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Standardizing Nurse Knowledge Exchange in the Peripartum Mesosystem

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Abstract

Problem Handoff report is a significant source of medical error, as reported by the Joint Commission. As it stands, Hospital A’s peripartum mesosystem has no standardized policy regarding the Nurse Knowledge Exchange (NKE) process. Context Hospital A is an urban tertiary care medical center in San Francisco, with its peripartum mesosystem divided into two floors with a total of 35 dedicated beds. Intervention Stakeholder engagement, literature review, and mesosystem analysis identified potential barriers to bedside NKE. To address the identified causes, the project implemented a standardized handoff guide and staff education. Measures The outcome measured was comprehensiveness of NKE as evaluated by a binary coding system. Results NKE comprehensiveness improved significantly when utilizing the bedside handoff guide with an increase from 33.5% at baseline to 77%. Comprehensiveness of NKE regardless of location rose from 74% to 91%. Conclusion The intervention was found to successfully improve NKE comprehensiveness. To ensure ongoing success of this change, continuous leadership support and further PDSA cycles must be pursued.

Keywords: NKE, handoff communication, peripartum, bedside report
Standardizing Nurse Knowledge Exchange in the Peripartum Mesosystem

It is common knowledge that in-patient nursing care often requires handoff, whether it be shift-to-shift or interdepartmental. Despite being a common process in any nursing microsystem, handoff report is a significant source of medical error. In 2017, The Joint Commission issued a sentinel event alert regarding inadequate handoff communication. They asserted that this process, if done incorrectly, can lead to patient harm (The Joint Commission, 2017). Additionally, a study looking at medical malpractice claims found that of the 49% of all claims citing communication failure, 77% of them could have been prevented if a tool was used during handoff (Humphrey et al., 2022). It is evident that handoff report, as a common process in healthcare, requires change to make it a process safer for patients.

Addressing patient handoff will also align with the priorities of the current microsystem. Hospital A’s mission is as follows: “To provide high-quality, affordable health care services and to improve the health of our members and the communities we serve” (Kaiser Permanente, 2022). Engaging in quality improvement regarding the process of patient handoff within the peripartum mesosystem will improve quality of care and the health of patients at Hospital A.

Nurse Knowledge Exchange

From 2004 to 2006, Hospital A developed and implemented a model for nursing handoff called Nurse Knowledge Exchange, or NKE. An NKE has four components: preparation for nurse-patient assignments prior to an oncoming shift, bedside handoff report, use of a care board, and use of a template to organize pertinent handoff information (Lin et al., 2017). The present project will be looking at patient handoff containing all components of an NKE, particularly bedside report and use of an organizational tool for handoff.
Problem Description

Setting

Hospital A is an urban tertiary care medical center in San Francisco. The peripartum mesosystem in this hospital is divided into two floors, with a total of 35 dedicated beds and two operating rooms (see Appendix A).

Current State

To assess the current state of NKEs and identify potential barriers to its completion at the bedside, a Qualtrics pre-survey was conducted to gather insight from nursing staff (see Appendix B). 19.6% of the L&D population and 14.5% of the postpartum nurse population completed the survey (C. Maddix, personal communication, 2024). According to responses from 31 labor & delivery and postpartum nurses, 71% of respondents felt that handoffs were either extremely or very comprehensive, compared to 29% who felt they were moderately or slightly comprehensive. Only 19.3% of respondents reported feeling very satisfied with handoff reports, compared to 51.6% being somewhat satisfied, 19.3% being neither satisfied nor dissatisfied, and 9.7% being somewhat dissatisfied.

Additionally, baseline data was collected on NKE comprehensiveness prior to any change. NKE comprehensiveness was determined by the percentage of topics discussed during handoff as defined by the standardized handoff tool developed by the QI team (see Appendix C). After observing 20 handoffs, it was found that 73.8% of pertinent information was covered; however, only 33.5% of this information was covered at the bedside (see Appendix D). This percentage varied between major sections of the NKE (see Figure 1). Although most of the information pertinent to the transfer of the patient’s peripartum care was covered regardless of location, most of the NKE did not occur at the bedside, which is a main feature of an NKE.
According to the pre-survey, nurses reported that handoff is not done at the bedside if patient is resting, if the labor & delivery nurse needs access to the computer for information, or if the handoff requires an exchange of sensitive information that cannot be done if the patient’s family is in the room.

As it stands, nurses overall are not completely satisfied with the current state of handoff reports and do not feel they are fairly comprehensive. The bulk of the content covered in current handoff reports are not being covered at the bedside due to a variety of barriers. The lack of comprehensiveness and the barriers to bedside handoff must be addressed to ensure the practice of NKE can be feasible and achievable.

Available Knowledge

PICOT Question

The PICOT question is as follows: For peripartum RNs (P), does implementing a standardized handoff tool (I) enhance the comprehensiveness of the handoff process during L&D to PP patient transfers (O) over a 4-week period (T)?
Search Methodology

Research was conducted via PubMed, Google Scholar, and the Cumulative Index to Nursing and Allied Health Literature Ultimate, or CINAHL Ultimate. The following keywords were used in various combinations with each other: “handoff,” “handover,” “transfer,” “bedside report,” “nurse knowledge exchange,” “labor and delivery,” and “postpartum.” The Boolean operators AND, OR were used in various combinations with these keywords. In order to discover a wider variety of evidence, several searches via CINAHL were conducted with the “Randomized Controlled Trials” limiter.

A total of ten articles were chosen for this project, consisting of both research and non-research evidence. The John Hopkins Nursing Evidence-Based Practice appraisal tool was used to appraise evidence quality (see Appendix E).

Literature Review

Structured Bedside Handoff as Evidence-Based Practice

Two reviews of current literature found that a bedside report, compared to its traditional counterpart, can decrease patient risk, improve staff relationships, and decrease incidence of adverse patient outcomes, particularly falls, medication error, and pressure injury. Patient risk is decreased by reducing the time the patient is left alone and improving continuity of care by requiring both nurses to be at the bedside during handoff. Staff relationships are improved by fostering mutual respect of the nurses participating in handoff (Hada & Coyer, 2021; Williams, 2018).

A systematic review by Bukoh and Siah (2020) had similar assertions in regard to decreasing patient risk but focused on studies of structured handoff in comparison to handoff without a standardized model. They found that medication and handoff error also decreased with use
of a handoff structure, due in part to the ability for both nurses to visualize and focus on a singular patient. In practice, similar outcomes have been observed: a study in Iran found that merely educating nursing staff on standardized handoff led to a decrease in technical error and information ignorance (Nematollahzadeh et al., 2022).

It is evident that an advantage of a structured bedside handoff is allowing for smooth transfer of care from one nurse to another and the practice of patient-centered care by allowing the patient’s present condition to be the focus of handoff, rather than a firsthand account at the nurse’s station.

**Barriers to Structured Bedside Handoff**

A systematic review by Tobiano et al. (2019) found that another barrier to bedside handoff is the hesitancy to have handoff at the bedside because of nurse concern over sharing confidential information with family members in the room, discussing sensitive topics with the patient, having the patient disrupt the flow of handoff report, and having to wake the patient to conduct handoff. They asserted that structured bedside handoff could alleviate challenges associated with this practice, but that nurse training should also be conducted to better their flexibility in regards to patient participation in handoff.

