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Utilizing Multimodal Education to Impact Provider Documentation of

Post-Anesthesia Evaluation in a Rural Hospital

A DNP Project Submitted to the

Graduate Faculty

of Jacksonville State University

in Partial Fulfillment of the

Requirements for the Degree of

Doctor of Nursing Practice

By

Mary Jennifer Coffman

Jacksonville, Alabama

August 5, 2022

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Jennifer Coffman   August 5, 2022

Abstract

Background: Hospital policy, Centers for Medicare and Medicaid Services (CMS), and The Joint Commission (TJC) require a post-anesthesia evaluation to be completed and documented no later than forty-eight hours following surgery or any other procedure requiring anesthesia. This evaluation is required any time general, regional, or monitored anesthesia has been administered to the patient and must be completed by a certified anesthesia provider. One rural hospital facility's post-anesthesia documentation compliance has declined to 79%, compared to the previous quarter's report of 95%.

Purpose: The Doctor of Nursing Practice (DNP) project aimed to improve post-anesthesia documentation through a multimodal educational intervention.

Methods: This quality improvement DNP project included a comprehensive multimodal education course presented to the nurse anesthetist using a PowerPoint video, poster presentation, and handout.

Results: Twenty-five Certified Registered Nurses participated in the project. All twenty-five participants completed the post-test with a 100% pass rate. The findings of the post-implementation chart audit demonstrated improvement in post-anesthesia documentation with a 17% increase in the compliance score from 79% to 96%.

Conclusion: The DNP project improved post-anesthesia documentation through multimodal education interventions and will be continued in the facility as part of annual training.

Keywords: post-anesthesia, post-anesthesia evaluation, multimodal education, post-anesthesia documentation, documentation compliance, CRNA, DNP project.

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Utilizing Multimodal Education to Impact Provider Documentation of Post-Anesthesia Evaluation in a Rural Hospital

More than 50,000 patients undergo general anesthesia every day in the United States (U.S.). Starting in the middle of the 19th century, surgical procedures were performed with anesthesia using sulfuric ether and chloroform. Today's practices have been replaced by safer agents such as Sevoflurane and Isoflurane (Liley, 2017). The practice of general anesthesia has now evolved to the point that it is among the safest of all major routine medical procedures. Assessing a patient's response to anesthesia provides important feedback to improve the quality of care and patient outcomes. Certified Registered Nurse Anesthetists (CRNA) complete a post-anesthesia evaluation noting any anesthesia-related complications.

CRNAs are advanced practice nurses who administer anesthesia for surgery and other medical procedures. They are directly involved in the preoperative, intraoperative, and recovery phases of anesthesia care. Post-anesthesia complications are often encountered, and the duration of surgery is frequently cited as a major risk factor for postoperative complications (Lone et al., 2021). A Certified Registered Nurse Anesthetist (CRNA) completes a bedside assessment and documents the findings to assess the presence and possibility of a post-anesthesia complication. The anesthetist finalizes anesthesia care if the evaluation does not identify any complications. A treatment regimen is initiated if a complication occurs, with a follow-up consultation completed in an appropriate time frame.

Completing the post-anesthesia evaluation document is hospital policy. The hospital's *Anesthesia Quality of Care and Patient Care Policy* follows the Centers for Medicare and Medicaid Services (CMS) standards and The Joint Commission (TJC) guidelines, identifying post-anesthesia evaluation and documentation requirements. Post-anesthesia evaluations allow

the anesthesia provider to recognize a trend in patient response to anesthesia, the need for practice improvement, or to confirm a regimen produced a positive response.

The recent nursing shortage has created a staffing deficiency and increased the clinical workload for the current CRNAs. New employees are hired to develop adequate staff, including recent graduates and locums, but orientation is minimal. There has been a decline in post-anesthesia evaluation documentation compliance with the change in staffing. It is suspected the decrease in compliance is in response to recent new hires, locum coverage, and increased workload. Kiekkas et al. (2019) stated that nursing shortage is common in the post-anesthesia care unit and can be related to compromised prevention, detection, and treatment of adverse events.

All CRNAs need to be educated on the importance of completing the post-anesthesia evaluation and proper documentation following the hospital policy, CMS standards, and TJC guidelines. With an increased workload and different learning styles, education needs to be easily accessible and available in multiple forms. This DNP project examines the impact of a multimodal education course on post-anesthesia evaluation documentation compliance scores.

Background

The American Society of Anesthesiologists estimates nearly 40 million anesthetics are administered each year in the U.S. Anesthesia care starts before surgery, defined as pre-operative, then continues through to the intraoperative phase, recovery phase, and finalized with a post-anesthesia evaluation. The post-anesthesia evaluation is conducted within forty-eight hours after arriving in the post-anesthesia recovery room. This evaluation assesses patient vital signs, ensuring they have returned to baseline and identifying any anesthesia complications.

Garfield et al. (2016) determined almost 70% of significant complications detected by a postoperative visit were either missed or not apparent in the post-anesthesia care unit (PACU), illustrating the importance of post-anesthesia evaluation. Some of the most reported complications included nausea and vomiting (Keikhaie et al., 2020), sore throat (Shrestha et.al., 2017), peripheral nerve damage (Chui et al., 2018), corneal abrasion (Mueller, 2014), awareness under anesthesia (Bowdle, 2009), post-dural puncture headache (Chekol et al., 2021), acute kidney injury (Shen et al., 2021), postoperative pain (Lou & Min, 2017), and delirium (Iamaroon et al., 2020). A post-anesthesia evaluation allows the practitioner to identify complications and start treatment or finalize anesthesia care. Rose et al. (2015) reported approximately 321 million surgical procedures are performed in the world annually, and this number is expected to rise related to advancements in technology and improvement in healthcare. The ultimate goal of surgical treatment is approaching better recovery for a high quality of life without complications and sequelae (Lou & Min, 2017). Post-anesthesia evaluation and documentation are widely recognized as important aspects of anesthesia care for data reporting, process and outcome measures, and patient satisfaction.

Striving to improve patient outcomes, documentation must be complete for thorough data extraction at the local, state, and national levels. Data analytics serve as an essential tool when trying to close gaps in healthcare, and by studying this data, providers can determine what steps need to be taken to improve patient outcomes (McNemar, 2021). The National Anesthesia Clinical Outcomes Registry collects and analyzes anesthesia case demographics and outcome data to improve safety and quality across the specialty.

Nurse anesthetists' complete post-anesthesia evaluations following hospital policy that correlates with the standards set forth by CMS and TJC. In the PACU, hospital policy requires

anesthesia providers to complete a post-anesthesia note at the end of phase I recovery based upon the evaluation of post-anesthesia indicators. The results are then documented in the primary section of the Post-Anesthesia Evaluation note identified as 1585-176HMS, denoting indicators set forth by CMS Conditions of Participation 482.52(b)(3) revised date 12-02-2011. As a final step, CRNAs conduct an inpatient secondary post-anesthesia evaluation documenting the results in the secondary section of the Post-Anesthesia Evaluation note form 1585-176HMS.

