirium screening will improve the overall care of patients with dementia by reducing the length of stay in acute care facilities and preventing readmissions by reducing falls and preserving discharge functioning (Babine et al., 2016). Falls reduction, limited length of stay, and decreased

readmissions carry a financial benefit for the agency and the patient. Finally, early recognition and treatment of delirium can improve the care of all geriatric patients.

Problem Statement

Delirium in hospitalized geriatric patients can increase the hospital length of stay, lead to decreased functioning post-discharge, and increases the likelihood of readmission. Delirium prevention starts with the identification of high-risk individuals using a validated screening tool. Current nursing documentation standards do not address routine delirium screening for geriatric patients in the family medicine unit.

Purpose Statement

The purpose of this project is to implement a standardized delirium screening tool for all patients age sixty-five and over on a family medicine unit at a large teaching hospital in eastern North Carolina. The overall goal is 90% compliance with daily delirium screening for patients aged sixty-five and over after educating the staff on delirium recognition and the brief Confusion Assessment Method (bCAM) screening tool.

Section II. Evidence

Literature Review

A literature search was conducted through the Cumulative Index of Nursing and Allied Health Literature (CINAHL) for current literature on delirium screening. The key search terms for review included geriatrics, screening, and delirium. Delirium, in itself, is a major term and yielded over five thousand articles. Geriatrics was further simplified to geriatric functional assessment, geriatric assessment, and gerontological care. The general term "screening" was used to remove articles that focused on treatment only. Combining the search terms with AND revealed seventy-seven articles. Limiting the period to five years reduced the field to forty-three articles. Those articles were narrowed to include English print and an age range of sixty-five and older. The final search produced twenty-five articles. Articles with a sample size of less than fifty and origins within the Middle East and Asia were removed. Conclusions that addressed treatment more than screening were discarded, revealing seven articles that were reviewed in their entirety.

Additional information was obtained by searching CINAHL for the search terms falls and delirium. Results were adjusted for the time, region, and language as described above. The remaining fifty articles were reviewed for a direct relationship, and three articles were retained.

The final remaining articles were Level III evidence or higher, based on the Melnyk & Fineout-Overholt's model, except for one quality improvement article evaluating the CAM screening tools. The two meta-analysis articles reviewed screening tools and a specific delirium prevention program, respectively. See Appendix A for the Literature Matrix.

Current State of Knowledge

Most of the current literature centers on delirium recognition and prevention in the Intensive Care Unit (ICU) or Emergency Department (ED). Data on delirium screening and prevention in the general care area was limited. Even though the current project's focus was a general medicine unit, information gained from the ED and ICU helped establish global screening guidelines. Pre and postoperative delirium screening data was also beneficial and includes mostly orthopedics and cardiac surgery patients. The American College of Surgeons and the Geriatrics Society established guidelines in 2014 to address postoperative delirium and support using a validated screening tool before and after surgical procedures to prevent adverse events (Inouye et al., 2015).

The literature consistently acknowledges the risks presented by unrecognized delirium in hospitalized geriatric patients. Delirium is a significant risk factor for falls in the geriatric population (Mangusan et al., 2015; Hshieh et al., 2018). Postoperative delirium can lead to increased skilled nursing needs after discharge (Brooks et al., 2014; Hshieh et al., 2018).

Dharmarajan et al. (2017) evaluated 469 patients over the age of seventy admitted to the hospital with intact mental status. According to daily CAM evaluation, fifteen percent developed delirium, leading to increased adverse events and prolonged hospitalization (Dharmarajan et al., 2017). The 90-day mortality of those patients experiencing delirium increased by eighteen percent. Despite documented poor outcomes, Turchet et al. (2018) retrospectively evaluated 786 patients for initial and subsequent delirium screening to find that almost a third of patients did not get screened despite documentation standardization.

Current Approaches to Solving Population Problem(s)

Some hospitals have adopted prevention programs to address geriatric-specific syndromes that historically lead to delirium (Ferguson et al., 2018; Dharmarajan et al., 2017).

The Hospital Elder Life Program (HELP) is an all-inclusive program meant to address important topics such as mobility, pain, and cognitive function in the geriatric population to prevent and treat delirium as a neurologic emergency (Hshieh et al., 2018). The overall use of HELP has shown noticeable decreases in delirium in hospitalized patients, decreased falls, and improved functioning post-discharge. All of the programs have certain commonalities, including the use of a standardized tool to screen for delirium on admission and systematically throughout a patient's hospitalization (Dharmarajan et al., 2017; Ferguson et al., 2018; Hshieh et al., 2018). The initial step in the prevention and treatment of delirium is recognition. The champion for this project also believed that accurate routine screening was the first step to preventing and treating delirium in the family medicine unit's geriatric population. Different versions of the CAM survey remain the most often used screening tool for delirium throughout the literature with high reliability ($\kappa = 0.92$) (Oh et al., 2017; Inouye et al., 2016).

Evidence to Support the Intervention

Many validated tools exist for delirium screening. Oh et al. (2017) conducted a meta-analysis of current trends in delirium diagnosis and treatment. The review included an evaluation of over twenty screening tools in use over the last six years. Assessment tools such as the modified Richmond Agitation Sedation Scale (mRASS) and the 3-Minute Diagnostic Assessment provide an efficient way to identify patients at risk for delirium. The Confusion Assessment Method (CAM) is a more comprehensive screening tool that incorporates severity options beneficial for tracking patients once delirium is identified (Oh et al., 2017; Ferguson et al., 2018; Turchet et al., 2018).

The CAM tool has been validated with a high sensitivity and specificity over thirty years of use and utilized in over 4000 studies since 1990 (Oh et al., 2017). CAM screening has been

modified throughout the years to accommodate specialty areas such as the ICU and the ED. A modified version of the CAM (called bCAM) has been used in ED studies with a completion time between two and six minutes in most patients, thereby reducing the documentation burden (Hasemann et al., 2018). CAM screening exists in the Electronic Health Record (EHR) of many health care facilities, making completion compliance more successful (Malik et al., 2016). The current project used the bCAM screening tool to evaluate geriatric patients on a family medicine unit on admission and each shift for signs of delirium.

Evidence-Based Practice Framework

The Institute of Healthcare Improvement (IHI) Approach to Quality Improvement describes the four areas of consideration to change current practice (Scoville & Little, 2014). The Appreciation of the System understands the organization and ensures project goals align with system goals. The Theory of Knowledge defines change as an evolutionary process continuously altered to meet the audience's needs. A third consideration is psychology, which considers the thought process of the individuals involved in the change (Scoville & Little, 2014). Finally, Variability is undeniable and anticipated as part of the plan.

The Model for Improvement or Plan-Do-Study-Act (PDSA) represents the Theory of Knowledge (Scoville & Little, 2014). Although several frameworks could help implement the change this project proposed, the PDSA model supported the frequent evaluations that took place to make this project successful. PDSA cycles occurred biweekly throughout the project to ensure compliance with the screening tool was consistent and nursing concerns were addressed.