It is evident that implementation of a standardized handoff tool can benefit bedside handoff by providing much-needed structure and direction to a highly variable process that is already affected by many other negative factors, but also that it is not a complete solution.

**Use of a Visual Aid During Bedside Handoff**

A randomized control trial was done in an urban medical center studying the use of a checklist tool for use during handoff from the operating room to the post-anesthesia care unit. This led to an increase in nurse recollection of all information in the received report (Robins &
Dai, 2015). Another randomized control trial looked at use of a visual aid during handover for use by pediatric intensive care residents. Residents who used this aid gave a report closer to the reference standard created by an expert compared to those who did not (Weiss et al., 2013).

This evidence suggests that use of a visual aid tool during handoff can increase comprehensiveness of report, meaning important information is not omitted or missed. Although these studies do not occur within the peripartum mesosystem, they both occur within high-acuity units in urban academic tertiary medical centers, similar to Hospital A. Exchange of knowledge of a patient and their care between healthcare professionals should benefit from a visual aid tool, regardless of specialty and profession.

Models for a Standardized Handoff Tool

A quality improvement project by Wollenhaup et al. (2017) implemented a Modified Bedside Handoff Tool, outlining postpartum-specific information in an SBAR, or Situation, Background, Assessment, and Recommendation format. This acted as a guideline to what should be discussed during a bedside handoff. Another project by Lin et al. (2015) implemented another standardized handoff format in the form of another acronym, KP SMILE, each letter representing an important part of handoff in the order that information was presented in that hospital system’s electronic health record.

Combined, these quality improvement projects hold potential as models for a standardized handoff tool within the peripartum mesosystem. A modified SBAR tool in an order that is logical and does not encumber current practice can be implemented in the present project. While these projects appear immediately applicable to the present project, it is possible several pilot cycles may need to be done to best modify these models for the present setting.
Additionally, this tool can be designed to be reusable and to have maximum visibility. A project done by Lee et al. (2018) implemented a visual aid in the form of a laminated huddle safety board to display information such as contraindications for care, pertinent medical conditions, and allergies for use for handoff between obstetric triage and labor and delivery. This kept the safety board as a permanent fixture at the patient’s head of bed and acted as a visual cue to discuss safety checks at the bedside.

**Conceptual Framework**

Change theories and frameworks are tools used to model the process of change implementation. These are used as references of what steps should be taken in order to reach lasting change. By using a change theory within a microsystem, it can guide quality improvement champions in enacting lasting change by garnering buy-in from those that must continue to work with the change, enable co-design with stakeholders, and facilitate positive, working relationships that can create a culture conducive to further change (Harrison et al., 2021).

Lippitt’s Seven-Step Change Theory was the framework used in this project. The first step involves analysis and diagnosis of the problem, including data collection. The second step includes evaluation of the microsystem’s readiness for change. The third step is to assess the change agent, or the person leading the change, for the readiness to enact change. The fourth step is to create objectives that are progressive in nature, including action plans on how to achieve them. The fifth step is to introduce and explain the role of the change agent to all those involved in the change. The sixth step is to maintain change as it is enacted through ongoing feedback and communication. The last step is to gradually terminate the relationship with the change agent, so that the microsystem operates with the new change alone (Hawkes & Hendricks-Jackson, 2017).
Ethical Considerations

This project meets ethical standards of the American Nurses Association and University of San Francisco.

Provision 4 of the American Nurses Association Code of Ethics states that the nurse has the obligation and responsibility to provide the most optimal care for their practice (American Nurses Association, 2017). This project promotes this provision by encouraging nurses to practice standardized bedside handoff, a practice the QI team has determined as evidence-based and the most beneficial for patients and practice.

In accordance with University of San Francisco’s Jesuit value of cura personalis, or care for the whole person, this project aims to improve patient-centered care by encouraging nurses to include patients in handoff by doing the NKE at the bedside (University of San Francisco, n.d.).

Non-Research Determination and Approval

Additionally, this project meets the guidelines for an evidence-based quality improvement project. An IRB review was not required. A statement of non-research determination (SONRD) form was completed to validate this quality improvement initiative (Appendix F) followed by a review and approval by University of San Francisco School of Nursing and Health Professions clinical faculty. The project described received no funding and the project group members declare no conflict of interest for the project.

Project AIM

We aim to improve the comprehensiveness of Nurse Knowledge Exchange (NKE) for postpartum nurses by 5% during the labor and delivery (L&D) to postpartum patient transfer through the implementation of a standardized handoff tool.
By implementing a standardized handoff tool, we also aim to improve patient outcomes, interdepartmental relations, and nurse workflow. Placing patients as key participants in NKE will ensure continuity of care and patient-informed care. Utilizing such a tool will lead to smoother and more comprehensive NKEs, leading to better nurse workflow and, subsequently, less contentious relationships between labor and delivery nurses and postpartum nurses.

**Methods**

**Context**

To develop an intervention for this mesosystem’s present problem, the QI team first assessed the mesosystem to further understand its purpose, patients, professionals, processes, and patterns. Then, a root-cause analysis and SWOT analysis were done to identify causes of the present problem and the external and internal forces that can either hinder or facilitate change. Lastly, a timeline was developed, and a potential budget was proposed in preparation for the project’s implementation.

**Assessment of Mesosystem**

**Purpose.** As previously stated, Hospital A’s purpose is “to provide high-quality, affordable health care services and to improve the health of our members and the communities we serve” (Kaiser Permanente, 2022). The purpose of Hospital A’s peripartum mesosystem is to provide acute inpatient care to pregnant individuals and their neonates, including ensuring their health and safety during all stages of labor and postpartum recovery.

**Patients.** The patients that are served by this mesosystem are pregnant patients in all stages of labor, neonate patients, uninsured patients, and insured patients.

**Professionals.** The professionals that work in this mesosystem are part of a large, interdisciplinary patient care team. The professionals responsible for patient care include labor and
delivery registered nurses, postpartum registered nurses, obstetricians, neonatologists, anesthesiologists, medical residents, surgeons, nursing leadership, midwives, doulas, patient care assistants, unit secretaries, social workers, lactation consultants, chaplains, and nutritionists. Other professionals that are responsible for patient safety and mesosystem functions include security officers, housekeeping, and information technicians.

**Processes.** There are many patient care processes that occur within the mesosystem. One such process is unit admission, which can occur either via triage or transfer. There is also unit discharge to home, to the postpartum unit, to further inpatient care, or to the morgue. Other processes include labor induction, assessment and treatment of pain, head-to-toe assessment, monitoring of labor, neonatal, and postpartum complications, prenatal, postpartum, and breastfeeding education, and postpartum aftercare.

