Implementation of a Behavioral Pain Scale for Traumatic Brain Injured Patients

Ashleigh Boidock

Problem & Purpose: Each year, 1.7 million Americans experience traumatic brain injuries (TBI) with many patients requiring intensive care, resulting in increased pain due to aggressive treatments, frequent neurological exams, and invasive procedures. Patients with TBIs present with atypical pain behaviors and decreased levels of consciousness that impede effective pain assessments, leading to inadequate pain management and poor outcomes. Pre- and post-administration pain score documentation compliance of a neurotrauma critical care unit (CCU) were below organizational benchmarks, averaging 75% and 56% respectively. Additionally, anecdotal reports from nurses found dissatisfaction with the organization's current pain scales.
Methods: A nurse-driven team, entitled the "Brain Pain Squad," led a quality improvement (QI) project to implement the Behavioral Pain Scale (BPS) for noncommunicative, critically ill adult patients with TBIs who were mechanically ventilated. Staff education was provided in small groups with hands-on application of the scale. Handouts as well as promotional signage were readily available on the unit. Presentations during staff meetings and weekly email reminders called, "Brain Pain Project Pearls" enhanced education and provided project updates. Periodic rewards and recognition events increased staff participation throughout operationalization. Data collection included weekly compliance rates of pre- and post-administration pain score documentation as well BPS usage. Usability testing via electronic staff survey occurred following a nine-week implementation period.
Results: Staff readily adopted the BPS with an average compliance of 92.04%. Pre-administration compliance improved by 4.57% whereas post-administration compliance declined by 6.46%. The overall usability score of the BPS was 86, equating to excellent usability.
Conclusion*:* A nurse-driven team and formal education plan led to the successful implementation of the BPS with minor improvements in pre-administration pain score compliance and a decline in post-administration pain score compliance. Variations in compliance may be due to discrepancies between organizational policy, clinical practice, and data collection methods. Policy changes, additional education, and better functionality of the electronic health record may increase compliance further. Critical care units who care for the neurologically impaired could consider instituting the BPS and future QI efforts should focus on the implementation of the BPS for noncommunicative TBI patients who are not intubated.

Implementation of a Nurse Mentorship Program

Lauren Dawson

Problem & Purpose: The Institute of Medicine's (IOM) report, "The Future of Nursing: Leading Change, Advancing Health", supports the need for nurses to engage in lifelong learning opportunities. The A 72-bed community hospital which served as the site of the program identified a gap in mentoring support for nurses enrolled in the. Value for mentoring was evident in the existence of a mentoring committee, however the committee had not been active and did not have a structured program. An organizational climate survey for soon-to-be nurse residency graduates revealed that all (100%) of current nurses enrolled in the Maryland Nurse Residency Collaborative held an Associate of Science in Nursing degree, were not certified in any specialty, and did not belong to any professional nursing organization. The purpose of the quality improvement project was to develop, implement and evaluate the effects of a nurse mentorship program.

Methods: Seven mentees were 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). Five of the seven mentors were experienced nurses recruited at a hospital sponsored event, while the other two mentors were experienced nurses recommended by their mentee. The NMP was developed with best mentoring practices provided by the Academy of Medical-Surgical Nurses. At the beginning of implementation, educational sessions were provided to participants to establish requirements of the program to include initiating goal contracts and professional development plans and documenting engagements. Engagement and professional development activities were monitored through data collection.

Results: As a result of the program, 100% of dyads who engaged, completed a goal contract and professional development plan along with meeting at least one professional development goal. The program received 100% overall satisfaction for mentors, and 66% for mentees.

Conclusion: Although small, all dyads achieved levels of satisfaction with the NMP and achieved a portion of professional development goals set. The NMP promoted a culture in the organization of support for professional development and career advancement among nurses.

Use of the Short Confusion Assessment Method to Prevent Falls

Jaspreet Garriques

Problem & Purpose: Patients who develop delirium during hospitalization have a mortality rate of 22-76% and a high mortality rate in the months following discharge from the hospital. In addition, simple modification of the environment can dramatically reduce the length of time a patient is delirious and reduces adverse outcomes after discharge from the hospital. The falls rate in the Cardiac Progressive Care Unit (CPCU) is one of the highest in the hospital. This initiative was launched with the goal of reducing the number of patients who fall who may be cognitively impaired due to delirium.