Ethical Consideration & Protection of Human Subjects

Ethical considerations for the project were limited. The proposed project implemented a CAM screening tool that would be added to the nursing assessment. The tool would not change

the nurse's responsibility, nor would it affect the patient's care. The data collected from the electronic health record included nursing tool compliance, the age range of the patients, and the screening results. No identifying or protected health information was collected. Only aggregate data was reported.

The screening tool was implemented on all patients in the family medicine unit as a standard of care for ninety days. For this project, only patients age sixty-five and older were evaluated for delirium screening compliance. All nurses were invited to attend education sessions, and resources were available on the unit throughout the process.

In preparation for this project, the Collaborative Institutional Training Initiative (CITI) program on Human Research – All Biomedical Investigators and Key Personnel was completed. Additionally, a quality assessment worksheet was completed and submitted to the Division of Research and Grants at the project site. A summation of the proposed project was presented during a meeting with the Research administrator and specialists. An exempt clearance from the Institutional Review Board (IRB) was received to cover potential data sharing during the dissemination of the project results. See Appendix B for the IRB approval letter. Additionally, a data-sharing agreement was signed and returned to the Division of Research and Grants.

Section III. Project Design

Project Site and Population

The project site was a family medicine unit in a large teaching hospital. The unit admits medical patients eighteen years and older that may or may not require telemetry. The primary facilitator for the project was the project lead (Doctor of Nursing Practice [DNP] graduate student); however, the nurse manager for the family medicine unit actively supported the project. The primary target group for this project was the nursing staff on the family medicine unit. The screening tool implementation benefited the geriatric population; therefore, patients aged sixty-five and older were the targeted patient population.

The nursing staff utilized an electronic health record (EHR) exclusively for charting. The proposed screening tool was incorporated as part of the existing assessment located in the EHR's flow sheet. The current abbreviated Confusion Assessment Method (CAM) flow sheet located in the EHR was specific to the intensive care unit (CAM-ICU). Two slight differences separate the CAM- ICU and the brief CAM (bCAM). The CAM-ICU screen allows for non-verbal patients' assessment and forgives one error in evaluating disorganized thinking (Han, 2015). Ideally, assistance from Information Systems (IS) was needed to add the bCAM to the flow sheet in order to streamline documentation and prevent confusion. The IS department proved to be a barrier in the project as personnel for EHR modifications were limited, and the administrative approval process for documentation change was extensive.

Description of the Setting

The setting for this project was a forty-three-bed unit that admits general medicine patients. The family medicine provider service was responsible for most patients with a small overflow from hospitalist admissions. There were no pediatric or obstetric patients admitted to this unit during the project period.

Description of the Population

During the project, the unit employed forty-two nurses that worked twelve-hour shifts. The nursing staff on the family medicine unit was a mixture of new, experienced, and temporary nursing staff. The patient ratio was five patients to one nurse. One charge nurse per shift did not take a patient assignment but instead floated among the staff.

Project Team

The project team consisted of several multidisciplinary professionals collaborating to execute a successful project. The project champion was a geriatrician within the family medicine division interested in delirium screening and prevention. The unit representative was the current nurse manager. A representative from IS and Professional Development both served as resources for logistical and education concerns. The graduate student was the project lead and facilitator. Finally, the faculty advisor provided continuous feedback on the planning, implementation, and evaluation of the project.

Project Goals and Outcome Measures

The purpose of the project was to implement a brief CAM delirium screening tool in geriatric patients on a family medicine unit. The main project goal was 90% compliance with daily delirium screening by the nursing staff on the family medicine unit. The outcome measures evaluated at each PDSA cycle review included the daily unit census divided into two specific age groups. The two age groups were those sixty-five years and older and those younger than sixty-five years. The target patient population was only patients sixty-five years and older; however, delirium screening was implemented on all patients as a standard of care.

A daily account of completed delirium screens on patients sixty-five years and older was recorded to assess nursing compliance with the tool. A run chart trended against the 90% goal

was used to plot weekly data. Terminal information collected included the number of patients admitted over three months divided into two age groups (sixty-five years and older, and less than sixty-five years of age) and the number of patients with a screening tool completed daily. Additionally, the screening tools completed (positive or negative) were compiled to evaluate the number of patients who screened positive for delirium. Results from the project may be used to justify future endeavors.

Description of the Methods and Measurement

The brief CAM (bCAM) assessment is divided into four sections. The four sections are altered mental status, inattention, altered level of consciousness, and disorganized thinking (Han, 2015). An altered or fluctuating mental status paired with a positive finding in any remaining category equals a positive screen. All four sections must be done to count as a completed screening tool. Nursing compliance with the tool was tracked throughout the project, and a cumulative report of positive and negative screens were evaluated.

The Institute for Healthcare Improvement (IHI) method of quality improvement was used to guide this project with a PDSA cycle review completed every two weeks. Data collected from the previous two weeks were analyzed, and new actions taken to improve compliance were implemented. In addition to data collected from the EHR, the project lead conducted staff interviews weekly to evaluate barriers in utilizing the screening tool.

Discussion of the Data Collection Process

The initial plan for the data related to delirium screen compliance and the unit census divided into two age groups (sixty-five years and older, and those less than sixty-five) were manually extracted from the EHR by the project lead. See Appendix C for the data collection

tool. Data collection occurred every evening starting September 1st through November 30th. The manually collected data were evaluated every two weeks.

The project lead evaluated the final data. For the purpose of the project, the data collection consisted of a nursing compliance percentage (with daily delirium screens) for those patients sixty-five years of age and older admitted to the family practice unit between September 1, 2020, and November 30, 2020. The cumulative results (positive or negative) for all screens completed during the ninety-day project period were included in the final report.

Implementation Plan

Primary staff education on delirium and the use of the bCAM screening tool started the last two weeks of August. COVID restrictions within the institution made face-to-face instruction impossible, so a voice-over PowerPoint was emailed to the entire nursing staff on the project unit. One week after the email was sent, the project lead visited the unit during shift change to provide an abbreviated educational offering during huddle report. Large laminated cards with the brief CAM (bCAM) screening algorithm were provided to reinforce the initial education. These instructional cards were displayed throughout the unit for quick reference. The bCAM screening tool went live on September 1, and PDSA cycles were complete biweekly. PDSA cycle review included a review of bi-weekly data and feedback from informal staff interviews. Based on the findings, the project lead evaluated compliance, identified potential changes, and made revisions as needed.

Timeline

The primary education for the project began on August 24, 2020. Tool implementation and data collection started on September 1, 2020. PDSA cycles were evaluated every two weeks until December 1, 2020. Data analysis occurred from December through January 2021. The

dissemination of data at the project site was scheduled for February 2021 but was delayed due to COVID-19 restrictions. The final presentation for the college faculty was completed on April 6, 2021. See Appendix D for the project timeline.

Section IV. Results and Findings

Results

Throughout the ninety days, the census on the family medicine unit was recorded daily. The total number of patients was separated by those sixty-five years of age and older and those under sixty-five to define the geriatric population. The unit's census averaged thirty patients daily with geriatric patients comprising slightly more than half of the population.