**Patterns.** Lastly, several patterns were identified that characterized the functions of the mesosystem. One such pattern was communication; ensuring effective communication is vital to ensuring proper coordination of care, patient safety, and good rapport between patients and healthcare staff. Another pattern was patient flow, especially how patients are admitted to the mesosystem, transferred between antepartum, labor and delivery, and postpartum, and discharged. This includes the consideration of patient census, bed allocation, and proper staffing (see Appendix A). Another pattern was the identification of and response to obstetric emergencies, such as postpartum hemorrhage protocol. Next, postpartum recovery patterns were identified as a means of anticipating patient needs and tailoring care to their recovery after birth. Lastly, family support patterns were identified, which included engaging present family and support members as the patient recovers from birth.
**Root-Cause Analysis**

After assessing the microsystem, the causes of the present problem were analyzed. In accordance with guidance provided by the Institute of Healthcare Improvement, or IHI (n.d.), a fishbone diagram was used for this root-cause analysis to identify areas that could be addressed via an intervention (see Appendix G). Some notable causes that the QI team’s proposed intervention directly addressed were absence of an NKE tool, variable NKE processes, lack of privacy at the patient’s bedside, use of computers in the hallway instead of at bedside, and the confined physical space that makes computer use at the bedside less feasible.

**SWOT Analysis**

After analyzing contributing causes to the present problem, the QI team conducted a SWOT analysis to identify forces both in the macrosystem and the mesosystem that can influence the present project (see Appendix H). Externally, the opportunities present for this project include the standardized bedside handoff mandate in 2010 (The Joint Commission, 2017). Some external threats, however, include time constraints, slow-moving change due to higher administrative processes, and physical constraints, as the postpartum unit was not structurally designed to be a cohesive part of the peripartum mesosystem.

Strengths that arise internally from the peripartum mesosystem include that there is a clear need for this project as discussed in the Problem Description section, strong support from unit leadership and unit-based councils, and present interdisciplinary collaboration. On the other hand, internal weaknesses that arise include a culture that is resistant to change, especially from laggards, individuals within the mesosystem that are slow to adopt change (Poe & White, 2010).
From these analyses and pre-survey feedback, the QI team identified three main barriers to implementing the proposed intervention: patient privacy and sensitivity at the bedside, computer use at the bedside, and culture differences that differ from the proposed intervention. In addition to the description of the intervention, proposed barrier mitigation strategies will be discussed in the Intervention section.

**Timeline**

To prepare for the implementation of this project, a Gantt chart was created to define its timeline (see Appendix I). As the project progressed, this chart was adjusted as needed. The Gantt chart has four major sections: project planning, implementation, evaluation, and performance.

**Budget Analysis**

A cost-benefit analysis was conducted to assess potential cost avoidance if the proposed intervention was implemented within the present mesosystem. Based on the number of transfers conducted in the peripartum mesosystem each year, over $2 million in HIPAA compliance violations could be avoided by implementing the intervention (see Appendix J).

**Intervention**

The proposed intervention is an NKE guideline tool intended for use at the bedside during patient handoff from labor and delivery to postpartum (see Figure 2). This tool was developed through models provided in literature and continuous feedback from registered nurses within the mesosystem. The final guideline tool is the product of several iterations.
The NKE guideline tool is intended to be used to standardize the order and format of information provided during an NKE. The tool is used as a guide during a report, with a computer at the bedside to supplement any personal notes a nurse may have on hand.

This tool is meant to be used in practice as a printed, laminated sheet meant to live on the mobile computer workstations on the postpartum floor. These workstations were meant to be wheeled in during an NKE so that both the electronic medical record and the guideline could be
utilized during the report. In addition to this tool, barrier mitigation strategies were also developed.

**Barrier Mitigation Strategies**

**Privacy and Sensitivity.** One barrier to the success of the proposed intervention is the concern of patient privacy at the bedside. From pre-survey feedback from nurses, many do not choose to do NKE at the bedside because of the concern of discussing sensitive patient information when family and support persons are also in the room. They may hesitate to discuss information that may also be emotionally distressing to the patient. To mitigate this barrier, a list of suggested phrases was developed to reframe certain points of the NKE (see Appendix K). For example, a mother may feel like they “failed” in labor if the term “failure to progress” is used. The list of phrases suggests the phrase “slow labor” instead.

**Computer Use.** Another identified barrier is use of the computer at the bedside. As identified in the root-cause and SWOT analyses, the physical constraint of having smaller rooms that make it less feasible to fit a mobile computer workstation has led to NKE being one at the nurses’ station where there is more room to refer to a computer. One identified mitigation strategy is to remind nurses that the Joint Commission encourages use of the computer at the bedside to aid handoff and prevent the exchange of inaccurate information (The Joint Commission, 2022).

**Culture Differences.** Lastly, the final barrier identified is that the proposed intervention is a significant change to current mesosystem culture. As discussed in the Problem Description section, the mesosystem currently has no standardized NKE protocol. To mitigate this, the QI team allotted significant time in garnering stakeholder buy-in, including presenting to the OB and L&D unit-based councils, providing complimentary snacks to nurses, and participating in
regular rapport with nurses on the floor (see Appendix I). This mitigation strategy was also used in relation to the barrier of computers at the bedside.

**Outcome Measures**

To study the intervention, an outcome measure was identified. The main outcome measure studied in this project is NKE comprehensiveness. NKE comprehensiveness was measured as a percentage of points completed during the NKE.

**Study of the Intervention**

To study the outcome of NKE comprehensiveness in the form of a percentage, each bullet point of the NKE guideline tool was assigned one point. If a bullet point was not covered during the NKE, it was not given a point. If it was covered, it was given one point. Upon the completion of the observation, the points were added up and its sum was divided by the total number of bullet points on the NKE guideline tool then multiplied by 100. This yielded a percentage of comprehensiveness.

These strategies were employed in both the study of baseline data and post-intervention data.

**PDSA Cycles**

To study the intervention, a PDSA cycle was planned (see Appendix L). During the “plan” phase, the QI team identified the goal of observing 10 NKEs using the tool, created an outline of education for nurses on the use of and reasons for using the tool, and planned how to study the intervention, as discussed in the Study of the Intervention section. During the “do” phase, post-intervention observations were conducted, and a post-survey was distributed. During the “study” phase, data collected was analyzed and reflections upon mitigation of barriers and persisting barriers to NKE at the bedside were identified. Lastly, in the “act” phase, the NKE
guideline tool was revise based on feedback collecting during the “do” phase, the next PDSA cycle was planned, and the project was handed off to the unit-based councils pending the conclusion of the QI team’s internship at the mesosystem.

**Results**

After observing 10 transfers where the NKE guideline tool was piloted, bedside NKE comprehensiveness was found to be at 77%, or 91% regardless of location (see Figure 3). Bedside NKE comprehensiveness had 43.5% increase from baseline observations (33.5%; see Figure 1), thus surpassing the initial goal of a 5% increase (see Project AIM). Appendix M contains graphs per major section of NKE.

**Figure 3**

*Post-Intervention NKE Comprehensiveness*

According to the post-survey, which was modeled after the pre-survey (see Appendix B), nurses perceived NKE comprehensiveness post-intervention to be similar to baseline (71%) with 70% reporting they felt NKE was extremely comprehensive. However, 60% of nurses in the post-survey reported feeling very satisfied with report, compared to 19.3% at baseline.
Discussion

The standardization of NKE via a handoff guideline tool proved successful in increasing comprehensiveness of NKE at the bedside compared to baseline observations. Nurse satisfaction with given report also increased substantially.

Positive feedback originated mainly from early adopters in the mesosystem. Because of early and consistent engagement with unit-based councils, many nurse champions were identified and bought-in from council membership. Presentations on project progress, substantiating literature review, and proposed interventions proved effective in dispelling skepticism in the proposed NKE guide. It also proved beneficial that unit-based council membership comprised of nurses and lactation specialists that were primed to be open to change.