Methods: A nurse-driven implementation of the Short Confusion Assessment Method (CAM-S) for floor and step-down patients for routine screening of delirium was the basis of a quality improvement project in the CPCU of a large academic medical center. Education was provided to all nurses in small groups and by voice over PowerPoint via email on the evidence behind the CAM-S, the proper assessment of patients with the CAM-S, and modifications to the environment such as maintenance of sleep/wake cycles, early mobility, toileting schedules, large clocks, calendars, adequate hydration, and familiar objects at the bedside.

Results: The CAM-S tool was adopted by the CPCU staff nurses but with low compliance. 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. There were 2 falls each in pre-intervention period months. There was only one fall in each the intervention period month. There were 3 falls in the first month immediately post-intervention, 2 falls in December, and 3 falls in January.

Conclusion: A nurse-driven implementation of the CAM-S delirium screen tool lead to a decreased number of falls in the CPCU likely as a result of heightened awareness of patient judgment and cognitive ability.

Using a Clinical Indicators Checklist to Determine Family Meeting Needs

Christina Heng

Problem & Purpose: Patients admitted to the surgical intensive care unit (SICU) are critically ill and may be unable to participate in their care, passing the burden of decision-making onto their family. Family members often express dissatisfaction with the healthcare team communication, making it difficult for them to make informed decisions about their loved ones. Studies have shown implementing family meetings within 72 hours of ICU admission improves communication between family members and the healthcare team. This quality improvement project aimed to improve family satisfaction with the healthcare team communication by implementing interdisciplinary family meetings within 72 hours of SICU admission for families of patients who meet specific clinical indicators.

Methods: A checklist was developed based on the literature and input from the nurse educator, nurse manager, and medical director, to recognize specific clinical indicators with which a patient presents that likely require proactive communication from the healthcare team. The presence of at least one indicator prompted a response in which the dayshift nurse notified the unit social worker and SICU provider to initiate a family meeting within 72 hours of ICU admission. To determine a family member's level of satisfaction with the healthcare team communication, the SICU family liaison distributed the Family Satisfaction With Intensive Care Unit 24R (FS-ICU 24R) questionnaire after the patient was discharged from the SICU.

Results: There was a statistically significant increase in the completion of the clinical indicators checklists, X^2 (1, $n=964$) = 75.96, $p < 0.001$. The number of family meetings did not increase significantly from pre- to post-implementation. The Fisher exact test statistic value was .52. The result was not significant at $p < .05$. Fifteen families were updated at the bedside (46.9%). Questionnaires returned resulted in satisfaction scores of greater than 75%.

Conclusion: Using the clinical indicators checklist may have increased staff awareness for family meeting needs. However, conclusions could not be drawn from the relationship between family satisfaction and attendance at formal family meetings. Other methods of communication such as bedside updates and daily rounds may provide sufficient communication for families of patients who meet minimal clinical indicators.

Screening, Brief Intervention and Referral to Treatment in an Emergency Room

Christopher Labe

Problem and Purpose: Alcohol and substance use are leading causes of hospitalizations, injury and death. Individuals increasingly use the emergency room to seek help for their alcohol and substance use related concerns. The purpose of this quality improvement project was to implement a Screening, Brief Intervention and Referral to Treatment intervention (SBIRT) to effectively evaluate at-risk or current individuals with alcohol or substance use in a high-volume emergency room in rural Maryland.

Methods: The project was implemented over a 12-week period and included every adult 18 years and older with alcohol or substance use related concerns. All encounters were screened by the Behavioral Health Response Team (BHRT) using the Cut, Annoyed, Guilty, Eye (CAGE) screening tool. The Brief Intervention (BI) included Motivational Interviewing (MI) and was elicited with individuals scoring a 2 or higher on the CAGE screening. Individuals were asked their readiness to change score post-MI intervention. All encounters were referred or given information to access inpatient or outpatient substance use treatment facilities for the next level of care. An Excel spreadsheet and monthly run charts were performed to analyze trends towards percentages of patients receiving motivational interviewing, referrals to treatment and completed SBIRTs.

Results: There were 54 (62.7%) males compared to 32 (37.3%) females that completed the SBIRT protocol. The number of individuals who completed the SBIRT process was 86 out of 112 who were eligible (76.7%), a noted increase from the internal data indicating evidence of 54.0% that were properly enrolled in treatment.