The number of delirium screens completed each day was recorded and divided into the two main age groups. The project's primary measurement included the number of geriatric patients with a completed delirium screen over the last twenty-four hours divided by the number of patients sixty-five and older present on the family medicine floor at 2100 each night. This number was multiplied by 100 to create a daily compliance percentage. Furthermore, taking the number of completed geriatric screens for two weeks and dividing them by the number of geriatric patients present on the unit over the same time period (multiplied by 100) measured the biweekly compliance percentage. Biweekly compliance percentage was reported to the staff with each PDSA cycle evaluation.

Over the 12 weeks, 1,431 patients sixty-five years of age and older were identified as eligible for screening. Of those patients, 912 (63.73%) received a completed delirium screen. An evaluation using the PDSA review process was conducted every two weeks. The expectation was an average biweekly compliance of 90% screening on patients sixty-five and older. Staff performance fell short of the established goal; however, the compliance improved to a cumulative compliance over ninety days of 63.73%. See Appendix E, Graph E1 for the staff compliance trend.

The initial PDSA cycle evaluation took place on September 13, 2020, revealing 58 out of 206 (28.16%) eligible patients were screened for delirium. As a result, links to bCAM video demonstrations were emailed out to the staff for review. The charge nurses were asked to remind nurses to complete delirium screening on all patients every shift during huddle. Unfortunately, an unexpected survey by an accrediting agency took priority over new education and projects across the organization for much of September.

The next cycle ended September 27, 2020, with 100 geriatric patients out of 226 eligible patients receiving delirium screening (44.24%). The staff verbalized frustration with using the CAM-ICU template to complete the bCAM screen. Additional learning resources were provided, and a weekly email went out on Sundays to inform the staff of current compliance percentages and provided pearls of wisdom. The project lead frequently attended huddle at shift change. The third cycle review ended October 11, 2020, and revealed 119 (60.71%) of the 196 identified geriatric patients were screened for delirium.

The fourth PDSA review revealed a decrease in compliance. The two weeks ending on October 25, 2020, revealed only 96 (41.20%) out of 233 geriatric patients were screened. Delirium screening reminders were laminated and placed at every computer workstation. The project lead spent more time on the unit speaking with the nursing staff. Improvement was achieved at the next evaluation with 159 (69.74%) of 228 geriatric patients screened daily.

The final PDSA cycle review was completed on November 22, 2020. Progress was maintained with 106 of 175 geriatric patients receiving delirium screening for a compliance percentage of 60.57%. Motivation emails were sent to the staff with reminders of the 90% compliance goal. A raffle was started for the staff in which everyone that completed a screen for the next nine days would be entered in a drawing for three small prizes. The pilot ended on

December 1, 2020, with 100 (63.29%) screens completed from the 158 eligible geriatric patients over nine days. See Appendix E, graph E2 for data by PDSA cycle.

The initial data collection did not include capturing positive screens; however, a running tally was performed and yielded nine positive screens over the ninety-day project. Eight of the nine positive screens were in patients sixty-five years of age and older. None of the eight patients had a pre-existing diagnosis of delirium on their hospital problem list. In other words, delirium was unrecognized in these eight patients until the screen was completed. The nursing staff alerted the provider when the patient screened positive. Interventions to treat and outcomes of positive screens were beyond the scope of this project.

Additional anecdotal information was collected from the nursing staff during face-to-face interviews. Feedback from staff indicated that the screening tool's location in the Electronic Health Record (EHR) throughout the project made remembering to complete the tool a challenge. Also, converting the CAM-ICU delirium screen (available in the EHR) to the brief CAM was confusing for the nurses.

Outcomes Data

The process measures addressed in this quality improvement project were essentially improving delirium education for the nursing staff and compliance with a delirium screening tool. The nurse's response to the education was not captured as part of this project, but the compliance with screening geriatric patients for delirium was. Compliance improved but fell short of the established goal, so adjustments throughout the project were made during the PDSA cycle review. Ranasinghe et al. (2019) describe simple reminders and constant analysis as one of the three keys to a successful change in practice. This concept was revisited throughout the project.

Ultimately, improving geriatric care for patients admitted to the family medicine unit is the global outcome or goal. This goal is achieved by reducing the length of stay for geriatric patients, reducing falls, preserving function, and reducing readmissions for patients with dementia. Identifying and treating patients with delirium inside the hospital positively affects these measures. Screening, as an outcome measure for identifying delirium, was successful in nine patients (8 patients age sixty five and older). Therefore, screening is a significant step in detecting delirium in the geriatric population and improving care.

Discussion of Major Findings

The project's goal was 90% compliance by nursing in completing delirium screening for patients sixty-five years and older. The project lead assumed the nursing staff would quickly embrace the delirium screening tool and complete the screen each day. However, education was identified as not enough to ensure compliance. Simplicity and availability of the tool within the EHR were essential to the success of the project. Reminders and prompts were incorporated during the project period and led to improvement in nursing compliance.

Reducing the documentation burden as a process measure was initially a way to make completing the screen more convenient for the nursing staff on a family medicine unit. However, it evolved into an opportunity to change practice for the organization. Conversations with nursing representatives within Information Systems (IS) began the first two weeks of the project and led to the discovery that an abbreviated non-ICU version of the CAM already existed within the EHR. The new screen could not be activated without approval from the Professional Practice Board and IS leadership. This project's outcomes with the barriers identified were presented to these leadership committees. The project presentations led to strong interdisciplinary

relationships and stakeholder buy-in with a pathway to several new initiatives that will improve geriatric patients' care throughout the organization.

Section V. Interpretation and Implications

Cost Benefit Analysis

Assuming the hospital took on this project for this one unit, the organization's cost would mainly consist of the expense for human resources. Forty-two nurses would need to be educated. A facilitator or project lead would be paid to develop an education plan, instruct, and coach throughout implementation. The project lead would spend approximately 5 to 10 hours weekly dedicated to the project. In North Carolina, the nurse's average hourly rate is $30.00/hour (Nursingprocess.org, 2021). The overall cost to educate forty-two nurses is approximately $1260. The project lead cost over 12 weeks is $1800 to $3600, bringing the total nursing resource expense to less than $5000. Also, a data collection person would be needed to collect the information and evaluate the success/failure of the program if the current EHR is not able to generate those reports for the project lead. See Appendix F for estimated project budget.

In return, the project would bring many benefits to the organization. The cost savings range from a decreased length of stay to the prevention of adverse events. Other institutions that have implemented a delirium screening and prevention strategy have successfully reduced falls in the geriatric population (Hshieh et al., 2018). According to a Joint Commission on Accreditation of Health Care Organization (JCAHO) (2015) report, one fall can cost a health institution as much as $14,000. This is a $9000 cost savings even if identifying delirium with early screening prevents only one fall. Finally, the hospital can benefit socially through improved patient experience scores and marketed improved geriatric care campaigns.

