Marian University

Leighton School of Nursing

Doctor of Nursing Practice

Final Project Report for Students Graduating in May 2023

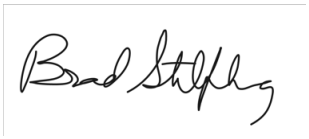
Assessing PACU Handoff Report Confidence

Majid Nasir Siddiqi

Marian University

Leighton School of Nursing

Chair: Dr. Brad Stelflug DrAP, CRNA



(Signature)

04/25/23

SRNA, DNP Marian University Class of 2023.

Table of Contents

Abstract

Effective communication during the handoff process between anesthesia providers and post-anesthesia care unit (PACU) nurses is crucial for ensuring patient safety. This Doctor of Nursing Practice (DNP) project aimed to investigate and develop an evidence-based educational intervention to enhance Student Registered Nurse Anesthetists' (SRNAs) confidence and competency in delivering standardized handoff reports, with the goal of promoting patient safety and reducing medical errors. Participants were required to complete a pre-test assessing baseline characteristics consisting of prior experience, confidence, knowledge, and comfort when giving PACU handoff reports. The pre-test was followed by the educational intervention which was provided in the form of an evidence-based presentation. Upon reviewing the presentation, participants were required to complete a post-test assessing confidence, knowledge, skills, and comfort when giving PACU handoff reports. The results indicated that the educational intervention improved SRNAs' confidence, knowledge, and skills related to post-operative care unit reports. The findings of this project have significant implications for practice, highlighting the importance of ongoing efforts to enhance SRNAs' abilities to conduct standardized handoff reports in post-operative care units. Further research is needed to confirm the findings and investigate the long-term effects of educational interventions on patient outcomes.

Background

Anesthesia care begins with the preoperative evaluation of the patient and is not complete until the patient has recovered to their biological preoperative condition. Surgical postoperative care, also known as postoperative treatment, starts immediately after surgery is completed. Complications connected with anesthetics have been documented since the introduction of inhalation anesthesia in the mid-19th century (Ramsay, 2006). In recent years, there has been growing recognition of the importance of effective communication in healthcare, including during patient handoffs. Handoff reports are a critical component of anesthesia care and have been found to have a significant impact on patient safety (Jurewicz et al., 2018). During the period of immediate postoperative recovery, when complications may still occur, the nurse anesthetist is integrating care with other members of the healthcare team in the post anesthesia care unit (PACU).

Anesthesia providers take part in patient handoffs on a number of occasions for each patient under their supervision. Each handoff has the potential to create a communication breakdown, jeopardizing the patient's safety. Practitioners are required to provide a verbal handoff report to the PACU nurse to ensure patient safety and continuity of care. The handoff report must include all components of the presurgical, anesthetic, and surgical courses that have an effect on the surgical and anesthetic outcomes, as well as the PACU care plan (Yap et al., 2019). It is crucial to transfer patients from the operating room to the post anesthesia care unit in a standardized and complete way. The transfer is an opportunity for the PACU nurse and anesthesia provider to discuss and clarify details regarding the patient’s care.

The American Association of Nurse Anesthetists (AANA) Standards of Practice emphasize the necessity of the anesthesia report: “Standard VII: Evaluate the patient’s status and

determine when it is safe to transfer the responsibility of care. Accurately report the patient's condition, including all essential information, and transfer the responsibility of care to another qualified health care provider in a manner that assures continuity of care and patient safety" (AANA, 2016). Despite these standards, errors and variations in the content and quality of information shared during handoffs can occur due to factors such as inadequate preparation, weak communication skills, loss of a standard protocol, insufficient time for transfer, information loss, diversions, delays, and a lack of opportunities to ask questions or express concerns (Roth et al., 2018). These communication breakdowns can result in medication errors, inaccuracies in treatment planning, delays in patient transfer to critical care, hospital discharge delays, and repeated testing (Roth et al., 2018).

Despite these standards, the content and quality of information shared may still vary. Errors might be made during the handover procedure. It has been difficult to complete proper handoffs due to inadequate preparation, weak communication skills, loss of a standard protocol, insufficient time for transfer, information loss, diversions, delays, and a lack of chances to ask questions or express concerns. Unfortunately, these effects include medication mistakes, inaccuracies in treatment planning, delays in patient transfer to critical care, hospital discharge delays, and recurrent testing (Segall et al., 2012).

Post-anesthesia recovery refers to the processes undertaken to manage a patient following the completion of a surgical or nonsurgical procedure during which anesthesia, analgesia, or sedative has been administered. When transferring patients from the operating room to the post-anesthesia recovery area, it is crucial to identify and communicate the likely phase the patient will be in before moving them. The PACU period of care is divided into three phases: early

recovery (Phase I), intermediate recovery (Phase II), and late recovery (Phase III) (Kinsella et al., 2018).

Immediately after surgery, a patient enters Phase I of the recovery process. This stage takes place in the PACU, where the patient stays until their breathing, level of awareness, blood pressure, and activity levels return to normal. After adequate recovery, the surgical patient is transferred to Phase II. In this step-down unit, patients receive food and drink and are prepared to return home following a brief stay. It is essential to recognize that patient handoffs occur during each recovery phase, and the information exchanged during these handoffs can significantly impact patient outcomes (Byrne et al., 2020).

Late recovery, also known as Phase III, takes place either in the hospital or at the patient's place of residence for ambulatory surgical patients, and will be completed when the patient has fully recovered from their surgical operation (Byrne et al., 2020). It is important to recognize that even when treatment is not being provided in a hospital environment, proper standards must be followed to prevent harm to the patient. Additionally, it is not uncommon for the entire recovery process to take up to six weeks (Chughtai et al., 2017).

Complications of postoperative anesthesia may vary from moderate to severe. According to the findings of a retrospective research postoperative nausea and vomiting are the most often reported symptom in the post-anesthesia care unit (PACU). In a study of 3,132 patients, 36% experienced postoperative nausea and vomiting (Akerman et al., 2017). Numerous additional complications were documented, including laryngospasm, hypotension, hypertension, dysrhythmia, and serious cardiac events (Villafranca et al., 2015). The majority of these issues could have easily been avoided if the anesthetic care professionals took proper precautions. Improper handoffs resulting from lack of proper protocols have been identified as a contributing

factor to these complications. In a study of 160 patient handoffs, only 7% of the handoffs met all six key communication elements, including active communication of patient information, prioritization of tasks, and opportunities for the receiver to ask questions (Bergs et al., 2017). Furthermore, handoff errors have been associated with increased length of stay and readmission rates, as well as higher healthcare costs (Sexton et al., 2014). Effective communication during handoffs is essential to avoid complications and ensure patient safety.

There has been a correlation established between handoff reports and patient harm. Handoff reports are vital to the success of the patient's outcome (Jurewicz et al., 2018). The major goal of post-anesthesia recovery is to examine and stabilize patients after these treatment procedures with a focus on preventing and detecting problems. During previous clinical site visits, handoff reports have varied substantially. There have been comprehensive handoff reports that provided detailed treatment plans whereas others only provided a few sentences of highlevel information. There was little emphasis placed on providing a standardized report to the PACU nurse. There did not seem to be a clear indicator of what precisely should be reported during the hand-off. Unfortunately, this may easily result in damage to the patient's well-being and cause them to be injured by a variety of factors.

A recognized method to evaluate safe release from the post-anesthesia care unit did not exist before to 1970, when Dr. J.A. Aldrete established the post-anesthesia recovery score, which is still in use today (PACU). Dr. Aldrete argued that a monitoring tool that could be used to standardize the treatment of surgical patients throughout the globe was urgently needed (Aldrete, 1995). A patient's awareness, activity, respiration, and blood pressure are all measured using the Aldrete scoring system, which has become well-known in the medical community for its ability to assess recovery following anesthesia (Aldrete, 1995). Dr. Aldrete improved this score in 1995

to add oxygen saturation scores, since the previous method employed a skin color index to determine oxygen saturation (Aldrete, 1995). Each of the five categories is assigned a number ranging from 0 to 2, with a maximum score of 10. Depending on the score received, the patient is then considered for readiness to be discharged from the PACU unit.

Patients admitted to the PACU are presumed to be in unstable condition unless proved otherwise due to the rapidity with which a patient's status might change in the PACU, accurate and careful nurse evaluation is essential. The most important reason for providing an accurate report during the handoff time is to prevent complications from getting worse (Kothari et al., 2021). There are numerous important elements about the patient's physiologic condition that the PACU nurse should be aware of at the time of admission. It is important to ensure that patients undergo periodic reexaminations in order to detect physiological trends, establish the patient's baseline level and the effect of previous medical conditions. The patient’s current physiology, ongoing status of the surgical site, effect of preexisting conditions and the patient’s recovery from anesthesia is assessed to prevent residual effects and treat complications that arise as the nurse monitors the patient’s progress (Kothari et al., 2021).