The anesthesia and quality assurance departments (QA) follow the CMS Quality Assessment Performance Improvement (QAPI) program focusing on indicators related to improving health outcomes, prevention, and reducing medical errors. The quality indicator chosen for the anesthesia department is the post-anesthesia evaluation documentation. The QA department conducts a post-anesthesia evaluation documentation audit every ninety days as a part of the QAPI requirement. The third quarter audit identified a drop in compliance scores, and the QA department reported a need to improve.

Needs Assessment

A needs assessment was completed via a review of the literature, best practices, and quality improvement data. The gap analysis proved a gap existed in the facility post-anesthesia evaluation documentation standard. Hospital policy, CMS, and TJC require a post-anesthesia evaluation to be completed and documented no later than 48 hours following surgery or any procedure requiring general, regional, or monitored anesthesia. Failing to comply with this CMS and Joint Commission standard could negatively impact the hospital's accreditation. The post-anesthesia evaluation documentation compliance in a rural hospital declined from 98% to 79%. Deficiencies included illegible signatures, documentation omissions, and omission of signature date and time of evaluation. This post-anesthesia evaluation documentation was completed on a

hospital-approved form and filled out by a qualified anesthesia provider. To be considered complete, the form must be filled out within 48 hours of surgery and legibly address all indicated requirements, including a legible signature and date.

Currently, the post-anesthesia evaluation documentation compliance is 79%. Per hospital policy, CMS standards, and TJC guidelines, 100% of patients receiving anesthesia must have post-anesthesia evaluation documentation. The post-anesthesia evaluation documentation is the QAPI performance improvement indicator and must be at 90% compliance every quarter per hospital policy to be considered acceptable. The performance gap between the third quarter compliance score of 79% and the required score of 90% identified a need for documentation improvement.

New employees are hired to improve staffing, including recent graduates and locums. There is limited time to complete a thorough orientation; therefore, many new employees complete on-the-job training. Preceptors work a rotating schedule, but the new employees work Monday through Friday during orientation. Since the two schedules are not parallel, the new employee often has multiple preceptors: thus, creating information gaps due to inconsistent teaching methods. The facility does not have a formal education process for completing the post-anesthesia evaluation documentation. The current evidence-based research demonstrated multimodal education was effective in improving documentation. For example, George et al. (2020) conducted an interventional study using a multimodal education intervention for documentation in the pre-operative, intra-operative, and post-operative areas. Two groups were identified as group A and Group B. A retrospective review of 100 patient charts before a multimodal intervention (Group A) was compared to 100 patient charts reviewed following a multimodal intervention (Group B). Strategies utilized for multimodal education included

structured lecture sessions with PowerPoint presentations, displays or laminated cards/posters, and individual handouts. The results revealed the overall documentation score was higher in Group B than in Group A (p<0.001). In the post-operative phase, after the multimodal education intervention, 96% of Group A had documentation compliance scores of 0%, and Group B had documentation compliance scores of 50%.

Problem Statement

Anesthesia providers must complete a post-anesthesia evaluation and document the findings no later than 48 hours after an anesthetic has been given. In the third quarter audit, a rural hospital's QA department reported a decline in post-anesthesia documentation compliance. The audit identified deficiencies that included illegible signatures and information omissions, including signature, date, and time.

The PICOT question this project answered was: In a rural medical facility (P), what is the effect of a multimodal educational intervention on post-anesthesia evaluation documentation (I), compared to no intervention (C), on the post-anesthesia evaluation documentation compliance (O) thirty (30) days after completing a comprehensive education course (T)?

Aims and Objectives

The overarching aims of this project were to utilize a multimodal education course to educate nurse anesthesia providers about the post-anesthesia evaluation documentation standards defined by CMS and TJC and hospital policy and procedure. Another aim was to improve post-anesthesia documentation compliance scores from 79% to 90%. The objectives for the project include:

1. Create an educational course supported by evidence to improve the CRNA's knowledge and understanding of why and how to complete a post-anesthesia evaluation note.

2. Demonstrate the CRNA's have learned through the multimodal education course by completing a post-test with scores of 100%.

3. Apply the learned knowledge to practice by properly completing post-anesthesia evaluations and documentation.

4. Compare the post-anesthesia evaluation documentation compliance scores from before implementing the project to post-implementation compliance scores.

5. Determine if multimodal education impacts post-anesthesia evaluation documentation compliance scores.

Review of Literature

A literature review was completed through CINAHL, PubMed, Google Scholar, Cochrane, and Medline. The following key terms and phrases were used in each database search: improving documentation, multimodal education, post-anesthesia documentation, and post-anesthesia evaluation. While the exact match for current research related to utilizing multimodal education to improve documentation was zero, there were 80 results that correlated with utilizing multimodal education or interventions to improve an outcome. A google scholar search utilizing the key phrase DNP projects related to interventions that increase anesthesia documentation compliance retrieved 2,880 results, DNP projects related to education to improve anesthesia documentation pulled up 3,850 results, and DNP projects related to multimodal education to improve anesthesia documentation compliance with 494 results. All results were filtered by relevance and date, and results that failed to answer or support the PICOT question were

excluded. After the final review of the search results, nine articles were appropriate and specific to the project.

George et al. (2020) conducted an interventional study to assess the efficacy of multimodal intervention strategies in improving perioperative anesthetic documentation over five months in a rural tertiary care hospital. The authors conducted a random controlled trial and identified with level three evidence an improvement in documentation through multimodal interventions. The multimodal interventions included standard lectures, PowerPoint presentations, laminated cards, posters, and handouts on proper documentation. A retrospective chart review of 100 patients that received general anesthesia pre-intervention (Group A) was conducted and compared to a retrospective chart review of 100 patients that received general anesthesia post-intervention (Group B). Perioperative anesthesia documentation was scored based on the degree of documentation that was evaluated by a point-based scoring system. This point system followed the recording of an episode recommendation by the Australian and New Zealand College of Anesthetics (ANZA). Data were analyzed using Microsoft Excel and statistically tested using the Mann-Whitney U test. The perioperative ($p<0.001$), intraoperative ($p<0.001$), and postoperative ($p<0.001$) scores were significantly higher for Group B than for Group A. The author concluded multimodal intervention strategies had been found to produce satisfactory results in clinical practice (George et al., 2020).

Lohman (2021) facilitated a DNP project evaluating the efficacy of an online multimedia educational module designed to educate anesthesia professionals about best practices in neuromuscular blocking agents (NMBAs) reversal. The PICO question guiding the overall DNP project was: In anesthesia providers, does a multimedia simulation-based educational intervention increase knowledge about current best practices for patient safety, monitoring, and

administering medications in accordance with evidence-based practice (EBP) guidance? The author created a simulation-based education model distributed through an online on-demand format via the Wix® website, which provided a virtual platform for education. Data from a ten-question pre-test and post-test survey on SurveyMonkey© was compiled and analyzed. The proportion of correct answers on the pre-test to post-test increased by 26% (63% to 89%), incorrect answers decreased by 27% (38 to 11%), and 100% reported a willingness to make a practice change. Based on the data results, participation in the educational module increased knowledge and willingness to implement anesthesia patient safety concepts into future anesthesia practice. The author determined the educational module was effective for both increasing provider knowledge and creating a practice change (Lohman, 2021).

