Implementation of a Behavioral Pain Scale for Traumatic Brain Injured Patients

Ashleigh Boidock, BSN, RN, CCRN and Linda Cook PhD, RN, CNS, ACNP

Problem

- Patients with traumatic brain injury present with atypical pain behaviors and decreased levels of consciousness that hinder effective pain assessments
- Ineffective pain assessment practices can lead to inadequate pain management and poor outcomes
- Current guidelines recommend using the Behavioral Pain Scale (BPS) in patients with traumatic brain injury
- Compliance with pre- and post-administration pain score documentation of a neurotrauma critical care unit were below organizational benchmarks ranging from 22 – 71%
- Anecdotal reports from nursing staff found dissatisfaction and improper use of current pain scales in patients with traumatic brain injury

Purpose

- The purpose of this project was to implement the Behavioral Pain Scale to promote accurate pain assessment practices in a neurotrauma critical care unit
- Short term goals included education and application of the Behavioral Pain Scale for traumatic brain injured patients who are mechanically ventilated
- Long term goals included improvement of pain assessments, increased documentation compliance, and usability testing of the Behavioral Pain Scale

Methods

- Setting: A neurotrauma critical care unit of a Level 1 Trauma Center in a large urban academic medical center
- Population: Adult patients with traumatic brain injury who are mechanically ventilated, admitted to the neurotrauma critical care unit, and unable to self-report
- Measure: BPS is a 5-item scale, scores range from 3 – 12

Implementation Procedures

- A nurse-driven team entitled, the “Brain Pain Squad,” led implementation of this quality improvement project
- Nurses were educated during scheduled shifts on the Behavioral Pain Scale, its components, and score interpretation as well as pain documentation standards with hands-on application of the scale
- Promotional signage and handouts were readily available
- Recognition events occurred during operationalization
- Presentations at staff meetings and weekly email reminders called, “Brain Pain Project Pearls” enhanced education and updated staff on project progress
- Data collection methods included weekly compliance rates of pre- and post-administration pain scores as well as usage of the Behavioral Pain Scale
- Usability testing took place after a nine-week implementation period via electronic staff survey

Results

- System Usability Scale Survey Results
  - I think that I would like to see the BPS implemented.
  - I found the BPS user-friendly.
  - I found the BPS easy to use.
  - I would definitely use the BPS.
  - I would recommend using the BPS.
  - I would definitely use the BPS again.

- Behavioral Pain Scale Assessment Practices of the Neurotrauma Critical Care Unit
  - Compliance with pre-administration pain scores improved by 7%.
  - Compliance with post-administration pain scores improved by 4%.
  - Short-term goals included education and application of the Behavioral Pain Scale:
  - Long-term goals included improvement of pain assessments, increased documentation compliance, and usability testing of the Behavioral Pain Scale

Discussion

- During the nine-week implementation period, the Behavioral Pain Scale was readily adopted by nursing staff with an average compliance of 92%
- Results from the system usability survey of staff indicated excellent usability of the Behavioral Pain Scale with an overall score of 86, further supporting the validity and reliability associated with this tool
- During the project implementation period, pre-administration compliance improved by 4%, whereas, post-administration compliance declined by 7%
- Variations in pre- and post-administration compliance rates may be due to discrepancies between practice, policy, and data collection methods regarding pain assessment standards of the organization
- Limitations included electronic health record restrictions for pain assessment reminders and inability to use the Behavioral Pain Scale on non-intubated patients

Conclusions

- A nurse-driven team and formal education plan led to the successful implementation of the Behavioral Pain Scale and minor improvements of pre-score pain assessment documentation compliance in traumatic brain injured patients who are mechanically ventilated
- Project results aligned with current evidence, indicating that critical care units caring for the neurologically impaired should consider instituting the Behavioral Pain Scale to assess pain in this unique patient population
- Additional staff education on pain documentation standards and better functionality of the electronic health record are needed to increase compliance
- Future opportunities include development of data collection methods that match organizational policy and best practice standards as well as exploration of the Behavioral Pain Scale for non-intubated patients

References

- To access the references used for this quality improvement project, please scan the following QR code:

