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**Quality Improvement Initiative Through Staff Development: Using Education to Increase
Preoperative Handoff Communication**

Submitted to the University of New Hampshire
in Partial Fulfillment of the Requirements for the Degree of
Masters of Science in Nursing

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Abstract

Background: Handoff communication is essential for patient safety, especially in the perioperative setting as a critical care environment. Preoperative communication between operating room nurses and preoperative room nurses was suboptimal in a local microsystem as evidenced by pre-intervention data collection where 82% of cases did not participate in handoff, 11% with partial adherence of policy and only 7% in full adherence. The global aim of this project was to improve the handoff communication between the preoperative nurse and operating room nurse in the surgical day center (SDC) within the chosen microsystem to promote patient safety and positive patient outcomes. The specific aim of this quality improvement project was to achieve 100% adherence with the facility handoff policy during the transition of care from surgical day center to the operating room by July 26, 2022.

Methods: To develop and pursue a quality improvement initiative in this setting, the Plan-Do-Study-Act framework was utilized. A 5P assessment was performed on the microsystem and preoperative communication was isolated as an important area to improve. As the facility's policy for handoff communication was already inclusive of best practice initiatives determined by literature review, educational materials were developed in order to promote adherence to the existing policy. Observation of this transition of care event also occurred both prior to and immediately following the distribution of materials. Staff surveys were also developed with the objective of determining the usefulness of the educational modules in the noted changes to adherence.

Intervention: A recorded, educational presentation on the current policy of handoff communication was distributed via email by the nurse educator for the microsystem.

Results: By July 14, 2022, post intervention data collection showed 52% of cases included handoff communication and 48%. However, other observations made during the time of data collection in addition to the few survey responses indicate that alternative factors may have contributed to the observed improvement.

Conclusion: Although improvement was observed which reflects the ability of the microsystem to alter their process to better reflect best practice, there is still an opportunity for improved handoff communication. Increased prioritization of proper handoff communication per agency policy is necessary for sufficient change. By continuing to alter and improve this process, the microsystem can further prioritize patient safety.

Keywords: Preoperative communication, handoff communication, staff development, patient safety.

Introduction

Transition of patients from one point of care to another is a regular nursing practice requiring pertinent patient information to be delivered in tandem for safe continuation of care. If handoff communication does not occur as an isolated healthcare event in an instance such as from the preoperative point of care to intraoperative, essential patient information may not be adequately passed on, introducing an opportunity for an adverse event. Known formally as patient hand-off or transfer of care (TOC), The Joint Commission has prioritized the improvement of this process since 2006 with a National Patient Safety Goal addressing all handoff communications (Catalano, 2006). Facilities such as this microsystem have also prioritized this process by outlining specific requirements related to patient hand-off. However, despite this being the case, adherence to the current policy is suboptimal at certain points of care.

Problem Description

The current policy for hand-off communication at the observed microsystem is not specific to surgical services, but clearly defines what a handoff event is (ex: unit to unit transfers) and identifies registered nurses (RN) as individuals it pertains to. Although a specific transfer tool such as *SBAR: Situation, Background, Assessment and Recommendations* is not required by the facility, it still acknowledges what pieces of information are required to inform the receiver of, including: (a) summary of the patient's current medical status, (b) recent changes in condition, (c) resuscitation status, (d) infection prevention or other precautions, (e) allergies, (f) fall risk status, (g) current care plan, treatment, services, and condition (h) recent or anticipated changes, (i) diagnostic testing and status of reporting (Elliot Health System, n.d.). Facility policy also states that the opportunity to ask and respond to questions is vital for staff to verify

understanding (Elliot Health System, n.d.). Although this policy is available through an employee portal, staff members reported difficulty finding it or did not know it existed at all (nurse 1; nurse 2, personal communication April 22, 2022). While observing the entire perioperative care pathway for three different patients, no handoff communication was noted between the operating room (OR) nurse and preoperative room nurse. Previous attempts to improve handoff communication include utilizing visual cues such as stop signs posted with a checklist of handoff tasks. When a task is not complete, it is meant to signal the OR nurse that the patient is not yet ready for transfer. However, they are often not utilized, or they are overlooked. RNs in the perioperative setting have demonstrated efficient handoff communications during other care transitions. Assessment of the current practices identifies that the transfer of care from the preoperative area to the operating room is an area where there is opportunity to support adherence to the facility policy and improve communication.

Available Knowledge

Background

A review of the literature was conducted to synthesize available knowledge related to communication patterns within perioperative services as it pertains to perceived patient safety and staff satisfaction. It is necessary to evaluate available knowledge to determine interventions best suited for the quality improvement of communication during handoff. In 6 articles included for review, the level of evidence remained within level 6 and 7 on the hierarchy of evidence pyramid outlined by PICO(T) apart from a single Level 1 Systematic Review published in 2014. Most studies included were conducted in the United States, but additional locations of Turkey and Canada were included based on relevance of findings. All articles report a limited scope of

available research for their studies which reflects the limited amount of available information on handover communication specific to the perioperative setting. Functional definitions of handover communication varied minimally across the different articles, but a summarized description of this process includes the transfer of pertinent patient information to ensure safe continuation of care. No studies discussed or reported findings regarding the specific handoff event between the preoperative nurse and the operating room (OR) nurse. However, there have been studies addressing handover in all perioperative settings. The results have been organized into five categories related to handoff communication: (1) perioperative setting, (2) existing tools and processes for improvement, (3) patient safety, (4) staff development, and (5) staff perception.

Perioperative Setting

Perioperative is a term used to describe the care given to a patient in relation to a surgical procedure which includes the preoperative, intraoperative and postoperative phases. According to Croke (2019), the perioperative environment poses unique and complex challenges to handover communication, making it particularly challenging for staff to accomplish effectively. Croke (2019) recommends that facilities structure their perioperative handoff communication using the variety of available tools, checklists, and protocols and adapting them to their individual needs (Croke, 2019).

Existing Tools and Processes for Improvement

A systematic review by Smeulers et al. (2014) aimed to report the effectiveness of various handover styles in ensuring pertinent patient information follows the patient. According to Smeulers et al. (2014), no study was found to meet their criteria as only qualitative data had been conducted at that time. Therefore, their study was unable to obtain randomized control trials

for high level evidence and did not produce any results. However, their report establishes a clear lack of research for the process of handover communication, and it is consistent with the search conducted for this review. Similarly, Espin et. al. (2020) conducted a narrative review of many studies to identify and summarize leading practices for effective communication and teamwork. Included studies were not appraised for quality and consisted only of qualitative data (Espin et al., 2020). Commonly used tools discussed in this article (Surgical Checklists, SBAR variations, etc.) vary in relevance to different phases of perioperative care, and no one tool was described as more beneficial during the preoperative phase compared to another (Espin et al., 2020). The use of standardized tools, however, did show promise in improving handover communication as they did not increase handover time, but improved information transfer (Espin et al., 2020). These findings are specific to a handoff event from the operating room to the post-anesthesia care unit which identifies a gap in research findings for the preoperative to operating room transfer. Overall, the evidence related to current best practice for handover communication processes in the perioperative setting is not sufficient and further research is needed in almost every aspect of perioperative communication practices.