On the other hand, nurse pushback encountered originated from laggards in the mesosystem who were not primed for change. Two main reasons pushback was encountered were culture differences and lack of perceived need to change. Some nurses were not open to piloting the NKE guide because certain practices, like bringing the mobile computer workstation into the patient room, conducting bedside report, and involving the patient in handoff were neither the precedent nor a requirement. Other nurses did not perceive a need for a standardized NKE process, due part to inadequate education in a noisy, and high-distraction environment as well as the belief that no change to NKE is necessary.

In a mesosystem that cares for the health of the mother and baby dyad during a critical period, the QI team recognizes that nursing staff have varied readiness for change. Some are open to changing practice for the better, while others are set in the processes they know to be ef-
fective. Ensuring buy-in is achieved from nurses of all levels of readiness first requires the mutual understanding that the concern for the health of the mother and baby dyad remains the center of quality improvement.

**Limitations**

Several limitations were present that affect the accuracy of post-intervention data and effectiveness of stakeholder buy-in. Post-intervention variability in nurse education substantially skewed results across individual NKE observations. If both nurses involved in the patient transfer, the labor & delivery nurse and the postpartum nurse, received adequate education from the QI team, NKE comprehensiveness improvement was substantial. On the other hand, if education was missed due to staff change or time constraints, NKE comprehensiveness improvement was diminished. Regardless, the total average of NKE comprehensiveness across all observations remains high.

Secondly, time constraints of the project restricted data collection. Due to a limited term in the peripartum mesosystem, the QI team was only able to observe a small sample size of 10 NKEs post-intervention compared to the 20 at baseline. A larger sample size is needed to better reflect the effectiveness of the NKE guide.

**Future Recommendations**

To combat the challenges encountered in the present project, it is recommended that sustainable change and formal NKE guide education are pursued in the future.

As seen in the project done by Lin et al. (2015), a similar NKE change initiative, change was not sustained because of an absence of culture change (see Appendix E). Thus, it is imperative that the efforts of the present project are handed over to the unit-based councils upon its conclusion so their membership may take over. Encouraging a future QI team cohort to champion
the present project may also prove beneficial. Champions are needed to conduct further PDSA cycles to refine the intervention for possible implementation in the future.

Lastly, a formal and compensated education on the NKE guide in the future can prevent pushback that was encountered in the present project due to resistance to change and unideal environments for education. Such education should include simulation-based learning where nurses are encouraged to practice using the guide in patient scenarios. Education should also be done outside of a patient care shift, so that nursing staff can learn of the guide without distraction. Leadership support will be needed to ensure nurses receive both the education and the compensation to attend it.

**Conclusion**

Despite encountering some pushback from nursing staff, the use of a standardized NKE guide tool was found to successfully improve NKE comprehensiveness in the peripartum mesosystem. Stakeholder buy-in is an essential part to sustaining this change. To ensure future success of this change, handoff to other champions, a formal NKE guide education, and continuous leadership support is needed.
References


https://doi.org/10.2147/JHL.S289176


https://doi.org/10.1111/nhs.12825


https://doi.org/10.1016/j.ijnurstu.2017.10.014


Appendix A

Hospital A: Maternity Mesosystem Bed Designation

<table>
<thead>
<tr>
<th>Bed Designation</th>
<th>Number (#)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hybrid Antepartum/Postpartum(^a)</td>
<td>11</td>
</tr>
<tr>
<td>Postpartum</td>
<td>10</td>
</tr>
<tr>
<td>Labor, Delivery, &amp; Recovery</td>
<td>9</td>
</tr>
<tr>
<td>Triage</td>
<td>3</td>
</tr>
<tr>
<td>Post-Anesthesia Care</td>
<td>2</td>
</tr>
<tr>
<td>Operating Suites</td>
<td>2</td>
</tr>
</tbody>
</table>

\(^a\)These beds are hybrid and can be designated either antepartum or postpartum depending on patient census and unit staffing.
Appendix B

Pre-Survey

A pre-survey was conducted within the peripartum mesosystem to assess the current state of NKEs via nurse feedback. The pre-survey was conducted via software Qualtrics and was accessible via QR code. The pre-survey contained nine questions: five Likert scale questions, three free-response questions, and one multiple-choice question.

**Table B1**

*Qualtrics Pre-Survey*

<table>
<thead>
<tr>
<th>Question</th>
<th>Response Type/Choices</th>
</tr>
</thead>
<tbody>
<tr>
<td>Department/Unit</td>
<td>Postpartum</td>
</tr>
<tr>
<td></td>
<td>L&amp;D</td>
</tr>
<tr>
<td>Years of Nursing Experience</td>
<td>Free Response</td>
</tr>
<tr>
<td>Process: How do you give or receive a handoff report during patient transfer from L&amp;D to Postpartum?</td>
<td>Over the phone</td>
</tr>
<tr>
<td></td>
<td>In person (hallway, nurse’s station)</td>
</tr>
<tr>
<td></td>
<td>At the patient's bedside</td>
</tr>
<tr>
<td></td>
<td>Other</td>
</tr>
<tr>
<td>Patient-Centered Care: How often do you give or receive a handoff/NKE report at the patient's bedside during a patient transfer?</td>
<td>Always</td>
</tr>
<tr>
<td></td>
<td>Very frequently</td>
</tr>
<tr>
<td></td>
<td>Occasionally</td>
</tr>
<tr>
<td>Question</td>
<td>Answer</td>
</tr>
<tr>
<td>-------------------------------------------------------------------------</td>
<td>----------------</td>
</tr>
<tr>
<td>If a handoff/NKE report is not done at the patient's bedside, what are some common reasons why?</td>
<td>Free Response</td>
</tr>
<tr>
<td>Comprehensiveness: How comprehensive do you find the current handoff you give or receive during a patient transfer?</td>
<td>Extremely comprehensive</td>
</tr>
<tr>
<td></td>
<td>Very comprehensive</td>
</tr>
<tr>
<td></td>
<td>Moderately comprehensive</td>
</tr>
<tr>
<td></td>
<td>Slightly comprehensive</td>
</tr>
<tr>
<td></td>
<td>Not comprehensive</td>
</tr>
<tr>
<td>Effectiveness: How effective do you find the current handoff you receive in facilitating communication during the patient transfer process?</td>
<td>Extremely effective</td>
</tr>
<tr>
<td></td>
<td>Very effective</td>
</tr>
<tr>
<td></td>
<td>Moderately effective</td>
</tr>
<tr>
<td></td>
<td>Slightly effective</td>
</tr>
<tr>
<td></td>
<td>Not effective at all</td>
</tr>
<tr>
<td></td>
<td>Unsure</td>
</tr>
<tr>
<td>Overall Satisfaction: Overall, how satisfied are you with the report you receive for patient</td>
<td>Very satisfied</td>
</tr>
<tr>
<td></td>
<td>Somewhat satisfied</td>
</tr>
</tbody>
</table>
transfers? | Neither satisfied nor dissatisfied
---|---
| Somewhat dissatisfied
| Extremely dissatisfied

Suggestions for Improvement: Please provide any additional comments or suggestions for improving the report checklist. | Free Response

*Note.* This is a transcribed version of the pre-survey, including questions in the pre-survey and the possible responses.