Acknowledgements

- “Brain Pain Squad” Members: Linda Byrne, Kaitlyn Cipro, Alexandra Del Barco, Krystal Fisher, Karen Memphis, and Nora Tamulevich
- Leadership Team: Karen McQuillan, Samantha Adams, Scott Taylor, and Gary Schwartzbauer
- Neurotrauma Critical Care Unit Staff
Implementation of a Nurse Mentorship Program
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Problem Statement
The Institute of Medicine’s (IOM) landmark report, “The Future of Nursing: Leading Change, Advancing Health”, emphasizes that in order to achieve improved patient outcomes, there needs to be an expectation and culture of lifelong learning in healthcare.

There is a demand for nursing leaders to mentor the next generation as the nursing workforce deals with issues facing nursing retention. Turnover rates were measured in 2018 to be 17.2%, up from 16.8% in 2017 and 14.6% in 2016.

Mentorship during this vulnerable transition period is an evidence-based strategy that offers opportunities for professional development and increases job satisfaction and retention.

Purpose Statement and Goals
Develop, implement and evaluate the effect of a nurse mentorship program to increase professional development knowledge and engagement.

Goals of the Quality Improvement Project:
• 80% of dyads at the project site will engage twice a month with a professional development plan and goal contract
• 80% of dyads will have positive satisfaction with their mentor or mentee, and with the nurse mentorship program as it relates to their professional development
• 80% of mentees who engaged in a formal mentoring relationship will increase their professional development knowledge and engagement

Methods
This quantitative mentoring quality improvement project was guided by the Mutual Benefits Model of Michael Zey (1991).

The project was implemented at a rural community 75-bed hospital.

Pre-intervention
• Development of the Nurse Mentorship Program utilizing best practices provided by the Academy of Medical-Surgical Nurses (AMSN) to include curriculum, activities and tools.
• Mentees recruited, all who expressed an interest in being mentored and were part of the most recent cohort of the organization’s Maryland Nurse Residency Collaborative (MNRC). Mentors were recruited during hospital sponsored event. Dyads paired by interest or request.
• Program Kick-off with orientation to the Nurse Mentorship Program for dyads

Intervention
• Bi-weekly, consultation with each dyad to monitor adherence to the engagement contact and progress on goal achievement.
• Engagement and goal progress facilitated with bi-weekly newsletter emails on best practices for mentoring.
• Progress gap analysis and closure with 1:1 outreach and resolution strategies.
• Program ended after 14-weeks, post-implementation surveys administered, dyads thanked their participation and encouraged continual engagements.

Quantitative Measures
• Assessment of Mentor Relationship with Mentee (AMSN, 2012)
• Assessment of Mentee Relationship with Mentor (AMSN, 2012)
• Satisfaction with Nurse Mentorship Program (AMSN, 2012)
• Self-reported 5-item Likert survey, responses from 1 (lowest) to 5 (highest)
• Measured post implementation

Engagement Monitoring Tool
• Self-reported data from mentor about scheduled engagements
• Measured bi-weekly

Results

Summary of Results

Goal
- At least one goal achieved by the mentee
- Degree in which the mentor was able to create a supportive relationship with mentee
- Degree in which the program contributed to professional growth of the mentee
- Mente's overall satisfaction with program
- Mentor's overall satisfaction with the program

At least one goal achieved by the mentee
Degree in which the mentor was able to create a supportive relationship with mentee
Degree in which the program contributed to professional growth of the mentee
Mente's overall satisfaction with program
Mentor's overall satisfaction with the program

Improvement in professional development is often attributed to meaningful relationships through regular interactions with a mentor.
• The quality of mentoring may have been affected by the ability to develop meaningful relationships as half of the dyads matched had previously known each other
• Initial program kick-off was beneficial for participants to learn the program requirements

Communication serves to solidify relationship building.
• At the onset, there was lagging participation attributed to poor communication and time constraints.
• Facilitation and support by the DNP Project Lead boosted dyad engagements and activities which ultimately lead to greater achievement of professional development goals.
• The support provided by mentors guided newer nurses through the stages of professional development, which was most evident from the increase in mentees joining a professional organization during implementation and with all mentees achieving some level of professional goal achievement.