Patient Safety

Actual patient safety findings are considered in this review as they are expected to correlate with perceived patient safety by staff. All articles included in this review recognize and cite patient safety as a consideration to be made during any discussion of handoff communication. Burden et al. (2021) conducted a review of qualitative studies and focused on the influence of handoff in the perioperative setting on patient outcomes and complications. A reduced risk to patient safety was seen in multiple studies when an improvement of handoff

communication occurred (Burden et al., 2021). Authors did not identify a specific educational tactic used to train staff but stated “the need for guidance and structure in developing appropriate handoffs and a handoff curriculum has been identified as an important safety goal” (Burden et al., 2021, p. 133). Although the nursing role is considered, Burden et al. (2021) primarily discusses handoff involving a physician and therefore, not nurse to nurse communication which is the primary focus of the proposed quality improvement initiative. It remains included as relevant literature, because communication between nurses was included as a basis for discussed findings.

Staff Development

In any given microsystem, staff nurses perform many tasks that require a certain competency level. According to Espin et al. (2020), the previously discussed handoff tools were introduced to staff using educational interventions such as role-playing or provided resources. In addition, Espin et al. (2020) reports that across multiple studies, various educational efforts not only improved handoff communication, but led to a sustained change in this area. Throughout all included articles, educational initiatives and training for staff related to handoff communication are vague or specific to certain tools. Croke (2019) suggests leadership within an institution should be prioritizing and allocating resources to education of handoff communication as a means to improve patient safety. Further research is required to better understand methods of staff development for handover communication and to make recommendations for how it can be achieved in a more optimal way.

Staff Perception

Individuals who are to be affected by a change are incredibly important in its development as they can be the facilitator or deterrent to a desired outcome. In a Turkish Hospital recognized internationally by The Joint Commission, a study was conducted to understand and account for the nursing perspective on communication failures in the perioperative area and to endorse recommendations made by participants given supporting evidence (Isik et al., 2020). Nursing participants included were required to be working in the role for at least two years at the time of interview to establish experience and expert knowledge. Informed consents were obtained, and efforts were taken to ensure accuracy of language during translation from Turkish to English. Despite efforts to reduce bias and extract sufficient data, limitations to this study include attainment of data outside of the United States and modest sample size which may limit generalizability. The perceived effects of communication error reported by participants are reduced patient safety, impaired team dynamics, and decreased staff satisfaction, which is consistent with literature outside of the perioperative setting (Isik et al., 2020). Participants in this study offered that a communication error of a single perioperative professional can result in the delay of independent role activities for another which could be further exacerbated by the concurrently described time constraints the setting evokes (Isik et al., 2020). Suggestions of surgical checklists, electronic transfer tools, standardized handoff, and focused staff development made by participants for improving perioperative communication are also consistent with existing evidence (Isik et al., 2020). However, participants reported that orientation programs for new employees and training are not sufficient (Isik et al., 2020, e7). The interviewed nurses offered that adherence to policy and competency could be better achieved through better educational initiatives, improved social dynamics, and clear job descriptions

facilitated by the institution (Isik et al., 2020). Isik et. al. (2020) hypothesizes that improvements in perioperative communication can improve staff satisfaction with role when disruptions are reduced. Another significant finding of this study includes how the diverse interdisciplinary roles such as that of a physician can be a conventional barrier to perioperative communication (Isik et al., 2020).

Expert opinion on perioperative communication was also obtained in an article aimed to explore recommendations for the conduct, training, implementation, and research specific to handover communication. Agarwala et al. (2019) performed this study using a multistep Delphi process structure to extract consensus from participants. Sample size in this study was 99, however professional identity was nonspecific for the 9 clinical professionals within the perioperative setting. Nursing role was only specifically identified for 8 participants listed as *other nurses* who work mainly outside of the perioperative setting, so total nurse participation is unknown. Consensus was reached on four categories related to perioperative communication including process elements and behaviors, measurement and metrics, most important research questions, and education in training. Many process elements and behaviors were identified as attributes of a successful handoff, but authors felt further research looking into the prioritization of these elements was needed to make a true recommendation for requirements of handoff communication (Agarwala et al., 2019). Findings of consensus related to staff development include 96.6% of participants felt that the development of the handoff education and training program should be inclusive of all stakeholders and supported by leadership, 95.6% of participants felt that education and training should include feedback about performance, and 94%

of participants felt training should detail the consequences of a poor handoff (Agarwala et al., 2019). The article also provides clear consensus that experts all feel further research is required.

Summary

Available evidence is limited but establishes confidence in a need to improve perioperative communication during transfer of care events. No practice guidelines were found to exist for the transfer of care preoperatively, and no studies or articles found discuss the transition of care event specific to when the operating room nurse takes the patient from the preoperative setting and assumes responsibility from the previous nurse. The process of compiling available evidence has also shown that there is little to no recognition that various disciplines of nurses work within perioperative care. Role differentiation is plainly described to impact the process and delivery of perioperative communication but mainly in consideration for providers or anesthesiologists. Responsibilities of an OR nurse varies significantly from that of a preoperative nurse, and therefore an understanding of anticipated needs cannot be assumed. Further research and evaluation of transfer of care events between two nurses of different roles within the perioperative setting would be beneficial in understanding interdisciplinary teamwork, impact on patient outcomes, and ways to better these relationships. Available research regarding staff perception is particularly helpful in determining how this should be approached from the perspective of stakeholders. In the clinical setting, the lack of best practices has shown to be problematic, and the full extent of ensued consequences are unknown. However, because improved communication is known to improve patient safety and staff satisfaction, it is beneficial for any facility to prioritize a quality improvement initiative to better their handoff communication.