Krabbendam (2020) created, implemented, and evaluated a DNP project to pilot an education program designed to equip bedside nurses with the knowledge, psychomotor skills, and resource tools necessary to prevent, identify, and report peripherally inserted venous catheter (PIVC) complications. The project aimed to achieve 90% overall documentation compliance and increase nurse awareness of PIVC complications. A multimodal nursing education campaign was piloted over eleven weeks on one medical-surgical unit. Interventions included classroom didactic, clinical in-services, and quick reference materials, including a poster, badge insert, documentation guide, and performance audit with feedback. Overall, PIVC documentation compliance improved from 43.8% to 86.4%, just short of the 90% goal. Improvement in nurse awareness of PIVC complications was correlated with an increase from 20% to 94.1% in documenting the indication for PIVC removal— a critical documentation component for identifying complications (Krabbendam, 2020).

Lorenzetti et al. (2018) conducted a systematic review to assess the effectiveness of approaches to improve Emergency Department (ED) physician documentation. The review was conducted in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) guidelines. The quality of the studies according to the Downs and Black scale ranged from low <15 (n =3), to moderate 15-19 (n =11), to high > 19 (n =5). The authors identified nineteen studies reporting on the effectiveness of interventions to improve physician documentation in the ED, including one RCT, six quasi-experimental, and twelve pre-experimental. Four studies assessed the impact of multi-interventions on the quality of physician documentation. The review identified seven promising approaches to improve physician documentation in ED settings, including audit/feedback *(n =2)*, dictation *(n =2)*, education *(n=1)*, facilitation *(n =1)*, reminders *(n=2)*, structured paper templates *(n=7)*, and multi-pronged educational interventions (*n*=4) that incorporated two or more learning approaches. The authors suggested further research was needed to confirm the findings and explore other approaches, including machine learning and emerging technologies, to advance ongoing improvements in physician documentation in the ED setting. The authors also suggested future research focus on the impact of implementing these interventions in the ED with and without an EMR to promote improvements in the quality of ED documentation (Lorenzetti et al., 2018).

Leite et al. (2019) completed a process improvement DNP project by creating learning modules and guidelines that, when introduced together, improved perioperative efficiency. This project took place in a 282-bed rural community hospital in the southeastern U.S. Three online educational modules and a standardized preoperative anesthesia interview guideline were developed. The authors conducted a retrospective chart review of 105 preoperative anesthesia interview records (PAIRs), fifty-two randomly selected for the pre-implementation group, and

fifty-three were randomly selected for the post-implementation group. Data was compiled and compared using the number of registered nurses who completed the education modules to improve the assessment components in the preoperative anesthesia interview records PAIRs and the number of preventable surgical cancellations. Using G*Power software, a sample size of fifty-four was calculated to achieve statistical significance. Educational module completion rates were evaluated using descriptive statistics, and Fisher's exact tests were used to compare pre- and post-implementation PAIRs and appropriate preoperative tests. Analysis of the data was performed by using the International Business Machines (IBM) Statistical Package for the Social Sciences (SPSS) Software with α p-value set at < 0.05. The education module completion rate was 95% within thirty days of availability. Post-implementation results exhibited a statistically significant increase in the assessment and documentation of alcohol and drug use assessments ($p=0.028$) and documentation of cardiac clearance ($p=0.04$). The overall project results showed an improvement in the completion of PAIRs, a decrease in unnecessary laboratory testing, and a reduction in preventable surgical cancellations from 34.3% to 20% ($p < 0.05$). Standardized pre-operative anesthesia interview guidelines and online educational modules for RNs conducting pre-operative anesthesia interviews improved the pre-operative record completion rate. While this research did not identify as multimodal education, it suggested utilizing more than one modality improved perioperative record completion rates (Leite et al., 2019).

Weinger et al. (2015) completed a research study introducing a multimodal intervention in an adult post-anesthesia care unit (PACU) at Vanderbilt University Hospital and pediatric PACU at Monroe Carell Jr. Children's Hospital at Vanderbilt to improve post-operative handovers between anesthesia providers and PACU nurses. The intervention included a standardized electronic handover report form, a didactic webinar, mandatory simulation training

focusing on improved interprofessional communication and post-training performance. Four nurses were trained to observe and score the PACU handovers to assess the results, including videotaped handovers and sixteen hours of witnessed handovers. A total of 981 handovers were observed in the PACUs from 344 different providers. The acceptable proportion of handovers increased from a baseline of 7% to 70% post-training in the adult PACU and from a baseline of 22% to 72% post-training in the pediatric PACU. The authors concluded that a multimodal intervention substantially improved interprofessional PACU handovers with sustainability for greater than three years (Weinger et al., 2015).

Rees et al. (2013) implemented and evaluated a quality improvement initiative to determine whether a multimodal intervention program could increase and sustain hand hygiene compliance rates within an organization. The quality improvement initiative was conducted in a 566-bed academic medical center in the Midwest. Over one week, 116 multi-disciplinary leaders directly observed 9,648 hand hygiene performances revealing a 63.1% compliance rate. In efforts to improve compliance, a computer-based training program was developed and required for all direct patient care staff members, followed by a post-test to assure learning. The initiative utilized a computer-based training program, post-test, scorecard reporting feedback, reminders, and posters. An internal slogan was branded for awareness and reminders. The initial results were positive and continued to trend upward. From January 2012 to December 2012, a 57.4% increase in hand hygiene compliance was observed. Rees et al. (2013) concluded that a large-scale multifaceted approach was useful for achieving better compliance with hand hygiene.

Choi et al. (2020) conducted a quasi-experimental pre-test and a post-test design study to determine the effect of a multimodal education program (MEP) on enhancing nurses' knowledge and confidence in performing delirium assessment (KCDA). A multimodal education program

(MEP) was conducted at a 12- bed surgical-trauma intermediate care unit at an east coast medical center. The MEP included an online didactic lecture with a video simulation and 1:1 bedside coaching with delirium screening (DS). The participants included twenty-three registered nurses (RN). The effectiveness of the MEP was evaluated by the nurse's knowledge and confidence in delirium recognition (DR) and their ability to use a delirium screening tool correctly. Descriptive and inferential statistics were computed using IBM SPSS statistics software version 24 with a level of significance at a p-value of 0.05 for testing of significance. The demographic characteristics of the participants, assessment scores, and the direct observation of the delirium screening were analyzed using descriptive statistics. A paired t-test was used in determining whether pre-MEP and post-MEP changes in the assessment of confidence and knowledge were significantly different from zero. Descriptive statistical direct observation data demonstrated (n=18) 78.3% of the RNs did not screen the patients correctly, although twelve of the twenty-three participants, or 52.2%, reported above-average confidence in performing the assessment. The author concluded the MEP demonstrated improvement in nurses' KCDA and suggested MEP be used in other disease processes (Choi et al., 2020).