The positive benefits are numerous; however, a few potential cost burdens for a project design focused on current nursing staff. Frequent staff turnover increases the need for additional education, which equates to an additional cost and time commitment for the organization and

project lead. Rotating staff throughout the hospital provides challenges when implementing new initiatives. Nurses rotated may not receive the same information as the unit's core staff resulting in miscommunication, poor outcomes, or project implementation delays.

Resource Management

The need and use of resources throughout the organization can affect the success of this project or any quality initiative. Organizational resources valuable for this project included information technology, specialty councils, and a system-wide email group. Information systems guided the modification of the existing screening tool (CAM-ICU) and outlined the process for activating the bCAM in the future. Specialty councils (education, quality, and nursing leadership) provided a mechanism to improve communication among leadership throughout the organization and promoted an interest in delirium screening. This process was not fast, but it was thorough and improved stakeholder buy-in, which contributes to the project's sustainability. System-wide email improved communication by ensuring a timely response to staff questions, frequent updates, and the ability to provide timely updates to leadership. This digital transmission ensured project participants could receive real-time information even if the project lead was not present during their shift.

Two additional benefits, a designated unit educator and an online education platform, would improve the implementation of this project and other delirium-screening quality improvement endeavors. A designated unit education representative or educational nurse specialist could connect quality initiatives and education as a closed-loop performance improvement. A representative from the organizational education department was not assigned to the current project but would be available in the future. The organization also has an online education platform that was not utilized for this project but available for use in the future for

large-scale delirium education and screening rollouts. This platform enables all staff members to receive the same education in a manner that respects individual schedules and availability. Records are retained to validate the completion of an educational offering, and testing is an option to evaluate the level of understanding. The organization has already offered the online platform to support future delirium education.

Implications of the Findings

Though this project did not address large-scale outcome measures, this small investigation into the potential of daily screening has led to a nursing practice change that could impact geriatric care across this organization and the entire healthcare system. The goal of 90% compliance was not obtained. However, valuable information was identified that has led to the development of a long-term commitment to improving early delirium recognition and treatment for all geriatric patients organization-wide. This commitment includes the development of a nurse-driven protocol to accompany the delirium screening tool activation.

Implications for Patients

Delirium screening will improve the care of geriatric patients by early recognition and treatment of delirium. Subsequent outcomes for improved recognition and treatment include improved function at discharge, reduced length of stay, and a reduction in hospital-related events (Hshieh et al., 2018). A reduced readmission rate for patients with dementia also aligns with Healthy People 2030 goals.

All three areas of the Triple Aim are addressed with improved early delirium screening. Geriatric patients (patients sixty-five years of age and older) are among the most vulnerable groups to delirium in a hospital setting. Early recognition and treatment will not only improve outcomes while a patient is hospitalized, but it will also improve function after discharge.

Improved functioning for geriatric patients outside of the hospital improves the health of the population. Delirium recognition from early screening will reduce non-reimbursable adverse hospital events like falls, thereby reducing expense for the healthcare organization.

Implications for Nursing Practice

Increased delirium education will improve awareness and the comfort level of the nurse caring for geriatric patients with acute or fluctuating mental status changes. Understanding and intervening when a patient presents with signs of delirium can potentially reduce the number of patients who require intense one-on-one monitoring or restraints. Additionally, the development of a nurse-driven protocol to treat patients with signs of delirium will give the nursing staff the autonomy to evaluate and intervene with confidence. Additionally, advanced practice nurses taking a leadership role in translating research to make policy changes that proactively improve patient outcomes, satisfaction, and reduce the organization's financial burden aligns with the Triple Aim and creates respect and appreciation for the profession.

Impact for Healthcare System(s)

The current project enlightened many to the presence and risks of delirium in hospitalized geriatric patients outside of the ICU. The opportunity to change practice by including a nurse-driven protocol as an adjunct to the delirium screen spotlights nursing leadership for the entire healthcare system. The interprofessional team collaboration that started during this project including information systems, nursing leadership, and education representation will continue in the future as the organization makes strides toward delirium recognition for all geriatric patients. As the organization continues to move forward with delirium education and screening, the organization could reap many financial and logistical benefits. The care of the geriatric patient is improved, which subsequently improves the health of many patients sixty-five years and older

after discharge from the hospital. The organization stands to save thousands of dollars with each fall prevented and potentially reduce the length of stay for one of the most vulnerable patient populations.

Sustainability

The organization plans to build on the existing project by adding a nurse-driven protocol to treat delirium once the patient screens positive. Before implementing the expanded project, the institution has agreed to offer house-wide education on delirium for all nurses who care for geriatric patients using the electronic education platform. The project lead is currently working with the Education and Professional Development Department's leadership to standardize delirium education and screening across the organization using the validated brief CAM tool available in the EHR. The Director of Professional Practice and Magnet is working with the project lead to develop the nurse-driven protocol. The adoption of delirium screening throughout the institution has gained support from the nursing leadership of all the hospitals within the organizational health system. Using the electronic education platform for instruction would lead to standardized education system-wide and result in minimal cost to the health care system. Standardized delirium screening with a validated tool and uniform annual education improves this project's sustainability.

Dissemination Plan

Fortunately, the dissemination of the project began before completion. The project lead was provided the opportunity to present findings and barriers related to delirium screening to the project site Professional Practice Committee within the organization on October 15th, 2020. This committee consisted of nursing leadership, educational specialists, and staff nurse representation from the organization. An overview of the delirium screening project and outcomes was

presented to the Nursing Executive Council on December 16th, 2020. The presentation of findings and barriers to the Nurse Executive Council led to a series of meetings that resulted in a system-wide plan to formalize delirium education and develop a nurse-driven protocol for early treatment. Dissemination of the current project results and future endeavors to all project site members is tentatively planned for April or May 2021. The original presentation was scheduled for February 2021 during the organization's monthly research webinar, but the current pandemic has caused a moratorium on all new education and many informational webinars until April 2021.

A poster presentation was presented to the university nursing faculty at the university on April 6th, 2021. The poster presentation included an overview of the project, discussion of project outcomes in addition to barriers, limitations, and plans for the future. The final written project paper will be submitted to the university scholarship repository for public access. Potential plans include future Medical Grand Rounds presentation and a written description as an exemplar for the project site's Magnet submission process.

There are no current plans to present this project's results at a conference this year; however, a plan is in place to submit an abstract to the Gerontological Advanced Practice Nurses Association's annual meeting next year. This group of advanced practice nurses specializes in geriatric patients' care and would be an appropriate audience for the current project. Submission is withheld until next year to include the organizational delirium screening rollout and the nurse-driven protocol currently in production. Other conferences under consideration include the American Delirium Society and the American Geriatrics Society, both of which support delirium screening and prevention in the geriatric population.

Section VI. Conclusion

Limitations

The COVID-19 crisis and time constraints were significant limitations during the project. The planning began before the pandemic, and there was no way to predict the restrictions and creativity needed for implementation. Time was the most significant limitation during implementation and evaluation. Making changes to improve compliance during the project timeframe of ninety days became a challenge. Additionally, data was analyzed every two weeks, which provided little time to implement changes (identified from previous PDSA evaluations) prior to planning for the next.

