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# Improving Handoff Communication in the Emergency Department

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# Improving Handoff Communication in the Emergency Department

by

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## Abstract

Ineffective handoff communication has been recognized for years as a practice issue and is the most frequently reported cause of sentinel events in U.S. hospitals (Dufault et al., 2010) and responsible, at least in part, for 30% of all malpractice claims (Fucik, 2019). The development of standardized tools has been identified as a key component to improving handover practice. For this project, a standardized SBAR tool was modified for a local emergency department. The intervention was a process change in the emergency department to utilize an SBAR tool during handoff reports. The project was implemented by educating staff on the new process and tool during routine staff meetings and then launching the use of the new tool after scheduled staff meetings were completed. The project aimed to increase staff perception of "good handoff communication" measured by a pre and post survey questionnaire. The survey questionnaire consisted of 10 questions and was created by using the "Eight Quality Components of Handoff" to measure pre versus post implementation handoff behavior (Angelow & Specht, 2019). The desired outcome was to increase staff perception of effective handoff communication by 25% after 2 months of implementing the use of a standardized tool for handover reports. The project resulted in an overall increase in the quality of handoff measures. Staff perception of the quality of handoff using a standardized tool improved from an average score of 3.36 presurvey to 4.25 post survey on a 5-point Likert scale.


*Keywords: handoff tool, standardized, SBAR, communication, emergency department,*

## Table of Contents

## List of Figures

## List of Tables

## Introduction

Effective communication in healthcare is essential, especially when transferring care from one healthcare provider to another. Nurses are expected to communicate a patient summary effectively, including the reason for the visit, lab and radiology results, diagnosis, plan of care, and future orders to maintain continuity of patient care. Without effective communication, the patient suffers. Ineffective handoff communication has been recognized for years as a practice issue. "As a result of the rapid turnover of patients, number of daily admissions, and daily bed capacity limitations, unit-to-unit handoffs are frequent, fast-paced, and problem-prone" (Fleischman & Lanciers, 2013, p. 56). Handoff communication impacts patient safety, time to diagnosis, and patient and family satisfaction.

## Problem Recognition

### Safety

Safety is of the highest priority when it comes to patient care. When giving a report, one must make sure that it is thorough so that the safety of patients continues to be the goal. Patients presenting to the emergency department are often suffering from severe illness or injury so there is little room for error and the need for accurate clinical information sharing and decision-making during handoff is high (Eggins et al., 2016). Continuity of treatment and management of patient care can prevent patient deterioration and early recognition of a change in condition. In fact, 80% of serious medical errors are associated with high miscommunication rates during patient handoffs (Wilson, 2018). The Joint Commission recognizes handoffs as a critical patient safety issue, and in 2017 released a Sentinel Event Alert identifying inadequate handoffs as a high-risk occurrence

(Wilson, 2018). Nevertheless, gaps in communication continue to exist, thereby increasing patient risk. Negative effects of ineffective handoffs include incorrect treatments, delayed diagnoses, prolonged hospital admissions, prescription errors, patient falls, and patient fatalities (O'Rourke et al., 2018).

**Delay**

Communication breakdowns during patient reports can result in delays in diagnosis or treatments and longer hospital stays (Dahlquist et al., 2018). Handoff communication must include a "to-do" list of orders that have not been completed, as well as the future plan of care for a hospital stay. Dahlquist et al. (2018) found that when bedside rounding with the standardized report was performed during handoff, less time was spent during the transition of care process and patients subsequently spent less time in the Emergency Department. Delay in care is not the only purpose of effective handoff communication. Other benefits can include relief of anxiety for the patient allowing for improved patient satisfaction.

**Satisfaction**

Failures in communication are a major cause of critical incidents and patient complaints (Eggins et al., 2016). Successful handoff can improve patient satisfaction through involvement in care and improved nurse-patient relationships (Taylor, 2015). Communicating patient-specific details and preferences during handoff promotes a cohesive atmosphere of patient safety and satisfaction. The positive effect at the bedside drive patients, families, nurses, and other clinical staff to examine the purpose of treatments and any special needs or preferences that should be observed. In turn, more time focused on patient needs links closely with higher patient satisfaction outcomes.

## Handoff Components

Although the impact on patient care is clear, gaps continue to occur during handoff reports. Angelow and Specht (2019) outline eight quality components of handoff as (1) determining critical information, (2) using standardized tools, (3) using face-to-face or technology such as video conferencing, (4) gathering information from all sources (allowing the family to give input), (5) discussing minimum information (sender contact information, illness assessment, patient summary, to-do list, plan, allergy list, code status, medication list, lab tests, vital signs), (6) having a zone of silence, (7) allowing for questions, and (8) using the medical record to give report (not relying on memory). The development of standardized tools has been a key component to improve handover practice. However, according to Eggins et al. (2016), many clinicians were not aware that a standardized tool was recommended.

## Problem Statement

Ineffective handoff communication has been recognized for years as a practice issue and is the most frequently reported cause of sentinel events in U.S. hospitals (Dufault et al., 2010). One estimate showed 1,744 deaths and $1.7 billion in malpractice expenses over 5 years as a result of communication errors in American hospitals and medical practices, which are considered to be at least partially to blame for 30% of all malpractice claims (Fucik, 2019). The development of standardized tools has been identified as a key component to improving handover practice. In current practice, there is no standardized tool being utilized for handoff reports in the local emergency department.

## Literature Review

The purpose of the literature review was to gather evidence-based practice information regarding handoff communication practices, communication tools used, and implications for future improvement. An English language search of 12 articles was collected utilizing databases such as PubMed, ScienceDirect, Wiley Online Library, ProQuest, and NCBI. Keywords used for the search included “handoff communication”, “ineffective handoff”, “handoff report”, “bedside report”, “handoff tools” and “standardized communication tools”.

