

DNP PROJECT ABSTRACTS

ROOM 12

Disease-Specific Patient-Reported Outcome Tool in Head and Neck Cancer Patients

Kathryn M. Campion

Problem and Purpose: Head and neck cancers (HNC) have a five-year survival rate of 62%. The effects of treatment and the disease can be debilitating. Symptoms are subjective and frequently go undetected during clinic visits. Patient reported outcome tools (PROs) provide a quantitative measurement of symptoms and improve symptom management, communication, and patient satisfaction. The Functional Assessment of Cancer Therapy: Head and Neck Symptom Index (FACT: HNSI) is a validated and reliable PRO which can improve symptom reporting and management for HNC patients. The purpose of this project was to implement this tool among HNC patients receiving treatment.

Methods: Structure changes included imbedding the PRO in the patient portal. Process changes included patients completing weekly PROs, treatment team reviewing responses during visits and integrating results in progress notes. A retrospective chart audit evaluated staff's consistency of capturing symptoms listed in the FACT: HNSI prior to implementation. Descriptive data was used to evaluate compliance and effectiveness of implementation. Pre- and post-implementation surveys were administered to staff to evaluate perceptions of the PRO. Patient compliance was defined as percentage of patients who successfully completed the PRO compared to the number who agreed to participate each week. Staff compliance was defined as the percentage of staff who used the smartphrase in patient progress notes compared to the number of patients who completed a PRO each week.

Results: The integration of the PRO into the patient portal was essential to the success of the project. Overall patient compliance was 68.2% while staff compliance was 78.8%. Staff opinions of the project improved by 0.38-1.37 points on a five-point scale between the pre- and post-implementation surveys. The chart audit revealed 46% of the symptoms listed in the FACT: HNSI were routinely captured before implementation.

Conclusion: The culture of the organization supported adaptation of PROs in outpatient oncology. Staff education and development of an HNC note template will take place for future sustainability. The FACT: HNSI is a useful tool for the HNC population. Other facilities treating outpatient HNC patients should incorporate PROs to improve the detection and management of symptoms, and patient and staff communication.

An Alpha-1 Antitrypsin Deficiency Screening Tool to Identify Patients at Risk

Heather N. Fitzpatrick

Problem & Purpose: Early identification of Alpha-1 Antitrypsin Deficiency (AATD) could prevent widespread pathological destruction of the lung parenchyma, possibly delaying time to death. On average AATD patients experience a diagnostic delay of six years and have to consult three physicians until diagnosis is established. With the implementation of established guidelines, unidentified individuals at risk for AATD may be identified and treated earlier to prevent premature death. The purpose of this quality improvement project is to implement a clinical practice guideline-based screening tool to identify at-risk patients for AATD at a rural primary care practice where the patient population is at risk.

Methods: An evidence –based screening tool was administered for every patient with an appointment at the primary care practice. Patients who met inclusion criteria based upon personal or family medical history were screened for AATD using an evidenced-based tool during routine provider visits. Patient’s found to be at-risk with a were offered testing for AATD in the practice.

Results: A total of 235 patients were screened over 12 weeks with an overall screening rate of 96.8% after implementation of the screening tool. 11% of patients screened were found to be at-risk for AATD, 35% were male and 65% were female. There was no difference between gender and being at-risk, $p < .0005$.

Conclusion: Improvements of identifying patients at risk for AATD were accomplished by implementing staff education as well as paper evidenced-based screening tools during each appointment resulting in with 11% positive results.

Screening for Adverse Childhood Experiences in Pediatric Primary Care

Sarah Gross

Problem & Purpose: Pediatric mental illness is a growing epidemic in the United States, yet the average time from onset of symptoms to treatment is eight to ten years. Screening children for Adverse Childhood Experiences (ACEs) is associated with early identification of mental illness risk and improved outcomes. The purpose of this quality improvement project was to implement an ACEs Screening Program for patients in a pediatric primary care practice and evaluate the program's effectiveness in early risk-identification and referral to mental health services.

Methods: Patients ages 8-18 years were screened for ACEs using the *Center for Youth Wellness Adverse Childhood Experiences Questionnaires (CYW ACE-Q)* during routine pediatric well visits and consults. Patients and/or caregivers self-completed the pen/paper *CYW ACE-Q* screening tools and pediatricians then analyzed and discussed the results with the patients and/or caregivers. Patients with positive screens were referred to mental health services if not already under care, and appointments were confirmed by the office practice nurses. Statistical Process Control procedures were utilized to demonstrate change over time with screening and referral.