Barriers included nurse manager turnover, an accrediting agency site visit, temporary geographical relocation of the family medicine unit, and communication challenges from a constant rotation of new nurses floated to staff the family medicine unit. Nurse manager turnover and unit relocation were quickly overcome in one to two days. The accrediting agency site visit involved two on-site visits that required intense preparation, and priority was focused away from any other quality initiative to address the visit's demands. All follow-up education and project lead presence on the unit were placed on hold during the site visits. Communication with the appropriate nursing staff continued to be a challenge that was not easily addressed. Nurses floated to the family medicine unit came from various units and were often not aware of their relocation until arrival to work. The charge nurse was tasked with orienting the floated nurses on how to complete the delirium screen. Despite the barriers, the staff continued to demonstrate an improvement in compliance throughout implementation.

Recommendations for Others

Several lessons learned during the project are highlighted for those attempting similar projects. Working with information systems (IS) prior to the beginning of the project to activate the bCAM (in the pilot unit) may have improved compliance. Modifying the existing delirium screen in the EHR was simple but cumbersome for the nursing staff. Second, recognition that not all nurses will check and read emails regularly changes the education plan. Utilize multi-modal education options to ensure all nurses are receiving the communication. Third, add a competency test to ensure the delirium screens are completed appropriately. Competency evaluation was overlooked in the current project and is necessary to ensure accuracy. In closing, anyone attempting similar projects in the future should recognize the value of interprofessional team collaboration to improving stakeholder support for quality improvement.

Recommendations Further Study

Several areas of research are needed to improve early delirium recognition in the future. More research is needed to explore delirium screening in the geriatric population outside of the intensive care unit and emergency department. Further evaluation of the reliability and validity of different delirium screening tools for general medical and surgical patients is needed. Finally, an optimal staff education strategy during a pandemic is a concept that needs further exploration. Research is needed to determine the effectiveness of online learning compared to traditional classroom learning for professionals in the healthcare industry.

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Appendix A

Literature Matrix

Literature Matrix

Authors	Year Pub	Article Title	Theory	Journal	Purpose and take home message	Design/Analysis/Level of Evidence	IV DV or Themes concepts and categories	Instr. Used	Sample Size	Sample method	Subject Charac.	Comments/critique of the article/methods GAPS
Travers, Henderson, Graham, Beattie	2018	Turning education into action: Impact of a collective social education approach to improve nurses ability to recognize and accurately assess delirium in hospitalized older patients	Distributed Leadership Approach	*Nurse Education Today*	Nursing education to improve delirium screening	**Level III**	Staff education	Confuson Assessment Method (CAM)	34 Cognitive Champions _____ 148 Ward nurses	Experienced nurses from six different units in Australia were trained at Cognitive Champions and trained 148 Ward nurses	Demographic data for 31 of 34 nurses revealed a mean age of 30.5 years. 84% female	Authors found that the education utilizing the Distributed Leadership Model is effective in translating research into practice. The author also demonstrated the ability of a Cognitive Champion to increase the number of patients screened for delirium. **Limitations-** The link between improved screening and a reduction in adverse events was not made. The study took place in a large hospital with many resourses and the ability to repeat in a small hospital is unknown. **Usefulness -** The article supports the use of the CAM instrument and the ability to educate ward nurses using a standardized education plan and coaches.
Turchet, Canfield, Williamson,Fan-Lun, Tabbara, Mantas, Sinha, Dphil, Burry,	2018	Detecting Delirium in Hospitalized Elderly Patients: A Review of Practice Compliance		*Journal of Pharmacy Technology*	Deliberate efforts need to be made to improve delirium screening in geriatric patients.	Retrospective Chart Review **Level III**	Improving compliance with delirium screening.	Standardized data collection form to evaluate the use of the Confusion Assessment Method (CAM), the intensive Care Delirium Screening checklist, and clinical documentation.	786 patients	Chart review of all patients >or equal to 65yo admitted to four hospital inpatient units for at least 48 hours between 2010-2013	Mean age 80.2 years; 59.4% female	Authors found that the incidence of delirium in this specific hospital was lower than reported in the literature. The establishment of an ACE strategy increases delirium screening compliance. **Limitations -** Patients that were not screened initially for delirium were not reflected in the final numbers. This accounted for one third of the original sample size. **Usefulness** -Describes the benefit of automated order sets that include delirium screening and pre-established guidelines in the EHR workflow that act as reminders to complet the delirium screening.
Haseman, Grossmann, Stadler, Bingisser, Breil, Hafner, Kressig, Nickel	2018	Screening and detection of delirium in older ED patients: performance of modified Confusion Assessment Method for the Emergency Department (mCAM-ED. A two-step tool		*Internal and Emergency Medicine*	To evaluate the Modified Confusion Assessment Method for the Emergency Department for performance criteria, accuracy in the presence of dementia, and time efficiency.	Prospective Validation Study **Level II**	Evaluating the mCAM-ED tool	Modified Confusion Assessment Method for the Emergency Department (mCAM-ED)	286 patients	ED patients age 65 and older consecutively over an 11 day period in November 2015	Mean age 80.02 years. 58.7% female. 14.3% had underlying dementia	Aurthors found that the mCAM-ED is able to effectively diagnose and rule-out delirium without increasing assessment time. **Limitations** - single site study in Switzerland. May not be able to reproduce in similar institutions. **Usefulness** - This study validates a variation of the CAM delirium screening tool.
Mangusan, Hooper, Denslow, Travis	2015	Outcomes Associated with Postoperative Delirium after Cardiac Surgery		*American Journal of Critical Care*	Patients with post-op delirium have a greater risk of complications such as increased falls, greater length of stay, and skilled nursing needs after discharge.	Retrospective Chart Review **Level III**	Evaluating unwanted outcomes secondary to delirium in post-op patient.	No validated instrument used. No delirium screening tool in use. Medical record evaluated for common symptoms of delirium.	656 patients	All patients with cardiac surgery between 1/10/11 and 10/30/11	Mean age of patient w delirium - 71.4 years and no delirium - 64.9 years	Authors found that patients with alleged delirium were associated with increase prevalence of falls, increased length of postsurgical stay,increase incidents of discharge to a nursing home or needed home health services. **Limitations -** A validated tool was not utilized. Many uncontrolled variables. **Usefulness -** Some association between delirium and adverse events in hospitalized patients.
Malik, Harlan, Cobb	2016	Stop. Think. Delirium! A quality improvement initiative to explore utilising a validated cognitive assessment tool in the acute inpatient medical setting to detect delirium and prompt early intervention		*Journal of Clinical Nursing*	The transformation of research to the bedside through nursing education to improve delirium screening.	A Descriptive Study **Level III**	Ability of nursing staff to detect delirium using a formalized tool.	Delirium screening performed using Modified Richmond Assessment Sedation Score (mRASS)	40 nursing staff _____ 740 patients	Pre and post questionaires were given to nursing staff with screening educaiton. Incusion of all patients 65 and older admitted between 1/1/15 and 5/31/15.	Average age 72 yo	Authors found that routine delirium screening increases nursing awareness. Integration into the medical record is optimal for compliance of standardized delirium screening. **Limitaitons** - Patients were mostly male. Unable to include mRASS into medical record to optimize documentation. **Usefulness** - Identified a need for nursing education related to delirium screening.
Ferguson, Uldall, Dunn, Blackmore, Williams	2018	Effectiveness of a Multifaceted Delirium Screening, Prevention, and Treatment Initiative on the Rate of Delirium Falls in the Acute Care Setting.	Lean Methodology (Plan-Do-Study-Act)	*Journal of Nursing Care Quality*	A formalized delirium program reduced delirium related falls and overall falls inside the hosptial	Retrospective Cohort Study **Level II**	The impact of improved delirium screening and treatment on falls.	Confusion Assessment Method (CAM) "The Language of Delirium" was also an educational tool.	Preintervention-7095 Intervention - 7154 Postintervention - 6596	Separated into three periods. Preintervention, Intervention, Postintervention	Preintervention mean age 67.5 years old. Postintervention mean age 68.1 years	The author found that implementing a delirium program reduced delirium related falls from 0.91 to 0.50 per patient day. **Limitations -** Delirium diagnosis was retrospective during chart review and could be subjective. Each component of the program was not evaluated indiviually. Falls reporting is dependent on a nurse completing a patient safety report.
Hshieh, Yang, Gartaganis,Yue, Inouye	2018	Hospital Elder Life Program: Systematic Review and Meta-analysis of Effectiveness		*Americal Journal of Geriatric Pschiatry*	To summarize the current literature on the efficacy of the Hospital Elder Life Program (HELP)	Meta-analysis/ Systematic Review **Level I**	Hospital Elder Life Program (HELP)	Meta-analysis - Review Manager Version 5.3	44 articles	Article search using OVID, MEDLINE, Embase, Cochrane register, and the Cochrane database.	14 articles included in meta analysis and 30 articles in the systematic review	The author found that implementation of HELP reduced the incidence of delirirum and falls with the potential to reduce hospital length of stay and after discharge needs. **Limitations -** Research conducted in multiple different areas with many different variations in population. **Usefulness -** Anecdotally the obstacles and successes of HELP implementation are discussed.