The Joint Commission has recommended improvements to the handoff process as a national goal to improve patient safety (The Joint Commission, 2017). The best practice for any anesthesia provider is to provide complete care from the beginning to the end of the patient encounter. Previous clinical site visits have shown that facilities do not have protocols in place for standardized reports. With the goal of enhancing communication and providing standardized hand off report, this DNP project aims to change the practice of patient handoff report. A Quality Improvement technique using non-experimental pre- and post-surveys will be held for SRNA students for providing handoff reports. The proposed standardized handoff report will implement

the SBAR tool and consist of the following parameters: patient's airway patency, respiratory rate, peripheral oxygen saturation, heart rate, blood pressure, the electrocardiogram, mental status, neuromuscular function, temperature, pain, and nausea or vomiting.

Project statement & Purpose Statement

The purpose of this Doctor of Nursing Practice (DNP) project is to evaluate and enhance the confidence and competency of Student Registered Nurse Anesthetists (SRNAs) in delivering standardized handoff reports to improve post-operative patient safety. This project will employ a pre-test, post-test design with an evidence-based educational intervention to assess the impact of the training on SRNAs' knowledge, confidence, and practices related to standardized handoff reports in the post-anesthesia care unit (PACU).

Effective communication during handoffs between anesthesia providers and post-anesthesia care unit nurses is critical for patient safety and continuity of care. Inconsistencies in handoff practices, lack of standardized protocols, and inadequate training can lead to miscommunication, resulting in adverse patient outcomes, increased length of stay, and higher healthcare costs. The current practice environment has identified gaps in the confidence and competency of SRNAs in delivering standardized handoff reports, which may compromise patient safety. This is the reason why this DNP project aims to address these gaps and enhance the quality of handoff communication, ultimately contributing to improved patient safety in the post-operative setting.

Theoretical Framework

The theoretical framework for this DNP project is based on the Communication Theory of Nursing (CTN) and incorporates the Situation-Background-Assessment-Recommendation (SBAR) communication tool to support the development of confidence in standardized handoff

reports. The CTN highlights the crucial role of effective communication in nursing practice, asserting that the exchange of clear and precise information is essential for maintaining patient safety and delivering high-quality care (Arnold & Boggs, 2019). This project's goal is to enhance handoff report confidence by improving the communication processes between anesthesia providers and PACU nurses.

The SBAR communication tool acts as a practical guide for organizing the handoff report. This widely accepted approach enables clear, concise, and focused communication during patient handoffs (Agency for Healthcare Research and Quality, 2019). By implementing the SBAR tool into the handoff process, anesthesia providers can systematically share crucial patient information, thus improving confidence in the handoff report and reducing the risk of communication errors. The tool is structured into four components:

1. Situation: A concise statement of the patient's current status and the reason for the handoff.
2. Background: Pertinent medical history, including diagnoses, allergies, and recent interventions or treatments.
3. Assessment: The patient's current clinical condition, including vital signs, pain level, and any concerns or complications.
4. Recommendation: Expected needs or actions, such as ongoing monitoring, interventions, or consultations with other healthcare professionals.

By integrating the CTN and the SBAR tool as the theoretical framework for this project, the aim is to enhance the confidence in standardized handoff reports and ensure effective communication, ultimately improving patient safety and overall quality of care during the perioperative period.

This DNP project will focus on educating and training Student Registered Nurse Anesthetists (SRNAs) on the importance of effective communication and the use of the SBAR tool during handoffs. Through a combination of didactic teaching, role-playing, and feedback, SRNAs will develop the skills necessary to deliver comprehensive and standardized handoff reports. The project will also evaluate the impact of the educational intervention on the knowledge, confidence, and practices of SRNAs in relation to standardized handoff reports in the PACU. By addressing the existing gaps in SRNAs' confidence and competency, this project seeks to create a culture of consistent and effective communication during the handoff process. The goal is to reduce miscommunication-related errors, enhance patient safety, and contribute to better patient outcomes in the post-operative setting. The adoption of the CTN and the SBAR tool as the theoretical framework will provide a solid foundation for the project's success and promote lasting improvements in handoff communication practices.

Strengths, Weaknesses, Opportunities, Threats (SWOT) Analysis

The DNP project has several strengths, including its evidence-based approach, focus on patient safety, and potential for improvement in SRNA confidence and competency. Utilizing an evidence-based educational intervention ensures that the training provided to the SRNAs is based on current best practices and research. By addressing patient safety concerns through targeting the crucial handoff communication process, the project aims to enhance patient outcomes. Additionally, the project has the potential to significantly increase the confidence and competency of SRNAs in delivering standardized handoff reports.

However, there are some weaknesses, such as the limited sample size, convenience sampling, and reliance on self-reported data. The small sample size may limit the generalizability of the results, while the use of convenience sampling could introduce selection bias, potentially

affecting the external validity of the findings. Furthermore, the project's reliance on self-reported data from SRNAs may be subject to social desirability and recall bias.

Despite these weaknesses, there are opportunities for the project's findings to contribute to the ongoing development of best practices in handoff communication and patient safety, benefiting the wider healthcare community. The project could serve as a basis for future educational interventions, targeting other healthcare professionals involved in the handoff process or expanding the scope to other aspects of patient care. Moreover, the project's findings may inform the development of standardized handoff protocols and guidelines, leading to improved patient safety across healthcare settings.

Nevertheless, threats to the project's success should be considered, including resistance to change, time constraints, and external factors. Healthcare professionals, including SRNAs, may be resistant to change, making the implementation of new handoff practices challenging. Busy schedules and high workloads could limit the time available for SRNAs to participate in the educational intervention, affecting the project's success. Lastly, factors outside the control of the project, such as changes in healthcare policy or the emergence of new technologies, may impact the relevance or effectiveness of the proposed intervention.

Search Strategy and Literature Review

Various databases were used to gather evidence-based practice on patient safety among anesthesia providers. The databases included Cumulative Index to Nursing and Allied Health Literature (CINAHL), Public MEDLINE (PubMed), Medical Literature Analysis and Retrieval System (MEDLINE), Ovid Databases, Cochrane Library, and MeSH. Search terms for patient handoffs included: handoff, handover, transfer of care, patient handoff, patient handover, communication, and report. Search terms for anesthesia care included: anesthesia, anesthetist,

nurse anesthetist, SRNA, PACU, post-anesthesia care unit, perioperative care, and postoperative care. Search terms for educational interventions included: education, training, intervention, program, curriculum, and competency. The terms were combined from each category in the search strategy, such as "patient handoff" AND "anesthesia care" AND "educational intervention." This search was performed in each of the selected databases. The search was limited to last five years (2017-2022) and excluded articles that did not provided enough data to support evidence-based practice on providing standardized communication handoff tool. Appendix A is available for search strategies, keywords, and results.

After the initial search, the results were screened for relevance by reviewing titles and abstracts. Relevant articles were retrieved and assessed for eligibility based on predefined inclusion and exclusion criteria. Inclusion criteria consisted of articles that focused on handoff communication in anesthesia care, educational interventions for healthcare professionals, and patient safety outcomes related to handoffs. Exclusion criteria of articles consisted of articles that were not in English, published more than 5 years ago, or did not pertain to the topic of interest.

In the literature review, findings of the selected articles were summarized, focusing on the importance of standardized handoff reports, best practices in handoff communication, the impact of educational interventions on healthcare professionals' confidence and competency, and the relationship between handoff communication and patient safety outcomes. Through this review, gaps were identified in the existing literature, providing a rationale for the DNP project and its potential contribution to the field.

Project Design

The project design is a pre-test, post-test survey aimed to assess and improve the confidence and competency of Student Registered Nurse Anesthetists (SRNAs) in standardized

handoff report communication. The design begins with the recruitment of a convenience sample of SRNAs from an anesthesia program, ensuring that informed consent is obtained from all participants. A pre-test survey using *Qualtrics* (qualtrics.com) was then administered to gather baseline data on the SRNAs' current knowledge, confidence, and practices related to standardized handoff reports, including demographics, previous experience, and self-assessment of handoff communication skills.

Following the pre-test survey, an educational intervention was developed and delivered in the form of an evidence-based PowerPoint presentation. This intervention educates SRNAs on the importance of standardized handoff reports, best practices, and effective communication techniques, focusing on providing practical guidance, case studies, and interactive activities to enhance their confidence and skills in conducting handoff reports.

After the intervention, a post-test survey using Qualtrics (qualtrics.com) was administered to SRNAs to evaluate the impact of the training on their knowledge, confidence, and practices related to standardized handoff reports. The post-test survey includes the same questions as the pre-test survey to enable comparison and assessment of the intervention's effectiveness.

Data from the pre-test and post-test surveys were analyzed using descriptive and inferential statistics to evaluate the effectiveness of the educational intervention in enhancing SRNAs' confidence and competency in delivering handoff reports. The analysis identifies any significant differences in knowledge, confidence, and practices between the pre-test and post-test results.

The outcomes were evaluated, and any remaining gaps or areas for further improvement were identified. The project findings will be shared with the anesthesia program, stakeholders,

and the wider healthcare community to contribute to the ongoing development of best practices in handoff communication and patient safety.

Data Collection

Data collection consisted of two primary sources: the pre-test survey and the post-test survey. Both surveys were administered using the online survey platform *Qualtrics* (qualtrics.com) to gather data regarding the Student Registered Nurse Anesthetists' (SRNAs) knowledge, confidence, and practices related to standardized PACU handoff reports.