Rationale

The framework utilized for this quality improvement project is the Plan-Do-Study-Act (PDSA) model (IHI, 2019). Once a change idea is considered, this model is a way to implement that change while determining its usefulness or lack thereof (IHI, 2019). The model is also developed in such a way that it allows additional PDSA cycles to occur as a result of learned information from the previous cycle (IHI, 2019). During the *Plan* stage of the model, the project lead performs assessment of the current process, team forming, sets aims, establishes measures, and develops the proposed intervention (IHI, 2019). Then, the project lead moves into the *Do* stage where the intervention is implemented and data may be collected (IHI, 2019). Then, the *Study* stage begins. Arguably the most important, this stage is where the project lead must determine progress and evaluate outcomes (IHI, 2019). Based on what is learned in the *Study* stage, the *Act* stage may consist of altering methods or the intervention for improvement, abandoning the idea, or facilitating a process of sustained change (IHI, 2019).

Observations of the unit so far have shown that there is little to no communication during the transfer of a patient from SDC to the OR prior to a procedure. By working on this process, consistent communication is expected to be observed that is clear, concise, and not lacking information that is required by facility policy or pertinent to patient safety, as the two coincide. It is important to work on this now as every patient interaction with no communication preoperatively is an opportunity for an unfavorable patient outcome. Additionally, as two nursing roles are involved in this transfer, teamwork dynamics between these roles is hoped to improve.

Specific Aim

The overall, global aim of this project is to improve the handoff communication between the preoperative nurse and operating room nurse in the surgical day center (SDC) within the

chosen microsystem to promote patient safety and positive patient outcomes. The delivery of pertinent information related to patient condition during transfer of care is a delicate process. Although it is a routine step necessary for safe continuation of care, the perioperative setting proposes unique challenges to transfer of care such as the pressure of time and additional patient priorities of the preoperative nurse, creating an opportunity for error. The Joint Commission (2010) began requiring healthcare organizations to have a policy requiring handoff communication following their 2006 National Patient Safety Goal of prioritizing handoff communication to reduce patient harm. The Joint Commission (2017) has also recognized health care provider training as a contributing factor to handoff communication failures. Therefore, staff development is offered as a useful intervention to improve this process.

Prior to and following the proposed change of educational initiatives, nurses were observed and surveyed. An expected outcome is that they would demonstrate an increased adherence to facility policy during routine patient care, and that their contributions of personal experience reflect on improved teamwork dynamics and patient safety because of staff development. Therefore, the specific aim of this quality improvement project is to achieve 100% adherence with the facility handoff policy during the transition of care from SDC to the OR by July 26, 2022.

Methods

Context

The unit in which this project is proposed is a large hospital organization. Several microsystems contribute to the care given related to a surgical procedure and each focus on a different phase of perioperative care. Procedures related to almost all acute and chronic

conditions are cared for in surgical services at this facility. Prior to a day surgery procedure, patients enter through the Surgical Day Center (SDC) and meet their preoperative nurse. When it is time for the procedure, an OR nurse will retrieve the patient from SDC. The facility policy applies to this transition of care and requires a formal sharing of information between the OR nurse and preoperative nurse to maintain safety through the subsequent care processes (see Appendix A). Continuous flow of ambulatory post-operative patients and preoperative patients arriving to the SDC often requires the preoperative nurses to manage more than one patient at a given time creating a potential barrier to communication. Agarwala et al. (2019) found that in multiple studies poor communication at the time of handoff correlated to higher hospital costs despite the exact amount being unknown. Performance of this project is estimated to cost under \$10 to print basic poster materials on the unit, so overall cost is minimal and may be canceled out by the intended improvement. However, time must be considered as a resource used for the completion of this project by both the project lead nurse educator, and unit staff who participate. When discussing the current facility policy for handoff communication with staff members in SDC, nurses reported difficulty finding the policy, not knowing its contents, or not knowing it was in place.

Intervention

The intervention determined to be the best option is staff development by means of education. The facility has no current staff development initiatives for handoff communication, so new materials of teaching were created and utilized (D. Langlais, personal communication, April 27, 2022). Using the facility's policy and the assistance of the nurse educator, a PowerPoint presentation was created to engage the staff in developing a better understanding of

what is already required of them per the policy, in addition to relevant literature to portray significance and relation to patient safety and teamwork dynamics (See Appendix B). On June 21, 2022, the newly developed presentation and a copy of the current policy was sent as an email attachment to all department staff including management by the nurse educator. A survey for staff feedback as well as an incentive survey was also distributed with the presentation on June 21st, 2022, by the nurse educator on the unit and these closed on July 16th, 2022 by the project lead.

Study of the Intervention

To determine if the intervention was useful in increasing adherence of facility policy, baseline data was collected by means of observation to determine the percent of care transitions from preoperative care to the operating room that adhere to policy. The impact of education on adherence to facility handoff policy will be assessed in two ways. The first is by determining a new rate of adherence to policy in the same manner that baseline data was collected. Second, Qualtrics® Experience Management was planned to be used to create staff surveys which were constructed of all free text questions to determine staff perception of handoff policy, the usefulness of the educational materials, and if they feel they are adhering to policy more because of the intervention.

Measures

When observing the adherence to facility policy for handoff communication, data was collected by simple tallying. For each preoperative case observed on the five days in which data was collected, transition of care was recorded as having *no handoff*, *handoff per policy*, or *incomplete handoff*. Incomplete handoff is recorded if a communication did not have all elements

required by the policy. Observations related to these communications are also made such as if an error occurred appearing to be a result of communication error. The frequency for each category was recorded and the percentage calculated by comparing the frequency to the total handoffs observed.

Further evaluation of staff perception and team dynamics was assessed through staff surveys. The survey distributed to the nurses included an informal consent and verification of completing the educational component and policy review. Further questions included a request for identification of current role and a question for satisfaction with the communication. Finally, questions regarding factors impacting adherence to the handoff policy including accessibility were presented.

Analysis

Quantitative data includes baseline observation of adherence to facility policy and is to be compared to the new rate observed following educational initiatives and was organized using Microsoft Excel. Staff surveys were developed using Qualtrics® Experience Management with categorical data reported as frequency and percentage and continuous data for the two Likert style items reported as mean, SD, and range. The nine question staff feedback survey included a variety of question types including multiple choice, select all that apply, and a few open ended questions. These open ended questions included one for their perception of role impact on the transition of care and any additional comments. Following the completion of the last question, the staff was directed to a second survey where they could input their email to be in the running for the incentive gift card. Closed ended questions were analyzed using Qualtrics Experience

Management for statistical data and free text open ended questions were analyzed independently to note any patterns or recurring themes.

Ethical Considerations

Permission for data collection including the observational data was granted from the department's nurse educator. Observations made following the conclusion of this project are subject to inherent sample bias as all observations are of a single perioperative setting. The first question provided the participants with the background information about the project including goals and addressed privacy and confidentiality concerns. This question ended with a choice to continue with the survey, addressing informed consent. After completing the first survey, a separate survey provided an incentive of winning a \$25 amazon gift card by inputting their email. This proposal was reviewed and approved by the UNH Department of Nursing Quality Committee to determine that as QI, it is exempt from full IRB review.