Flyers were posted on both peripartum floors and directly presented to nurses to begin garnering stakeholder buy-in and to collect responses for the pre-survey.
Figure B1

Pre-Survey Flyer

![Pre-Survey Flyer Image]

1. Take survey
   - ~2 min long
   - CONFIDENTIAL!

   https://usfca.qualtrics.com/jfe/form/SV_UulXbeARHHu9Ugu

2. Share it with a coworker
   - Your feedback will help guide QI initiatives

3. Grab a treat
   - Located in the breakroom

Questions? Email us!

USFQIPROJECT@GMAIL.COM

Note. Above is the flyer posted on the peripartum floors. The QR code directs the viewer to a LinkTree containing links to the Qualtrics pre-survey and a PDF document introducing the current QI team.
Appendix C

Standardized Handoff Tool

**At the Bedside:** *utilize a computer at bedside*

- Introduce on-coming nurse to patient *on-coming nurse writes name on board*

**Background**
- Name(s) *check bands*
- Age
- Allergies
- Pregnancy History (GTPAL, GDM, complications, Pre-E)
  - Prenatal Labs (Blood Type, RPR, Rubella, GBS, STIs, etc.)
  - Medical/Surgical History, Psychosocial History, COVID status

**Situation:** Time & Type of Delivery

<table>
<thead>
<tr>
<th>Vaginal Delivery</th>
<th>C - Section</th>
</tr>
</thead>
<tbody>
<tr>
<td>• QBL</td>
<td>• QBL</td>
</tr>
<tr>
<td>• Laceration</td>
<td>• Assess dressing <em>view dressing for drainage</em></td>
</tr>
<tr>
<td>• Pain Control method</td>
<td>• Type of anesthetic</td>
</tr>
<tr>
<td>• Assistive device</td>
<td>• Medication(s) given</td>
</tr>
</tbody>
</table>

Complications (Mom + Newborn)

- Baby Progress
  - APGAR Score + weight
  - BG Check?
  - Meds (Hep B, Vit K, erythromycin)
  - Feeding plan/last feeding
    - Colostrum, hand expressing, latching assessment
  - Vitals
  - Void(s)/Stool *(in utero)*

**Assessment:** Inspect wounds, incisions, drains, SCD’s etc.
- IV sites *(both RNs trace Mg, Pit lines)*
- Fundal assessment *(both RNs, assess for bleeding)*
- Ambulation & Diet (oral intake)
- Void/foley catheter

**Computer:**
- Orders & care plan
- Upcoming tasks & labs *(review labs drawn and schedule for future lab draws)*

**Recommendation:** Goals for the shift and discharge goal *engage patient and write goals on white board*

**Questions:** Ask patients and family if they have any questions or additional information that they would like to add.
Appendix D

Baseline Observation Data

Figure D1

Introduction and Background Baseline Data

NKE Baseline Observations: Introduction and Background

- **On-coming nurse introduction**
- Name(s)**check bands**
- **Age**
- **Allergies**
- **Pregnancy History**
- **Prenatal Labs**
- **Medical/Surgical History**

Average Percentage of Completion
Figure D2

Situation Baseline Data
Figure D3

*Baby Progress Baseline Data*

[Diagram showing baseline observations for baby progress with categories and their average percentage of completion.]
Figure D4

Assessment Baseline Data
Figure D5

*Computer and Recommendations Baseline Data*

![Graph showing NKE Baseline Observations: Computer and Recommendations. The graph compares the percentage of completion of various tasks between Bedside ONLY and Bedside OR Nurses Station.](graph.png)
## Appendix E

### Johns Hopkins Evidence Appraisal Table

<table>
<thead>
<tr>
<th>Citation</th>
<th>Evidence Type</th>
<th>Sample, Sample Size, Setting</th>
<th>How Does Article Address Problem?</th>
<th>Quality of Evidence</th>
<th>Other Highlights from Article (consider including limitations &amp; outcomes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Nematollahzadeh, Z., Jahani, S., Ghanbari, S., Sayadi, N. (2022). The effect of standard patient handover intervention on improving the quality of transfer from the operating room to the intensive care units. <em>Nursing and Midwifery Studies, 11</em>(1), 17-23 <a href="https://doi.org/10.4103/nms.nms_24_21">https://doi.org/10.4103/nms.nms_24_21</a></td>
<td>Quasi-experimental Sample: handovers between cardiac OR and cardiac ICU Sample Size: 62 handovers (31 before, 31 after intervention) Setting: Golestan Hospital, Iran</td>
<td>This study looked at implementation of training for nursing staff in a standard transfer process, including being fully present during handoff. This study found that standardized handoff led to increased quality of care, cementing the use of a standard handoff tool as evidence-based practice for the present project.</td>
<td>Level II A Results are consistent, reasonable sample size for the microsystem, and consistent recommendations.</td>
<td>Limitations: This study may not be generalizable to the present microsystem because it takes place in Iran. Outcomes: Technical error and information ignorance both decreased after implementation.</td>
</tr>
<tr>
<td>2</td>
<td>Bukoh, M. X., &amp; Siah, C. J. R. (2020). A systematic review on the structured handover interventions between nurses in improving patient safety</td>
<td>Systematic Review Sample: randomized control trial and quasi-experimental studies pertaining to structured handovers</td>
<td>This systematic review aimed to determine what effect structured handovers had in improving patient outcomes. This review suggests that structured handovers can improve patient safety.</td>
<td>Level III A Rigorous study selection, transparent methods and analysis section, and robust appraisal and synthesis.</td>
<td>Limitations: No mention of potential reviewer biases and self-scrutiny, and inquiry was not participant-driven. Outcomes: Structured handoff led to decreased patient complications, medication error, and handoff error.</td>
</tr>
<tr>
<td>#</td>
<td>Author(s)</td>
<td>Study Type</td>
<td>Sample</td>
<td>Setting</td>
<td>Outcomes</td>
</tr>
<tr>
<td>---</td>
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<td>1</td>
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<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Lee, D. D., Colwill, A. C., Teel, J., &amp; Srinivas, S. K. (2018).</td>
<td>Quality improvement project</td>
<td>Sample: # of triage to L&amp;D admissions</td>
<td>Setting: urban academic tertiary medical center</td>
<td>This project implemented a huddle safety board to provide a visual aid during bedside admission. This helped standardize team member roles and promote closed-loop communication. This project's change is similar to ours and serves as evidence that a similar change can yield positive change within the setting of a peripartum mesosystem.</td>
</tr>
<tr>
<td>4</td>
<td>Lin, M., Heisler, S., Fahey, L., McGinnis, J., &amp; Whiffen, T.</td>
<td>Quality improvement project</td>
<td>Sample: Kaiser SoCal nursing units of</td>
<td></td>
<td>This project aimed to implement NKEplus, a package of shift change specifications: Level V A</td>
</tr>
</tbody>
</table>

Sample Size: 111 nursing units
Setting: Kaiser SoCal nursing units across 14 Kaiser medical centers

1. Team rounding before shift change
2. Optimizing patient care assignments
3. Having unit secretaries, NAs, or charge nurses answer call lights for uninterrupted shift handoff
4. Standardizing shift report & safety check format
5. Update patient care board with patient goals for shift & w/ incoming & outgoing RN

This project supports our own as it also takes place within Kaiser and specifically targets NKE. It serves as both a robust piece of literature detailing how NKE was implemented in Kaiser nursing units as well as evidence that such a change can yield increased patient satisfaction.