Participants were required to complete the pre-test survey before the educational intervention to assess baseline data. The survey included questions about demographics, previous experiences, self-assessment of handoff communication skills, and current practices regarding handoff reports. This data provided insight into the initial state of the SRNAs and served as a reference point for assessing the impact of the educational intervention.

After reviewing the provided the educational materials, the participants were required to complete a post-test survey. This survey contained similar questions to the pre-test survey allowing for a comparison of the participants' knowledge, confidence, and practices before and after the intervention. Utilizing the data collected in the post-test survey, the intervention's effectiveness in improving the SRNAs' confidence and competency in delivering handoff reports was evaluated.

Throughout the data collection process, it was crucial to ensure that participants' confidentiality was maintained and that the data was securely stored. Following the completion of data collection, the data was prepared for analysis by cleaning and organizing it into a format suitable for statistical analysis. This process involved the removal of any personally identifiable information and the conversion of categorical variables into numerical values, if necessary.

Ethical Consideration & Protection of Human Subjects

To ensure that the project was conducted ethically and that the rights, privacy, and well-being of participants were protected, several measures were taken. Approval from the Institutional Review Board (IRB) was sought before the initiation of the project, ensuring that the project adhered to ethical guidelines and standards, minimizing risks to participants and protecting their rights. Informed consent was obtained from all participants, providing them with a written informed consent form outlining the purpose, procedures, risks, and benefits of the study. Participants were informed that their participation was voluntary, and they could withdraw from the project at any time without any consequences. The consent form also outlined how participants' confidentiality would be maintained throughout the study. To protect the privacy of participants, all data collected were de-identified and stored securely, with access restricted to authorized research personnel. Results were reported in aggregate, and any identifying information was removed to ensure participants could not be linked to the data.

The project was designed to minimize any potential risks or harms to participants, and the intervention was evidence-based and aligned with best practices in nursing education. Any potential discomfort or inconvenience related to survey completion was minimized by keeping the surveys concise and straightforward. Lastly, the findings of the project will be shared with participants, the anesthesia program, stakeholders, and the broader healthcare community to contribute to the development of best practices in handoff communication and patient safety. This dissemination of information ensures that the research can have a positive impact on patient care and nursing practice. By adhering to these ethical considerations and guidelines for the protection of human subjects, the DNP project was conducted responsibly and ethically, ensuring that the rights and well-being of participants were upheld.

Throughout the project, ongoing monitoring and evaluation took place to identify any unforeseen risks or issues that might have arisen. If any concerns were identified, they were promptly addressed, and any necessary modifications to the research protocol were made to prioritize the safety and well-being of participants.

Participants were also encouraged to ask questions and express concerns throughout the research process, fostering an open and transparent environment that respected their autonomy and acknowledged their contributions to the study. Research personnel were committed to maintaining a high level of ethical conduct and professionalism, which further supported the protection of human subjects.

In conclusion, the DNP project prioritized the ethical considerations and protection of human subjects, taking all necessary steps to ensure the rights, privacy, and well-being of participants were maintained. By seeking IRB approval, obtaining informed consent, protecting confidentiality, and minimizing risks, the research team was able to conduct the study responsibly and ethically. This commitment to ethical research practices not only upheld the integrity of the project but also contributed to the advancement of nursing knowledge and improvements in patient care.

Results

Surveys were sent to the students from the DNP class of 2023 and 2024. There were a total of 16 responses. Results of the pre- and post-survey were matched using the participants' IP address. Of the 16 respondents, 7 responses were excluded from further analysis as the participant did not complete the post-survey. An additional response was excluded as the participant completed the post-survey but did not complete the pre-survey. Of the remaining 8

participants, there were 4 males and 4 females. Demographics from the remaining 8 participants are characterized below.

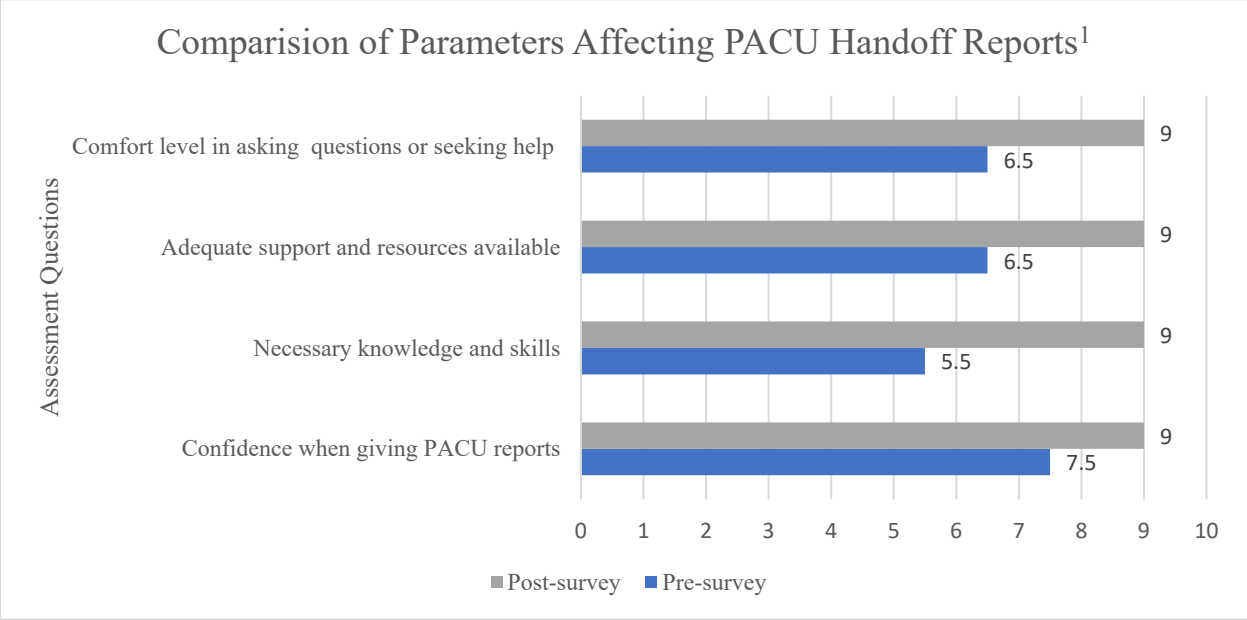
Demographic characteristics of study participants

Parameter		Total Reports
Sex	Male	4
	Female	4
Age Range (years)	20-30	3
	30-40	4
	40-50	1
Cohort	DNP Class of 2023	5
	DNP Class of 2024	3

Survey Analysis

The pre-survey consisted of foundational questions to identify the participant's prior experience and training giving PACU reports. Of the 8 participants, 6 reported to have never received any training or coaching on giving post-operative care unit reports whereas 2 participants reported receiving prior training on giving PACU reports. All participants reported experiencing challenges when giving PACU reports. Among the students, there was an average of 131 PACU reports given over the past 6 months. Seven participants reported that they received feedback regarding their handoffs. Of the 7 participants that received feedback, 4 participants received positive feedback and 3 participants reported that there was room for improvement.

Participants' confidence, skills, availability of resources, and comfort in seeking help when giving PACU handoff reports were assessed before and after the educational intervention using a Likert-type scale where 0 = not at all and 10 = extremely likely. These findings are characterized in the chart below.



[1]Values from the surveys represent the median scores.

There was in increase in the participants' confidence, knowledge, and comfort after the educational intervention. The confidence improved by 1.5 points (7.5 to 9), the self-assessment of necessary knowledge and skills improved by 3.5 points (5.5 to 9), the assessment of support and resources availability improved by 2.5 points (6.5 to 9), and the comfort level in asking questions or seeking help improved by 2.5 points (6.5 to 9).

Discussion

The results of this DNP project indicate that educational interventions can positively impact SRNAs' confidence, knowledge, and skills related to post-operative care unit reports. The improvements observed in the post-test survey suggest that the provided educational materials addressed the gaps in understanding and abilities. These findings underscore the importance of

targeted training initiatives in promoting patient safety and improving the overall quality of care in the post-anesthesia care process. The success of the educational intervention in this project has important implications for practice. It suggests that incorporating similar educational modules into the SRNAs' curriculum could lead to better prepared and more competent practitioners, capable of delivering accurate and thorough handoff reports. Furthermore, by standardizing the handoff process and improving communication, the likelihood of errors and complications can be reduced, ultimately contributing to improved patient outcomes.

There are several limitations to this DNP project. First, the sample size was small, with only 8 participants completing both the pre-test and post-test surveys. This limits the generalizability of the results and highlights the need for a larger sample to confirm the findings. Second, the study relied on self-reported assessments of confidence, knowledge, skills, and comfort which may be subject to bias. Incorporating objective measures of performance, such as direct observation or simulation-based evaluations, could provide a more comprehensive understanding of the intervention's effectiveness.

Future research should aim to expand upon the findings of this DNP project by exploring the long-term effects of educational interventions on SRNAs' abilities to conduct standardized handoff reports in post-operative care units. Larger sample sizes should be employed to ensure broader applicability, and objective measures of performance should be incorporated to validate self-reported assessments. Additionally, future studies could investigate the use of such interventions in a cross-functional setting at a health system as well as assess the impact of such interventions on patient outcomes, providing further evidence of the importance of effective communication and standardized handoff reports in post-anesthesia care.