Results

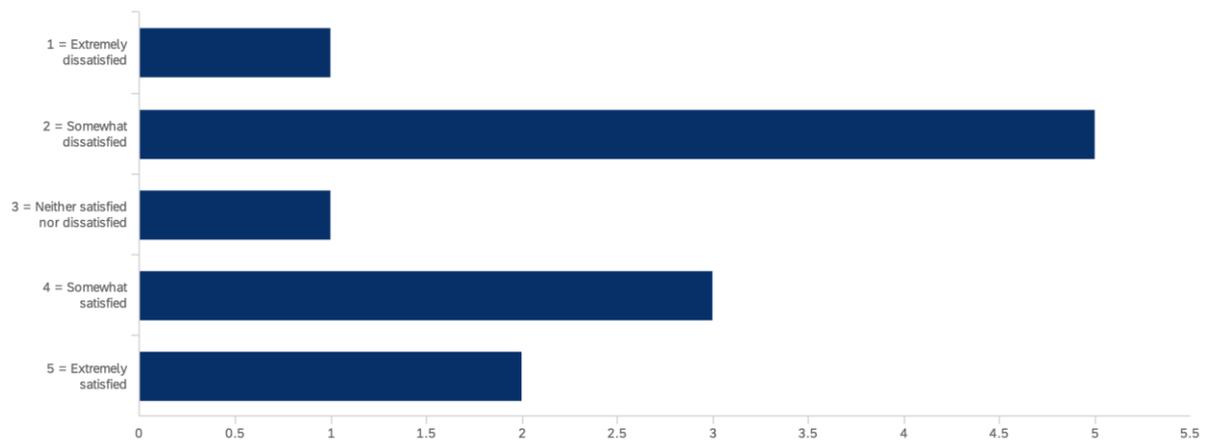
As the proposed intervention, educational modules were developed with accompanying surveys to determine if the changes were due to the intervention. Multiple contextual elements interacted with both the intervention and the process of quality improvement. By far the most impactful variable was key stakeholders who are both the nurses and their supervisors. Although the nurse educator was willing to help as one key stakeholder, individual unit managers were wary of using regularly scheduled staff meeting time for the student presentation. Although initial permission was given, competing priorities arose, so the project lead offered the idea of a recorded presentation as an alternative.

Initially, during a 50-hour observational period, it was observed that 82% of the time no communication or handoff report occurred between the preoperative nurse in SDC and the OR nurse pre-operatively for a total of 91 patient encounters observed. Number of cases which did include handoff per policy (7%) and incomplete handoff (11%) where communication was incomplete of all requirements per policy was also tracked and recorded. An additional 4 days was spent observing post-implementation to determine if the desired change took place. Data collection was altered at this time to not include the incomplete category as the nurse educator considers each nurse communicating their individual review of the electronic medical record to account for some elements of the required information per policy such as the allergies and past medical history. Following the distribution of educational materials, 52% of handoffs included handoff report as opposed to 48% of cases which did not, showing improvement in handoff communication preoperatively.

Of the 12 individuals who responded to the survey, 5 operating room nurses (42%) and 7 pre-operative nurses (58%), all provided informed consent and verified their review of the provided materials. In rating the level of satisfaction with the preoperative handoff overall, the responses varied, but the majority of individuals reported being somewhat dissatisfied with handoff (See Figure 1). For the Likert style item asking them to rate their satisfaction with handoff communication the mean score was 3.0 (*SD* 1.29, Range 1-5) showing that the participants were neither satisfied nor dissatisfied. However, when reviewing the categorical data, we see that 50% of the participants were extremely or somewhat dissatisfied and 42% were somewhat satisfied or extremely satisfied.

Figure 1.

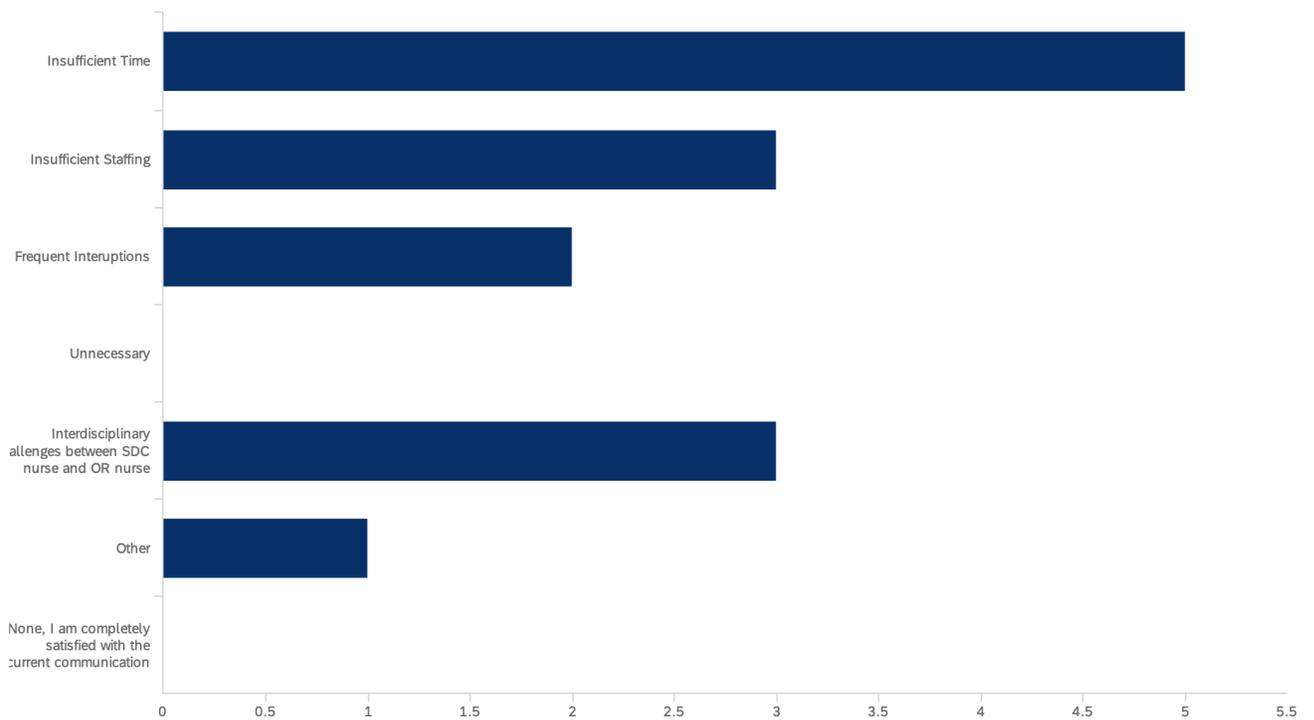
Distribution of responses from Feedback Survey Question 4 - Level of Satisfaction with Handoff Policy



Due to an error in the functionality of the survey, only six participants continued to questions 5-9. For question 5, participants were asked to identify contributing factors to inadequate handoff communication in their microsystem (See Figure 2). 83% of staff reported *insufficient time* as a contributing factor to poor handoff. Other selected factors included *insufficient staffing* (21.43%), *frequent interruption* (14.29%), *interdisciplinary challenges between the different nurses* (21.43%), and *other* (7.14%). No respondents selected *Unnecessary* (0%) and no respondents selected *None, I am completely satisfied with the current communication* (0%). (See Figure 2.)