Byorick (2020) directed a DNP project assessing the Efficacy of Multimedia Educational Module on Best Practices of Anesthesia Patient Safety for Intraoperative Lidocaine Infusions. Due to clinical limitations created by the COVID-19 pandemic, student nurse anesthetists (SRNAs) from Cedar Crest College created a simulation-based educational module incorporating the original DNP projects of multiple SRNAs. This project's module provided a recorded educational discussion on intraoperative lidocaine infusions' benefits, recommendations, and contraindications. The purpose was to increase anesthesia providers' knowledge of IV lidocaine and elicit a practice change. Pre-educational and post-educational

surveys were used to determine the anesthesia providers' knowledge and willingness to change clinical practice. A goal was established to have at least 50% of the participants who viewed the module report a willingness to make a practice change on the post-survey. Multimedia education was created in a virtual educational module containing simulation designed to foster the learning of multiple topics using an online format. The project involved twenty-four participants that completed a ten-question survey before the education module and a ten-question survey after the module was completed. McNemar's test was performed with SPSS version 17 on the pre-survey and post-survey data. The results indicated eight correct (33.33%) answers on the pre-survey, and 24 correct (100%) answers on the post-survey measuring knowledge acquisition. Analysis with McNemar's test claims statistical significance with $p < 0.001$. Additionally, participants in the study reported a 100% willingness to make a practice change based on information presented in the module for anesthesia providers (Byorick, 2020).

The review of the literature identified that utilizing multiple educational modalities improved knowledge. In each study reviewed, the participants engaged in multiple learning modalities, including standard lectures, PowerPoint, laminated cards, posters, handouts, in-services, bedside coaching, videos, webinars, and simulation training. The financial and intellectual resources needed to be increased in parallel with the higher level of technology. While classroom didactics, posters, and handouts are easily accessed, creating, and implementing a webinar simulation training program requires extensive time, personnel, and financial support. The literature review supported the claim that evidence-based multimodal educational intervention improves knowledge and is effective in improving outcomes.

Theoretical Model

Minimal time is allotted for anesthesia providers to gain a meaningful relationship with their patients before surgery. Many times, surgical patients experience anxiety and receive an anxiolytic medication that causes amnesia and retro amnesia, so they may not remember the pre-operative interaction at all. This creates a ghost provider even though the CRNA stayed at the head of the bed throughout the entire case, assuring hemodynamic stability and intra-operative safety. The post-anesthesia assessment allows the anesthesia provider to re-introduce themselves and assess anesthesia recovery. Swanson's Theory of Caring is based on the idea that the nurse demonstrating they care about patients is as important to patients' well-being as the clinical activities provided. Swanson's Theory considers and cares for the whole person and is the foundation for better healing and better care ("Kristen Swanson, PhD, FAAN," n.d.). The post-anesthesia evaluation puts a face with the invisible CRNA that cared for the patient. The effort made by the anesthesia provider to assess and ask how the patient is recovered is appreciated.

The Ottawa Model of Research Use (OMRU) offers a comprehensive, interdisciplinary framework of elements that affect the process of getting valid research findings applied in practice. The prescriptive aspect of the model is the assessment, monitoring, and evaluation (AME) process (Rycroft-Malone & Bucknall, 2010). The OMRU guided the implementation of the multimodal education process for improving post-anesthesia evaluation documentation. The OMRU lead project identified a need for improvement in post-anesthesia evaluation and documentation in the anesthesia department and the nurse anesthetists as the individuals that needed to make a change. A gap analysis needs assessment, and a review of the literature was conducted, identifying a gap in practice and current best evidence-based practice. Teaching

modalities were identified based on the barrier of the anesthetist's time constraints. Implementation of the multimodal education project followed the best practice identified through the review of the literature. An audit was conducted and reported to the participants for post-project implementation results.

The OMRU involves assessing the practice environment, potential adopters, and the evidence-based practice to be implemented. The nurse anesthesia department included a broad range of experience and age groups. While the more experienced CRNAs may have felt the course was an overreaching modality to learning due to the awareness of the documentation process, the project provided new information to new employees and confirmed and expanded the experienced CRNA's knowledge base. This may have created negative feedback from the seasoned employees toward completing the course, but they also understood the importance of completing documentation. With an open conversation, the staff expressed understanding and willingness to complete the education course, thus, decreasing barriers to implementation of the project.

The quick response (QR) code allowed individualized viewing and time needed for each learner. Once the CRNA completed the course, they completed a post-test. This post-test assessed the participant's knowledge following completion of the educational course. The PowerPoint video, poster, and handouts provided the CRNA with information regarding the education course audit process and offered an opportunity to obtain post-education audit results. The course will be available yearly to maintain current employees' knowledge and educate new employees.

Methodology

The goal of this project was to improve post-anesthesia assessment documentation compliance. The post-anesthesia evaluation documentation policy, procedure, and process were reviewed. A comprehensive educational class was created following the facility's post-operative assessment documentation policy and procedure, CMS, and Anesthesia Associates of Nurse Anesthetist (AANA) documentation standards. The class included why and how the post-anesthesia evaluation documentation must be completed. The educational course was distributed in paper, poster, and video form. The video was accessed by QR code, allowing easy access to view the education class. Posters and handouts were distributed in areas visible to anesthesia providers one week before opening class for availability.

Setting

The project was conducted in a rural hospital in Northeast Alabama that has approximately 2,000 employees and believes in the power of people to create great care. The facility is a 346-bed acute care hospital with inpatient and outpatient care accredited by TJC. The anesthesia department employs nineteen full-time CRNAs, two part-time, and four locums that provide care in surgical services, gastroenterology department, emergency department, intensive care unit, and the cardiopulmonary department. The presentation was in a central gathering area for the anesthetists located in the anesthesia workroom of the anesthesia department.

Population

The population of interest was CRNAs. The participant sample included 19 full-time CRNAs, two part-time CRNAs, and four locums for a total sample size of 25 CRNAs.

Inclusion/ Exclusion Criteria for CRNA

The CRNA inclusion criterion was as follows:

- All facility credentialed CRNAs were included in the project.

The exclusion criterion is described below:

- Student Registered Nurse Anesthetists were excluded from the multimodal education project because they were not credentialed at the facility and do not complete the post-anesthesia evaluation.

Recruitment

There was no formal recruitment. The informational posters and handouts with the QR code to access the video were readily available in the common anesthesia area for consent and participation in the course.

Consent to Participate

The hospital administration approved the project; however, it had no influence or participation in the project. The primary project investigator (PI) had no influence over administrative responsibilities in the anesthesia department. Each potential participant was provided with detailed information regarding the project's purpose. Participation consent was obtained by signing an agreement to participate before the multimodal educational project was implemented and placed in a locked box. The PI collected the signed consents in the box and witnessed the consent with a signature. The PI was the only person with access to the box, and it was kept in the PI's locked office in a locked cabinet. The consent was held in this location and shredded after the project. The consent letter and form can be accessed in Appendix A.

Design

The design was a DNP quality improvement project following the Knowledge-to-Action (KTA) framework. The Knowledge to Action (KTA) framework was developed in Canada by Graham and colleagues in the 2000s (Field et al., 2014). Based on the KTA framework, there were three phases to the project. The problem was identified as a decrease in post-anesthesia evaluation documentation compliance; a multimodal education course was created and completed by all CRNAs, and an outcome evaluation was completed through chart audits one-month post-intervention.

Research demonstrated a multimodal approach was beneficial and improved outcomes; therefore, this DNP project used a narrated PowerPoint presentation, poster, and handout. The multimodal educational course was available for one week. Thirty (30) days after completing the course, the QA department provided the PI with 100 randomly chosen charts. The PI audited the charts following the Post-Anesthesia Documentation Audit Tool. The results from the pre-intervention chart audit were compared to the post-intervention audit.