Conclusion

In conclusion, this Doctor of Nursing Practice project underscores the importance of educational interventions in improving Student Registered Nurse Anesthetists' (SRNAs) confidence, knowledge, and skills related to post-operative care unit reports. The results demonstrated that providing targeted education materials, such as the evidence-based PowerPoint presentation used in this project, enhanced the participants' abilities in these critical aspects of patient care. This finding has significant implications for practice, suggesting that incorporating standardized handoff training within the curriculum as well as health systems could lead to better patient outcomes and increased safety in post-anesthesia care units. The project's positive outcomes not only emphasize the value of educational interventions but also highlight the need for continuous improvement and reinforcement of best practices in handoff communication. By addressing gaps in knowledge and skills, SRNAs can become more confident and competent in their roles, ultimately contributing to enhanced patient safety and a reduction in adverse events related to handoff errors.

Despite the limitations of this study, including the small sample size and reliance on self-reported assessments, the positive results warrant further research to expand upon these findings. Future studies should investigate the long-term effects of educational interventions, utilize objective measures of performance, and explore the impact on patient outcomes. Additionally, researchers may consider examining the influence of different teaching methods, such as simulation-based training or peer mentoring, on SRNAs' handoff skills and confidence.

Furthermore, this project's results may serve as a catalyst for collaboration between anesthesia programs, healthcare institutions, and professional organizations in the development and dissemination of standardized handoff protocols and best practices. By fostering a culture of

continuous learning and improvement, the healthcare community can work together to ensure that SRNAs and other healthcare providers are well-equipped to deliver high-quality care and effectively communicate during critical handoff processes.

Ultimately, this project emphasizes the importance of effective communication and standardized handoff processes in post-anesthesia care, advocating for the continued development and implementation of targeted educational initiatives. By focusing on the training and development of SRNAs and other healthcare professionals, patient safety can be consistently prioritized and handoff-related errors will be minimized.

Appendix A

Keywords, CINAHL, Ovid Databases, PubMed, Cochrane, MEDLINE, MeSH, and Search Strategy.

Anesthesia, anesthesiologist, anesthetists, handoff, handover, hand-off, shift report, PACU, PACU- nurses, post Anesthesia, recovery, recovery room, Recovery Unit, Post-surgery, after surgery, surgery, communication, communications errors cost-effective, morbidity, mortality, checklist, safety, incomplete handoffs, errors, sign-out, and operating rooms.

	Keywords	Limits, Results, Results kept
CINAHL	Handoff, handover, PACU handoff, Communication PACU, and Communication error.	Last 5 years (2017-2022), English, 83 results, and 13 results kept.
Ovid	Handoff, handover, PACU handoff, Communication PACU, and Communication error.	Last 5 years (2017-2022), English, 353 results, and 8 results kept.
PubMed		
Cochrane	Operating room, OR PACU, Communication errors, handoff, and handover.	Last 5 years (2017-2022), English, 263 results, and 6 results kept.
	PACU OR, post anesthesia care unit, handoff and handover	Last 5 years (2017-2022), English, 183 results, and 8 results kept

Appendix B

Citation	**Research Design & Level of Evidence**	**Population / Sample size n=x**	**Major Variables**	**Instruments / Data collection**	**Results**
Benton, S. E., Hueckel, R. M., Taicher, B., & Muckler, V. C. (2020). Usability Assessment of an Electronic Handoff Tool to Facilitate and Improve Postoperative Communication Between Anesthesia and Intensive Care Unit Staff. *Computers, informatics, nursing : CIN*, *38*(10), 500–507. https://doi.org/10.1097/CIN.0000000000000563	Quality Improvement Level of evidence = 1	N= 38	Certified RN anesthetists [CRNAs], Anesthesiologists and Anesthesia residents, and PACU	Using a semi structured interview guide adapted from a previous study, participants were approached in person and questioned about the current handoff procedure, including the quantity and quality of information transferred, the current workflow, areas for improvement, and the impact of postoperative handoff on teamwork and patient safety.	The findings of this study indicate that participants rated the postoperative IPASS handoff form as simple to use (87.5 percent), good (75.0 percent), and user-friendly (75.0 percent), all of which might contribute to its broad adoption.

Boat, A. C., & Spaeth, J. P. (2013). Handoff checklists improve the reliability of patient handoffs in the operating room and postanesthesia care unit. *Paediatric anaesthesia*, *23*(7), 647–654. https://doi.org/10.1111/pan.12199	Quality Improvement Level of evidence = 1	N = 58	PACU nurse Anesthesiologist Nurse anesthetists	Based on input from anesthesia and nursing staff, key driving diagrams and'smart objectives' were built for each process, and handoff checklists were developed and refined utilizing numerous plando-study-act cycles. Prior to the start of the projects, and during the 6-month duration of the programs, data on the dependability of the handoff procedures were collected.	With the implementation of the intraoperative handoff checklist, the dependability of intraoperative anesthetic handoffs increased from 20% to 100%. Similarly, when a standardized PACU checklist was implemented, the dependability of PACU handoffs increased from 59% to better than 90%.

Boet, S., Djokhdem, H., Leir, S. A., Théberge, I., Mansour, F., & Etherington, N. (2020). Association of intraoperative anaesthesia handovers with patient morbidity and mortality: a systematic review and meta-analysis. *British journal of anaesthesia*, *125*(4), 605–613. https://doi.org/10.1016/j.bja.2020.05.062	Prospective and Retrospective clinical studies Level of evidence: 3	$n_{patients}$=605 678 $n_{providers}$=307	Nurse anesthetists', anesthesiologists' and PACU nurses'	The research created a narrative synthesis of the findings by using particular qualitative and quantitative data. Additionally, a posthoc exploratory metaanalysis was done to assess the influence of handover on patient outcome in a group of similar trials. The meta-analysis was done using Review Manager 5.0 and a random-effects model (Cochrane Collaboration, London, UK). Risk ratios (RR) with 95% confidence intervals were used to quantify the effects of dichotomous outcomes (CI). The I2 statistic was used to determine statistical heterogeneity.15 Where data were unavailable, the study's original authors were contacted. For studies that reported continuous handovers, occurrences were categorized as	Seven studies found a link between anesthetic handovers and worse patient outcomes, whereas one showed that handovers may aid in mistake detection or correction. When an anaesthetic handover happens during the operation, a meta-analysis of four trials showed a 40% increase in the likelihood of patients having an adverse event.

				'handover' or 'no' (zero) handovers.	
Jaulin, Francois, Lopes, Thomas & Martin, Frederic. (2021). Standardised handover process with checklist improves quality and safety of care in the postanaesthesia care unit: the Postanaesthesia Team Handover trial. BJA: British Journal of Anaesthesia, 127, 962-970. https://doi.org/10.1016/j.bja.2021.07.002	This was a singlecentre, prospectiv e, pre-/postimplementation study conducted , Level of evidence: 2	*N=294*	Adult patients (aged 18-80 yr) Anesthesia PACU	The research was conducted in three parts. Stage 1 consisted of a baseline assessment conducted prior to the PATH checklist's deployment. Stage 2 featured a four-week period devoted to PATH checklist training sessions for the whole anesthesia PACU staff. Stage 3 was identical to Stage 1, except that it included an independent examination of the criteria.	Hypoxemia episodes occurred at a rate of 4.1 percent before to the implementation of the PATH checklist and at a rate of 0.8 percent thereafter. Patients in the PATH group had a 5.6fold lower risk of hypoxemia than those in the control group.
Lambert, L., & Adams, J. (2018). Improved anesthesia handoff after implementation of the written handoff anesthesia tool (WHAT). AANA Journal, 86(5), 361-370. https://search.proquest.com/docview/2121517180?accountid=10639	Quality Improvement Level of evidence =1	*N= 37*	CRNA PACU nurses	The TST for handoff communication was created to quantify and assess the existing handoff process, to identify the causes of insufficient handoffs, to develop solutions for improving the handoff process, and to review the handoff process after the	While using the WHAT tool, a significant improvement was made to an incomplete report. Additionally, there was an increase in report satisfaction between CRNAs and PACU RNs.

				implementation of corrective measures.	
Park, L. S., Yang, G., Tan, K. S., Wong, C. H., Oskar, S., Borchardt, R. A., & Tollinche,	A crosssectional	N= 60	Nurses, PACU midlevel	Physical checklist was created including key elements of the transfer of	A physical checklist facilitated data transmission and reduced
L. E. (2017). Does Checklist Implementation Improve Quantity of Data Transfer: An Observation in Postanesthesia Care Unit (PACU). *Open Journal of Anesthesiology*, *7*(4), 69–82. https://doi.org/10.4236/ojanes.2017.74007	observational study. Level of evidence= IV		Providers, Anesthesia staff, and Surgical staff.	care measures recommended by The American Society of Anesthesiologists.	the omission of vital patient information.