Figure 2.

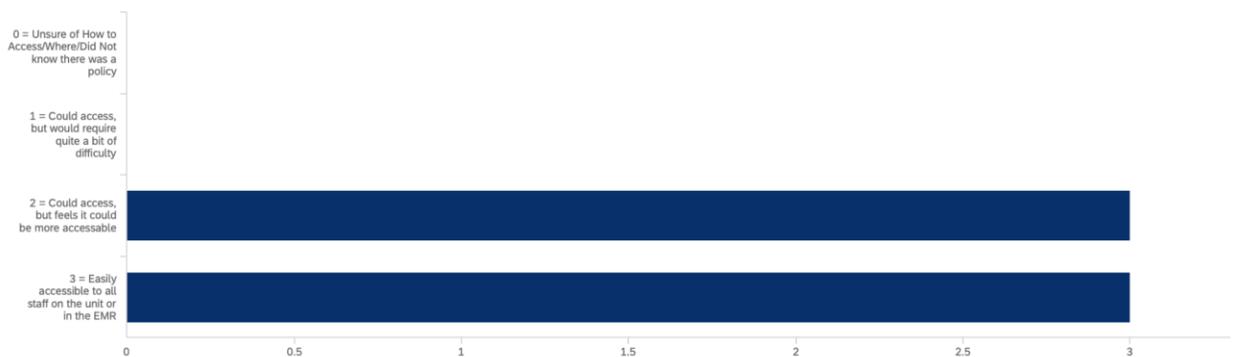
Distribution of responses from Feedback Survey Question 5, Contributing factors for Handoff Communication



In response to Question 6, *Please Rate your current level of accessibility to Microsystem's Facility Policy on Handoffs/Safe Transfer*, 50% of participants responded *Could access, but feels it could be more accessible*, and 50% of participants responded *Easily accessible to all staff on the unit or in the EMR*. Using the Likert Scale, the mean for this data set is 2.5 (*SD* 0.50, Range 0-3). (See Figure 3 below.)

Figure 3.

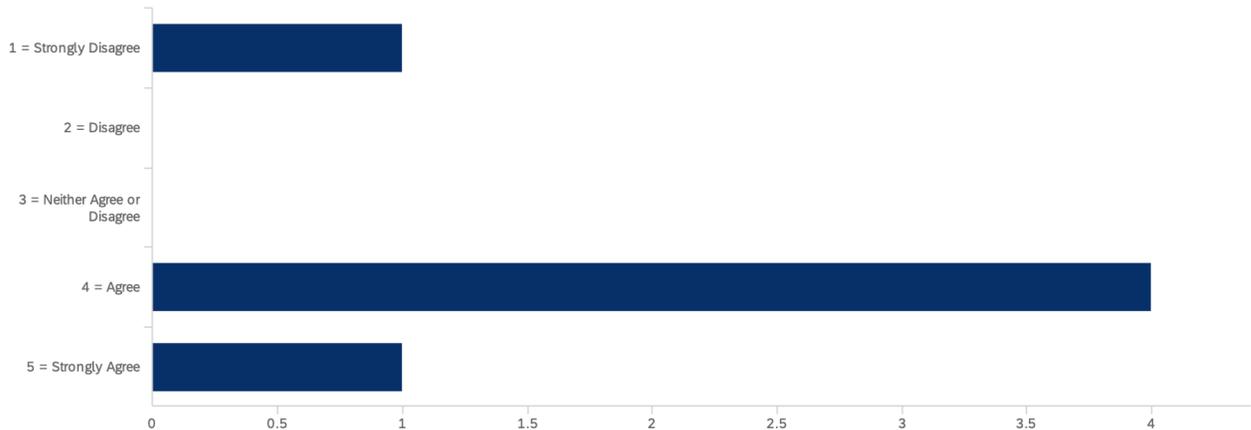
Distribution of Responses From Feedback Survey Question 6 - Perceived Accessibility to Facility Policy



Next, question 7 inquired about the usefulness of the distributed materials in increasing their understanding of the facility policy related to handoff communication (See Figure 4). Based on the Likert scale 1-5, 1 meaning *strongly disagree* and 5 meaning *Strongly agree*, the mean of response is 3.67 (*SD* 1.25, Range 1-5).

Figure 4.

Distribution of Responses from Feedback Survey Question 7 - Perceived Helpfulness of the Educational Presentation



Two open ended questions were then presented for the purpose of extracting recurring themes. Question 8 asked *How do you feel the differing roles entering the handoff interaction of Perioperative staff and the operating room staff affect this transition of care?* Multiple comments made by staff contribute to the theme of differing roles and competing priorities. These comments include *“SDC RN is not always accessible for handoff when OR RN arrives. This causes delay in the surgical schedule”* and *“It’s an important piece to a smooth transition of care. Differing roles offer different perspective on care.”* Another theme seen in staff response is policy importance and implementation as one response stated *“This presentation is not reflective of our current policy, displays a lack of understanding as well as lack of clinical expertise. Our policy encourages review of SBAR, then seeking out RN for questions.”* Finally, the theme of communication tools was also determined based on the following response: *“How did this project assess if the SBAR had been reviewed. What if other tools such as Voalte were used?”*. Additional responses to question 8 include *“N/a; and Unsure of pertinent information”* which did not contribute to a theme. Question 9 asked: *If you have additional thoughts that you*

feel were not accounted for in the previous questions, please describe to which no participants reported anything additional to.

Contextual Elements

As participation in the routine meeting was a regular role responsibility for staff, their participation in an educational module during this time would have been expected as well. Instead, participation in the recorded presentation and the accompanying survey requires the self-motivation of staff members. Therefore, this is likely a reason for the limited response. This format also demanded a greater allocation of time than the alternative for the project lead as recording and editing is a lengthy process. However, an unexpected benefit of this alteration is that the recorded presentation could be reused by the nurse educator if it is deemed helpful by staff members.