### Problem Impact

Tobiano et al. (2020) designed a descriptive, qualitative study, to explore nurses’ perceptions of factors that influence emergency department (ED) to inpatient unit (IPU) nurse reports. Forty-nine nurses were interviewed at an Australian hospital and the content obtained was grouped into three major themes. Tobiano et al. (2020) discovered there was a lack of clear responsibility for who provides handover, there were issues regarding continuity and quality of information being transferred, and strained nurse rapport occurred between units affected by work pressures. Tobiano et al. (2020) suggested that clearer ED-to-IPU handover processes should be required and that the development of a handover process protocol may assist with process issues. A limitation of the study is that it is qualitative data of nurses’ perceptions with no measurable tool indicating the quality of the report given. Another limitation could be the small number of nurses interviewed.

Dufault et al. (2010) created a project using a six-step translating-research-into-practice approach, the Collaborative Research Utilization (CRU) model, to develop and

test an evidence-based, patient-centered, best practice protocol for nurse-to-nurse shift handoffs in a 129-bed, magnet-designated urban community hospital. The first three steps of the model, methods included (1) identifying clinical problems related to shift handoffs; (2) appraising and systematically evaluating the strength of theoretical, empirical, and clinical evidence; and (3) translating this evidence into a best-practice patient-centered, standardized protocol for nurse-to-nurse shift handoffs (Dufault et al., 2010). The study found standardization of clinical practice related to the transfer of information is an essential aspect of patient safety and improves clinical outcomes (Dufault et al., 2010). The project created meaningful protocol change in the hospital setting to a standardized, evidence-based, patient-centered approach to nurses' change-of-shift handoffs (Dufault et al., 2010).

Dahlquist et al. (2018) conducted a pre and post intervention quality improvement study to determine the impact that a standardized reporting tool and process may have on metrics for patients undergoing a transition of care at shift change. The study was performed from September 1 to November 30, 2015, and implementation began with a mandatory workshop and personnel training (Dahlquist et al., 2018). The primary endpoint was the length of stay (LOS). A comparative analysis of differences between patient LOS and the communicative method used was assessed pre and post intervention (Dahlquist et al., 2018). Bedside reporting increased from 45% pre study to 85% post intervention with the use of the standard reporting system (Dahlquist et al., 2018). Dahlquist et al. (2018) concluded standard reporting tools used during handoffs at shift change improve ED throughput efficiency and are associated with shorter ED LOS (Dahlquist et al., 2018). Limitations of the study include it being at a single-center urban

hospital with no analysis of patient care outcomes, such as patient satisfaction, readmission rate, or medical errors. Additionally, the LOS endpoint can be affected by other factors such as inpatient bed availability and ED volume.

Taylor (2015) conducted an evidence-based project to recognize how the implementation of a standardized bedside handoff can improve patient safety and satisfaction in an inpatient surgical oncology unit. A literature review was conducted, and qualitative data was gathered by a survey from a convenience sample of nurses and patients (Taylor, 2015). According to surveyed nurses, benefits included an introduction to the patient and family, improved communication from nurse to nurse and nurse to patient, improved patient satisfaction and adherence to care, and task prioritization (Taylor, 2015). According to the patients, the top benefits were introductions and enhanced communication (Taylor, 2015). A limitation is that the study was conducted on one particular unit and may not be able to be generalized to all hospital units.

**Problem Improvement**

Bergs et al. (2018) aimed to improve the quality of nursing handover from the ED to inpatient units. The methods used were a quasi-experimental control group pretest/ posttest design to implement the use of an existing handover form and procedure (Bergs et al., 2018). A total number of 130 nurses participated in the study. Data was rated on the quality of information, interaction and support, and efficiency (Bergs et al., 2018). There was an improvement in the perception of interaction and support among emergency department nurses (Bergs et al., 2018). The intervention positively affected teamwork and mutual understanding concerning handover practices (Bergs et al., 2018). Limitations of the study include that fidelity or adherence to the handover procedure was

not measured. Another limitation is that the study was conducted in Belgium and social characteristics in the hospital setting may differ between cultures. There could also be a potential for bias by using a negatively worded questionnaire.

Campbell and Dontje (2019) designed a practice improvement project to improve the effectiveness of nurse handoff in the ED of a midwestern trauma center. The process changes required nurses to give bedside reports using the SBAR (Situation, Background, Assessment, Recommendation) format (Campbell & Dontje, 2019). Participants included all nurses who worked in the emergency department. Pre and post implementation scores were measured for a nursing handoff questionnaire, selected items on the Hospital Survey on Patient Safety Culture, and handoff observations documented by leadership to determine the effectiveness of the intervention (Campbell & Dontje, 2019). The results revealed no significant change between pre and post implementation for 5 of the 7 questions (Campbell & Dontje, 2019). One change was nurses' responses to “I have had a personal incidence of a poor patient outcome related to incomplete handoff” showed 43% disagreed with this statement in the pre-implementation questionnaire versus 84% in the post-implementation questionnaire (Campbell & Dontje, 2019, p. 152). The second question that changed was pre-implementation, 43% of nurses agreed with the statement “I believe all nurses on staff provide complete and accurate handoffs” versus 77% on the post-implementation questionnaire (Campbell & Dontje, 2019). Nurses found the SBAR method easy to use and prevented loss of patient information more effectively than pre-intervention practice (Campbell & Dontje, 2019). A possible limitation of the study may be that only the 6 pm and 6 am shift handoffs were observed. Time constraints may also be a factor due to nursing staff being asked to complete a post questionnaire 2 months

after implementation. No long-term sustained commitment to the process changes was demonstrated.

Fleischman and Lanciers (2013) conducted a Lean Six Sigma Work Out to review current hospital practices, determine information that should be included in reports between units, and develop a standardized report checklist. After a trial of the checklist, input from staff was used to revise the tool for the handoff report (Fleischman & Lanciers, 2013). Post-implementation, the Culture of Safety Survey for the hospital showed significant improvements in safety perception and teamwork within units, however, showed no improvement in teamwork across units (Fleischman & Lanciers, 2013). The poster presentation does not include specific checklist items that were used during the report or concurrent changes made in the hospital throughout the year that could have potentially affected the Culture of Safety Survey from 2011 to 2012.