Leonardsen, Moen, Kalsoen, & Hovland. (2019). A quantitative study on personnel's experiences with patient handovers between the operating room and the postoperative anesthesia care unit before and after the implementation of a structured communication tool. Nursing Reports, 9(1). Doi: 10.4081/nursrep.2019.8 041	Quantitative Study Level of evidence= IV	N= 290000	PACU nurses Age Gender Years of experience	Positive and negative experiences were classified as agree and partially agree, while disagree and partly disagree were classified as disagree and partly disagree. Summative statistics were employed to illustrate the sample's characteristics. T-tests were utilized to demonstrate differences between pre- and postimplementation periods, as well as between employees.	The tool enhanced the quality and safety of handovers and had a favorable effect on employee satisfaction.
Randmaa, M., Engström, M., Swenne, C. L., & Mårtensson, G. (2017). The postoperative handover: a focus group interview study with nurse anaesthetists, anaesthesiologists and PACU	Focus group interview study with a descriptive design using	N=23	Nurse anesthetists', anesthesiologists' and PACU nurses'	Six focus group interviews were conducted (2 groups for each profession). A semi structured interview guide was used covering opening questions, introductory questions,	Five patterns were identified: (1) having different temporal foci during handover, (2) insecurity when information is transferred from one team to another,

nurses. *BMJ open*, *7*(8), e015038. https://doi.org/10.1136/bmjopen-2016-015038	qualitative content analysis of transcripts. Level of evidence: 5			transition questions and key questions. A moderator interviewed the participants while the assistant moderator took notes on the overall interaction/attitudes. Meaningful sentences/phrases across the groups were coded into categories and subcategories. These categories were compared for similarities and differences across the 6 focus groups.	(3) striving to ensure quality of the handover, (4) weighing the advantages and disadvantages of the bedside handover and (5) having different perspectives on the transfer of responsibility. While the professionals' perceptions of post-op handover differed in regards to temporal foci, all groups agreed upon the need to ensure quality of care. There are gaps between different professionals' practices of post-op care which can be minimized.
Jones, P. M., Cherry, R. A., Allen, B. N., Jenkyn, K., Shariff, S. Z., Flier, S., Vogt, K. N., & Wijeysundera, D. N. (2018). Association Between Handover of Anesthesia Care and Adverse Postoperative Outcomes Among Patients Undergoing Major Surgery. *JAMA*, *319*(2), 143–153.	A retrospective population-based cohort study Level of evidence: 3	N = 313066	Adult patients (≥18 years) Longer than 2 hours surge ries.	Data were obtained from the Canadian Institute for Health Information's Discharge Abstract Database (CIHI-DAD; inhospital outcomes), the National Ambulatory Care Reporting System (CIHINACRS; emergency department [ED] visits), the Same Day Surgery Database (CIHI-SDS), the	56% of the cohort's 313 066 patients were female; the mean (SD) age was 60 (16) years; 49% of procedures were conducted in academic facilities; 72% of surgeries were elective; and the median time of surgery was 182 minutes (interquartile [IQR] range, 124-255). 5941 (1.9

https://doi.org/10.1001/jama.2017.20040				Ontario Health Insurance Plan (physician billings), the Corporate Provider Database (physician demographic data from Ontario's Ministry of Health and Long-Term Care), and the Registered Persons Database (patient demographics and vital status).	percent) patients had surgery with full anesthesia care handover. Each year of the research, the number of patients having surgery with a transfer of anesthesiology treatment grew, reaching 2.9 percent in 2015. The main outcome happened in 44% of the full handover group and 29% of the no handover group in the unweighted sample.

Krishnan, S., Kumar, N., Diaz, E., Thornton, I., Ghoddoussi, F., & Ellis, T. A., 2nd (2020). Anesthesiology Handoff Simulation Case: A Handoff From Intensive Care Unit to Operating Room for Anesthesiology Learners. *MedEdPORTAL : the journal of teaching and learning resources*, *16*, 10887. https://doi.org/10.15766/mep_2374-8265.10887	Quality Improvement Level of evidence: 1	N= 27	Medical Student and Student Nurse Anesthetist	This simulation was created for anesthesiology students to practice executing complete and content-appropriate handoffs in the perioperative context. The quantitative component of the scoring key assessed their ability to convey required patient information and to assimilate and comprehend medical concerns with anesthetic implications. The qualitative section of the scoring key provided feedback to learners on the effectiveness and	This handoff scenario had twenty-seven learners. The participants indicated that the simulation increased their comprehension of the anesthetic implications of medical problems and the important components of a handoff. Additionally, learners felt that the simulation's debriefing phase was beneficial in filling in some of their medical knowledge gaps and improving their handoff abilities.

				appropriateness of the handoff based on the Accreditation Council for Graduate Medical Education's (ACGME) core competencies, which include patient care and procedural skills, practicebased learning and improvement, professionalism, and interpersonal and communication skills.	

Reine, E., Aase, K., Raeder, J., Thorud, A., Aarsnes, R. M., & Rustøen, T. (2021). Exploring postoperative handover quality in relation to patient condition: A mixed methods study. *Journal of clinical nursing*, *30*(7-8), 1046–1059. https://doi.org/10.1111/jocn.15650	Observational mixed methods convergent design. Level of evidence: 5	Quantitative (n = 109) & Qualitative data (n = 48)	Type of surgery Patient ASA classification Type of Anesthesia Gender Transferring team	The postoperative handover assessment instrument (PoHAT) and a grading system for patient condition were used to obtain quantitative data. Qualitative data were gathered via the use of unstructured field notes and an observational guide. The study follows the GRAMMS standard for reporting mixed methods research.	The observed information omissions in handovers varied from 1 to 13. (median 7). Handovers of critically stable and pleasant patients were related with a higher rate of report omissions. 50 handovers (46%) were interrupted, and checklist compliance was poor (13%, n = 14). Three topics emerged from the qualitative data analysis: "adaptation of handover," "information transfer tactics," and "contextual and individual variables." The factors that promoted excellent practices were
					adapting the handover to the patient's state and situational conditions, organized verbal reporting, giving patient evaluations, and team communication.

Shah, A. C., Herstein, A. R., Flynn-O'Brien, K. T., Oh, D. C., Xue, A. H., & Flanagan, M. R. (2019). Six Sigma Methodology and Postoperative Information Reporting: A Multidisciplinary Quality Improvement Study With Interrupted Time-Series Regression. *Journal of surgical education*, *76*(4), 1048–1067. https://doi.org/10.1016/j.jsurg.2018.12.010	Quality improvement Level of evidence: 1	N= 417	Physician trainees in anesthesia, Surgical subspecialties, Certified registered nurse anesthetists, Recovery room registered nurses.	The major end measure was the frequency of correct data transmission during verbal handover (cumulative handover score, CHS), which was calculated by comparing data items to the patient's electronic health record (EHR). A secondary result assessed the incidence of incorrect information reporting, the overall time of the TOC, and the participation of surgical subspecialty representatives. In January 2015 (pre-implementation) and May 2018 (postimplementation), a 5question survey was issued to PACU RNs (3 years postimplementation).	After controlling for preintervention time trends, cumulative handover scores improved by 18.3 points in the post-implementation period (n = 70) compared to preimplementation handovers (n = 69), a result that remained statistically significant after adjusting for pre-intervention time trends. There were no statistically significant differences in the length of handover across groups.

Appendix C DNP

Project Timeline

Date	Task
October 2021	DNP Proposal Approval
November 2021	Proposal Draft 1
December 2021	Proposal Draft 2
February 2022	Proposal Draft 3
February 2022	IRB Approval
March 2022	Pre Surveys sent
May 2022	Post Surveys Sent
June 2022	Data Collection and Analysis
July 2022	Submit Initial Draft
August 2022	Reassess the Initial Draft
August 2022	Submission of the Initial Draft
March 2023	Project Poster presentation

MARIAN UNIVERSITY
Indianapolis ®

Improving Post-Anesthesia Care Unit Handoff Report Confidence.

Majid Nasir Siddiqi, DNP

www.marian.edu

Significance of Problem

- The Joint Commission reports that up to 80 percent of serious medical errors involve communication failures between care providers during the transfer of patients.
- Communication errors have also been associated with a decrease in patient satisfaction and increased length of hospital stay. In 2000, an estimated 98,000 deaths were due to medical errors every year (Institute of Medicine [IOM], 2000).
- Information loss and miscommunication are variables that contribute to a rise in sentinel events, medication errors, and adverse patient outcomes. Medical errors due to miscommunication were the third biggest cause of mortality in the United States of America in 2016.(Makary & Daniel, 2016).
- With this potential for adverse events in mind, the Joint Commission's 2006 National Patient Safety Goal requires “a standardized approach” for handoffs.

The Importance of Post-Operative Care Unit Reports

- Post-operative care unit reports are an important tool for ensuring that patients receive the best possible care during the critical period following surgery.
- These reports provide an overview of the patient's condition, treatment, care plan, monitor progress, and make any necessary adjustments.
- Accurate and complete post-operative care unit reports are essential for ensuring that patients receive the appropriate care. Errors or omissions can have serious consequences for patient safety and outcomes.
- By ensuring that post-operative care unit reports are thorough and complete, SRNAs can help to ensure that patients receive the best possible care and have the best possible outcomes.