Results: Over 70% of all eligible patients and caregivers during the 13-week implementation period were screened for ACEs (n=232). Of those, 14% (n=32) screened positive, and four were referred for mental health services. Phone-call follow-up to referred patients found one patient obtained an appointment with a mental health professional. Eighty-eight percent of stakeholders strongly agreed that the screening program was feasible for well visits and consults.

Conclusions: An ACEs Screening Program using the *CYW ACE-Q* tools is an effective and feasible strategy for primary care practices to identify children at higher risk for mental illness and facilitate earlier referral to mental health services. This increase in early identification and referral of higher-risk children can play a key role in decreasing the burden of pediatric mental illness and its associated complications in the United States.

Substance Screening, Brief Intervention, and Referral to Treatment in Rural Primary Care

Kabrina L. Johnson

Problem & Purpose: Providers in a small, rural primary care practice in rural Maryland reported higher rates of alcohol or drug use disorders over the past several years, consistent with county-level data. The lack of screening tools and referral resources was identified as a need. Substance Screening, Brief Intervention, and Referral to Treatment (SBIRT) is a comprehensive early intervention approach that includes universal substance screening (S), and depending on problem severity, providing either brief interventions (BI) or referrals to treatment (RT).

Methods: Medical assistants (MA) conducted a pre-screen using the first 3 items of the Alcohol Use Disorders Identification Test (AUDIT) and the National Institute on Drug Abuse (NIDA) single item drug screen. For those with positive pre-screens, medical providers completed full screens, using the remaining 7 items of the AUDIT, and the Readiness Ruler to assess for use of other substances and readiness to change.

Results: Of 290 eligible patients seen over 10 weeks, 68.6% received a pre-screen. Reasons for missed pre-screens were “too busy” (27.4%); high patient census that day (29.6%) or no MA on duty (42.8%). N=38 patients (19.1%) had a positive pre-screen; all scoring >8 on the full AUDIT received a BI for alcohol misuse (n=6, 15.7%) or an RT for probable alcohol dependence (n=1, 2.6%). All with a positive drug screen (n=4, 2.0 %) received a BI. Low rates of screening may be due to short duration of implementation; low patient census; staffing issues, and possibly, patient under-reporting of substance use.

Conclusions: Organizational leadership and physician involvement is necessary for SBIRT implementation. Primary care practices adapting SBIRT into their workflow should implement universal screening with validated, standardized substance use screening tools. SBIRT implementation should be conducted as a team approach. To help alleviate potential time constraints, medical assistants can be utilized to conduct SBIRT screening. SBIRT implementation can help primary care staff increase their knowledge of alcohol and drug use in their patient population and help to reduce the associated stigma.

ZapVAP Decreases Ventilator-Associated Pneumonia with an Interdisciplinary Bundle

Lauren Manrai

Problem & Purpose: Ventilator-associated pneumonia (VAP) is a preventable, hospital-acquired infection that increases morbidity and mortality. VAP bundles incorporate evidence-based, clinical interventions that are low-cost and improve outcomes. The National Healthcare Safety Network set the benchmark at 1.8 VAP episodes per 1000 ventilator days. This quality-improvement project implemented a VAP bundle, referred to as *ZapVAP*, which standardized best-practices for bedside care. This nursing and respiratory innovation aimed to reduce the VAP rate of 6 per 1000 ventilator days.

Methods: *ZapVAP* was implemented in a 19-bed Pediatric Intensive Care Unit (PICU) at a large, tertiary hospital in the Mid-Atlantic region. It included (a) developmentally-appropriate oral care, (b) clean suction techniques, (c) equipment management, (d) positioning with head of bed elevation, and (e) hand hygiene. During the introduction phase stakeholder support, environmental structures, and resources were established. The preparation phase disseminated education that enhanced competency of *ZapVAP* processes. Bundle supplies and care-reminder-signs were produced. Practice-change was monitored throughout the implementation phase with audits performed by *ZapVAP* champions and teaching in response to performance gaps. Any missed bundle component was scored as non-adherent with *ZapVAP*.

Results: Performance exceeded the target goal of 80% eleven weeks in a row and ranged from 30% to 97%. Final adherence to all bundle components exceeded 95%. A zero VAP rate was calculated by comparing the number of ICD-10 VAP diagnosis codes to ventilator days. Sputum cultures tracked before and after *ZapVAP* revealed a 30% decrease in positive sputum cultures, with a 58% reduction in sputum rate and a 50% reduction in ventilator days.