A multimodal educational class was created following the facility's post-operative assessment documentation hospital policy and procedure, CMS, and TJC documentation standards. The multimodal education course included a poster, a video accessed through a QR code, and written lecture material. The chief quality officer and the continuing education department validated the educational course and post-test.

The poster was designed to visually demonstrate proper post-anesthesia evaluation documentation. The poster included the eight-page hospital policy and procedure entitled, *Anesthesia Quality of Care and Patient Care Policy.* The post-anesthesia care policy was located on page seven, section one, labeled Post-Anesthesia Care. This information was highlighted to

emphasize its importance. The Post Anesthesia Evaluation Note form 1585-0176HMS was on the poster and filled out correctly for demonstration. The education department and the quality assurance chief approved all educational information.

The PI created a PowerPoint presentation with audio approved by the education department. This informative lecture was downloaded on a QR code for staff access. The QR code was opened by utilizing a smartphone. To access the QR code by smartphone, the participant opened the photo application of the phone and held the phone to take a picture of the QR code. This allowed the video-recorded PowerPoint presentation to open and play. The PowerPoint presentation paralleled the poster presentation information, and the QR code was posted on the poster and the handouts.

The handouts followed the same pattern as the poster and video typed out on a letter-sized sheet of paper. The information was categorized by main ideas, typed out in bullets, and descriptive information in subscripts. The main points included:

- the project importance,
- compliance scores,
- hospital policy,
- CMS regulation,
- TJC guidelines,
- Post-Anesthesia Evaluation (required elements), and
- proper documentation.

The PowerPoint presentation can be reviewed in Appendix B, the Post-Anesthesia Evaluation and Documentation Poster and Handout (including the post-anesthesia note) can be viewed in

Appendix C, and the QR code containing the educational materials can be accessed in Appendix D.

Each participant completed a post-test to assess their learning from the multimodal education course. The post-test was comprised of six questions. A closed box with a small opening to turn the post-test in to maintain privacy. The PI graded the post-test to assess the scores. The post-test can be reviewed in Appendix E.

The PI completed 100 chart audits and compared the three-month pre-intervention to 30-days post-intervention audit results. The chart audit was completed using the *Post-Anesthesia Documentation Audit Tool*. The results were compiled and compared to the pre-intervention results. The Post Anesthesia documentation audit tool can be viewed in Appendix F.

Chart Reviews

A pre-intervention chart review and a post-intervention chart review were completed. The pre-intervention chart review included a total of 100 charts over a three-month time period, at the end of the facility's third quarter. The post-intervention chart review included 100 charts thirty days after implementation.

Pre-Intervention Review

The QA department provided the PI with the 100 charts audited for the past three months. *The Post-Anesthesia Documentation Audit Tool* was created following the policy and procedure requirements and authenticated by the education department. The PI completed an audit utilizing *The Post-Anesthesia Audit tool* and identified areas that did not meet the documentation requirements. The audit results demonstrated a 3% non-compliance rate due to documentation omissions, and 19% due to illegible signatures, with an overall compliance rate of 79%.

Post-Intervention Review

Post-intervention, 100 charts were randomly chosen by the QA department. The QA department provided the PI with the medical record numbers, and the charts were accessed by EMR Cerner. Each chart was audited using *The Post-Anesthesia Documentation Audit Tool*, and data was transferred to excel for interpretation. The post-intervention results will be discussed in the results section.

Risks and Benefits

There were no identifiable risks to the patient or the staff.

Compensation

There was no compensation offered to the participants.

Project Timeline

Collaborative Institutional Training Initiative (CITI) training was completed, and a CITI training certificate was printed on September 23, 2021 (Appendix J). Communication and the clinical problem were identified on October 18, 2021, followed by the development of the PICOT question and literature review. October 20, 2021, the primary investigator met with the QA department and obtained verbal permission to complete the project. The project proposal was started on November 17, 2021, and project forms were created. The project proposal was submitted to the Project Proposal Evaluation Review Committee (PERC) committee and approved on November 19, 2021. The IRB application was submitted to Jacksonville State University's (JSU) Institutional Review Board (IRB) on December 6, 2021, with approval on December 7, 2021. The JSU IRB's application approval was confirmed by IRB Approval Letter (Appendix I). The initial Doctor of Nursing Practice (DNP) manuscript was submitted for review on February 6, 2022. The project was implemented on February 11, 2022, and thirty days after

implementation the project was ready for data collection and evaluation. Data were collected, reviewed, and statistical analysis completed. The final DNP manuscript was submitted on April 17, 2022. The DNP project was completed through the dissemination of the DNP manuscript, narrated PowerPoint presentation, and poster presentation. The DNP project culminated with participation in a virtual dissemination day on July 15, 2022. The detailed timeline table can be accessed in Appendix G.

Budget and Resources

A project budget was completed without donation expectations. The initial budget was $500; however, the project was completed below the projected budget through facility donations and assistance with printing. The final budget expended was $324.00. The detailed budget table can be reviewed in Appendix H.

Evaluation Plan

The evaluation plan included the results from the post-test and statistical analysis of pre-implementation compliance scores and post-implementation compliance scores. The post-test results will demonstrate the CRNAs knowledge and understanding of why and how to complete a post-anesthesia evaluation note. Statistically analyzing the pre-implementation compliance scores and the post-implementation scores will determine if multimodal education has an impact on post-anesthesia evaluation documentation compliance scores.

Statistical Considerations

The post-tests were graded and averaged. The data from the post-anesthesia documentation audit of 100 charts were collected and organized in a Microsoft Excel document. A two-sample proportion test was completed to analyze the data using Minitab software version 21.1.

**Data Maintenance and Security**

The participating CRNAs signed a consent to participate form and completed a post-test following completion of the education course. The participation consent, data collection, post-test, health information, and reports remained confidential by adherence to HIPPA standards. Participants' personal information and health information data retrieved from the EMR Cerner remained confidential and kept in a locked cabinet in the PI's locked office. Upon completion of the project, all data was destroyed by shredding at the project facility location.

Results

The post-test was completed by 25 CRNAs. The post-test included six questions. The twenty-five tests were graded with a 100% pass rate.

A two-sample proportion test was completed to analyze the post-anesthesia documentation compliance data using Minitab software version 21.1. Data results were labeled p1 for pre-implementation (79%) and p2 for post-implementation (96%). P1 was subtracted from P2, resulting in an estimated difference of -0.17 (-0.258590, -0.081410) with a confidence index of 95% based on normal approximation.

Minitab software calculated a Z-Value of –3.63 with a p-value of 0.00028. The null hypothesis (p1=p2) was rejected because the p-value of 0.00028 was less than the significance level of 0.05. The p-value of 0.00028 is highly significant for the alternative hypothesis (p1≠ p2). The estimated difference of -0.17 and the p-value of 0.00028 statistically support the change in the compliance scores. It is concluded that the multimodal education course positively impacted compliance scores, as evidenced by the improved outcomes. The pre-implementation and post-implementation documentation compliance scores can be viewed in Figure 1.