Examples of Post-Operative Care Unit Reports

Figure 1. PACU Handoff Checklist

Patient	Patient Identification (Nameband check)	
	Time In	
	Allergies	
	Surgical Procedure and Reason for Surgery	
	Type of Anesthesia (GA, TIVA, regional)	
	Surgical or anesthetic complications	
	PMH and ASA Scoring	
	Preoperative Cognitive Function	
	Preoperative Activity Level (METs)	
	Limb Restriction	
	Preop Vitals	
Procedure	Positioning of Patient (if other than supine)	
	Intubation conditions (grade of view, airway, quality of bag mask ventilation, bite block?)	
	Lines/catheters (IVs, a-lines, CVSs, foley chest tubes, surgical drains, VP shunt)	
	Fluid Management	Fluids= EBL= UO=
Medications	Analgesia Plan - During Case, Postop Orders	
	Antiemetics Administered	
	Medications due during PACU (antibiotics, etc.)	
	Other Intra-Op Medications (steroids, antihypertensives)	

"Do you have any questions or concerns?"

S Situation	☐ Patient Name ☐ Patient DOB ☐ Procedure and Diagnosis ☐ Allergies
B Background	☐ Past Medical History ☐ Significant Lab Values ☐ Baseline Vital Signs ☐ Baseline Neuro Status
A Assessment	☐ Type of Anesthesia ☐ Medications Given (Opioids, Antiemetics, Abx, Vasopressors, Benzodiazepines, Acetaminophen, Steroids, Other) ☐ Pain Management Plan ☐ Lines/Tubes/Drains ☐ I&O ☐ Issues During Surgery or Anesthetic Complications ☐ Concerns
R Recommendation	☐ Additional Questions or Comments ☐ Patient Destination after PACU

Structuring a post-operative care unit report

- As an SRNA, it is important to structure your post-operative care unit report to include an introduction, a patient assessment, and a plan for post-operative care.
- The introduction should provide an overview of the patient's identification, allergies, type of anesthesia performed, and current condition. It should also include any relevant medical history and current medications.
- The patient assessment should include a thorough evaluation of the patient's physical condition, including vital signs, potential complications, lines/catheters, and fluid management. It should also include an assessment of the patient's emotional state and any specific concerns or needs they may have.
- The post-operative care plan should outline the specific steps that will be taken to ensure the patient's recovery and comfort, including the analgesia plan, antiemetics, any medications or treatments that will be administered, the timing and frequency of follow-up visits or assessments, and any special instructions or precautions that the patient should follow.
- It is important to always ask the PACU nurse if they have any questions or concerns about the patient's post-operative care. This helps to ensure that the care plan is thorough and complete, and that the nurse is prepared to advocate for the patient's needs.

MARIAN UNIVERSITY Indianapolis | www.marian.edu page 5

Presenting a post-operative care unit report

- It is important to deliver your report clearly and confidently to the PACU nurse. This can help to establish your credibility and build trust with the audience. Be sure to speak clearly and at a pace that is easy for the PACU nurse to follow.
- Use visual aids, such as charts, graphs, or images, to help illustrate key points and make the report more engaging. Be sure to label the visual aids clearly and explain how they relate to the content of the report.
- If the PACU nurse has questions or concerns about the patient's care, it is important to handle them professionally. Be prepared to listen to the concerns of the PACU nurse and address them in a way that is respectful and informative. If you don't know the answer to a question, it is okay to say so and offer to find the answer later.

MARIAN UNIVERSITY Indianapolis | www.marian.edu page 6

...continued

- It is your responsibility to provide the PACU nurse with a complete picture of the patient's current condition and care plan. Be sure to provide enough information to give the PACU nurse a clear understanding of the patient's needs, but avoid overwhelming them with unnecessary details. Be sure to highlight any areas of concern or potential issues that may need to be monitored or addressed.
- Emphasize the importance of adherence to the care plan and encourage the patient to ask questions or raise any concerns they may have. This helps to ensure that the nurse understands the care plan and feels empowered to advocate for their patient needs.
- Conclude by summarizing the key points of the report and reiterating the importance of the patient's ongoing care and recovery.

Building confidence through preparation and practice

- Prepare thoroughly and practice beforehand in order to build confidence in giving post-operative care unit reports to the PACU nurse.
- Start by gathering all relevant information about the patient, including their identification, allergies, type of anesthesia performed, and current condition. Be sure to review any relevant medical history and current medications.
- Practice organizing the information in a logical and clear manner, highlighting any areas of concern or potential issues that may need to be monitored or addressed.
- Consider using visual aids, such as charts, graphs, or images, to help illustrate key points and make the report more engaging. Be sure to label the visual aids clearly and explain how they relate to the content of the report.
- Practice speaking clearly and confidently to the PACU nurse. Be prepared to handle any questions or concerns they may have in a professional and empathetic manner.
- To further improve your skills, consider seeking feedback from colleagues or mentors, or seeking out opportunities to observe or participate in post-operative care unit reports given by more experienced professionals.
- With preparation and practice, you can build confidence in giving post-operative care unit reports to the PACU nurse and improve your skills over time.

Seeking help and support

- Seek help and support when needed in order to improve your skills and build confidence in giving post-operative care unit reports to the PACU nurse.
- There are many resources available to support your professional development, including mentor programs, training workshops, and online resources.
- Consider seeking guidance from more experienced colleagues or mentors who can provide feedback, advice, and support as you develop your skills.
- Training workshops and online resources can also provide valuable insights and practical tips for giving effective post-operative care unit reports.
- Don't be afraid to ask for help when needed. It is a sign of strength and professionalism to recognize your own limitations and seek support to improve your skills.
- By seeking help and support, you can take an active role in your own professional development and build confidence in giving post-operative care unit reports to the PACU nurse.

Successful post-operative care unit report

Introduction:

- Patient identification: John Doe
- Allergies: none
- Type of anesthesia: general
- Current condition: stable
- Relevant medical history: none
- Current medications: none

Patient Assessment:

- Vital signs:
  - Heart rate: 72 bpm
  - Blood pressure: 120/80 mmHg
  - Respiratory rate: 18 breaths/minute
  - Oxygen saturation: 98% on room air
  - Body temperature: 36.5°C
  - Potential complications: none
  - Position: supine
- Lines/catheters: IV in place, urine catheter in place
- Fluid management: IV fluids given 700ml , EBL: 50ml , UO: 200ml
- Emotional state: alert and oriented
- Specific concerns or needs: none

Post-Operative Care Plan:

•Analgesia plan: patient-controlled analgesia with acetaminophen 650 mg prn every 4 hours.
•Antiemetics: ondansetron as needed 4 mg prn every 6 hours.
•Medications/treatments: none
•Follow-up visits/assessments: vital signs and pain assessment every 4 hours
•Special instructions/precautions: none

Questions/Concerns:

•SRNA: "Do you have any questions or concerns about the patient's post-operative care?"
•PACU nurse: "No, I think the care plan is thorough and complete. Thank you for your report."

Challenges and lessons learned

Introduction:

- Patient identification: Jane Smith
- Allergies: penicillin
- Type of anesthesia: spinal
- Current condition: stable
- Relevant medical history: none
- Current medications: none

Patient Assessment:

- Vital signs:
  - Heart rate: 90 bpm
  - Blood pressure: 130/80 mmHg
  - Respiratory rate: 20 breaths/minute
  - Oxygen saturation: 97% on room air
  - Body temperature: 37.5°C
  - Potential complications: none
- Lines/catheters: IV in place, urine catheter in place
- Fluid management: IV fluids given 300ml, EBL: 20ml, and UO: 50ml
- Emotional state: anxious and tearful
- Specific concerns or needs: patient is experiencing pain and discomfort

Challenges:

•Patient is experiencing pain and discomfort despite pain management plan
•Patient is anxious and tearful, disrupting sleep and recovery
•Patient has a penicillin allergy and is prescribed a medication that contains penicillin

Lessons Learned:

•Pain management plan may need to be adjusted, including increasing the dose or frequency of analgesia
•Emotional and psychological support is important for patient comfort and recovery
•Allergy history must be carefully reviewed.

…continued

Updated Post-Operative Care Plan:

- Analgesia plan: patient-controlled analgesia with acetaminophen (650 mg every 4 hours) and oxycodone (10 mg every 4 hours)
- Antiemetics: ondansetron (4 mg every 6 hours) as needed
- Follow-up visits/assessments: vital signs, urine output, and pain assessment every 2 hours
- Special instructions/precautions: Please let me know if things change.

Questions/Concerns:

- SRNA: "Do you have any questions or concerns about the patient's post-operative care?"
- PACU nurse: "Yes, I noticed that the patient's heart rate is above the normal range. Can you provide more information on the pain management plan and how it's being adjusted?"
- SRNA: "Certainly, we increased the dose of oxycodone to 10 mg every 4 hours and are providing acetaminophen every 4 hours rather than every 6 hours. We will continue to assess the patient's pain level and make any necessary adjustments. Is there anything else you would like to discuss?"
- PACU nurse: "No, thank you"

Conclusion

- In this presentation, we have explored the importance of giving clear and confident post-operative care unit reports, as well as strategies for building confidence and improving skills.
- We have also discussed the key elements that should be included in a post-operative care unit report, including an introduction, patient assessment, and post-operative care plan.
- We have looked at case studies that highlight both successful and challenging post-operative care unit reports, and have learned about the importance of seeking help and support when needed.
- In conclusion, we have learned that effective post-operative care unit reports require preparation, practice, and a willingness to seek guidance and support when needed. By following these principles, SRNAs can provide high-quality care for their patients and build confidence in their skills and abilities.