**Identifying Key Features of Communication**

Angelow and Specht (2019), provided an overview of the current communication handoff process and the importance of implementing standardized institutional patient handoff policies and procedures. A meta-analysis of standardized handoff protocols was performed resulting in an outline of eight quality components used to improve the quality of information and foster positive patient outcomes (Angelow & Specht, 2019). The eight quality components of handoff are: (1) determining critical information, (2) using standardized tools, (3) using face-to-face or technology such as video conferencing, (4) gathering information from all sources, (5) discussing at least minimum information (sender contact information, illness assessment, patient summary, to-do list, plan, allergy list, code status, medication list, lab tests, vital signs), (6) having a zone of silence, (7)

allowing for questions, and (8) using the EHR to give report (Angelow & Specht, 2019). Angelow and Specht (2019) suggested that policies delineate a process for handoff in the emergency department that must include a standardized tool, with competency-based education while ensuring continued competency in the future. A limitation, however, is that a specific tool over another was not recommended.

O'Rourke et al. (2018) conducted a mixed methods design study using the Delphi technique to identify the core components of nurse-nurse handoffs. From May 2016 to October 2016 the study used a series of steps while a panel of experts gave feedback on the nurse-nurse handoff components (O'Rourke et al., 2018). The experts who had a background in clinical nursing practice, academia, and handoff research came to a consensus when an agreement was 80% or higher (O'Rourke et al., 2018). The 17 experts determined the core components of handoff are patient summary, action plan, and nurse-nurse synthesis (O'Rourke et al.,2018).

Eggins et al. (2016) detailed a multi-disciplinary analysis of more than 800 recorded handover interactions, audits of written handover documentation, interviews, and survey responses. Eggins et al. (2016) identified features of effective and ineffective clinical handovers in diverse hospital contexts. Descriptive findings were then translated into practical protocols, communication strategies, and checklists that clinicians, managers, and policymakers can apply to improve the safety and quality of clinical handovers (Eggins et al., 2016). Multiple studies are cited throughout the content of the book. According to Eggins et al. (2016), practical communication tools developed in the book are based on a 3-year multidisciplinary project called Effective Communication in Clinical Handover (ECCHo). The ECCHo project builds on methodology and research in

communication between clinicians and patients in emergency departments through both quantitative and qualitative data collection (Eggins et al., 2016). Eggins et al. (2016) recognized that there are a number of factors that affect communication such as physical constraints, employment conditions, and lack of clinical handover training. Eggins et al. (2016) concluded that handover training and education can improve teamwork, hospital safety, clinician morale, and the level of overall patient care. The development of structural communication tools for handover has been a key aspect of the response to handover problems. Human factor advocates support the use of standard forms and checklists as potential failure detection mechanisms in clinical settings (Eggins et al., 2016). The modified SBAR tool to ISBAR was recommended in the book adding an "I" for "introduce" (Eggins et al., 2016). Limitations may exist in cultural and social characteristics due to the ECCHo project being based out of Australia.

Reimer et al. (2018) conducted a literature review using Allied Health Literature and PubMed between 2008 and 2015 to identify the essential elements of effective handoffs in emergency situations. The goal was to develop a standardized tool to support patient handoff procedures for use in guiding education and training (Reimer et al., 2018). Essential data elements resulted in a tool containing 30 objective and five subjective items (Reimer et al., 2018). Limitations of the study are that it is based on prehospital to hospital transfer of care and recommendations may not be transferable from ED to inpatient units.

Smith et al. (2018) conducted a mixed method, pretest/posttest study at a Midwestern Level 1 trauma center that had 60,000 emergency department visits per year. "Admission handoff best practices were integrated into a modified SBAR-DR format

resulting in Situation, Background, Assessment, Recommendation, Discussion and Disposition, and Read-back & Record" to evaluate the impact of a structured communication strategy on the quality of admission handoffs (Smith et al., 2018, p. 372). The intervention included an educational session on admission handoff best practices, a review of internal handoff data, and an introduction to the verbal and written elements of the SBAR-DR model (Smith et al., 2018). After receiving consent from participants, admission handoff conversations were recorded from labeled ED telephone lines using a HIPPA-compliant online recording program (Smith et al., 2018). Eligible calls underwent stratified random sampling to achieve the pre-determined sample size (Smith et al., 2018). The calls were de-identified, then transcribed, and graded using a 16-point scoring instrument reflecting the best practice recommendations used in creating SBAR-DR (Smith et al., 2018). As a result of the SBAR-DR strategy, over half of the physicians reported personally experiencing improved patient safety during the 60-day study period (Smith et al., 2018). One limitation, however, was compliance. In the post intervention period, the SBAR-DR format was only used in 30% of verbal handoffs (Smith et al., 2018). Another limitation of the study was that it was based on the emergency physician-to-inpatient provider report rather than a nurse-to-nurse report.

## Needs Assessment

### PICOT Statement

In the emergency department, how does the implementation of a standardized tool compare to no standardized approach affect staff perception of handoff communication over 2 months?

## Sponsors and Stakeholders

A project to change the practice of shift reports and test whether it affected communication required a number of sponsors and stakeholders. The high-power, high-interest stakeholders involved were the unit manager and clinical educator for the emergency department. High-power, low-interest stakeholders were the staff nurses in the emergency department. Needs had to be met to keep these stakeholders satisfied as they were asked to make changes to their current practices in order to maintain compliance with a newly developed tool. Others who had a vested interest in the outcome were the inpatient nurses. These low-power, high-interest stakeholders would not be using the tool, but the project could impact the quality of communication they received during the patient report. Ancillary staff is an example of low-power, low-interest stakeholders as they had minimal involvement in the project.

## SWOT Analysis

Figure 1 depicts the SWOT analysis used.