Project imitations included separate orientations for mentors and mentees and an unexpected restructuring of the organization during time of implementation.

Conclusion
A nurse mentorship program is an evidence-based strategy to increase professional development knowledge and engagement through support and guidance offered by an experienced mentor.

All dyads in this project achieved levels of satisfaction with the NMP and achieved a portion of pre-determined professional development goals.
• The mentoring process among nurses created a culture of change that contributed to growth of the professional development knowledge and engagement.

Keys to this success were dependent on clear expectations of the program and dyads creating a relationship of trust while establishing short- and long-term goals. The unexpected merger restructure served as a healthy reminder of the importance of timing and organizational availability as requisite to the successful planning and implementation of any system-wide initiative.

Future areas of interest for research would include examination of the impact of NMP’s on nurse’s intent to stay with the organization, job satisfaction and the long-term results on the implementation of a nurse mentorship program.

References
Use of the Short Confusion Assessment Method to Prevent Falls
Jaspreet K. Garriques, BSN, RN, PCCN, RCIS and Linda Cook PhD, RN, CNS, ACNP
University of Maryland School of Nursing

**Problem Statements**
- Prior to implementation, there were between 2 to 3 falls per month on the Cardiac Progressive Care Unit (CPCU)
- Hospitalized patients experience delirium at a rate of up to 56%
- Falls in tertiary care hospitals were linked to delirium both diagnosed and undiagnosed
- The short Confusion Assessment Method (CAM-S) is a validated, evidenced-based tool to detect delirium and may be useful in reducing inpatient falls associated with delirium, thus reducing overall falls on the CPCU

**Methods**
- The population included in this project is all adult inpatients admitted to the CPCU
- Any patient admitted after midnight does not get an initial screen until the morning
- The physical environment was changed to mitigate delirium such that the blinds will be opened in the daytime and clocks on the wall were changed to accurately reflect the time
- The nurses updated the white board with the date each shift
- There was a change in daily nurse documentation, such that a paper CAM-S screen will be conducted on every patient each shift
- Education on the delirium screen and methods of mitigating delirium was started during the months of September and October
- The delirium screens were conducted during the months of September and October
- After data collection, the number of falls were compared pre-intervention vs. post-intervention

**Results**
- The average compliance with the CAM-S delirium screen on day shift was 29% and it was 16% on night shift
- The range for compliance was between 86 to 0% on day shift and 79 to 0% on night shift
- The median for compliance for day shift was 22% on day shift and 12.5% on night shift
- There were 2 falls each in July and August, the pre-intervention period
- There was 1 fall each in September and October, the intervention period
- There were 3 falls in November, 2 falls in December, and 3 falls in January, the post-intervention period

**Discussion**
- Overall compliance with the CAM-S amongst the CPCU nurses was low due to the screening tool being on paper and not part of the electronic health record (EHR)
- Two new completing clinical initiatives, Tailoring Interventions for Prevention (TIPS) of falls boards and new insulin vials rolled out at the same time as the CAM-S
- Compliance was higher on weekends when the DNP student worked and ensured compliance
- Falls decreased during the intervention period with the CAM-S screen, which may represent an increased awareness of delirium from the nursing staff despite low compliance

**Purpose of the Project**
The aim of this process improvement project is to implement and utilize the CAM-S in the CPCU and measure fall rates during the implementation phase

**Short and Long Term Goals**
- Short term goals:
  - The implementation and utilization of the CAM-S in the CPCU
  - The education of 100% of CPCU clinical nurses on the CAM-S
  - CPCU patients will be assessed each shift (day and night)
  - The CAM-S will be used on at least 50% of the patients admitted on the unit
- Long term goals:
  - 100% compliance of the CAM-S delirium screen each shift
  - A reduction of falls to the national benchmark of 3 falls per one thousand patient days or below
  - Usage of the CAM-S screen will be a standard of documentation in the Cardiac PCU