Missing Data

Missing data for this quality improvement project occurred as a result of both setting restrictions and project lead error. The preoperative process at the observed microsystem is unique to the variable of where the patient enters the healthcare organization including ambulatory, emergency, inpatient, or block room. Because each setting involves a different process of retrieval, preparatory procedures, and handoff communication, preoperative communication was only observed from the ambulatory day center and did not account for the block room or inpatient preoperative handoff. As these environments and processes differ from SDC, additional PDSA cycles could be developed for the gathering of observational data for these environments. In addition, 50% (6 out of 12) of survey respondents did not answer questions 5-9. Originally, the link to the incentive survey was on the same page as questions 5-9,

allowing them to prematurely finish the survey and enter to win. This was adjusted a week into the surveys to promote completion of the survey in full.

Discussion

Summary

Key Findings: Observation of Adherence to the Handoff Policy

Key findings of this project include a 45% increase in cases which included handoff communication preoperatively that both meets policy and supervisor standards. The reported 45% was determined by the difference between the pre-intervention data collection categories *Handoff Occurred* and *Incomplete Handoff* as the latter was later determined to meet handoff and the post-intervention data collection category *Handoff Occurred*. Other observations and feedback during the time of post implementation data collection suggest alternative reasoning for the increase such as the consistent prioritization of handoff communication by select individuals that could skew the recorded data. Alternatively, the increase could be a result of the project lead's presence and the awareness of project goals producing response bias. While the specific aim of 100% adherence to facility policy was not noted, an increase in adherence was. Furthermore, the global aim was to improve handoff communication, and this increase in adherence to facility policy may improve overall communication during this care transition.

Key Findings: Survey Summary

Insufficient response to survey makes it difficult to link the improvement of handoff communication to the distributed materials or understand staff perception of this process as a whole. However, the responses received did provide some useful information. All staff reported some level of accessibility to the facility policy for handoff communication while highlighting an

opportunity to improve accessibility as half of the respondents perceived that the policy could be made easier to access. In addition, 83% of participants reported that they found the educational presentation helpful. Finally, contributing factors to suboptimal handoff communication were identified such as insufficient time or staff, frequent interruptions, and interdisciplinary challenges.

Strengths of the Project

Throughout the development and implementation of this quality improvement project, there was a strong collaboration with the microsystem's nurse educator. This relationship allowed for productive flow of the project as they helped coordinate with staff and supervisors, as well as contributing clinical expertise to the final presentation. Another strength of this project was the development of a recorded presentation rather than the original idea of an oral one as this can continue to be used if it is deemed helpful by the staff. Finally, this was able to provide data on handoff communication that was not tracked prior leading to increased understanding of the current process. The additional observations made and data from surveys also allows for a broadened understanding of staff perception and contributing factors to poor communication.

Interpretation

Following the implementation of staff education on the current policy of preoperative handoff, communication between the preoperative nurse and SDC nurse improved. However, this may be a result of outside factors as the few responses on the survey may indicate a small number of staff members who actually reviewed the provided materials. Despite this, the majority of individuals who answered reported finding the educational materials helpful which indicates that the method can still be useful if distributed in an alternative way. Potential

improvements to the presentation could be interactive components or incorporating staff feedback. Both of which will empower nurses to be more involved in the process. Also, new staff members on the unit and staff members who regularly prioritize communication could be accounting for a majority of the recorded communications included in the post-implementation data collection. In addition, it can also be speculated that the observed improvement could be a result of the staff's awareness of the project goals and desired outcomes during the post-implementation data collection. Although improvement was observed, the desired percentage of 100% has not yet been achieved and further areas of improvement should be identified. Handoff communication is still expected to occur 100% of the time as it is shown to be best practice in order to improve patient outcomes and protect patient safety (Burden et al., 2021).

This project provokes greater consideration and speculation around the previous process of handoff communication. The staff members appear to be in the storming phase of the traditional stages in team development for quality improvement where large debate occurs frequently (Mosel & Shamp, 1993). The nurses vary in their opinion on how preoperative communication should occur, whose responsibility it is to be carried out, and what ways to improve the communication. Additional PDSA cycles could be developed to approach the problem in an alternative way such as focusing on the role of the OR nurse in approaching the SDC nurse, requiring all staff to participate in the educational materials, or implementing a transfer tool into the electronic medical record which requires documentation of a given handoff report. Despite limitations of time, resources, and scope of this project, an increased awareness of the importance of handoff may support future PDSA cycles.

Opportunity Costs

The overall cost of this project was \$25 spent on an incentive gift card plus the time and resources of the project lead, participating staff, and the nurse manager who helped assist with the project when needed. As previously stated, multiple studies have shown that poor communication at the time of handoff correlated to higher hospital costs (Agarwala et al. 2019). As a result, the continued prioritization of handoff communication has the potential to reduce cost to the microsystem. However, the exact amount of potential savings is unknown.

Limitations

This project had several limitations, some of which pertain to the unique microsystem. Key stakeholders including managerial staff and unit staff both were resistant to change and impacted the utilization of the distributed materials. In an environment where a culture of safety has already been established, all staff may be more willing to participate in a change. In addition, the current policy is unique to the setting and may vary slightly from others. Especially because although the available evidence on the topic suggests the standardization of handoff communication within a microsystem, a clinical guideline for transfer of care or specific requirements of handoff for this care event has yet to be established. Because of this, the likelihood of this work to be generalized may be limited but has the potential to be applied with alteration.

The design of the project also poses limitations to the work. Although the project lead was diligent during the time of data collection, some nurses had to report whether handoff occurred due to the nature of the setting. Especially in the morning, many cases leave the

preoperative area at the same time and from opposite ends of the unit, making it not possible for a single person to visualize at once. The student lead however made every effort to visualize every interaction possible to limit the effects of this on the project. Preoperative cases that came from the block room were also not included in this study for this reason. The student's openness with unit members of the project goals prior to the intervention and following the intervention may have also resulted in response bias if the increased awareness affected the behavior of the staff nurses.

Distribution of materials posed the greatest limitation to measurement and analysis. The nurses were not required to participate and may not have seen the email sent from the nurse educator. The project lead provided a gift card as incentive to participate and to prevent this from minimizing data, but it posed its own limitations to the response as the link being on the same page as the last four questions allowed staff to bypass the last four questions and click the link prior to finishing. As a result, the project lead adjusted the survey to have the incentive link on its own last page to require complete surveys prior to the opportunity for the incentive gift card.