Figure 1

Post-Anesthesia Documentation Compliance Scores
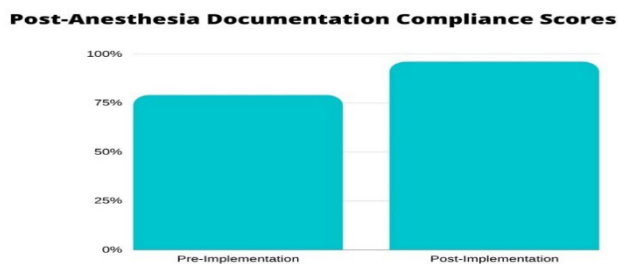
Results of Chart Review

A pre-implementation post-anesthesia evaluation documentation chart review was conducted at the end of the third quarter. Of the 100 charts, 79% were completed and identified as compliant. A post-implementation chart review of 100 charts was completed thirty days after the project was implemented. The chart review followed the post-anesthesia audit tool and identified that 96% of the charts were completed correctly. The compliance scores improved from 79% to 96%. Four charts were found to be non-compliant. Of the four charts, three charts were missing the post-anesthesia evaluation note completely, and one chart was missing the date.

<div align="center">

Discussion

</div>

The DNP project was a quality improvement project designed to improve post-anesthesia evaluation documentation compliance scores. This project addressed the need for improvement, and a thorough review of the literature identified that multimodal education improved outcomes. The aim of this project was to utilize a multimodal education course to educate nurse anesthesia providers about the post-anesthesia evaluation documentation standards defined by CMS and TJC, as well as hospital policy, to improve compliance scores.

The multimodal education course improved the post-anesthesia evaluation documentation compliance scores. This is evident by the p-value of 0.00028 which statistically supported the

change in the compliance scores. In summary, the multimodal education course positively impacted the compliance scores, as evidenced by the improved outcomes.

Implications for Clinical Practice

The improvement in compliance demonstrated the willingness and ability of the staff to comply with policy given adequate education. The project findings indicated annual re-orientation through multimodal education improved overall policy compliance.

Implications for Healthcare Policy

The clinical practice policy for completing post-anesthesia evaluation documentation is up-to-date and follows current CMS standards and TJC guidelines. While the employees completed a hospital re-orientation yearly, the findings indicated the need to complete an anesthesia-specific re-orientation yearly.

Implications for Quality/ Safety

This quality improvement project demonstrated the impact of multimodal education on documentation compliance. Following hospital policy, CMS standards, and TJC guidelines ensured quality and patient safety.

Implications for Education

Multiple studies indicated the positive impact of multimodal education. This project revealed a positive impact and demonstrated the importance of educating new and current employees. The anesthesia department should continue to identify and develop pedagogy for the ongoing learning needs of the current and new employees.

Since implementing this project, the anesthesia department, including the physicians, voiced their concerns and thoughts about the decreased compliance. This conversation provided

an opportunity to identify gaps and improve the post-anesthesia evaluation process. This was another benefit of conducting the project.

Limitations

This project was limited due to time constraints and only identifying one documentation gap. The use of paper charting is phasing out of most hospitals, creating a limitation for further studies in multiple hospitals, large anesthesia groups, or a metropolitan area. Still, it could be implemented in a smaller non-hospital setting. The physicians were not included in the project even though they frequently completed a part of the post-anesthesia evaluation note. The data collection was minimal, and the technological level was basic. Comparing the CRNA demographics with their compliance would have been beneficial to the project. Allowing a 90-day post-intervention audit would have allowed an equal comparison between pre-intervention and post-intervention. The pre-implementation data only provided the compliance rate, and it did not provide a breakdown of documentation omissions limiting the post-implementation analysis. The literature review for improving paper documentation was limited due to the current trend of electronic documentation.

Dissemination

First, the findings of this project have been disseminated at the project site through handouts, a poster, and a narrated PowerPoint presentation. During the project facility presentation, a QR code was available to view the video portion of the education and the poster and handout. Second, the 3 Ps of dissemination were followed using the DNP manuscript, poster presentation, and narrated PowerPoint presentation for this project. Third, the DNP project was disseminated during the Virtual Dissemination Day at JSU on July 15, 2022. Fourth and final,

the DNP manuscript was placed in the JSU Library's Public Repository for further dissemination.

The project will be presented to the QA and anesthesia departments at the agency where the project was conducted. The project and findings will be summarized and distributed to the QA and anesthesia departments at other affiliated agencies.

Sustainability

The anesthesia department adopted the multimodal education course as an annual requirement. The anesthesia department expressed interest in continuing the education process to include other hospital policies, CMS standards, and TJC guidelines. The anesthesia department can utilize the multimodal education process to advance and structure the pedagogy to meet the audience's needs.

The anesthesia department recognized the need to be more involved in the chart audits and requested that the anesthesia department be responsible for completing quarterly audits. The QA department granted this request. A primary anesthesia investigator will conduct audits and provide quarterly reports to the QA and anesthesia departments. This will allow early recognition of problems and enable the education course to be adapted to the department's needs.

Plans for Future Scholarship

Future studies to build on this project could include involving the physicians and obtaining a larger sample size with equal pre-implementation and post-implementation time frames. Through this project, this student has learned that consulting a statistician in the planning and developing phase of the project would assure the highest level of data would be gleaned from the project. This study could be furthered by identifying correlations between a decrease in compliance scores and the CRNA's experience level, length of employment, job satisfaction, and

pay satisfaction, with an open-ended question for the CRNAs to identify their thoughts on why there is a decrease in compliance. With the help of technology specialists, the multimodal education course could advance to an interactive computer skills lab.

Multimodal education courses have proven to provide effective learning and can be used in the future to transition from paper charting to electronic charting. This project will be presented at the facility and will be used to guide this student in future process improvement projects.

Conclusion

General anesthesia is considered one of the safest of all major routine medical procedures. Post anesthesia assessment provides important feedback to improve the quality of care and improve patient outcomes. Documentation of the post-anesthesia evaluation is a TJC, CMS, and hospital policy. When the post-anesthesia compliance rate dropped to 79%, a need for improvement was identified. The project sought to improve the compliance rate through a sustainable multimodal education course. Although there were limitations identified, the project supported the use of multimodal education for improving outcomes.

Multimodal education improved post-anesthesia documentation. Utilizing multiple educational modalities enhanced learning and has been proven effective both in the literature review and this DNP project. Further research should be conducted to examine the benefits of electronic documentation on compliance rates. This project identified the anesthesia documentation requirements, and an educational intervention was conducted to improve compliance to maintain the hospital, CMS, and TJC requirements.

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Appendix A

Consent to Participate

TITLE OF STUDY: Utilizing Multimodal Education to Impact Provider

Documentation of Post-Anesthesia Evaluation in a Rural Hospital

Principal Investigator: M. Jennifer Coffman, CRNA
This consent is part of an informed consent process for a DNP student project. The information provided will help you decide whether you want to volunteer for this project. It will help you understand what the study is about and what will happen during the project.
If you have questions or concerns during the project, feel free to ask them, and you should expect to be given answers that you can completely understand.
Once all your questions are answered, you will be asked to complete the agreement to form.

Why is this project being done?
This project aims to improve post-anesthesia assessment documentation compliance

What will you be asked to do if you participate in this research project?
The participants will watch an educational video and complete a post-test.

What are the risks you might experience if you participate in the project?
There is no harm expected from this project, and it is at no cost to the participant. This project has no influence or involvement from upper management, and participation is voluntary.