**Conclusion**
- The CPCU saw a decrease in the number of falls during the CAM-S delirium screen intervention period
- This may be attributed to the fact that nurses were more aware of delirium prevention measures and how to identify delirium, even if the CAM-S screen was not completed
- Future recommendations include trialing the CAM-S delirium screen again over a longer period of time to measure compliance and positive screenings
- The nurses participating in this project are hired specifically to the CPCU. Findings from this project cannot be generalized to other units

**Acknowledgements**
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Please see references by scanning this QR code
Using a Clinical Indicators Checklist to Determine Family Meeting Needs
Christina Heng, BSN, RN, CCRN and Erica Alessandrin, DNP, CRNP, FNP-BC
University of Maryland School of Nursing

Problem Statement

- Families become decision-makers for critically-ill patients in the ICU.
- Over 90% of ICU directors across the country agree that family meetings are important, but only one third are timely scheduled.
- SICU families reported unclear goals of care due to conflicting information provided by the healthcare team.
- This leads to delayed decision making, increased ICU length of stay, increased hospital costs.
- Prior to implementation, only 14.3% of family meetings were held for families of patients who met clinical indicator

Purpose & Goals

Purpose: To improve family satisfaction with the healthcare team communication by implementing interdisciplinary family meetings within 72 hours of ICU admission.

Short-Term Goals:
- At least 75% of clinical indicators checklists will be completed each day.
- At least 50% of family meetings will occur within 72 hours of ICU admission.
- Families who attended a family meeting will score at least a 75% on the FS-ICU 24R questionnaire.

Long-Term Goals:
- A protocol will be developed to ensure early and consistent family meetings within 72 hours of ICU admission across all ICUs in the hospital.
- At least 75% of families will occur within 72 hours of ICU admission.
- Families will score 100% on the FS-ICU 24R

Methods

Setting: Surgical Intensive Care Unit (SICU) at a large academic hospital in Maryland
Population: 32 families of patients admitted during a 14-week period, who meet at least one clinical indicator

Procedures:
- Quality improvement project
- Dayshift RNs completed a daily clinical indicators checklist to identify patient and families eligible for an early family meeting.
- Unit social worker initiated interdisciplinary family meetings
- Unit family liaison distributed FS-ICU 24 R to family after patient was transferred from SICU

Discussion

- Although the number of family meetings scheduled did not significantly increase.
- Connections between family meetings and family satisfaction with the healthcare team communication could not be made due to low questionnaire return rate.
- FL unable to distribute all questionnaires due to lack of family present after transfer out of ICU.
- Providers’ preference to update families was service specific.

Limitations:
- Small sample size
- Questionnaire response rate low – anonymity and survey bias possible
- FS-ICU 24R lacked validity in measuring family satisfaction with communication after a family meeting.
- SW unavailability during weekends made it difficult to meet 72 hour goal.

Future Implications:
- If financially capable, mail questionnaires to families to increase questionnaire return rate.
- Nurse champions were vital during the implementation process in reminding the nursing staff about project.
- Checklist was useful in increasing awareness of family needs for communication.
- Bedside updates, phone calls, and daily rounds may be sufficient and appropriate for families.

References


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Screening, Brief Intervention and Referral to Treatment in an Emergency Room
Christopher Labe, BSN, RN-BC & Kristen Rawlett PhD, FNP-BC

Problem

- Alcohol and substance misuse account for increased injuries, deaths, hospitalizations and health care costs in the United States.
- Individuals frequently use the emergency room for substance or alcohol misuse. Internal evidence from June 2016 to August 2017 indicated substance use peer support specialists in the emergency room have assisted 336 individuals, but only 54% were successfully enrolled in proper treatment.
- Screening, Brief Intervention and Referral to Treatment (SBIRT) is an intervention that can be utilized in the emergency room to identify at-risk or dependent users by screening, brief counseling and referral to specialty treatment if needed.
- Identification of substance misuse allows clinicians to establish rapport, provide feedback to current use, enhance motivation to change and begin starting goals for treatment.
- Individuals engaged in seeking treatment are provided referrals for addictions treatment (Agerwala & McCance-Katz, 2012). Proper substance use treatment enhances long-term recovery outcomes.

Purpose

Purpose

To implement and evaluate the effectiveness of a SBIRT intervention in an emergency room setting.