Conclusions

Usefulness and Sustainability

This project identifies that improvement in preoperative communication is achievable in this microsystem, and can continue to be improved. It also helped acknowledge the impact that role differentiation has on staff perception of the process as a whole. The operating room nurses and preoperative room nurses had preconceived notions regarding the alternative role and understanding each perspective allows for consideration to be made going forward. As staff members found the distributed educational materials useful, it has potential for continued use as

it is a recorded presentation. Specifically, it could be utilized as new staff members enter the microsystem.

Spread to other Contexts

For this facility, the observed pre-operative handoff was between the preoperative room nurse in the surgical day center (ambulatory cases) and the operating room nurse. However, surgical cases are also transferred to the OR from the inpatient setting and the block room at the facility which reflects an opportunity for the quality of care to be assessed. Although the care settings are unique and differ from the surgical day center, findings from this project could still be applied due to the simplicity in altering staff education materials to fit the needs of the setting.

Next Steps

As the percentage of handoff occurrences showed improvement from pre- to post- data collection, a continued prioritization of this care process is imperative for continued improvement to be observed. In this microsystem, certain changes could be made that would be considered for additional PDSA cycles if timing and resources allowed. First, education of preoperative communication expectations and patient safety outcomes could continue to be a priority. Second, the electronic medical record could include a preoperative transfer tool requiring the documentation of handoff communication and individuals involved. Collection and review of this data would allow management individuals to utilize this information in employee review, and track overall cases that include preoperative communication. Lastly, the unit should consider the monitoring of adverse events related to communication error which could help the unit understand its impact as well as motivate the nurses as the value of improvement would be better understood. If handoff communication continues to be prioritized, quality initiatives going

forward can utilize the learned information to develop strategies that better fit the needs of the unit, and promote efforts that build a culture of patient safety which prioritizes best practice.

Implications for Practice

Quality improvement projects such as this one allow for the recognition of gaps in practice related to the selected problem. For preoperative communication, the review of available evidence reflects a need for high quality research related to this specific transfer of care event, and which recognizes the variation of role between preoperative nurses and operating room nurses. In addition, a clinical guideline could be constructed for all institutions to utilize for preoperative handoff as there is none currently. The prioritization for all nurses and Clinical Nurse Leaders to better this process is vital in protecting patient safety in the perioperative setting.

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Appendix A

Microsystem Handoff Policy

Microsystem Health System

TITLE: Hand Offs/Safe Transfers

SCOPE: Clinical Staff, including RNs, Paramedics, LNAs, Respiratory Therapists, Radiology; Unit Secretaries and Patient Transport within the Hospital

PURPOSE: To ensure continuity of care and maintenance of patient safety when there is a patient “hand off” (and/or transport) in all areas of the Hospital.

POLICY STATEMENT: When a patient is involved in a “hand off” (and/or transport) there is a standardized approach, including an opportunity to respond to questions that will provide accurate, clear and complete information using interactive communication about a patient’s:

- Care treatment and services
- Current conditions and
- Recent or anticipated changes

All patients will receive care and monitoring appropriate to their status. The accountability extends to ensure that all pertinent clinical information needed to care for the patient safely during “hand offs” (and/or transports) are communicated to the appropriate person.

During transport prior arrangements must be made if the patient will require RN, LPN, LNA or RT coverage while off the unit temporarily in a receiving department (i.e., Diagnostic Imaging.) If the receiving unit is unable to provide coverage, an RN, LPN or LNA as appropriate from the sending unit must accompany and remain with the patient. Unlicensed personnel, including patient transporters, cannot transfer oxygen from one delivery source to another, such as wall unit to portable tank, or set flow rate. Licensed personnel must be present to set up oxygen for transfer on and off a unit; a licensed nursing assistant may do this if there is no change in the oxygen dose (flow rate).

All cardiac monitored patients being transferred will have continuous cardiac monitoring and defibrillator capability unless ordered by physician. An ACLS nurse must accompany the patient on a cardiac monitor. The ACLS certified staff from the monitored unit receiving the patient may be asked to assist with the transport.

A minimum of two people will accompany a critically ill patient during transfer. One RN who accompanies the patient will be Advanced Cardiac Life Support (ACLS) certified.

Appendix A (cont.)

If the patient is mechanically ventilated, a respiratory therapist must accompany the patient. Pulse oximetry, non invasive blood pressure, respiratory rate may be monitored intermittently.

PROCEDURE:

1. **Points of patient hand off include but are not limited to:**
 - Nursing shift changes
 - Unit to unit transfers
 - Interdepartmental transfers for treatment or diagnostic testing
 - Temporary responsibility for staff leaving a unit for a short time,
 - Anesthesia providers report to perianesthesia nurse post procedures
 - Nursing hand off from emergency department to inpatient units,
 - Different hospitals
 - Nursing homes and home health care.
2. **The hand off process and communication will vary by setting and discipline; it will include the following information as appropriate:**
 - A summary of the patient's current medical status,
 - Recent changes in condition,
 - Resuscitation status, infection prevention or other precautions*, allergies as appropriate and/or fall risk
 - Current pertinent information regarding the patient's care, treatment, services, condition and any recent or anticipated changes
 - Recent diagnostic testing and status of reporting those to the physician/designee
 - Opportunities to ask and respond to questions

*The patient's nurse will communicate with the transporter any additional precautions needed, including the reduction of exposure to hazardous drugs.

CRITERIA for Transporting Patients:

III. Patients that are transported without a nurse in attendance must have a *Ticket to Ride. *A ticket is not necessary for patient discharges.**

- Nursing staff: The ticket is printed from EPIC (Patient Summary > Report Index Report)
- The nurse must sign his/her name before the patient leaves the unit; this indicates that the nurse has verified the information on the ticket and the patient is ready to leave the unit. o The nurse will indicate on the *Ticket to Ride* if the patient is independent.

Appendix A (cont.)

- Transport staff should ask the patient's nurse if patient should be transported by nursing if they see the hazardous drug signage (caterpillar)
- Unless the patient is independent in mobility and does not have any lines, tubes, or drains that need to be disconnected, a nurse or LNA will initiate the transfer of the patient from bed to stretcher/wheelchair and upon return to the unit, transfer the patient back to the bed.
- When Transport returns the patient to the unit, the patient's nurse will be notified of the patient's return. For patients requiring assistance with mobility or connecting any lines, tubes, or drains, a nurse or LNA will initiate the transfer of the patient from the stretcher to the bed.
- A new ticket is used for each transfer off the unit and is discarded after use

IV. Patients who meet the following criteria *MUST* be accompanied and continuously attended by an RN from either the sending or receiving unit:

- patients on continuous cardiac monitoring (exception: those patients for whom the physician gives an order that they may be off the monitor for testing)
- patients needing frequent SPO2
- patients with chest tubes
- patients with blood or blood products running
- immediate post op patients
- patients who may reasonably be expected to require oral, endotracheal or tracheal suctioning
- patients actively being infused with a category I hazardous drug

IV. Patients on mechanical ventilation or those requiring ventilator support must be accompanied and continuously attended by a Respiratory Care Practitioner.