How will information about you be kept confidential?
All health information will remain confidential by HIPPA standards, and reports will be completed by the quality assurance department.

What will happen if you do not wish to participate in the project?
Participation in this project is completely voluntary. If you choose not to be a part of this project, there will be no penalty or decrease in the level of care.

Who can you contact if you have any questions?
M. Jennifer Coffman CRNA, JSU DNP Student
(256) 613-4685

AGREEMENT TO PARTICIPATE

1. Subject consent:

I have read this entire form, or it has been read to me, and I believe that understand what has been discussed. All my questions about this form or this study have been answered. I agree to take part in this study.

Subject Name: _____

Subject Signature: _____

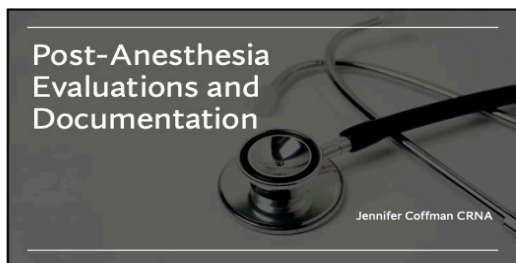**2. Signature of investigator/ Individual Obtaining Consent:**

To the best of my ability, I have explained and discussed the study's complete contents, including all the information contained in this consent form.

Investigator/ Person obtaining Consent (Printed name): _____

Signature: _____ Date: _____

Appendix B

PowerPoint Presentation

1
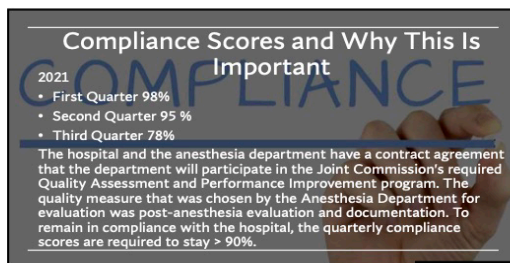
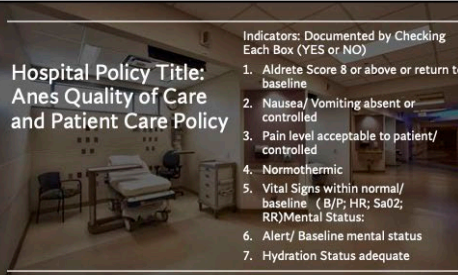

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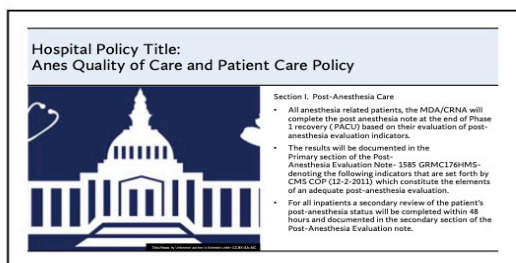
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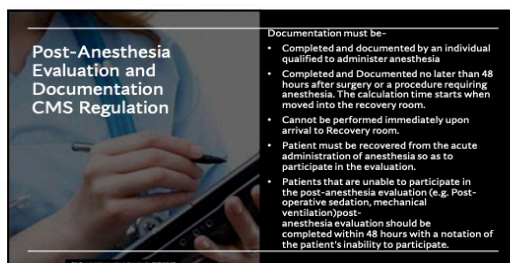
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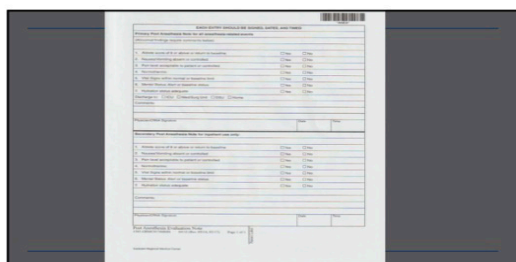
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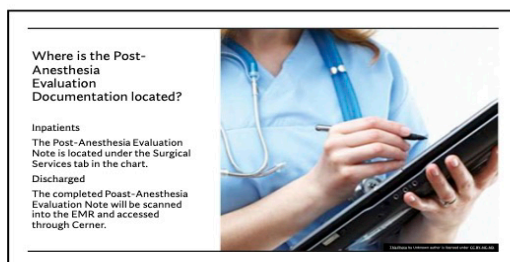
6

The Elements of an Adequate Post- Anesthesia Evaluation

- Clearly Documented Current Standards of Anesthesia Care Including:
  - Respiratory Function, including respiratory rate, airway patency, and Oxygen saturation
  - Cardiovascular Function, including pulse rate and blood pressure
  - Mental Status
  - Temperature
  - Pain
  - Nausea and Vomiting
  - Post Operative Hydration

7

Hospital Policy Title: Anes Quality of Care and Patient Care Policy

Indicators: Documented by Checking Each Box (YES or NO)

1. Aldrete Score 8 or above or return to baseline
2. Nausea/ Vomiting absent or controlled
3. Pain level acceptable to patient/ controlled
4. Normothermic
5. Vital Signs within normal/ baseline (B/P; HR; Sa02; RR)Mental Status:
6. Alert/ Baseline mental status
7. Hydration Status adequate

8

Discharge From PACU

Policy I. A. Discharge Information:

The MDA/CRNA will also complete the discharge destination at the end of Phase 1 recovery (PACU) based on their evaluation of the above post-anesthesia evaluation indicators by checking one of the following:

Ok to D/C to:
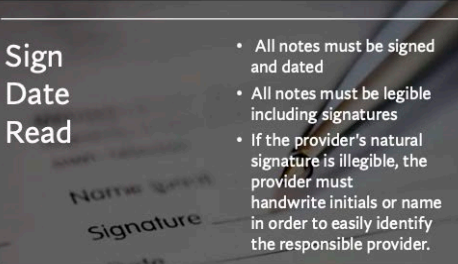
- ICU
- Med/Surg
- DSU
- Home

Patient Pick-Up & Discharge Only

9

Secondary Review

For all inpatients, a secondary review of the patient's post anesthesia status will be completed by MDA/CRNA within 48 hours after surgery on any procedure requiring anesthesia services. This evaluation will be documented under the Secondary section of the Post- Anesthesia Evaluation Note 1585-GRMA176HMS.

10

Sign Date Read

- All notes must be signed and dated
- All notes must be legible including signatures
- If the provider's natural signature is illegible, the provider must handwrite initials or name in order to easily identify the responsible provider.
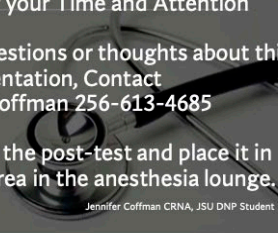
11

Thank You for your Time and Attention

If you have any questions or thoughts about this presentation, Contact Jennifer Coffman 256-613-4685

Please complete the post-test and place it in the designated area in the anesthesia lounge.

Jennifer Coffman CRNA, JSU DNP Student

12

Appendix C

Post-Anesthesia Evaluation and Documentation Poster and Handout

Post-Anesthesia Evaluation and Documentation

Centers for Medicare and Medicaid services require that a well-organized anesthesia service be integrated into the hospital's required Quality Assessment/Performance Improvement (QAPI) program to assure safe care to patients.