Conclusion: High levels of *ZapVAP* adherence resulted in a zero VAP rate. Effective oral care and equipment rotation were key, so nurses and respiratory were paramount to VAP prevention.

Intraoperative Anesthesia Care of Patients with Cardiovascular Implantable Electronic Devices

Chioma U. Nwankwo

Problem and Purpose: Cardiovascular Implantable Electronic Devices (CIED), commonly referred to as pacemakers or implantable cardioverter defibrillators (ICD), are lifesaving devices placed subcutaneously in patients with recurrent life-threatening bradyarrhythmias and tachyarrhythmias. In the United States, more than 3 million patients have pacemakers and more than 300,000 patients have ICDs. Electromagnetic interference during the intraoperative period is the most significant problem encountered with these patients during surgeries. Therefore, anesthesia providers need to understand how to manage these devices perioperatively. The purpose of this scholarly project is to develop a clinical practice guideline (CPG) for consistent intraoperative anesthesia care of the patients with CIEDs at a hospital in Baltimore, Maryland.

Methods: Institutional Review Board approvals at the school and the hospital facility were obtained prior to DNP project implementation. An expert panel was assembled: two CRNAs, an Anesthesiologist and a Cardiac Electrophysiologist. The Appraisal of Guidelines for Research & Evaluation II (AGREE II) tool was completed by the expert panel. Revisions were made to the CPG based on feedback from the AGREE II tool. A PowerPoint presentation was delivered to the anesthesia staff during ground rounds. Following the presentation, the anesthesia staff completed the Practitioner Feedback Questionnaire (PFQ), an anonymous survey that assessed for clarity of the presentation and ease of CPG adaptability to clinical practice.

Results: Domain scores from the AGREE II tool results ranged from the lowest score of 70.8% to the highest score of 97.9%. Of the PFQ distributed, 80% were returned and analyzed. Results indicated that 94% of the providers recommended adoption of the CPG, and 90% indicated they would adapt the CPG recommendations to their practice. Qualitative data on the anesthesia providers' years of experience and provider type were collected from the PFQ responses, and results indicated that 50% of the providers had less than five years of experience and 47% were CRNAs. A finalized CPG was approved by the chief anesthesiologist, and the CPG became an official policy at this anesthesia department.

Conclusion: The cumulative results revealed anesthesia providers' future intention to use the CPG policy during their care of patients with CIEDs. Adoption of this CPG in daily clinical practice will mean a reduction in electromagnetic interference, and the use of evidence-based care by anesthesia providers during the intraoperative care for this patient population.

Implementation of Cognitive Stimulation Therapy in Long Term Care

Claire Regan

Problem & Purpose: Individuals with dementia that exhibit adverse behaviors are often treated with psychotropic medications despite harmful side effects and recommendations to use non-pharmacological interventions. Cognitive Stimulation Therapy (CST) has consistently been shown to improve cognitive functioning and quality of life (QOL) in individuals with mild to moderate dementia and reduce the number of adverse behaviors. The aim of this quality improvement project was to implement a CST program in a long term facility for residents with dementia to reduce the use of psychotropic medications, decrease the number of adverse behaviors and improve cognition and quality of life.

Methods: This quality improvement project was implemented in a 200 bed long term care facility in Baltimore City. Nine residents with mild to moderate dementia were selected to participate in a seven week CST program. A DNP student performed the CST sessions twice a week for 45 minutes to one hour. Content was based on activities outlined in the CST program manual, with a different theme for each session that incorporated cognitive stimulation, reality orientation, reminiscence therapy, and validation therapy. Outcome measures included the St. Louis University Mental Status (SLUMS) Exam and the Quality of Life in Alzheimer's Disease (QOL-AD) Scale. Assessments for these measures were completed pre-implementation and post-implementation. Psychotropic medication use and the frequency of adverse behaviors were monitored through chart audits performed bi-weekly and compared to pre-implementation values.

Results: One resident was excluded after two sessions due to death. Eight residents completed the full CST program of seven weeks. Variance in the number of sessions attended was noted, with all participants attending at least half of the sessions and one resident attending all fourteen. There was an overall average increase in SLUMS scores of 19% with a mean pre-implementation score of 16.75 (N=8) and mean post implementation score of 20 (N=8). QOL scores improved an overall average of 12% for six participants (pre-implementation mean = 33.5, N=6 and post-implementation mean = 36.6, N=6), and decreased by 20% for two participants (pre-implementation mean = 32.5, N=2 and post-implementation mean = 26, N=2). One of those residents had a reduction in QOL of 28% (pre-implementation score = 39 and post-implementation score = 28, N=1). Deficiencies existed which prohibited the ability to accurately evaluate behavioral charting completed by the staff. There was no change in the use of psychotropic medications for residents enrolled in CST. An important secondary outcome was the observation of increased sustained socialization of residents when not participating in CST.