**Figure 1**

*SWOT Analysis*

| **Strengths** | **Weaknesses** |
|---|---|
| • Continuing education and best practice changes are strongly encouraged in the department | • Short staffing<br>• High unit volumes cause increased work fatigue |
| **Opportunities** | **Threats** |
| • Cost-saving ability for the hospital<br>• Increased quality of patient care | • Large amount of resources and travel nurses |

**Resources**

A handoff tool existed within the system. This tool was used and modified for implementation within the emergency department.

**Outcome**

The desired outcome was to increase staff perception of effective handoff communication by 25% after 2 months of implementing the use of a standardized tool for handover reports. The baseline was established by a pre-survey questionnaire and compared to a post-implementation questionnaire.

**Team**

The team included the DNP student as the project leader, the DNP project faculty chair, and the practice partner. The practice partner was the emergency department nurse educator who holds a master's degree in nursing education.

**Cost**

The cost of the project required a copy of the tool on each computer on wheels (COW) that nursing staff utilized during shift reports to aid as a visual reminder. Estimates projected by an office supply store suggested the cost of $0.52 per copy, with 25 COWS in the department, a total cost being approximately $13. The project also required training that was done at a quarterly staff meeting. The training was estimated to last 30 minutes. The average educational pay in the emergency department was $28 an hour. At the time of the project, 52 registered nurses were employed in the emergency department (varying from full-time to part-time to PRN). The training was estimated to cost the hospital's education budget approximately $728. The benefits to the hospital included enhanced communication, which may result in decreased malpractice claims.

An estimated $1.7 billion in malpractice expenses over 5 years are the result of communication errors in American hospitals and medical practices (Fucik, 2019).

### Scope of Project

The project was intended to address handoff communication in the emergency department by using a standardized tool for handoff reports. This project did not address a standardized tool for use in other units in the hospital or for use in outpatient settings. Potential barriers included staff hesitancy to adopt a new admission handoff process.

## Goal, Objective, and Mission Statement

### Goal

The project goal was encompassed by the desire to grow as a team, as a department, and as a system to attempt to better the current communication process for the person giving the report, the receiving staff, and patients who receive care in the department.

### Objective

The objective of this project was to increase staff perception of "good handoff communication" measured by pre and post survey, showing a 25% increase after 2 months of using the new ED standardized tool.

### Mission Statement

The mission of this project was to improve communication during handoff reports by developing a standardized tool for use in the emergency department to benefit the quality and continuity of patient care.

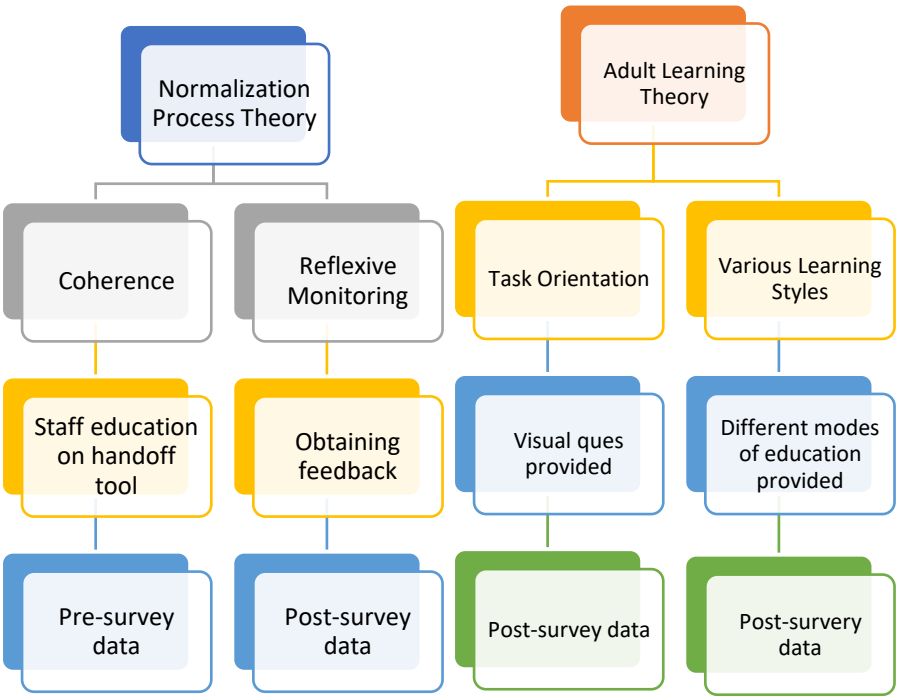
## Theoretical Underpinnings

As previously discussed, numerous efforts by accredited organizations such as The Joint Commission set forth standards for using a handover tool for patient safety. Although the body of knowledge was evident, a problematic gap between research and implementation continued to exist. The project, therefore, focused on initiating an SBAR handover tool during reports among emergency department nurses. The Normalization Process Theory (NPT) identifies, characterizes, and explains key mechanisms that promote and inhibit the implementation, embedding, and integration of new health techniques, technologies, and other complex interventions (May et al., 2018). NPT searches to answer the question of what needs to happen in order for the process change to become normal. In this study, the focus was on the theory components of coherence and reflexive monitoring. Coherence was done by educating staff on what is being changed, why it is being changed, and how the change is implemented. This education was completed during a staff meeting as well as through follow-up reeducation and being present during the initial start-up of tool use. Adequate training is essential for process change to become routine practice. Reflexive monitoring is a monitoring and evaluation method used to align activities with long-term project goals. The NPT component of reflexive monitoring was used in this project as a feedback model by use of a post-intervention survey. The post-intervention survey allowed for the measurement of staff perception of the quality of communication with the use of a standardized tool. Throughout the project, NPT was utilized as a framework to navigate potential issues of implementation, while designing the intervention and its evaluation. However, to address participant involvement in the study, the accommodation of Malcolm Knowles' theory of

andragogy was used. Knowles' theory of andragogy is a theory specifically used for adult learners with an emphasis that instruction for adults should focus more on the process and less on the content being taught (Culatta, 2022). For example, the Adult Learning Theory was applied to the project by having an SBAR visual tool to enable staff to be task-oriented rather than promoting memorization of content. The tool was present on each staff-used computer with extra copies in the department for staff who choose to write directly onto the form. The option modeled Knowles by considering the wide range of different backgrounds of learners so that materials and activities could fit participants' experiences and learning styles. Verbal, visual, and handouts were all modes of education that were provided for adult learners during the education and implementation of the project. Refer to Figure 2.