Project Goals

By November 30th 2019, the Behavioral Health Response Team (BHRT) that work in the emergency room will screen 100% of individuals, deliver brief interventions to 80% of substance users and refer 75% of the individuals to treatment in order to improve the treatment protocol for substance use.

By 1 year post implementation, emergency room manager and director will adopt SBIRT protocol into standard practice.

Methods

Setting: Rural Community Emergency Room on the Eastern Shore

Population: Adult 18 years and older who are at-risk or currently using substances

Implementation Procedures:

- Screening- Individuals were screened for alcohol and substance use using the CAGE screening tool. Individuals scoring a 2-4 on the CAGE screening were identified as at-risk or current substance misusers. When using the CAGE score, Team member will replace the word “drinking” in each question with “substance use.”
- Brief Intervention- Identified individuals with substance use were provided with motivational interviewing (MI) to engage individuals in treatment. MI was performed to assess readiness to change and increase likelihood of adherence to treatment options.
- Referral to Treatment- After delivery of MI, Individuals were referred to the proper level of substance use treatment

Results

- This quality improvement project took place over a 12-weeks period
  - The majority of individuals screened were male (54.4%) and in the age range 18-39 (60.2%)
  - Nine of the twelve weeks, 80% or more of eligible individuals received MI
  - Eleven of the twelve weeks, 75% or more which received MI were provided with a referral to treatment
  - Nine of the twelve weeks, 75% or more of the eligible individuals completed the entire SBIRT protocol
  - Of the eligible individuals, 85.7% received MI and 89.5% were referred to treatment
  - Of the 112 eligible individuals, 86 (76.7%) completed the SBIRT protocol

Discussion

- There was a high sample of eligible individuals from total screened. More importantly, the amount of individuals that received MI and a referral to treatment was significant
- The amount of individuals that completed the SBIRT process (76.7%), was an increase from the internal evidence of 54% that were properly enrolled in treatment.
- The data supports SBIRT as an effective protocol for obtaining appropriate treatment for individuals with substance use which can decrease hospital readmissions. Evidence maintains that hospital recidivism was reduced by 47% when using SBIRT.
- Limitations include using the CAGE scale, which is not indicated for substance use, time constraints for the BHRT in a high-volume emergency room, and the comfort level of working with individuals with substance use.

Conclusions

- Observed outcomes indicate the implementation of a SBIRT protocol as an effective treatment plan for substance use in the emergency room
- The project has assured that individuals can be identified early by screening, educated/counseled regarding changing behaviors and referred to appropriate levels of care from the facility
- Further quality improvement projects can include implementing the SBIRT protocol in the entire emergency room, monitoring adherence to treatment after referrals are made, and continued education of emergency room staff members.

References


**Implementation of the Columbia Suicide Severity Rating Scale (C-SSRS) Screener in Detention Setting**

Jennifer Moon, MPH, MSN, FNP-BC, Karen Clark, PhD, RN, University of Maryland School of Nursing
Indira Harris, MSW, LCSW, BCD, Robert Van Meir MSW, LCSW, BCD, CCTP

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**Problem Statement**

**Significance:**
- Undocumented immigrant population is underserved due to lack of access, language and cultural barriers; increased risk for suicide while in detention due to high levels of chronic and acute medical and mental health concerns
- Completed suicides and suicide attempts are increasing in this population

**Problem:**
- Currently using a collection of mental health screening questions to assess suicide risk at intake as well as a stock electronic health record (EHR) “smart form” suicide risk assessment neither of which has been validated through research
- Current set of screening questions consists of fifteen (15) items in question format, five (5) of which are intended to assess suicidal or homicidal ideation; these questions require the assessor to draw conclusions based on their conversational assessment of the detainee
- No rating scale to assist providers in making an objective risk determination

**Purpose of the Project**

Quality Improvement Project & Evidence Based Practice Change

**Short term goals:**
- Implement the C-SSRS Screener within a minimum sixty (60) day pilot period
- Achieve 90% compliance with staff utilization of the tool
- Demonstrate an increase in test scores on the post-test after staff training
- Identify barriers to full compliance