Literature Matrix

Authors	Year Pub	Article Title	Theory	Journal	Purpose and take home message	Design/Analysis/Level of Evidence	IV DV or Themes concepts and categories	Instr. Used	Sample Size	Sample method	Subject Charac.	Comments/critique of the article/methods GAPS
Brooks, Spillane, Dick, Stuart-Shor	2014	Developing Strategy to Identify and Treat Older Patients with Postoperative Delirium	Plan-Do-Study-Act Model for quality improvement	*AORN*	The use of validated screening tools results in increased identification and treatment of postop delirium.	Quality Improvement Project	Early delirium screening and intervention on post op complications in geriatric patients.	Mini- Cog pre-operatively CAM and CAM-ICU post-op	96 patients	All English speaking patients 65 years old or older admitted same day for elective surgery.	65 years and older. 66% female.	The author found that patients with post-op delirium are better identified using a standardized tool such as CAM. Also significant was the incident of adverse events in patients with post-op delirium. **Limitations** - Compliance with pre-op screening relied on the presence of one practitioner which is not sustainable long term. Additional risk factors was not considered in data. **Usefulness** - Supports the use of CAM screening in post-op geriatric patients.
Dharmarajan, Swami, Gou, Jones, Inouye	2017	Pathway from Delirium to Death: Potential In-House Mediators of Excess Mortality		*Journal of the American Geriatrics Society*	New onset delirium is predictive of 90 day mortality. The use of restraints, hospital acquired problems, and adverse outcomes increased in patients with delirium.	Analysis of data from a controlled clinical trial (Project Recovery)	Relationship of Delirium and 90 day mortality. Relationship of Delirium and adverse events	Confusion Assessment Method (CAM)	469 patients	Enrolled all patients greater than or equal to 70 yo that did not have delirium at time of admission. Patients with terminal illess, discharge in less than 48 hours and the inability to participate in interview were excluded.	Mean age 80.1 years. 39.9% male. 14.9% minority.	The author found that patients that developed delirium had a higher 90 day mortality, increased ADL impairments, and increased skilled nursing needs post discharge. **Limitations -** Majority of data was extracted between 1995 1998. All bias could not be eliminated as this data extraction was part of a larger clinical trial. **Usefulness-** Identification of delirium with poor outcomes and increased adverse events builds the case of the need to identify delirium early.
Oh, Fong, Hshieh, Inouye	2017	Delirium in Older Perons: Advances in Diagnosis and Treatment		*JAMA*	Advances in screening tools have increased the diagnosis of delirium. Non-pharmacological prevention and treatment is preferred.	Meta-analysis **Level 1**	Delirium detection Delirium treatment	Confusion Assessment Method (CAM) Short CAM CAM-ICU 4A's Test Nursing Delirium Symptom checklist (Nu - DESC) Modified Richmond Agitation Sedation Scale (mRASS)	127 articles	Article search using OVID, MEDLINE, Embase, and the Cochrane library	25 clinical trials, 42 cohort studies, 5 systematic reviews, and 55 other articles.	The author found that the CAMS screeening tool is the most utilized tool. The most appropriate method for detection of delirium is patient interview combined with chart review. Nonpharmacologic delirium treatment is preferred over pharmacological treatment. **Limitations**- Studies exclusively focused in intensive care were eliminated from review. High quality randomized clinical trials are limited for review. **Usefulness** - CAM remains an appropriate screening tool for delirium detection.

Appendix B

IRB Approval Letter

EAST CAROLINA UNIVERSITY
University & Medical Center Institutional Review Board
4N-64 Brody Medical Sciences Building· Mail Stop 682
600 Moye Boulevard · Greenville, NC 27834
Office **252-744-2914** · Fax **252-744-2284** ·
rede.ecu.edu/umcirb/

Notification of Exempt Certification

From: Biomedical IRB
To: Amy Gee
CC: William Johnstone
Date: 7/22/2020
Re: UMCIRB 20-001557
Identifying Delirium in the Geriatric Population

I am pleased to inform you that your research submission has been certified as exempt on 7/21/2020. This study is eligible for Exempt Certification under category # 2a.

It is your responsibility to ensure that this research is conducted in the manner reported in your application and/or protocol, as well as being consistent with the ethical principles of the Belmont Report and your profession.

This research study does not require any additional interaction with the UMCIRB unless there are proposed changes to this study. Any change, prior to implementing that change, must be submitted to the UMCIRB for review and approval. The UMCIRB will determine if the change impacts the eligibility of the research for exempt status. If more substantive review is required, you will be notified within five business days.