**Figure 2**

*Conceptual-Theoretical-Empirical Diagram*

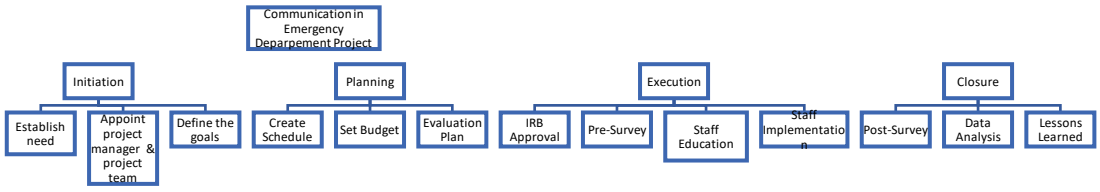


## Project Planning

A work breakdown structure was created to serve as a planning tool and to aid in the schedule of activities. Accurate planning of work required that the work be broken down into small packages that could be easily monitored. The purpose was to systematically identify the work that needed to be done to execute the project (Zaccagnini & Pechacek, 2021). The initial step involved establishing project needs, getting buy-in from the project facility, and defining goals for the project. In the planning stage, a timeline was developed, a budget was created, and an evaluation plan was established. During the execution phase, participants completed a presurvey prior to their scheduled education session. Staff education occurred at each session of the quarterly staff meeting and continued during launch day. Implementation of using the handoff tool during the report occurred on launch day after education was completed. The closure of the project was used for post-survey evaluation and feedback as well as a reflection on lessons learned. A detailed work-breakdown structure is shown in Figure 3.

**Figure 3**

*Work Breakdown Structure*

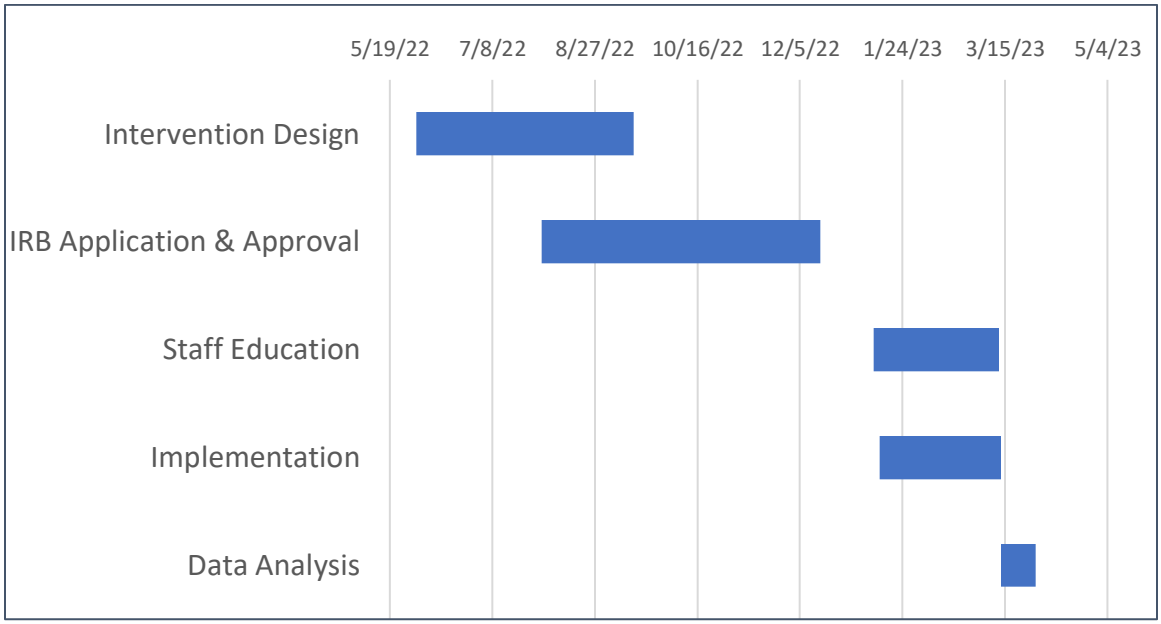


## Timeline

A project timeline was used to estimate the time required to complete subprojects and tasks; to identify whether tasks could be parallel or sequential to other tasks. The information was placed in a Gantt chart for visual appeal and began in the planning stages. The intervention design was initiated in Summer 2022 with plans to complete it prior to the submission of the IRB application. Staff education occurred at the scheduled staff meeting in Spring 2023 and continued during the implementation phase. Data analysis was completed after the 2-months of implementation occurred. Figure 4 details the timeline for task completion.

**Figure 4**

*Handoff Communication Project Timeline*




## Budget

Developing a budget is an important step in project management. A budget was created for administrators and stakeholders to know the cost associated with the project.

A budget was used to account for both direct and indirect costs. The direct costs included labor and supplies. Labor cost was broken down further to account for the cost of the project planner's education sessions and staff education time. The project planner was to attend all four, 1-hour staff meetings where initial education of the new handoff process would occur. The project planner would also be present for launch day for continued education and questions. The launch day time frame compensated for dayshift, midshaft, and nightshift staff members. On completion of the project, the project planner would be present to encourage staff to complete a post survey and an available for additional feedback or suggestions from staff. The training was estimated to last 30 minutes. The average educational pay in the emergency department was $28 an hour. At the time of the project, the department employed 52 registered nurses in the emergency department. It was estimated to cost the emergency department's education budget approximately $728 for staff training purposes. Other direct costs included the printed handoff tool to be used as a guide on staff computer-on-wheels. Printed material cost was estimated based on the average cost at a local supply store. Indirect costs included items shared by many different entities in the institution. Indirect costs were depicted and included office space, internet access, information technology services, and internal communications. Indirect costs were expressed by using a 15% model minus exclusions such as materials (University of California San Diego [UCSD], 2021).