**Long term goals:**
- Expansion of the use of the C-SSRS screening tool to all clinic sites agency wide
- Ensure that those identified at risk are appropriately referred for treatment
- Collect data to support stratification of suicide risk from the implementation of the tool

**Methods**

- Selected detention facility is located in Texas near the U.S.-Mexico border
- Targeted population housed in the adult detention facility for immigration purposes
- All detainees receive an intake assessment; therefore, no exclusions (clinical staff were given the discretion to not use the C-SSRS for intake groups 50 or over)
- Integration of the C-SSRS Screener into the EHR as a “smart form”
- Clinic staff trained and coached by the site project champion, a licensed clinical social work (LCSW) prior to project implementation
- Staff will be assessed on their knowledge of the purpose, use and scoring of the C-SSRS
- The process assessed during the pilot was the appropriate utilization of the C-SSRS

**Theoretical Framework:** The Interpersonal Theory of Suicide (ITS) explains the phenomenon of suicide, the ITS refined the conceptual basis of the project by enveloping the concepts of risk assessment, prevention, stress and coping; and illustrates the relationship between those concepts.

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**Discussion**

**Discussion Points:**
- Fewer behavioral health referrals for suicide risk during the pilot when compared to the baseline, pre-implementation phase (10 vs. 32); disputes the presumption by staff that the C-SSRS increases nursing and behavioral health provider workload
- 90% compliance not achieved consistently due to several factors to include perception of increased workload by nursing staff and clinic staff shortages

**Limitations:**
- Use of smart form, extra clicks within the EHR disrupted the intake workflow
- In order to obtain support of Nursing Services, agreement to not use C-SSRS for intake groups of 50 or more detainees
- While headquarters level leadership fully supported the implementation of the practice change, local leadership did not encourage or enforce implementation (HQ to field communication ineffective)
- Quality improvement vs. research; lack of scientific comparison between the current intake questions and the C-SSRS

**Conclusions**

- Agency-wide implementation of a validated tool will improve identification of those at risk for suicidal behaviors; this should be informed by a proven framework (i.e. Zero Suicide)
- Although the goal of this project was not to predict suicidality, even when clinicians can use theoretically and empirically validated screening tools, they cannot be certain that they can always predict suicide
- The C-SSRS is specific and sensitive to suicide risk
- Detention facilities face the challenge of early detection, accurate assessment and effective management of detainees at-risk for suicide

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**References**


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Problem Statement

- The American Diabetes Association (2019) set the antidiabetic oral medication adherence rate to 80%.
- Existing literature reports that the majority of patients with type 2 diabetes mellitus (T2DM) do not achieve this benchmark.
- Medication nonadherence is strongly associated with poor glycemic control resulting in more healthcare services utilization.

Short-term and Long-term Goals

Purpose: Improve medication adherence through the implementation of the mobile health app reminder (MHAR) and diabetes adherence education pamphlet (DAEP).

Short-term goals:
- At the end of four weeks of usage of the MHAR, 60% of the participants will achieve a low to medium likelihood of nonadherence (LON) post score.
- In the last week of implementation, 80% of patients seen will receive DAEP.
- At least 80% of participants will have a medication adherence rate at or above 80% after four weeks of using the MHAR.

Long term goal: At least 80% of patients with T2DM will achieve random blood sugar <180 mg/dL and HgA1c <7%.

Methods

Setting: Suburban Family Practice Clinic

Population: Adult patients (>18 years old) with T2DM who have at least one oral diabetic medication.

Implementation (13 weeks):
- Patients completed the likelihood of nonadherence (LON) post-score (N=6).

Results

- In the last week of implementation, only 67% of patients seen received the DAEP.
- There is a weak negative correlation (-0.31) between adherence rate and LON post-score.

Discussion

- 100% of patients (N=6) achieved low to medium LON post scores. This result means that the patients had a >75% probability of adhering to the medication.
- The average adherence rate reported by participants was 86.67%.
- 67% (n=4) of participants reported a 80% or higher adherence rate, and 33% (n=2) were nonadherent.
- This result supports existing literature that 67.9% of patients with T2DM are nonadherent to their medication.
- There is a weak negative correlation (-0.31) between adherence rate and LON post-score.
- In the last week of implementation, only 67% of patients seen received the DAEP.
- This project supports previous studies that utilizing MHAR and DAEP has the potential to improve medication adherence among patients with chronic diseases.