Conclusion: CST improves cognitive functioning and may be correlated with the improving QOL of some residents. No changes in the use of psychotropic medications were observed for the CST group. Recommendations for this PI project would be to improve behavioral charting practices prior to CST implementation so the effect on behavior can be evaluated. Additional research is needed to further investigate the effect CST has on increasing or sustaining socialization for long term care residents. This was an interesting finding of the PI project.

A Clinical Practice Guideline for Postoperative Cognitive Impairment: Anesthetic Interventions

Natalie L. Taylor

Problem & Purpose: Postoperative delirium and postoperative cognitive dysfunction, collectively referred to as postoperative cognitive impairment (PCI), are two neurocognitive risks that accompany anesthesia. The incidence of developing PCI can be as high as 50% and is heightened after the age of 65. Currently, the anesthesia department at a mid-sized community hospital in Baltimore City does not have a structured process for the perioperative management of these patients. A Clinical Practice Guideline (CPG) was written recommending a strategy to preoperatively assess and identify high-risk surgical patients, and includes evidence-based anesthetic interventions recommended for this population. The purpose of this scholarly project was to identify the anesthetic interventions included within this CPG: a guide which outlines the perioperative anesthetic management of patients ≥ 65 in order to decrease the incidence of PCI.

Methods: CPG content was derived from a literature search identifying evidence published within the past 10 years and included five systematic reviews, two randomized control trials, and the current recommendations of the American Geriatrics Society and American College of Surgeons. The CPG was designed, analyzed by key stakeholders, and revised according to criteria found within the AGREE II tool. The CPG was presented to anesthesia staff and analyzed for applicability and acceptance using the Practitioner Feedback Questionnaire (PFQ).

Results: AGREE II results by key stakeholders provided $>88\%$ positive feedback showing CPG quality in scope, content, and development. PFQ results demonstrated an overall average positive feedback and agreement of 70% (SD=19.1) among anesthesia providers (n=13). Feedback regarding the overall *Quality* of the CPG was both positive (88%) and neutral (12%).

Applicability of Recommendations received the least encouraging feedback: 35% positive, 38% neutral, and 27% negative.

Conclusion: Analysis demonstrates that the CPG's content was regarded by anesthesia staff as high quality and that the majority of providers believe the CPG to be an improvement compared to what is currently practiced. While the majority of the polled anesthesia providers felt favorably towards the interventions, there remains reluctance towards its applicability into practice. Even so, 70% of anesthesia staff answered positively when asked if the CPG should become a guideline. Further staff education is recommended to enhance user buy-in.

Improving Allergen Immunotherapy Assessment and Follow-up Utilizing a Screening Tool

Ashley A. Witt

Problem & Purpose: Allergen immunotherapy (AIT) is an effective treatment for environmental allergies and/or allergic asthma involving the administration of subcutaneous injections at regular intervals. Treatment guidelines recommend the routine use of questionnaires and annual follow-up visits to monitor patients' symptoms, AIT tolerance and efficacy, and guide overall treatment plans. Poor follow-up rates and a lack of routine assessment with screening tools were identified at a suburban Maryland allergy and asthma specialty care clinic.

Methods: A pre-screening tool was administered every 4 to 6 weeks prior to AIT injections. The screening included health questions and validated assessments of allergy and/or asthma symptom severity and disease control. Individualized patient follow-up plans were determined based on screening results and evidenced based improvements were also made to patient educational materials, and AIT administration records.

Results: Over 14-weeks, 85 adult patients completed a total of 204 screenings. The overall screening completion rate was 86.1%, with 41.2% of screenings identified as positive, and timely appointments scheduled for 66.7% of positive screenings. Overall compliance with AIT follow-up within 12 months improved significantly, from a baseline of 62.35% (n=53), to 98.82% (n=84) over the course of the project ($p>0.001$).

Conclusions: Significant improvements in AIT patient assessment and provider follow-ups were noted during the course of this quality improvement DNP project. These improvements demonstrate that the quality improvement interventions were successful and over time may improve the overall disease management and health outcomes of AIT patients.