Outcomes:
Aggregate HCAHPS scores increased, suggesting increased patient satisfaction with their care. Change was not sustained after the conclusion of this project due to a lack of culture change.


This review aimed to find nursing interventions that were by end of project). Processes, barriers to change, and evaluation of change effectiveness were included and thorough.

Limitations: The studies included in this review did not contain...
<table>
<thead>
<tr>
<th>Study</th>
<th>Authors</th>
<th>Study Design</th>
<th>Sample</th>
<th>Setting</th>
<th>Outcomes</th>
<th>Limitations</th>
<th>Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>Robins, H., &amp; Dai, Fa. (2015).</td>
<td>Randomized control trial</td>
<td>Randomly chosen OR to PACU handoffs</td>
<td>Yale-New Haven Hospital OR &amp; PACU</td>
<td>This study looked at use of a checklist during handoff from the OR to the PACU. This checklist is on a laminated card that the anesthesia provider received before the case, then used during handoff to the PACU RN.</td>
<td>Level I B Reasonable conclusions from consistent, statistically consistent results. Not enough control to be considered a strong RCT, especially in a process as variable as handoff.</td>
<td>The level of experience for both the anesthesia provider and the RN varied greatly and was not controlled for.</td>
</tr>
<tr>
<td>7</td>
<td>Tobiano, G., Bucknall, T., Sladdin, I.,</td>
<td>Systematic</td>
<td>Research studies</td>
<td>The systematic review had 3 overarching questions:</td>
<td>Level III A</td>
<td>Limitations: The review did not exclude studies based on qualitative data, and thus had no insight into perceived patient outcomes.</td>
<td>Outcomes: This review found that utilization of a standardized handoff tool leads to significantly decreased adverse patient events, including falls, pressure injuries, and medication errors.</td>
</tr>
</tbody>
</table>

To-shift nursing handover interventions associated with improved inpatient outcomes—falls, pressure injuries and medication administration errors: An integrative review. *Nursing & Health Sciences*, 23(2), 337–351. [https://doi.org/10.1111/nhs.12825](https://doi.org/10.1111/nhs.12825)


Tobiano, G., Bucknall, T., Sladdin, I., _et al._ (2020). Alerting and 2020 about nursing interventions aimed at improving handover. Sample Size: 8 studies Setting: Any nursing setting able to improve inpatient outcomes compared to current practice. This review supports the bedside handoff report as evidence-based practice, thus substantiating the present project. Sample Size: 60 handoffs Setting: Yale-New Haven Hospital OR & PACU This study presents Level I evidence that suggests implementing a standardized checklist, similar to our proposed change, can increase handoff retention/comprehensiveness.
| Whitty, J. A., & Chaboyer, W. (2019). Reprint of: Patient participation in nursing bedside handover: A systematic mixed-methods review. *International Journal of Nursing Studies, 97*, 63-77. [https://doi.org/10.1016/j.ijnuurstu.2017.10.014](https://doi.org/10.1016/j.ijnuurstu.2017.10.014) | mixed-methods review | 1. What is the role of the patient in bedside handover? 2. What are barriers keeping patients from participating in handover? 3. What strategies can be used to enable patient participation? This applies to our present project as it can provide insight into barriers that prevents bedside handoff from occurring. | Rigorous study selection, transparent methods and analysis section, and robust appraisal and synthesis. Quality level and stakeholder involvement was not integrated into the process. Outcomes: The role of the patient is to provide critical information regarding their care and contribute to current knowledge of their condition. Barriers to patient participation include nurses’ concern for confidential/sensitive information. Strategies to help encourage patient participation include nurse training and making a more predictable handoff process, such as standardization. |
| Weiss, M. J., Bhanji, F., Fontela, P. S., & Razack, S. I. (2013). A preliminary study of the impact of a handover cognitive aid on clinical reasoning and information transfer. *Medical Education, 47*(8), 832–841. [https://doi.org/10.1111/medu.12212](https://doi.org/10.1111/medu.12212) | Randomized Control Trial | Sample: handover events in the PICU by first-year resident doctors Sample Size: 20 handover events Setting: Montreal Children’s Hospital PICU | This study looked at the use of a written handover cognitive aid that included sections of relevant and required information for a resident to present during rounds. This study presents Level I evidence that suggests implementing a visual aid, similar to our proposed change, can increase handoff comprehensiveness. Level I C Sample size was small and study design was prone to biases and confounding variables. Limitations: Sample size was small at 20, and as a result, randomized participants in both groups were not equal in class standing and experience, a possible confounding variable. Also, residents were not blinded to the study, leaving open the possibility of observational bias. Outcomes: Residents who used the visual aid were statistically significantly more concurrent to the reference standard than those who did not. This suggests using a visual aid during |
handover results in a more comprehensive report.

The authors speculate that the reason for this is unclear: was a better report the result of having a visual aid to guide the report, or was it because the resident sought out further clinical rationale and data prior to the report because the visual aid required it?

<table>
<thead>
<tr>
<th></th>
<th>Williams, C. L. (2018). A comparison of the risks and benefits of nursing bedside shift report vs. traditional shift report: A systematic review of the literature. International Journal of Studies in Nursing, 3(2), 40. <a href="https://doi.org/10.20849/ijsn.v3i2.382">https://doi.org/10.20849/ijsn.v3i2.382</a></th>
<th>Literature Review</th>
<th>Sample: Studies between 2013 to 2018 focused on shift report both traditional and at the bedside. Sample Size: 8 studies Setting: N/A; literature review was not restricted to geographical area or area of expertise</th>
<th>The purpose of this systematic review aimed to determine if, based off literature, a bedside shift report can lead to improved patient care, less missing information, less medication errors, and less adverse patient outcomes. This review suggests that bedside report is evidence-based practice and can lead to positive outcomes.</th>
<th>Level V B Clear research question was identified, articles thoroughly summarized, and recommendations provided. However, little mention of limitations of scoping literature.</th>
<th>Limitations: This review was mislabeled as a “systematic review.” Only 3 databases were searched and only provides a summary of studies. Outcomes: Recommendation for practice is to implement bedside report. The review found that bedside report implementation leads to decreased potential patient risk, increased opportunity for interstaff relationships, and to ensure safety checks are made.</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>Wollenhaup, C. A., Stevenson, E. L., Thompson, J., Gordon, H. A., &amp; Nunn, G. (2017). Implementation of a modified Quality improvement project Sample: Bedside nursing handoffs between shifts Sample Size: 100</td>
<td>Quality improvement project</td>
<td>This project included implementation of a Modified Bedside Handoff Tool during bedside nursing handoff between shifts. They looked at compliance to all necessary</td>
<td>Level V B Results were consistent and statistically significant but there are many variables that</td>
<td>Limitations: The setting of this project is the same as the author’s place of employment, suggesting possible bias. Also, a convenience sample was used, suggesting handoffs during less busy parts of the day (i.e. night</td>
<td></td>
</tr>
</tbody>
</table>
bedside handoff for a postpartum unit. *JONA: The Journal of Nursing Administration, 47*(6). [https://doi.org/10.1097/NN A.000000000 0000487](https://doi.org/10.1097/NN A.000000000 0000487)

| nursing handoffs | components in the tool and patient and nurse satisfaction with handoffs before and after implementing the tool. This QI project has a similar intervention to ours, and may serve as a model for our own change and act as evidence supporting that such a change can yield positive results. could have skewed data into the positive. | could have skewed data into the positive. shift) were not added. Additionally, the setting is a rural hospital with an environment much different from an urban one. Outcomes: Handoff compliance, patient satisfaction, and staff satisfaction all increased after implementation of the tool with statistical significance (p<0.05). |
Appendix F