Conclusion: Successful systematic implementation of an SBIRT can increase access to substance use programs, increase engagement and readiness to change and improve better outcomes in recovery management.

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

Jennifer Moon

Problem and Purpose: The purpose of this quality improvement project was to implement the Columbia Suicide Severity Risk Scale (C-SSRS) screener at intake screening to improve identification of those at risk for suicide. Prior to this evidence-based practice change the agency used non-validated screening questions to determine suicide risk. The C-SSRS has been validated in several settings, including corrections, and is designed to quantify the severity of suicidal ideation and behaviors.

Methods: The C-SSRS screening tool was embedded in the electronic health record (EHR) as a smart form and was piloted as a quality improvement project at one of the detention facilities for 11 weeks. The inclusion criteria are all those housed in the adult detention facility. All detainees admitted to the facility received an intake assessment; therefore, all detainees were included in the evaluation of the utilization of the C-SSRS screening tool, no exclusions. The nursing staff, who conducted the intake assessments, received education on suicide prevention and training on the C-SSRS. Baseline behavior health referral data was captured prior to implementation. During the implementation period, retrospective chart review was used to determine if the screening tool was being utilized at intake (presence of completed form). Data was also collected on whether detainees were appropriately referred to a behavioral health based on their screening by comparing screening results to actual referrals.

Results: The total number of detainees screened with the C-SSRS tool during the project was 1340, which was 60% of total intakes (2233 total intakes). Staff training pre-test scores were (M=51.25, SD 15.86, n=16) with an increase at post-test (M= 68.75, SD 8.06, n=16). This difference was significant; t (30) =3.93, $p < .001$ (one tail). The total number of mental health referrals from intake prior to implementation was 32 (1.68% of total 1910 intakes). The total number of referrals from the use of the C-SSRS was 10 (0.75% of total 1340 intakes with C-SSRS). While cumulative compliance did not reach the goal of 90%, there were several days during which 100% compliance was achieved.

Conclusions: The immediate goals of the project were to ensure that the C-SSRS was being utilized and that detainees at risk of suicide were appropriately referred. In order to gain support of Nursing Services the concession to not require use of the C-SSRS smart form for groups of detainees being admitted to the facility larger than 50; however, compliance was largely dependent on which nurse conducted the intake screening rather than how many detainees were in the intake group. Nursing expressed concerns that use of the smart form added extra clicks and disrupted the intake workflow. Full integration of the C-SSRS tool into the intake screening template neutralize this issue. There were fewer behavioral health referrals for suicidal risk during the project period when compared to the baseline, pre-implementation phase. This supports the specificity and sensitivity of the C-SSRS. Agency wide implementation of a validated tool will improve identification of those at risk for suicidal behaviors.

Improving Medication Adherence Among Diabetes Patients Utilizing Mobile App and Pamphlet

Aileen D. Pacheco

Problem and Purpose: The American Diabetes Association set the antidiabetic oral medication adherence rate to 80%. Medication nonadherence is strongly associated with poor glycemic control resulting in more healthcare services utilization. A family practice clinic noted that the majority of patients with diabetes are nonadherent to their medication. The purpose of this quality improvement (QI) project was to improve the medication adherence of patients with type 2 diabetes mellitus (T2DM) through the implementation of mobile health application reminder (MHAR) and diabetes adherence education pamphlet (DAEP).
Methods: This project was implemented over thirteen weeks at a suburban primary care practice using the Mobilize, Assess, Plan, Implement, Track process framework. During an office visit, participants (N = 6) completed the likelihood of nonadherence (LON) online survey before the intervention and receive the DAEP. The participants used MHAR for four weeks and self-reported medication adherence rates. They also completed a post-LON survey via phone call by the project leader.
Results: All the of participants (N=6) achieved low to medium LON post scores. There were no differences ($z=0.577$, $p > 0.05$) between pre- and post-intervention LON scores using the sign test as an alternative statistic. Only 67% (average) of patients seen received the DAEP at the last week of implementation. After four weeks of usage of the MHAR of each participant, 67% (n=4) reported adherent with an 80% or higher adherence rate, and 33% (n=2) nonadherent. The Pearson correlation coefficient for dichotomized compliance data predicted by post-intervention LON scores was found to be -0.31. This result indicated a weak negative correlation between adherence rate and post-LON.
Conclusion: With the availability of MHAR, this tool must be leveraged to help patients adhere to their medication as prescribed. This project has demonstrated that when combined DAEP and MHAR have the potential to improve medication adherence among patients with T2DM. Providers can optimize the efficacy of these interventions to enhance verbal education during clinic visits.