Conclusions

- A high rate of medication adherence continues to be a challenge among patients with T2DM.
- Higher LON scores may be indicative of lower actual compliance.
- The distribution of the pamphlet is more successful where there is monitoring, data reporting, re-education of staff, posting of reminders, and reinforcement from the administration.
- A baseline score on the LON will help the provider address patients’ perceived barriers for compliance.
- Future QI projects may leverage the efficacy of these interventions to improve adherence among patients with other chronic diseases.

Limitations:
- Small sample
- The sustained outcome is limited due to the length of MHAR usage (4 weeks).

References

Implementation of a Pneumococcal Immunization Standing Order Protocol in Long-Term Care

Alyson Shittu, BSN, RN, and Erica Alessandrini, DNP, CRNP, FNP-BC
University of Maryland School of Nursing

Problem
Background: Pneumococcal disease is ranked the 8th leading cause of death with nearly 51,000 deaths annually. Highest risk factors include: Advanced age (65 years and older), Chronic immunocompromising conditions.

National Guidelines: HealthyPeople2020 goal to vaccinate 90% of adults, in long-term care (LTC) facilities, against pneumococcal disease. Centers for Medicare and Medicaid Services (CMS) quality measures require LTC reporting to include: Percent of residents assessed for vaccine status, Percent of residents appropriately vaccinated.

Significance: In preparation for a CMS site visit, an internal audit revealed: No standardized vaccine screening protocol, Inconsistencies with vaccine administration documentation, Low pneumococcal immunization rates, 58%.

Purpose
To implement an evidence-based standing order protocol to increase the percentage of adult LTC residents appropriately screened and vaccinated against pneumococcal disease.

Goals
Centers for Disease Control and Prevention (CDC) pneumococcal vaccine recommendations support the project goals:

Short-term: Increase the vaccine screening rates by 90%, Increase total vaccination rates by 10%.

Long-term: Increase LTC and sub-acute rehab vaccination rates to 90%, Decrease pneumococcal pneumonia related cases, hospital transfers, and deaths per calendar year to less than 1%

Methods
Setting: 120-bed privately-owned suburban LTC care facility.

Population: Residents aged 65 years and older.
Residents aged 19-64 years with high-risk medical conditions.

Evidence-based model: Four Pillars Transformation Program.

Implementation Procedure:
- Structure Change: Staff education
- CDC pneumococcal pneumonia prevention guidelines
- Immunization Action Coalition’s pneumonia vaccine standing order protocol (SOP)
- Process change: SOP
- Standardized screening and vaccine administration protocol

Measures Collected:
Demographics: 100 residents
- Average age 83 years; 77% female; 66% non-Hispanic White
Data Collection:
- Retrospective chart review (manual audit)
- Prospective data collection (electronic reports)

Results

Figure 1: Pre- and postintervention vaccine needs screening. This figure illustrates the changes in the percentage of residents screened for pneumococcal vaccine need, pre- and postintervention.

Screening rates increased from 0% pre-intervention to 100% post-intervention (p<0.05)

Figure 2: Pre- and postimplementation pneumococcal vaccine rates. This RUN Chart illustrates the changes in total vaccination rates and corresponding quality improvement process cycles.

Vaccination rates increased from 56% at baseline to 85% post-intervention, indicating a significant relationship between vaccination status and the SOP intervention (p = 0.046, df = 1, n = 100).

Discussion
Significant improvement in screening and vaccination rates throughout this DNP project.