Statement of Non-Research Determination

Project: Statement of Determination and Non-Research Determination

Form

Student Name: Gabby Romena

Title of Project: Standardizing Nurse Knowledge Exchange in the Peripartum Mesosystem

Brief Description of Project

Data that Shows the Need for the Project

There is currently no existing standardized policy on NKE within the peripartum mesosystem. Based on baseline observation data, 75.8% of necessary NKE components are covered by nurses during handoff; however, only 28.5% of the necessary NKE components are completed at the bedside. According to a pre-survey, 64% of nurses respondents reported NKE that was received or given was very comprehensive or better. Via informal feedback, nurses reported the handoff process was not thorough nor concise. Overall, staff endorsed the current project’s intervention.

Aim Statement

By April 7, 2024, we aim to improve the comprehensiveness of Nurse Knowledge Exchange (NKE) for postpartum nurses by 5% during the labor and delivery (L&D) to postpartum patient transfer through the implementation of a standardized handoff tool.

Description of Intervention(s)

Based on literature and nurse feedback, a handoff guideline was created as a reference point for nurses during a handoff, containing all necessary components of NKE.

Desired Change in Practice

The aim for this project is to standardize the NKE process via the handoff guideline to ensure consistent and thorough report between the two units. The NKE process should occur at the bedside and utilizing a computer for reference.

Outcome measurement(s)

The present project will measure the comprehensiveness of a given NKE based on the handoff guide. Comprehensiveness will be a percentage based on the number of points covered on the handoff guide.
To qualify as an Evidence-based Change in Practice Project, rather than a Research Project, the criteria outlined in federal guidelines will be used: (http://answers.bhs.gov/ohrp/categorias/1569)

- This project meets the guidelines for an Evidence-based Change in Practice Project as outlined in the Project Checklist (attached). Students may proceed with implementation.
- This project involves research with human subjects and must be submitted for IRB approval before project activity can commence.

**Comments:**

**EVIDENCE-BASED CHANGE OF PRACTICE PROJECT CHECKLIST**

*UNIVERSITY OF SAN FRANCISCO School of Nursing and Health Professions*

**Instructions:** Answer YES or NO to each of the following statements:

<table>
<thead>
<tr>
<th>Project Title: Standardization of Nurse Knowledge Exchange (NKE) on the Peripartum Microsystem</th>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>The aim of the project is to improve the process or delivery of care with established/accepted standards, or to implement evidence-based change. There is no intention of using the data for research purposes.</td>
<td>☑</td>
<td>☐</td>
</tr>
<tr>
<td>The specific aim is to improve performance on a specific service or program and is a part of usual care. ALL participants will receive standard of care.</td>
<td>☑</td>
<td>☐</td>
</tr>
<tr>
<td>The project is NOT designed to follow a research design, e.g., hypothesis testing or group comparison, randomization, control groups, prospective comparison groups, cross-sectional, case control). The project does NOT follow a protocol that overrides clinical decision-making.</td>
<td>☑</td>
<td>☐</td>
</tr>
<tr>
<td>The project involves implementation of established and tested quality standards and/or systematic monitoring, assessment or evaluation of the organization to ensure that existing quality standards are being met. The project does NOT develop paradigms or untested methods or new untested standards.</td>
<td>☑</td>
<td>☐</td>
</tr>
<tr>
<td>The project involves implementation of care practices and interventions that are consensus-based or evidence-based. The project does NOT seek to test an intervention that is beyond current science and experience.</td>
<td>☑</td>
<td>☐</td>
</tr>
<tr>
<td>The project is conducted by staff where the project will take place and involves staff who are working at an agency that has an agreement with USF SONHP. The project has NO funding from federal agencies or research-focused organizations and is not receiving funding for implementation research.</td>
<td>☑</td>
<td>☐</td>
</tr>
</tbody>
</table>
The agency or clinical practice unit agrees that this is a project that will be implemented to improve the process or delivery of care, i.e., not a personal research project that is dependent upon the voluntary participation of colleagues, students and/or patients.

If there is an intent to, or possibility of publishing your work, you and supervising faculty and the agency oversight committee are comfortable with the following statement in your methods section: “This project was undertaken as an Evidence-based change of practice project at X hospital or agency and as such was not formally supervised by the Institutional Review Board.”

ANSWER KEY: If the answer to ALL of these items is yes, the project can be considered an Evidence-based activity that does NOT meet the definition of research. IRB review is not required. Keep a copy of this checklist in your files. If the answer to ANY of these questions is NO, you must submit for IRB approval.

*Adapted with permission of Elizabeth L. Hohmann, MD, Director and Chair, Partners Human Research Committee, Partners Health System, Boston, MA.

STUDENT NAMES (Please print):

Student Name: Gabrielle Ann Romena Signature of Student: 

DATE: 03/06/2024

SUPERVISING FACULTY MEMBER NAME (Please print):
Supervising Faculty Member Name: Scout Hebinck

Signature of Supervising Faculty Member: Scout E. Hebinck, MSN, RN-C

DATE: 03/06/2024
Appendix G

Fishbone Diagram

Nurse Knowledge Exchange (NKE) Standardization

Fishbone Analysis

PEOPLE
- Not shift standard to have a postpartum charge
- Notification of a patient transfer varies
- Low morale between units
- Roles/responsibilities unclear of nurses involved in transfer process
- Absence of NKE checklist tool

ENVIRONMENT
- Multiple people in patients' room contributing to a lack of privacy
- Confined physical space
- Highly distracting room
- High stress unit
- L&D nurses don't float to PP Unit
- Variable NKE requirements around NKE
- Multiple interruptions during NKE
- Unknown processes on policy of NKE and notice of transfer

METHODS

EQUIPMENT
- Suboptimal use of Voceras
- Computers in hallway versus bedside
- Majority slow adopters
- Variable NKE processes
- Transfer of patients NKE not seen as priority
- Low priority to give family centered care

MATERIAL

CULTURE

NKE IS NOT STANDARDIZED
Appendix H

SWOT Analysis

**SWOT Analysis**

**Internal (Peripartum Meso-system)**

**Strengths**
- Clear objective and need
- Strong support from unit leadership
- Existing handoff covers 74% of necessary content
- Interdisciplinary collaboration
- Engaged unit-based councils
- Commitment to safety

**Weaknesses**
- Resistance to change/current culture
- Physical constraint (confined space to bring WOWs into postpartum rooms)
- Suboptimal managerial involvement
  - Staff turnover
    - NKE compliance data unknown
    - Time constraints

**External (Hospital X)**

**Opportunities**
- Evidence-based
- Promotes culture of safety
- Staff development
- Patient centered
- Medical resident-focused teaching hospital
- Joint Commission mandated standardized bedside handoff in 2010