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

Alyson Shittu

Problem & Purpose: *Streptococcus* pneumonia is a significant cause of morbidity and mortality of adults who are immunocompromised and of advanced age. It is the standard of care to vaccinate all high-risk adults (18-64 years) and adults 65 years and older with two pneumococcal vaccines. However, pneumococcal immunization rates remain below the HeathyPeople2020 target goal of 90% nationally and locally. The objective of this quality improvement (QI) project was to implement the Immunization Action Coalition pneumococcal standing order protocol to increase the percentage of adult patients screened for vaccine need by 90%, and percentage of total residents vaccinated according to CDC recommendations by 10%.
Methods: The strategy of this QI project was to educate registered nurses to implement a pneumococcal standing order protocol, in a privately owned, 120-bed, long-term care (LTC) center in suburban Maryland. The design of this QI project was based on the diffusion of innovation theory, the 4 pillars practice transformation program (4 Pillars), and the Mobilize-Assess-Plan-Implement-Track (MAP-IT) process model. Weekly frequency distributions were used to examine the screening and vaccination rates, and a chi squared (X^2) test was performed post intervention to examine the significance of intervention on vaccination rates.
Results: The total number of LTC residents (n=100) were White (66%), Black (32%), other (2%), with an average age of 83 years. Pneumococcal immunization rates increased from 56% pre-intervention to 82% post-intervention, and screening rates for vaccination need increased from 0% to 100%. A chi-squared test for independence indicated a significant relationship between vaccination status and implantation of the SOP intervention ($p = 0.046$, d$f = 1$, n = 100).
Conclusions: This QI initiative showed that a systematic process change is feasible and can improve pneumococcal vaccination rates in a single institution. The findings may not be applicable to centers without an electronic medical record software to document immunizations or dedicated QI team. Ongoing work should focus on the perceived self-efficacy of LTC nursing staff to effectively implement a behavior change, and skills to provide strong recommendations for immunizations.

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

Aline Ulloa

Problem and Purpose: The Centers for Disease Control and Prevention reports 1.7 million cases of sepsis each year causing 270,000 deaths. For every one-hour treatment is delayed mortality risk increases by 8%. In a Mid-Atlantic hospital intensive care unit (ICU), patients were not routinely screened for sepsis by nurses and there was no standard evidence-based screening assessment tool available. Based on the Surviving Sepsis Campaign, it is recommended to use sepsis screening tools routinely to facilitate earlier sepsis identification and initiation of time sensitive care to reduce mortality. The purpose of this Doctorate in Nursing Practice project is to implement an evidenced based sepsis screening tool.

Methods: A paper-based sepsis screening assessment tool was implemented with steps including education on Sepsis-3 criteria and use of the screening tool. Staff used the assessment tool to screen all patients daily in the ICU. The unit sepsis champion collected and compiled aggregate audit data. All data was de-identified. Data collected both electronically and paper were analyzed using descriptive statistics and frequencies for tool compliance and pre and posttest survey to assess sepsis knowledge pre and post education.

Results*:* Over an 11-week time period, 217 screens were completed on 434 eligible patients. The chi square test of independence demonstrated an increase in proportion screened (0.61 or 61%, n = 344) after the intervention was implemented compared with the proportion screened (0.079 or 7.9%, n = 89) before the intervention was implemented. The findings were significant ($X2(1, N=433) = 79.99$, $p < 0.001$. A knowledge survey was administered to staff. An independent samples t-test was conducted to compare mean pretest scores and posttest scores. The mean posttest score was 71.53, compared with a mean pretest score of 44.75, which represented a mean improvement of 26.78 ($p < 0.001$).

Conclusions: Implementation of a standardized bedside sepsis screening tool demonstrated an increase in the number of patients screened for sepsis which may improve early sepsis recognition. In addition, the Joint Commission accredited hospital recently changed its data reporting structure and now is required to report sepsis performance measures and adherence to guidelines including sepsis screening.