Document	Description
Delirium Data Collection Tool(0.01)	Data Collection Sheet
Potential Interview Questions(0.01)	Interview/Focus Group Scripts/Questions
Project Proposal(0.01)	Study Protocol or Grant Application
Tentative Timeline(0.01)	Additional Items

For research studies where a waiver or alteration of HIPAA Authorization has been approved, the IRB states that each of the waiver criteria in 45 CFR 164.512(i)(1)(i)(A) and (2)(i) through (v) have been met. Additionally, the elements of PHI to be collected as described in items 1 and 2 of the Application for Waiver of Authorization have been determined to be the minimal necessary for the specified research.

The Chairperson (or designee) does not have a potential for conflict of interest on this study.

Appendix C

EHR Data Collection Tool

Date	Census	# patients Less than 65	# patients 65 and older	# 65 and older screens completed	% Daily compliance with 65 and older completed screens

Appendix D

Project Timeline

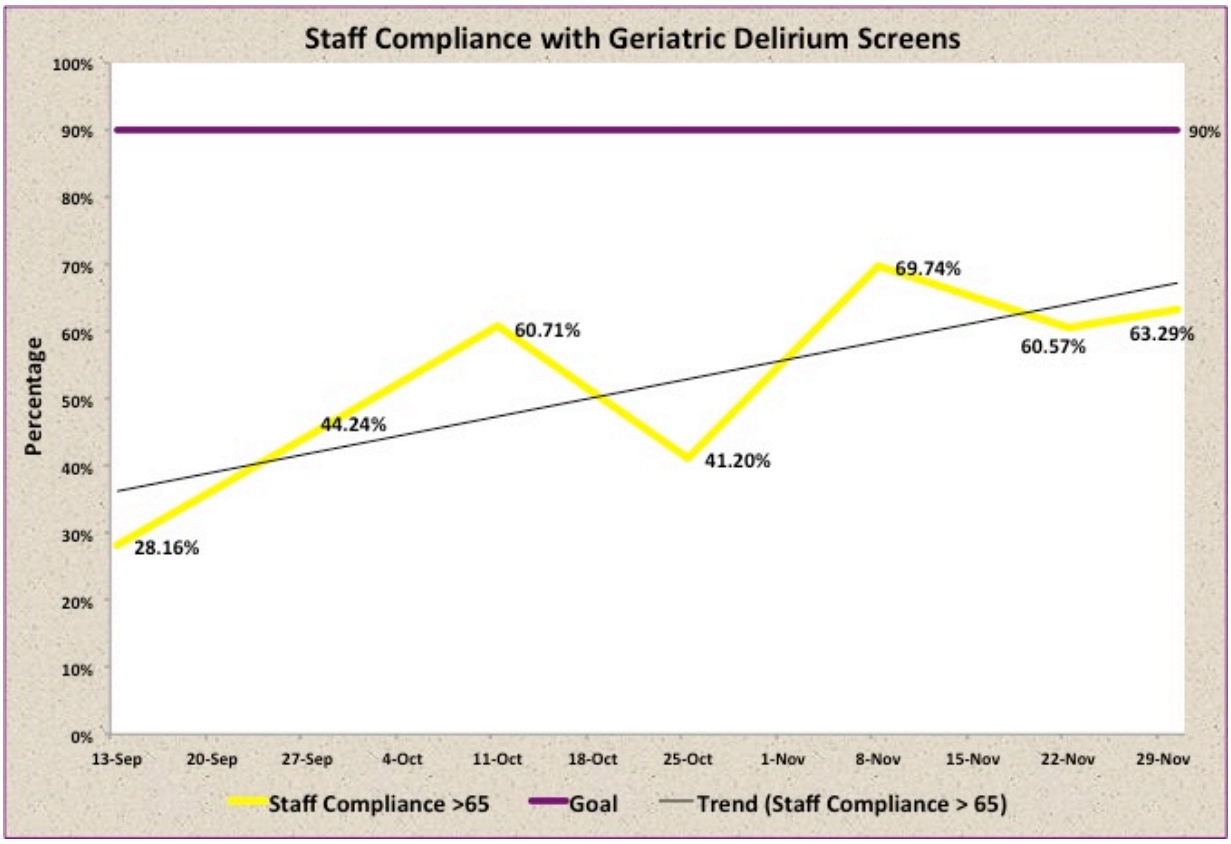
August 24, 2020	Initial education starts on 2East for delirium screening and how to utilize the CAM screening tool.
September 1, 2020	Implementation starts for the screening tool
September 13, 2020	Evaluation - First PDSA cycle complete
September 27, 2020	Evaluation – Second PDSA cycle complete
October 11, 2020	Evaluation – Third PDSA cycle complete (as needed)
October 25, 2020	Evaluation – Fourth PDSA cycle complete (as needed)
November 8, 2020	Evaluation – Final PDSA cycle complete (as needed)
November 22, 2020	Evaluation – Additional PDSA as needed and project wrap up
December 1, 2020	Implementation complete- Final Data Collection
Jan 1- 18, 2021	Data analysis
Jan/March 2021	Final paper revisions (ECU)
April 2021	College of Nursing Presentation (ECU)
April/May 2021	Present at Project Site Lunch and Learn (Dissemination)

Appendix E

Project Results

Graph E1

Staff Compliance

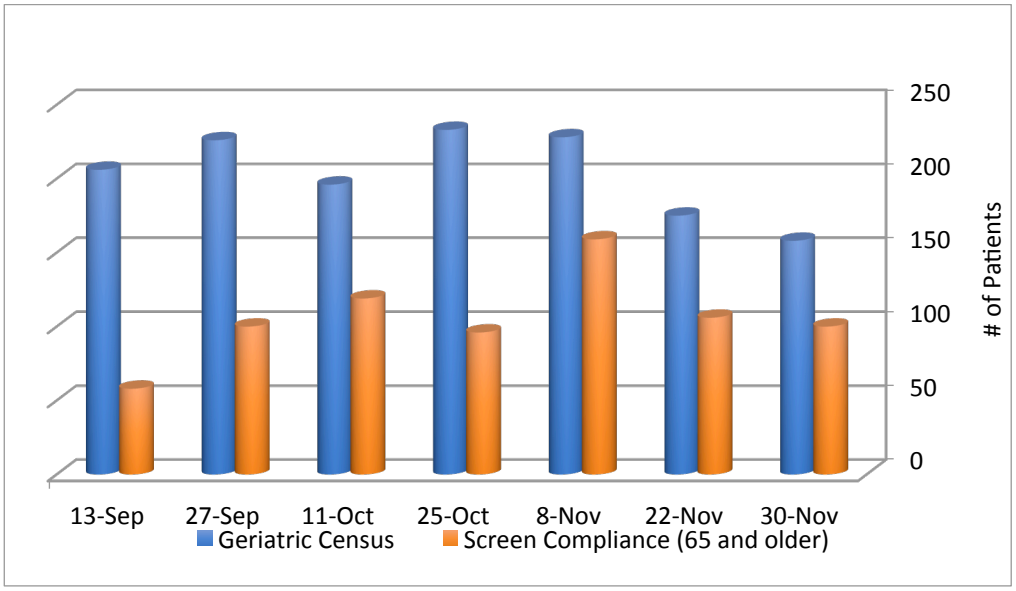


Appendix E

Project Results

Graph E2

PDSA Cycle Evaluations



Note. The number of completed geriatric screens compared to the number of patients sixty-five and older.