V. Acutely Ill Patients

- Patients with unstable dysrhythmias, vasoactive or antiarrhythmic IV medications infusing, hemodynamically unstable, diagnosis of acute MI must be accompanied by an ACLS RN, transported on a cardiac monitor and have defibrillator capability during transport.
- Additional equipment considerations during transport:

- Airway management equipment and resuscitation bag for unstable patient or patient being mechanically ventilated
- Oxygen source with ample volume to support the patient's needs while being transported from department to department.
- For unstable patients, emergency medications per standing orders

Appendix A (cont.)

- Verify sufficient supply of infusing IV fluids and continuous infusion medication.
- Resuscitation cart does not need to accompany patient.
- Transfer within hospital for diagnostic testing:
 - The patient's nurse, who is ACLS certified, will accompany the monitored patient for the diagnostic test and remain with the patient during the test.
 - Upon arrival to a diagnostic area, the acutely ill patient will have the test done immediately upon arrival to the department. The cardiac patient will NOT be left waiting in the hallway.

§ Both the patient's nurse and personnel within the department to which the patient is being transferred will set a mutually agreed upon time to receive the patient.

VI. In addition to the above, certain patients who do not meet the above criteria may still require an RN, LPN or LNA in attendance to ensure safe care during transport/while off the unit. The assigned RN from the sending unit is responsible for using her or his clinical judgment to ensure a safe plan for these patients.

Page 3 of 4

This document is only accurate and timely when viewed on the Policy Manager site.

Examples of these types of patients include but are not limited to:

- patients with altered level of consciousness

- agitated or confused patient
- any other unstable or potentially unstable patient
- other nursing judgment (anxiety, communication difficulty, patient at fall risk, etc.)

VII. An LNA may not be assigned to accompany and remain in attendance with patients requiring skilled nursing assessment or intervention, only those patients requiring supervision or observation for safety purposes.

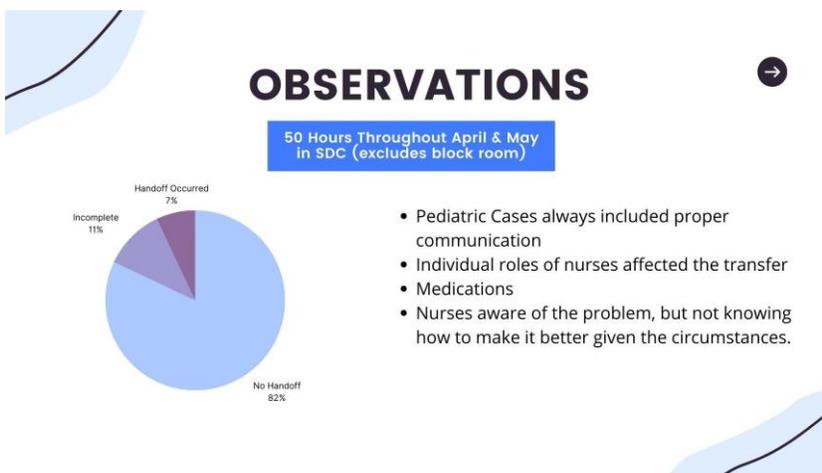
OWNER: Director, Clinical Education & Professional Development

REFERENCES:

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Appendix B

Educational Intervention Powerpoint Slides





ELLIOT HOSPITAL POLICY

Can be found in your employee portal, and by reaching out to your nurse educator or other supervisors.



Purpose

"To ensure continuity of care and maintenance of patient safety when there is a patient 'hand off' (and/or transport) in all areas of the Hospital."

Elliot Hospital Handoff Policy
DNV-GL (2019). NIAHO® Accreditation Requirements, Interpretive Guidelines and Surveyor Guidance [18-2]. NS. 1 Nursing Service.

I. Points of patient hand off include but are not limited to:

- Unit to Unit transfers
- Interdepartmental transfers for treatment or diagnostic testing

Elliot Hospital Handoff Policy
DNV-GL (2019). NIAHO® Accreditation Requirements, Interpretive Guidelines and Surveyor Guidance [18-2]. NS. 1 Nursing Service.

II. The hand off process and communication will vary; it will include the following information:

- Summary of patient's current medical status
- Recent/Anticipated changes in condition
- Resuscitation status, infection prevention or other precautions*
 - Allergies
- Pertinent information regarding the patient's care, treatment, services, condition
 - Recent diagnostic testing and status of reporting those to the physician/designee
 - Opportunities to ask and respond to questions
- *The patient's nurse will communicate with the transporter any additional precautions needed*

Elliot Hospital Handoff Policy
 DNV-GL (2019). NIAHO® Accreditation Requirements, Interpretive Guidelines and Surveyor Guidance [18-2]. NS. 1 Nursing Service.

Summary

<p>Opportunity for Questions</p> <p>Allows for verified understanding</p>	<p>Standardized Approach</p> <p>Required information per policy is included by all staff</p> <p>Expectations of staff are clear</p> <p>Every interaction is approached the same</p>	<p>Interactive</p> <p>Done in person or over the phone</p> <p>Not solely relying on the electronic medical record</p>
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Available Knowledge



- **Burden et al. (2021)**
 A reduced risk to patient safety was seen in multiple studies when an improvement of handoff communication occurred.
- **Isik et al. (2020)**
 Believes that improvements in perioperative communication can improve staff satisfaction with role when disruptions are reduced as a clear relationship was seen between the two.
- **Espin et al. (2020)**
 Across multiple studies, various educational efforts not only improved handoff communication, but led to a sustained change in this area.

RECCOMENDATIONS



1. Know your Policy
2. Be Receptive
3. Keep the Board Updated
4. Prioritize Teamwork
5. Enter Handoff Prepared
6. Follow Up
7. Pass it On



FOR MORE INFORMATION

Victoria McGovern
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Donna Langlais
Your nurse educator!

Your Opinion is Wanted Here!



As a part of this quality improvement project, I would love to get as many staff as possible to offer input on this process.

You can use your smart phone camera to hover above the QR Code to the left or go to https://unh.azl.qualtrics.com/jfe/form/SV_9GodeilVte89IEG

Upon completion, you have the oppertunity to enter a drawing for a \$25 amazon gift card!