Consent

Informed Consent

The purpose of this project is to improve communication between student registered nurse anesthetists (SRNAs) and post-anesthesia care unit (PACU) registered nurses (RNs) during a patient's transition of care by increasing confidence in giving standardized handoff reports.

You are being invited to participate in this investigative study, which is being conducted by Majid Nasir Siddiqi, a graduate nurse anesthesia student at Marian University. You have been selected to participate in this study because you meet the only inclusion criterion: being a second or third year SRNA at Marian University.

Participants will remain anonymous and will be assigned a unique identifier to ensure that there are no duplicates in the surveys. Participation is completely voluntary. The surveys will be emailed to participants and collected electronically through Canvas. There will be no loss or rewards for refusing to participate in the surveys or failing to complete them. All data collected will be kept confidential.

The survey data collected through Qualtrics will be used to evaluate the effectiveness of the educational materials provided to the students. The only personal information that will be collected is age range, gender, and number of students by training year.

If you have any questions or concerns about this research, please contact the lead researcher at mnasirsiddiqi428@marian.edu. If you have any concerns about your rights as a research subject, please contact Dr. Amanda C. Egan, chair of the Marian University Institutional Review Board, at aegan@marian.edu or irb@marian.edu.

Statement of Consent

I have reviewed the provided material and believe that I understand the research well enough to make an informed decision about my participation. By continuing to the survey, I confirm that I am at least 18 years old and have read and understood this consent form.

By clicking the **NEXT** button, I agree to participate in this survey as part of this Doctor of Nursing Practice (DNP) study.

MARIAN UNIVERSITY
Indianapolis ®

Please specify your year in training

- ○ Second Year
- ○ Third Year
- ○ Prefer not to answer

Please specify your gender

- ○ Male
- ○ Female
- ○ Non-binary / third gender
- ○ Prefer not to say

Please choose an age range

- ○ 20-30
- ○ 30-40
- ○ 40-50
- ○ 50 or above
- ○ Prefer not answer

Have you ever received any training or coaching on giving post-operative care unit reports?

- ○ Yes
- ○ No

How confident do you feel when giving post-operative care unit reports?

Not confident — Extremely confident

0	1	2	3	4	5	6	7	8	9	10
○	○	○	○	○	○	○	○	○	○	○

Do you feel that you have the necessary knowledge and skills to give accurate and thorough post-operative care unit reports?

Not at all likely — Extremely likely

0	1	2	3	4	5	6	7	8	9	10
○	○	○	○	○	○	○	○	○	○	○

Approximately, how many post-operative unit reports have you given in the past 6 months? (You can move the cursor)

0 50 100 150 200 250 300 350 400 450 500

# of PACU reports given

Have you ever experienced any difficulties or challenges when giving post-operative care unit reports?

Never

0	1	2	3	4	5	6	7	8	9	10
○	○	○	○	○	○	○	○	○	○	○

Do you feel that you have adequate support and resources available to you when giving post-operative care unit reports?

Definitely not — Definitely yes

0	1	2	3	4	5	6	7	8	9	10
○	○	○	○	○	○	○	○	○	○	○

Have you received any feedback on your post-operative care unit reports in the past?

- ○ Yes
- ○ No
- ○ Maybe

If you have received feedback, was it mostly positive or negative?

Extremely negative — Extremely positive

0	1	2	3	4	5	6	7	8	9	10
○	○	○	○	○	○	○	○	○	○	○

How comfortable do you feel asking questions or seeking help when you are unsure about something related to giving post-operative care unit reports?

Not at all — Extremely comfortable

0	1	2	3	4	5	6	7	8	9	10
○	○	○	○	○	○	○	○	○	○	○

MARIAN UNIVERSITY
Indianapolis ®

Please specify your year in training

- ○ Second year
- ○ Third year
- ○ Prefer not to answer

Please specify your gender

- ○ Male
- ○ Female
- ○ Non-binary / third gender
- ○ Prefer not to say

Please choose an age range

- ○ 20-30
- ○ 30-40
- ○ 40-50
- ○ 50 or above
- ○ Prefer not to answer

How confident do you feel when giving post-operative care unit reports now, compared to before the intervention?

Not confident — Extremely confident

0 1 2 3 4 5 6 7 8 9 10

Do you feel that you have the necessary knowledge and skills to give accurate and thorough post-operative care unit reports now, compared to before the intervention?

Definitely not — Definitely yes

0 1 2 3 4 5 6 7 8 9 10

Do you feel that you have adequate resources available to you when giving post-operative care unit reports now, compared to before the intervention?

Not at all likely — Extremely likely

0 1 2 3 4 5 6 7 8 9 10

Do you feel that you receive sufficient feedback on your performance when giving post-operative care unit reports now, compared to before the intervention?

Not at all likey — Extremely Likey

0 1 2 3 4 5 6 7 8 9 10

Do you feel that you have the opportunity to ask for help or seek guidance when giving post-operative care unit reports now, compared to before the intervention?

Much less opportunity — Much more opportunity

0 1 2 3 4 5 6 7 8 9 10

COLLABORATIVE INSTITUTIONAL TRAINING INITIATIVE (CITI PROGRAM)

COMPLETION REPORT - PART 2 OF 2
COURSEWORK TRANSCRIPT**

** NOTE: Scores on this Transcript Report reflect the most current quiz completions, including quizzes on optional (supplemental) elements of the course. See list below for details. See separate Requirements Report for the reported scores at the time all requirements for the course were met.

- **Name:** Majid Nasir Siddiqi (ID: 11053624)
- **Institution Affiliation:** Marian University - Indianapolis (ID: 2921)
- **Institution Email:** mnasirsiddiqi428@marian.edu
- **Institution Unit:** DNP

- **Curriculum Group:** Social & Behavioral Research - Basic/Refresher
- **Course Learner Group:** Group 2: Social-Behavioral-Educational Researchers
- **Stage:** Stage 1 - Basic Course
- **Description:** Choose this group to satisfy CITI training requirements for Investigators and staff involved primarily in Social/Behavioral Research with human subjects.

- **Record ID:** 48008137
- **Report Date:** 17-Mar-2022
- **Current Score**:** 97

REQUIRED, ELECTIVE, AND SUPPLEMENTAL MODULES	MOST RECENT	SCORE
Marian University - Indianapolis (ID: 16576)	17-Mar-2022	No Quiz
Defining Research with Human Subjects - SBE (ID: 491)	17-Mar-2022	5/5 (100%)
The Federal Regulations - SBE (ID: 502)	17-Mar-2022	5/5 (100%)
Belmont Report and Its Principles (ID: 1127)	17-Mar-2022	3/3 (100%)
Assessing Risk - SBE (ID: 503)	17-Mar-2022	5/5 (100%)
Informed Consent - SBE (ID: 504)	17-Mar-2022	5/5 (100%)
Privacy and Confidentiality - SBE (ID: 505)	17-Mar-2022	5/5 (100%)
Research with Prisoners - SBE (ID: 506)	17-Mar-2022	5/5 (100%)
Research and HIPAA Privacy Protections (ID: 14)	17-Mar-2022	4/5 (80%)
Internet-Based Research - SBE (ID: 510)	17-Mar-2022	5/5 (100%)
Unanticipated Problems and Reporting Requirements in Social and Behavioral Research (ID: 14928)	17-Mar-2022	5/5 (100%)
History and Ethical Principles - SBE (ID: 490)	17-Mar-2022	4/5 (80%)
Conflicts of Interest in Human Subjects Research (ID: 17464)	17-Mar-2022	5/5 (100%)
Cultural Competence in Research (ID: 15166)	17-Mar-2022	5/5 (100%)

For this Report to be valid, the learner identified above must have had a valid affiliation with the CITI Program subscribing institution identified above or have been a paid Independent Learner.

Verify at: www.citiprogram.org/verify/?ka01b5f90-5c8d-4d16-9bdb-e8a3bdb6c87c-48008137

Collaborative Institutional Training Initiative (CITI Program)
Email: support@citiprogram.org
Phone: 888-529-5929
Web: https://www.citiprogram.org

COLLABORATIVE INSTITUTIONAL TRAINING INITIATIVE (CITI PROGRAM)

COMPLETION REPORT - PART 1 OF 2
COURSEWORK REQUIREMENTS*

* NOTE: Scores on this Requirements Report reflect quiz completions at the time all requirements for the course were met. See list below for details. See separate Transcript Report for more recent quiz scores, including those on optional (supplemental) course elements.