**Cost of Personnel and Non-Personnel Resources**

Table 1 depicts the resource breakdown within the project.

**Table 1**

*Resource Breakdown*

| Cost Category | Resource | Detail | Total Cost in Dollars |
|---|---|---|---|
| Direct Labor | Project Planner (project leader) | Initial training (all staff meetings)- 4 hours<br>Launch day- 8 hours<br>Post-survey completion day- 8 hours<br>20-person hours @ $32 per person hour | $640 |
| | Staff | 52-person hours @ $28 per person/hour | $728 |
| Other Direct Costs | Education Materials | 0.25 per copy @ 25 copies | $13 |
| **Total Direct Costs** | | | **$1,381** |
| Indirect Costs | Office Space, internet access, computer use, and email | $1,381- exclusions $1,368 @ 15% | $205 |
| **Total Project Cost** | | | **$1,586** |

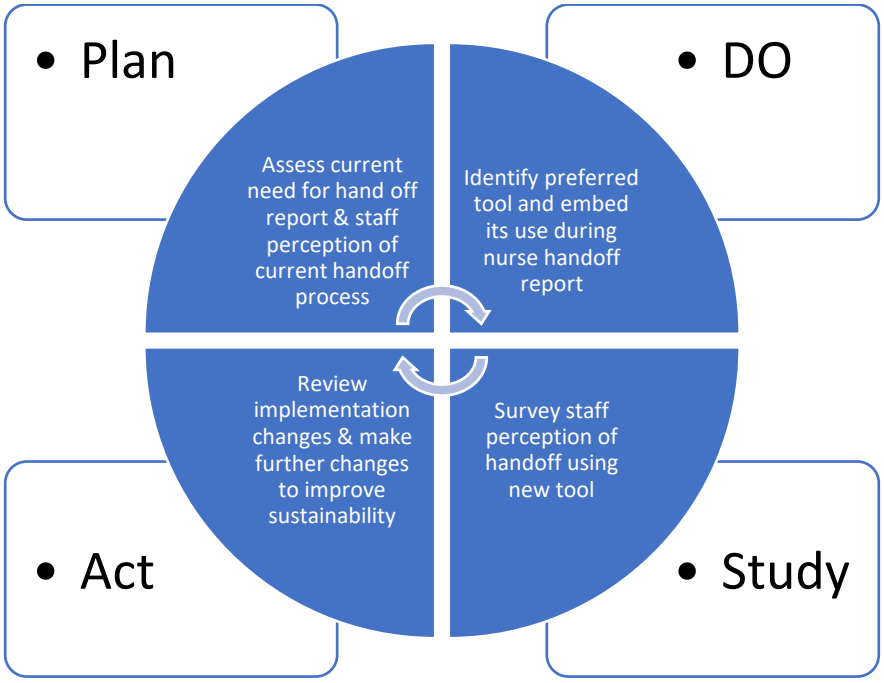
## Evaluation Plan

Evaluation of the project was planned by utilizing the quality improvement method of plan, do, study, act (PDSA). PDSA is a cycle that allows for the improvement of processes in daily management and continuous development (Zaccagnini & Pechacek, 2021). With this model, changes are made, evaluated, corrected or changed, and reevaluated. During the “Plan” phase data is collected, analyzed, and the intervention is

planned. The “Do” phase is for developing and testing potential solutions. The “Study” phase consists of measuring the efficacy of outcomes and analyzing outcomes for needed adjustments. Lastly, the “Act” phase is used to modify the plan as needed (Zaccagnini & Pechacek, 2021). A detailed PDSA chart is shown in Figure 5.

**Figure 5**

*PDSA Cycle*




**Outcomes**

To measure the impact of the project and document outcomes a quantitative method was used. A paper survey was created to evaluate staff perception of whether key components of handoff were being discussed, utilizing a pretest/posttest format. The survey also assessed if staff perception of handoff communication improved. A paper survey was chosen due to the acuity of the unit; it was felt that a paper copy of the survey was more likely to be completed by staff than an electronic version. The survey questionnaire consisted of 10 questions and was created by using the “Eight Quality

Components of Handoff" to measure pre versus post implementation handoff behavior (Angelow & Specht, 2019). A 5-point Likert scale was used for responses, including "always", "most of the time", "about half the time", "sometimes" and "never" for questions 1-9, and "strongly agree", "agree", "neither agree nor disagree", "disagree", and "strongly disagree" for question 10. The questions are as follows:

1. How often do I use a standardized approach (such as SBAR) during the handoff report?
2. Time for questions is made available after handoff
3. Outstanding orders such as radiology/labs are discussed
4. Admission plans are discussed
5. Bowel/bladder needs are discussed
6. Ambulatory status is reviewed during the report
7. Psychosocial components of health are discussed during the report (such as social issues, special needs, and patient preferences)
8. Handoff communication is effective and clear
9. The report is being done at the bedside or by using Vidyo
10. Do you agree or disagree with the statement?
    a. In the emergency department, using a standardized tool during handoff allows for better communication compared to using no tool.

Questions were reviewed by the project leader and DNP project faculty chair to establish face validity. The survey procedure was completed by having the department nurse educator hand out the paper copies at the scheduled staff meetings while the project leader was not present. The survey was collected by the nurse educator and given to the

project leader at a later date in order to keep the participants anonymous. The project leader had no way of knowing which staff members choose to participate or not participate.