CMS Regulations - Section 482.52(b)(3) requires a post-anesthesia evaluation completed and documented by an individual qualified to administer anesthesia no later than 48 hours after surgery or a procedure requiring anesthesia services.

Hospital Policy Title- Anes Quality of Care and Patient Care Policy- Section I- Post-Anesthesia Care- For all anesthesia-related patients, MDA/CRNA will complete the post-anesthesia evaluation and document the results on form 1585 XXXX176HMS.

The Joint Commission Standards PC.03.01.07- A post-anesthesia evaluation is completed and documented by an individual qualified to administer anesthesia no later than 48 hours after a procedure requiring anesthesia services.

Following the QAPI program, the anesthesia participates by auditing the post-anesthesia evaluation note quarterly. The target compliance rate is ≥ 90%. Last quarter our compliance rate was 79%. This education has been created to improve the compliance rate.

Primary Post-Anesthesia Evaluation Note

- Must be Completed in PACU
- Must be Completed by MDA or CRNA
- Each Indicator must be addressed
- Each box must be checked Yes/No
- MDA/CRNA must identify discharge destination
- The MDA/CRNA must sign legibly with the date and time

Secondary Post-Anesthesia Evaluation Note

- All Inpatients must have a secondary evaluation within 48 hours after surgery
- The MDA/CRNA must sign legibly with the date and time

Scan QR code for PowerPoint Presentation

Post-Anesthesia Evaluation Note

EACH ENTRY SHOULD BE SIGNED, DATED, AND TIMED

Primary Post Anesthesia Note for all anesthesia-related events

(Abnormal findings require comments below)

1. Aldrete score of 8 or above or return to baseline	☑Yes	☐No
2. Nausea/Vomiting absent or controlled	☑Yes	☐No
3. Pain level acceptable to patient or controlled	☑Yes	☐No
4. Normothermic	☑Yes	☐No
5. Vital Signs within normal or baseline limit	☑Yes	☐No
6. Mental Status: Alert or baseline status	☑Yes	☐No
7. Hydration status adequate	☑Yes	☐No

Discharge to: ☐ICU ☑Med/Surg Unit ☐DSU ☐Home
Comments:

Physician/CRNA Signature: Dr. James Example Date: 2-4-22 Time: 0930

Secondary Post Anesthesia Note for inpatient use only:

1. Aldrete score of 8 or above or return to baseline	☐Yes	☐No
2. Nausea/Vomiting absent or controlled	☐Yes	☐No
3. Pain level acceptable to patient or controlled	☐Yes	☐No
4. Normothermic	☐Yes	☐No
5. Vital Signs within normal or baseline limit	☐Yes	☐No
6. Mental Status: Alert or baseline status	☐Yes	☐No
7. Hydration status adequate	☐Yes	☐No

Comments:

Physician/CRNA Signature: Christi Sample CRNA Date: 2-5-22 Time: 0715

Post Anesthesia Evaluation Note
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Appendix D

QR Code for Educational Materials

Appendix E

Post-Test

1. The MD/CRNA is responsible for completing the post-anesthesia assessment at the end of phase I Recovery PACU?
   A. True   B. False

2. Mark all elements that must be assessed and documented in the post-anesthesia assessment.
   - ❑   Aldrete Score 8 or above or return to baseline
   - ❑   Pain level acceptable to patient/ controlled
   - ❑   Nausea/ Vomiting absent or controlled
   - ❑   Normothermic
   - ❑   Hydration status adequate
   - ❑   Vital signs within normal / baseline (B/P:HR: SaO2, RR)
   - ❑   Mental Status: Alert/Baseline mental status

3. The primary post-anesthesia assessment is completed when the patient is discharged from the PACU.
   A. True.   B. False

4. The secondary post-anesthesia assessment should be completed within 48 hours for all inpatients that have received anesthesia.
   A. True   B. False

5. The signature should be legible, or the name printed with the signature for signature identification.
   A. True.   B. False

6. Primary and secondary evaluations must include the date, time, and signature.
   A. True   B. False

Appendix F

Post-Anesthesia Documentation Audit Tool

Primary Post-Anesthesia Evaluation
1. Was the primary post-anesthesia evaluation completed before discharge from PACU?

    Yes_____ No_____
2. Did the Primary post-anesthesia evaluation include Time___ Date___Signature __

    Yes_____No_____
3. Was it documented that all seven elements were assessed by marking each box?

    Yes_____No_____
4. Did the MDA/CRNA complete the discharge destination at the end of Phase I recovery (PACU) based on their evaluation?

    Yes_____ No_____
5. Was the signature legible? or identified by print?

    Yes_____ No_____
6. If the patient could not participate in the evaluation, was it noted?

    Yes_____ No_____

Secondary Post-Anesthesia Evaluation
1. Was the secondary post-evaluation completed within 48 hours?

    Yes_____ No_____
2. Did the Secondary post-anesthesia Evaluation include Time ___Date _____Signature___

    Yes_____ No_____
3. Was it documented that all seven elements were assessed by marking each box?

    Yes_____ No_____
4. Was the signature legible? Or were they identified by print?

    Yes_____ No_____
5. If the patient could not participate in the evaluation, was it noted?

    Yes_____ No_____

Appendix G

DNP Project Timeline

Completion	Pre-Design	Design	Implementation	Evaluation
Fall Semester	Completed CITI training Communicated with the facility to identify clinical problems Clinical Problem Identified Developed PICOT Completed review of literature Finalized PICOT Question Met with preceptor to introduce project idea Met with QA department to obtain permission to complete project Review of Literature- Table of evidence on effectiveness of multimodal education course on the	Started the project proposal Completed project forms- Informed Consent, Agreement to Participate, Post-Test, Audit Tool Submitted to PERC Obtained PERC approval Submitted to IRB, Obtained IRB Approval		

	improvement of documentation Selected Theoretical Methodology			
Spring Semester			Submission of initial DNP manuscript Implementation of the DNP Project Final DNP Manuscript	Data Collection and statistical analysis
Summer				Project Dissemination Poster Presentation And ePortfolio Submission

Appendix H

DNP Project Budget

Item	Budget	Actual Cost
Printed Materials	$100.00	**$46.00**
Handouts	$100.00	**$42.00**
Poster Print	$100.00	**$36.00**
Final Bound Copy	$200.00	**$200.00**
Total Cost:	$500.00	**$324.00**

Appendix I

IRB Approval Letter

JSU | **INSTITUTIONAL REVIEW BOARD**
JACKSONVILLE STATE UNIVERSITY

Institutional Review Board for the Protection of Human Subjects in Research
203 Angle Hall
700 Pelham Road North
Jacksonville, AL 36265-1602

December 7, 2021

Jennifer Coffman
Jacksonville State University
Jacksonville, AL 36265

Dear Jennifer:

Your protocol for the project titled "Utilizing Multimodal Education to Impact Provider Documentation of Post Anesthesia Evaluation in a Rural Hospital" 12072021-03 has been granted exemption by the JSU Institutional Review Board for the Protection of Human Subjects in Research (IRB). If your research deviates from that listed in the protocol, please notify me immediately. One year from the date of this approval letter, please send me a progress report of your research project.

Best wishes for a successful research project.

Sincerely,

Lynn Garner
Associate Human Protections Administrator, Institutional Review Board

Appendix J

CITI Training Certificate