- **Name:** Majid Nasir Siddiqi (ID: 11053624)
- **Institution Affiliation:** Marian University - Indianapolis (ID: 2921)
- **Institution Email:** mnasirsiddiqi428@marian.edu
- **Institution Unit:** DNP

- **Curriculum Group:** Social & Behavioral Research - Basic/Refresher
- **Course Learner Group:** Group 2: Social-Behavioral-Educational Researchers
- **Stage:** Stage 1 - Basic Course
- **Description:** Choose this group to satisfy CITI training requirements for Investigators and staff involved primarily in Social/Behavioral Research with human subjects.

- **Record ID:** 48008137
- **Completion Date:** 17-Mar-2022
- **Expiration Date:** 16-Mar-2026
- **Minimum Passing:** 80
- **Reported Score*:** 97

REQUIRED AND ELECTIVE MODULES ONLY	DATE COMPLETED	SCORE
Belmont Report and Its Principles (ID: 1127)	17-Mar-2022	3/3 (100%)
History and Ethical Principles - SBE (ID: 490)	17-Mar-2022	4/5 (80%)
Defining Research with Human Subjects - SBE (ID: 491)	17-Mar-2022	5/5 (100%)
The Federal Regulations - SBE (ID: 502)	17-Mar-2022	5/5 (100%)
Assessing Risk - SBE (ID: 503)	17-Mar-2022	5/5 (100%)
Informed Consent - SBE (ID: 504)	17-Mar-2022	5/5 (100%)
Privacy and Confidentiality - SBE (ID: 505)	17-Mar-2022	5/5 (100%)
Conflicts of Interest in Human Subjects Research (ID: 17464)	17-Mar-2022	5/5 (100%)
Unanticipated Problems and Reporting Requirements in Social and Behavioral Research (ID: 14928)	17-Mar-2022	5/5 (100%)
Marian University - Indianapolis (ID: 16576)	17-Mar-2022	No Quiz
Cultural Competence in Research (ID: 15166)	17-Mar-2022	5/5 (100%)
Research with Prisoners - SBE (ID: 506)	17-Mar-2022	5/5 (100%)
Internet-Based Research - SBE (ID: 510)	17-Mar-2022	5/5 (100%)
Research and HIPAA Privacy Protections (ID: 14)	17-Mar-2022	4/5 (80%)

For this Report to be valid, the learner identified above must have had a valid affiliation with the CITI Program subscribing institution identified above or have been a paid Independent Learner.

Verify at: www.citiprogram.org/verify/?ka01b5f90-5c8d-4d16-9bdb-e8a3bdb6c87c-48008137

Collaborative Institutional Training Initiative (CITI Program)
Email: support@citiprogram.org
Phone: 888-529-5929
Web: https://www.citiprogram.org

MARIAN UNIVERSITY
Indianapolis®

Institutional Review Board

DATE:	10-20-2022
TO:	Majid Nasir Siddiqi & Dr. Bradley Stelflug
FROM:	Institutional Review Board
RE:	S22.168
TITLE:	Standardized Handoff Report Confidence
SUBMISSION TYPE:	New Project
ACTION:	Determination of EXEMPT Status
DECISION DATE:	10-20-2022

The Institutional Review Board at Marian University has reviewed your protocol and has determined the procedures proposed are appropriate for exemption under the federal regulations. As such, there will be no further review of your protocol and you are cleared to proceed with your project. The protocol will remain on file with the Marian University IRB as a matter of record. Please be mindful of the importance of reporting only de-identified, HIPPA-compliant information about the patient in any exhibit or publication.

Although researchers for exempt studies are not required to complete online CITI training for research involving human subjects, the IRB **recommends** that they do so, particularly as a learning exercise in the case of student researchers. Information on CITI training can be found on the IRB's website: http://www.marian.edu/academics/institutional-review-board.

It is the responsibility of the PI (and, if applicable, the faculty supervisor) to inform the IRB if the procedures presented in this protocol are to be modified of if problems related to human research participants arise in connection with this project. Any procedural modifications must be evaluated by the IRB before being implemented, as some modifications may change the review status of this project. Please contact me if you are unsure whether your proposed modification requires review. Proposed modifications should be addressed in writing to the IRB. **Please reference the above IRB protocol number in any communication to the IRB regarding this project.**

Amanda C. Egan, Ph.D.
Chair, Marian University Institutional Review Board

References

Aldrete, J. A. (1995). The post-anesthesia recovery score revisited. Journal of Clinical Anesthesia, 7, 89-91. DOI: 10.1016/0952-8180(94)00001-K

American Association of Nurse Anesthesiology. (2020). AANA Professional Practice Manual. Retrieved April 4, 2022, from https://www.aana.com/practice/practice-manual

Arnold, E. C., & Boggs, K. U. (2019). Interpersonal Relationships: Professional Communication Skills for Nurses (8th ed.). St. Louis, MO: Elsevier.

Agency for Healthcare Research and Quality. (2019). SBAR Technique for Communication: A Situational Briefing Model. Retrieved from https://www.ahrq.gov/teamstepps/instructor/reference/sbar.html

Bergs, J., Lambrechts, F., Simons, P., Vlayen, A., Marneffe, W., Hellings, J., & Cleemput, I. (2017). Barriers and facilitators related to the implementation of surgical safety checklists: a systematic review of the qualitative evidence. BMJ Quality & Safety, 26(12), 997-1005. https://doi.org/10.1136/bmjqs-2015-005019

Daly, J., Willis, K., Small, R., Green, J., Welch, N., Kealy, M., & Hughes, E. (2007). A hierarchy of evidence for assessing qualitative health research. Journal of clinical epidemiology, 60(1), 43–49. https://doi.org/10.1016/j.jclinepi.2006.03.014

Hines, R., Barash, P. G., Watrous, G., & O'Connor, T. (1992). Complications occurring in the Post anesthesia Care Unit. Anesthesia & Analgesia, 74(4). https://doi.org/10.1213/00000539-199204000-00006

Joint Commission international accreditation standards for hospitals. (2013). In Joint Commission accreditation participation requirements: Anesthesia and surgical care. DOI: 10.37573/9781585284474.002

Jurewicz, K., Alfred, M., Neyens, D. M., Catchpole, K., Joseph, A., & Reeves, S. T. (2018). Investigating intraoperative and interprofessional handoffs in anesthesia. Proceedings of the Human Factors and Ergonomics Society Annual Meeting, 62(1), 469–473. DOI: 10.1177/1541931218621107

Jurewicz, K., Manojlovich, M., & Miller, A. (2018). Quality of anesthesia handoffs and association with adverse events. Journal of Perianesthesia Nursing, 33(6), 914-923. https://doi.org/10.1016/j.jopan.2017.12.003

Kellner, D. B., Urman, R. D., Greenberg, P., & Brovman, E. Y. (2018). Analysis of adverse outcomes in the post-anesthesia care unit based on Anesthesia Liability Data. Journal of Clinical Anesthesia, 50, 48–56. https://doi.org/10.1016/j.jclinane.2018.06.038

Kinsella, S. M., Girgirah, K., Scrutton, M. J. L., & Vaughan, D. J. A. (2018). Factors affecting recovery room times

Kluger, M. T., & Bullock, M. F. (2002). Recovery room incidents: A review of 419 reports from the Anesthetic Incident Monitoring Study (AIMS). Anesthesia, 57(11), 1060–1066. https://doi.org/10.1046/j.1365-2044.2002.02865.x

Kothari, A., Bhatnagar, S., & Sharma, C. (2021). Handover Communication in Post-Anesthesia Care Unit: An Observational Study. Anesthesia, Essays and Researches, 15(1), 69-74. doi: 10.4103/aer.aer_22_21

Leslie, J., & Scott, J. (2021). Personal SWOT analysis: Making the most of your talents and opportunities. Career Planning from MindTools.com. Retrieved April 4, 2022, from https://www.mindtools.com/pages/article/newTMC_05_1.htm

McGrath, B., & Chung, F. (2003). Postoperative recovery and Discharge. Anesthesiology Clinics of North America, 21(2), 367–386.

Ramsay, M. A. (2006). John Snow, MD: Anesthetist to the Queen of England and pioneer epidemiologist. Baylor University. Medical Center, 19(1), 24-28. DOI: 10.1080%2F08998280.2006.11928120

Rosswurm, M., & Larrabee, J. H. (1999, December). A model for Change to Evidenced-Based Practice. Image: Journal of Nursing Scholarship, 31 (4), 317-322. DOI: 10.1111/j.1547-5069.1999.tb00510.x

Sexton, J. B., Helmreich, R. L., Neilands, T. B., Rowan, K., Vella, K., Boyden, J., ... & Thomas, E. J. (2006). The Safety Attitudes Questionnaire: psychometric properties, benchmarking data, and emerging research. BMC Health Services Research, 6(1), 1-10. https://doi.org/10.1186/1472-6963-6-44

Villafranca, A., McKinnon, J., & Houle, T. T. (2015). The effect of intraoperative temperature management on surgical site infection. Anesthesia & Analgesia, 120(5), 978-990. https://doi.org/10.1213/ANE.0000000000000659

Yap, Y. L., Hsu, Y. C., Kuo, M. C., Lee, M. H., & Lin, K. H. (2019). A handover protocol improves the quality of handover in anesthetic practice. BMC Anesthesiology, 19(1), 196. https://doi.org/10.1186/s12871-019-0872-2