Similar improvement rates were seen in the literature:
- Differences in the screening rates may be influenced by the context of LTC versus ambulatory outpatient centers

Staff nurses were not involved in the planning of this QI project; therefore, the following primary barriers were encountered:
- Staff nurse low priority for change
- Facilitator: Continued staff education
- Facilitator: Weekly graphical display of goal progress
- Perceived low of self-efficacy to utilize SOP independently
- Facilitator: Immunization champion team motivation
- Facilitator: Process change to unit managers implementing the SOP rather than unit staff nurses

Limitations:
- Quality of data collection due to discordance between manual and electronic chart reports
- Inability to integrate the SOP into the electronic medical record system

Conclusion
Evidence-based strategies may help guide future projects:
- Cultural assessment and readiness for change evaluation
- Include staff nurses in project development
- General staff nurse QI process training
- Integration of the SOP in the electronic medical record
- Automated clinician reminders
- Provide incentives to motivate staff

Implications for practice
This DNP project significantly impacted a process change that allowed nurses to autonomously assess and administer routine pneumococcal immunizations to help prevent pneumococcal pneumonia in a vulnerable population.

Sustainability
Organizational leadership plans to make the SOP a part of the standard admission process to ensure all residents in the facility are appropriately vaccinated against Streptococcus pneumonia.

References


Quality Improvement Project: Screening Assessment Tool to Improve Early Sepsis Identification

Aline Ulloa, BSN, RN; Karen Clark PhD, RN
University of Maryland School of Nursing & Paul Clark, D.O.

Background

• 1.7 million cases of sepsis in the United States annually (CDC, 2016)
• Leading cause of death among hospitalized patients (Sepsis Alliance, 2018)
• Every 1-hour treatment delayed, mortality risk increase 8% (Sepsis Alliance, 2018)
• Earlier recognition could avoid up to 80% of related deaths (CDC, 2016; Sepsis Alliance, 2018)

Problem

• In a Mid-Atlantic hospital intensive care unit (ICU), patients are not routinely screened for sepsis by nurses and there is no standard evidence-based screening assessment tool available

Purpose/Goal/Objectives

The Joint Commission, CDC, and The Surviving Sepsis Campaign recommends routine use of sepsis screening tools to facilitate earlier identification and initiation of time sensitive care to reduce mortality

Purpose of this Doctorate in Nursing Practice scholarly project is to:
• Implement an evidence-based sepsis screening tool at the bedside of an ICU in a Mid-Atlantic region hospital

Goal:
• To increase the number of patients screened and improve early identification of adult septic patients

Objectives:
• 100% of the registered nurses on the unit will:
  • Provided education on sepsis
  • Utilize a standardized screening tool
• 80% of eligible patients on the unit will:
  • Screened at least once daily with the sepsis screening assessment tool

Methods

• Setting: Mid-Atlantic 12-bed ICU from September to November 2019
• Design: Quality improvement: Implementation of a sepsis screening tool
• Patients: Inclusion criteria all adults age 18 years and older currently admitted to an ICU
• Interventions:
  • Staff education on early identification of sepsis based off Sepsis-3 criteria and use of a nurse screening tool adapted and provided from the Surviving Sepsis Campaign and Sepsis-3 Guidelines
  • Integrated with initial assessments daily
• Data Collection:
  • Unit sepsis champions collected and compiled aggregate audit data from paper charts
  • Pre and Post test surveys for baseline and change in knowledge
• Data Analysis in aggregate:
  • Simple descriptive statistics
  • Frequencies for sepsis tool compliance

Results

• Chi squared test (before v. after) and Screened (no v. yes)
  • Statistically significant increase in proportion screened (61%) after the intervention compared with the proportion screened (7.9%) before intervention $\chi^2(1, N=434) = 79.99, p < 0.001$

Discussion

• Staff educated on sepsis can increase patient screenings
• Aids earlier sepsis identification
• Paper screenings tools cost effective and quick to develop
• Allows for nurses’ autonomy of clinical judgement
• Suspicion of, and or new infection is one component of sepsis criteria in the tool based off clinical judgment and knowledge of the nurses

Conclusion

Implementation of a sepsis screening tool established a standardized approach for nurses to screen patients for sepsis
• Implications for practice: The Surviving Sepsis Campaign’s goal is to reduce mortality related to sepsis and routine screening is key
• Sustainability: This mid-Atlantic hospital supports the implementation of sepsis screening tools among other units and development of an electronic screening tool is in the near future
• Recommendation: To investigate early identification and the impact on length of stay and mortality in this population

References

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