## Implementation

### Threats & Barriers

Fostering adequate buy-in from staff to change the practice routine was one barrier that was addressed early on during implementation. The willingness of staff to cooperate to bring change to fruition versus the degree of resistance to change by staff members was variable. The degree of resistance seemingly improved with continuing education on benefits and having "champions" to help others with the tool throughout the implementation phase. Endorsement by senior leadership allowed for the cultural barriers of the department, especially senior team members, to be crossed. Personal bias and feelings of lack of need for the intervention were voiced by a few members of staff. Ultimately, having support from essential stakeholders facilitated the change agility of the department.

### Monitoring of Implementation

Monitoring of implementation went according to plan. The project was able to stay on track with the timeline that was set forth during the planning stages. Eight staff meetings were scheduled by management. Prior to the start of the meeting, staff was encouraged to complete the presurvey. After the presurvey was collected, the project leader educated the staff on key aspects of handoff communication and data that demonstrated the importance of a handoff tool being used. The new tool was introduced and discussed. The project leader was available to answer questions, comments, and

concerns from the staff at the end of the education session. Implementation began the following week. The project leader was accessible during the launch day to provide supportive work processes. This included addressing potential barriers, answering questions, and providing continuing education on the new process.

**Project Closure**

The project followed the strategic agenda and the implementation phase lasted for 2 months. The staff was made aware through reminders and daily huddles that a postsurvey was available to them for 1 week after the implementation period ended. The anonymous, post surveys were collected in a locked drop box outside of the nurse educator's office. The project leader collected the post surveys after the 1-week period ended for data analysis.

## Interpretation of Data

Thirty-six nurses participated in the pre-survey before SBAR implementation, and 35 nurses completed the post-survey after two months of SBAR implementation. The participation rate in the study was 69% on the pre-survey and 67% on the post-survey. Staff compliance with the SBAR tool use was not measured. Data from both the presurvey and postsurvey were entered into an Excel spreadsheet for calculation. Data were coded with 5 equaling “always” or “strongly agree” and 1 equaling “never” or “strongly disagree.” Higher scores indicated actions that were performed more often or more agreeance with the statement. Data were reviewed for accurate entry and then paper copies were shredded. Scores for each question were averaged and then averages were compared from the presurvey to the postsurvey to determine the percent change for each question. Percents were rounded to the nearest whole number (refer to Table 2).

**Table 2**

*Comparison of Average Pre-Survey and Post-Survey Responses*

| Question | Pre-Survey Average | Post-Survey Average | Percentage Change |
|---|---|---|---|
| 1 | 2.64 | 4.54 | +72%*** |
| 2 | 4.28 | 4.37 | +2% |
| 3 | 4.08 | 4.40 | +8%** |
| 4 | 3.53 | 3.71 | +5% |
| 5 | 3.08 | 4.09 | +33%*** |
| 6 | 3.44 | 4.23 | +23%*** |
| 7 | 2.94 | 3.49 | +18%*** |
| 8 | 4.17 | 4.34 | +4% |
| 9 | 3.72 | 3.71 | 0%* |
| 10 | 3.36 | 4.26 | +27%*** |

*Note.* * $p$ value < 0.05, ** $p$ value < 0.01, *** $p$ value < 0.001

Question 1, "How often do I use a standardized approach (such as SBAR) during handoff report?" had an average presurvey score of 2.64 and an average postsurvey score of 4.54. This resulted in a 72% increase in how often staff reported using a standardized approach during handoff. A one-sample t-test was conducted to compare presurvey and post survey scores for question 1. There was a significant difference between pre-survey scores (M = 2.64, SD = 1.10) and post-survey scores (M = 4.54, SD = 0.56); $t(34) = 20.09$, $p < .000$.

Question 2 addressed how often "Time for questions is made available after handoff" occurred, and results revealed an average of 4.28 pre-survey and 4.37 post

survey. This resulted in a 2% increase in how often staff reported making time for questions after handoff has occurred. A one-sample t-test was conducted to compare pre-survey and post survey scores for question 2. There was not a significant difference between pre survey scores (M = 4.27, SD = 0.88) and post survey scores (M = 4.37, SD = 0.73); t(34) = 0.7579, p = .23.

Question 3 asked if "Outstanding orders such as radiology and labs are discussed" during handoff. The average score increased from 4.08 pre-survey to 4.40 post-survey. This resulted in an increase of 8% in how often staff reported discussing outstanding orders such as radiology and labs during handoff. A one-sample t-test was conducted to compare pre survey and post survey scores for question 3. There was a significant difference between pre survey scores (M = 4.08, SD = 0.84) and post survey scores (M = 4.4, SD = 0.65); t(34) = 2.879, p = .003. Question 4 asked about the frequency of staff discussing plans for admission. The average score for question 4 increased from 3.53 pre survey to 3.71 post survey. This resulted in an increase of 5% in how often staff reported discussing plans for admission during handoff. A one-sample t-test was conducted to compare pre-survey and post-survey scores for question 4. There was not a significant difference between pre-survey scores (M = 3.53, SD = 1.00) and post survey scores (M = 3.71, SD = 0.93); t(34) = 1.192, p = .12.

Question 5, "How often is bowel and bladder needs discussed?" had an average pre-survey score of 3.08 and post survey score of 4.09. This resulted in an increase of 33% for how often staff reported discussing bowel and bladder needs during handoff. A one-sample t-test was conducted to compare pre-survey and post-survey scores for

question 5. There was a significant difference between pre-survey scores (M = 3.08, SD = 0.91) and post survey scores (M = 4.09, SD = 0.56); t(34) = 10.55, p < .000.

Question 6, “How often is ambulatory status reviewed during report?” had an average pre-survey score of 3.44 and an average post-survey score of 4.23. This resulted in a 23% increase for how often staff reported discussing ambulatory status during the handoff report. A one-sample t-test was conducted to compare pre-survey and post-survey scores for question 6. There was a significant difference between pre-survey scores (M = 3.44, SD = 0.91) and post survey scores (M = 4.23, SD = 0.60); t(34) = 7.753, p < .000.