Appendix F

Estimated Project Budget

Delirium Screening Tool Project

Expenses

Human Resources	Estimated	Actual
Facilitator	$3,600.00	$3,500.00
Staff Education	$1,200.00	$1,260.00
Equipment	$0.00	$0.00
Total	$4,800.00	$4,760.00

Refreshments	Estimated	Actual
Doughnuts	$50.00	$48.00
Pizza	$50.00	$35.00
Cookies	$50.00	$38.00
Total	$150.00	$121.00

Print Resources	Estimated	Actual
Laminated Cards (16)	$25.00	$28.00
Printed Algorithm (20)	$15.00	$25.00
Resource Booklet (2)	$10.00	$8.00
Total	$50.00	$61.00

Prizes	Estimated	Actual
Coffee mugs	$15.00	$14.00
Gift cards	$20.00	$20.00
Candy	$20.00	$20.00
Total	$55.00	$54.00

Potential cost of negative outcome	$14,000.00*
Total Expense	$4,996.00
Potential Cost Savings	$9,004.00

*Potential cost of negative outcome is defined by the cost (to the organization) of **one** unexpected fall during hospitalizaiton.

Appendix G

DNP Essentials Mapping

	Description	Demonstration of Knowledge
Essential I ***Scientific Underpinning for Practice***	**Competency** – Analyzes and uses information to develop practice **Competency** -Integrates knowledge from humanities and science into the context of nursing **Competency** -Translates research to improve practice **Competency** -Integrates research, theory, and practice to develop new approaches toward improved practice and outcomes	1. Analyze research to support the quality initiative. 2. Utilized IHI framework to develop a project 3. Utilized Melnyk & Fineout-Overholt levels of evidence to formulate a literature review. 4. Translate project into a written deliverable.
Essential II ***Organizational & Systems Leadership for Quality Improvement & Systems Thinking***	**Competency** –Develops and evaluates practice based on science and integrates policy and humanities. **Competency** –Assumes and ensures accountability for quality care and patient safety. **Competency** -Demonstrates critical and reflective thinking **Competency** -Advocates for improved quality, access, and cost of health care; monitors costs and budgets **Competency** -Develops and implements innovations incorporating principles of change **Competency** - Effectively communicates practice knowledge in writing and orally to improve quality **Competency** - Develops and evaluates strategies to manage ethical dilemmas in patient care and within health care delivery systems	1. Develop an educational offering using current evidence. 2. Project lead available on the family medicine unit during implementation. 3. Attended WebEx meetings to discuss quality initiatives with nursing leadership. 4. Aligned the current project with recommendations of the Triple Aim and Healthy People 2030. 5. Presented project outcomes to the Professional Practice Committee and Executive Council.
Essential III ***Clinical Scholarship & Analytical Methods for Evidence-Based Practice***	**Competency** - Critically analyzes literature to determine best practices **Competency** - Implements evaluation processes to measure process and patient outcomes **Competency** - Designs and implements quality improvement strategies to promote safety, efficiency, and equitable quality care for patients **Competency** - Applies knowledge to develop practice guidelines **Competency** - Uses informatics to identify, analyze, and predict best practice and patient outcomes **Competency** - Collaborate in research and disseminate	1. Continue to review literature for changes over the year while developing, implementing, and evaluating the quality initiative. 2. Communicated project progress with the Medical Director of ECU Family

	findings	Medicine Geriatrics Division. 3. Presented quality project findings and recommendations for future projects to the Nursing Executive Council.
Essential IV ***Information Systems – Technology & Patient Care Technology for the Improvement & Transformation of Health Care***	**Competency** - Design/select and utilize software to analyze practice and consumer information systems that can improve the delivery & quality of care **Competency** - Analyze and operationalize patient care technologies **Competency** - Evaluate technology regarding ethics, efficiency, and accuracy **Competency** - Evaluates systems of care using health information technologies	1. Repeatedly met with representatives from information technology to evaluate the best method to add and access a screening tool. 2. Assisted nursing staff in finding and completing the screen in the EHR. 3. Currently working with representatives from Education and Professional Development to create annual delirium education through the electronic platform.
	Description	**Demonstration of Knowledge**
Essential V ***Health Care Policy of Advocacy in Health Care***	**Competency**- Analyzes health policy from the perspective of patients, nursing, and other stakeholders. **Competency** – Provides leadership in developing and implementing health policy. **Competency** –Influences policymakers, formally and informally, in local and global settings **Competency** – Educates stakeholders regarding policy **Competency** – Advocates for nursing within the policy arena **Competency**- Participates in policy agendas that assist with finance, regulation, and health care delivery **Competency** – Advocates for equitable and ethical health care	1. Developed a welcome and huddle opportunity three times during the project to discuss progress with the nursing staff. 2. Met with the organization's Chief Nursing Officer to plan the expansion of the project to include nurse-driven interventions. 3. Advocated for improved delirium screening in geriatric patients to assist in reducing readmissions for patients with dementia (Healthy People 2030 goal)
Essential VI ***Interprofessional***	**Competency**- Uses effective collaboration and communication to develop and implement practice,	1. Worked with research and

Collaboration for Improving Patient & Population Health Outcomes	policy, standards of care, and scholarship. **Competency** – Provide leadership to interprofessional care teams **Competency** – Consult intraprofessionally and interprofessionally to develop systems of care in complex settings	grant center to complete and submit an IRB request. 2. Developed a multidisciplinary team of IT support, nursing leadership, and physicians to ensure success. 3. Maintain frequent email communication with all members of the multidisciplinary team.
Essential VII ***Clinical Prevention & Population Health for Improving the Nation's Health***	**Competency**- Integrates epidemiology, biostatistics, and data to facilitate individual and population health care delivery **Competency** – Synthesizes information & cultural competency to develop & use health promotion/disease prevention strategies to address gaps in care **Competency** – Evaluates and implements change strategies of models of health care delivery to improve quality and address diversity	1. Utilized PDSA to evaluate and improve the quality initiative. 2. Identified health-specific needs for the geriatric population as part of the quality initiative. 3. Developed a project that supported the Triple Aim to improve care, support population health, reduce financial burden.
Essential VIII ***Advanced Nursing Practice***	**Competency**- Melds diversity & cultural sensitivity to conduct systematic assessment of health parameters in varied settings. **Competency** – Design, implement & evaluate nursing interventions to promote quality. **Competency** – Develop & maintain patient relationships **Competency** –Demonstrate advanced clinical judgment and systematic thoughts to improve patient outcomes **Competency** – Mentor and support fellow nurses **Competency**- Provide support for individuals and systems experiencing change and transitions **Competency** –Use systems analysis to evaluate practice efficiency, care delivery, fiscal responsibility, ethical responsibility, and quality outcomes measures	1. Mentored fellow nurses throughout the quality initiative. 2. Utilized quality outcomes to evaluate return on investment. 3. Discussed appropriate interventions for delirium prevention and treatment with project champion to be included in nursing education.