Question 7 asked how often “Psychosocial components of health are discussed during report” such as social issues, special needs, and patient preferences. Participants had an average pre-survey score of 2.94 and an average post-survey score of 3.49. This resulted in an 18% increase for how often staff reported discussing the psychosocial component of health during handoff. A one-sample t-test was conducted to compare pre-survey and post-survey scores for question 7. There was a significant difference between pre-survey scores (M = 2.94, SD = 0.98) and post survey scores (M = 3.49, SD = 0.70); t(34) = 4.563, p < .000.

Question 8 asked staff giving report if they believed “Handoff communication is effective and clear”. Participants had a pre-survey average of 4.17 and a post-survey average of 4.24. This resulted in a 4% increase in how often staff reported communicating effectively and clear. A one-sample t-test was conducted to compare pre survey and post survey scores for question 8. There was a significant difference between

pre survey scores (M = 4.17, SD = 0.56) and post survey scores (M = 4.34, SD = 0.54); t(34) = 1.933, p = .03.

Question 9 addressed visualization of the patient during the report by asking staff how often they are reporting at the bedside or by using the hospital-approved video tool (Vidyo). Question 9 had an average pre-survey score of 3.72 and an average post-survey score of 3.71. This resulted in a 0% change in how often staff reported giving reports at the bedside or using Vidyo.

Question 10 asked staff to rate whether they agreed or disagreed with the statement "In the emergency department, using a standardized tool during handoff report allows for better communication compared to using no tool". Question 10 had an average pre survey score of 3.36 and an average post survey score of 4.26. This resulted in a 27% increase in how strongly staff agreed that using a standardized tool in the emergency department allowed for better communication than using no tool. A one-sample t-test was conducted to compare pre survey and post survey scores for question 10. There was a significant difference between pre survey scores (M = 3.36, SD = 0.92) and post survey scores (M = 4.26, SD = 0.61); t(34) = 8.678, p < .000.

**Process Improvement Data**

Question 1, "How often do I use a standardized approach (such as SBAR) during handoff report?", showed a substantial change which is likely because there was not a tool specifically for use in the emergency department prior to the study. Question 2, "Time for questions is made available after handoff", did not show substantial improvement. However, question 2 had a high average score of 4.28 presurvey, therefore, the lack of improvement appears to be related to staff feeling they were already skilled at

taking time for questions prior to the project intervention. Question 3, “Outstanding orders such as radiology and labs are discussed”, also had a high average rating of 4.08 pre-survey, therefore may reflect an area where staff was already doing well prior to the project intervention.

It is unclear as to why there was no further improvement in question 4, “Admission plans are discussed”, pre-versus post-survey. One staff member commented that “the admission plans were not always communicated to them by the provider”. The marginal change is possibly due to a communication barrier between nursing staff and providers, which is an area that may need further consideration in the future. Question 5, discussion of bowel and bladder needs, had a 33% improvement on pre survey after using the SBAR tool. Staff consistently reported this being a weak area and “forgetting to mention this”, prior to using an SBAR tool. Staff reported that although performed in the ED, activities of daily living were not always a focus during emergency care and therefore frequently missed. Staff received frequent education and re-education on question 6, “How often is ambulatory status reviewed during a report?”, during the initial education session and throughout the implementation period. A comment from staff included “I have not visualized the patient walking, but they report they can”. If this situation occurred, nurses were instructed to let the inpatient nurse know that the patient reported independent ambulation at home, but it was not assessed while in the emergency department. If this was addressed, regardless of independent assessment, it was to be counted on the survey. Staff reported discussion of ambulatory status improved post-survey.

Improvement presurvey versus postsurvey for question number 7, psychosocial components of health, may be due to the increased presence of social workers in the department who are available to assist nurses in addressing those needs. Question 8, "Handoff communication is effective and clear" had a high average score of 4.17 on the pre survey so this may represent why it minimally improved. Question 9, "Report is being done at the bedside or using Vidyo" had 0% reported improvement by staff. Staff expressed that using Vidyo was not appropriate for the department due to the high acuity of patients, some having mental status changes, being pharmacologically sedated, and/or emotionally labile. However, using Vidyo continues to be part of the policy within the department. This mindset will need to be further explored by management in the department and compared to evidence-based practice.

Question 10, "Using a standardized tool during handoff allows for better communication compared to using no tool" was used to measure the outcome and impact of the project. The desired outcome was to increase staff perception of effective handoff communication by 25% after 2 months of implementing the use of a standardized tool for handover reports. The baseline was established by a pre-survey questionnaire and compared to a post-implementation questionnaire, which showed a 27% change in staff perception of effective handoff communication. This exceeded the project objective and showed that using an SBAR handoff tool significantly increased staff perception of the quality of patient handoff.

The impact of this project could potentially increase patient safety during hospitalization, although this was not measured. In the future, safety data points after utilizing a standardized handoff tool could be further evaluated by monitoring

outstanding orders on admission, inpatient falls, and door-to-social work initiation of care. Gathering data from inpatient units on the quality of reports they receive could potentially be another helpful measurement for future projects. This could be done by surveying other departments to provide further feedback on the quality of emergency department reports.

Other notable items associated with this project include the hospital switch from Cerner electronic system to the Electronic Privacy Information Center (EPIC) electronic documentation system. This occurred shortly before the implementation phase. During this time staff reported issues finding essential information to provide during handoff. An SBAR format was not built into the new system. Some staff reported that using the paper SBAR tool, as a guide during the report, helped them to become more organized with transitioning to the new system.

The positive feedback, especially from new nurses, and the percentage of positive change in nurses' perception that using a standardized tool during handoff allows for better communication, demonstrated by this project intervention, guided management's decision to continue to support the use of the SBAR tool in the emergency department. Because effective communication is essential to patient safety and continuity of care, nurses should continue to use a standardized tool to enhance communication during patient handoff.

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