**Threats**
- Time constraints
- Slow-moving change
- Limited educational opportunities for new nursing workforce
- Physical/environmental constraints (unit not designed for peripartum)
Appendix I

Gantt Chart

<table>
<thead>
<tr>
<th>Task Title</th>
<th>Due Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Planning</td>
<td></td>
</tr>
<tr>
<td>Literature Review</td>
<td>3/3/2024</td>
</tr>
<tr>
<td>Evidence Appraisal Table</td>
<td>2/26/2024</td>
</tr>
<tr>
<td>Meeting with NIM, OBIC</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Develop NKE Checklist &amp; Feedback</td>
<td>2/15/2024</td>
</tr>
<tr>
<td>Finalize NKE Checklist</td>
<td>3/21/2024</td>
</tr>
<tr>
<td>Develop Pre-Survey Questions</td>
<td>2/14/2024</td>
</tr>
<tr>
<td>Finalize Pre-Survey Questions</td>
<td>2/14/2024</td>
</tr>
<tr>
<td>Develop Pre-Survey Flyer</td>
<td>2/16/2024</td>
</tr>
<tr>
<td>Disseminate Pre-Survey Flyer</td>
<td>3/13/2024</td>
</tr>
<tr>
<td>Develop Post-Survey Questions</td>
<td>4/1/2024</td>
</tr>
<tr>
<td>Finalize Post-Survey Questions</td>
<td>4/1/2024</td>
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<tr>
<td>Implementation</td>
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</tr>
<tr>
<td>Observe Baseline Transitions</td>
<td>3/8/2024</td>
</tr>
<tr>
<td>NKE Checklist Staff Education</td>
<td>4/1/2024</td>
</tr>
<tr>
<td>Observe Post-Education Transitions</td>
<td>4/12/2024</td>
</tr>
<tr>
<td>Project Evaluation</td>
<td></td>
</tr>
<tr>
<td>Develop Post-Survey Flyer</td>
<td>4/1/2024</td>
</tr>
<tr>
<td>Collect Post Survey Responses</td>
<td>4/12/2024</td>
</tr>
<tr>
<td>Analyze Pre/Post Survey Responses</td>
<td>4/19/2024</td>
</tr>
<tr>
<td>Project Performance</td>
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<tr>
<td>Poster Presentation</td>
<td>4/30/2024</td>
</tr>
<tr>
<td>Submit Paper to USF Repository</td>
<td>5/13/2024</td>
</tr>
<tr>
<td>Present to KP Leadership</td>
<td>5/6/2024</td>
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</tbody>
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Appendix J

Budget

<table>
<thead>
<tr>
<th>Description</th>
<th>Total expenses</th>
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</thead>
<tbody>
<tr>
<td><strong>Implementation Cost</strong></td>
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<tr>
<td>Cost of guide</td>
<td>$6.80</td>
</tr>
<tr>
<td>CNL educator cost</td>
<td>$17,680.00</td>
</tr>
<tr>
<td>Nurse education</td>
<td>$17,160.00</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>$34,846.80</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Description</th>
<th>Cost/year</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hospital Savings (Cost Avoidance)</strong></td>
<td></td>
</tr>
<tr>
<td>Total births per year</td>
<td>3,000 per year = 3,000 transfer per year</td>
</tr>
<tr>
<td>Transfers in violation of HIPAA Compliance</td>
<td>85% = 2,550 transfers</td>
</tr>
<tr>
<td>HIPAA Compliance Violation</td>
<td>$1,379,900.00 (Tier 2 violation) → average $35,154</td>
</tr>
<tr>
<td>Cost avoidance</td>
<td>2,560 x $1,379 BUT max is $2,067,813 (based on Tier 2 table)</td>
</tr>
<tr>
<td><strong>Net Savings</strong></td>
<td>$2,032,966</td>
</tr>
</tbody>
</table>
**Appendix K**

**Mitigation Strategies**

**Figure K1**

*Suggested Bedside Nomenclature*

<table>
<thead>
<tr>
<th>Suggested Phrases</th>
<th>Promoting Empowering Language at the Bedside</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Avoid Phrases That are Anxiety Inducing</strong></td>
<td><strong>Example of Poor Language</strong></td>
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<tr>
<td></td>
<td>“Fetal Distress”</td>
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<td></td>
<td>“Trial of Forceps”</td>
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<td></td>
<td>“Labour Ward”</td>
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<td>“Rupture of membranes”</td>
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<td></td>
<td>“Bloody show”</td>
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<td></td>
<td>“Big Baby”</td>
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<tr>
<td><strong>Respecting Women as Individual</strong></td>
<td>“Delivered”</td>
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<td></td>
<td>“The primagravida in room 12”</td>
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<td></td>
<td>“I’ll go consent her”</td>
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<td></td>
<td>“She”</td>
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<td>“She’s 7 cm”</td>
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<tr>
<td><strong>Respecting Women’s Autonomy</strong></td>
<td>“You Must Get a Caesarean”</td>
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<tr>
<td></td>
<td>“Patient Refused”</td>
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<td></td>
<td>“She Declined”</td>
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<tr>
<td><strong>Replacing Codified Language with Plain Language</strong></td>
<td>“SROM”</td>
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<td></td>
<td>“PPH”</td>
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<td>“APH”</td>
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<td></td>
<td>“VBAC”</td>
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<tr>
<td><strong>Avoid Discouraging Language</strong></td>
<td>“Failed VBAC/Induction”</td>
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<td></td>
<td>“Poor Maternal Effort”</td>
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<td>“Failure to Progress”</td>
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<td>“Terminte Pregnancy”</td>
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<td>“High Risk”</td>
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<td>“Poor Obstetric History”</td>
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<td></td>
<td>“Painful Contractions”</td>
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</tbody>
</table>
Appendix L

PDSA Cycle

**Plan**

- **Who, What, Where, When:**
  - The QI group will witness 10 transfers from L&D to PP. Unit champions will be identified and educated on the NKE guide. The champions will then utilize the handoff guide during their shifts whenever they are involved in a patient transfer.

- **Questions & Predictions:**
  - We anticipate push back from nurses not doing bedside NKE due to privacy concerns or perception of patient needs.

**Do**

- **Data Collected & Observations:**
  - We saw 8 transfers from L&D to PP and successfully recruited the nurses to utilize the NKE Guide during their handoff.
  - Post-survey was conducted to obtain feedback on use of handoff guide.
  - We saw use of break nurses during handoff, and found participating in huddle makes everyone aware the pilot is happening and thus more inclined to participate.
  - PP nurses were resistant to participate in the pilot project.

**Study**

- **Summary & Reflection:**
  - The L&D nurses are open to participating in the pilot and utilizing the tool during their handoff report to PP.
  - Absence of culture to do handoff at bedside and to utilize a computer during handoff.
  - Educating both RNs on guide is essential for smooth pilot process.
  - Post-survey results were analyzed to assess the effectiveness of the intervention.

**Act**

- ** Modifications:**
  - We adapted to the feedback and revised the tool based on feedback and suggestions we received.

- **We prepared for unanticipated challenges by approaching the assistant nurse manager for guidance and substantiating the need for change with literature.**

- **The next PDSA cycle will involve piloting the revised tool with the goal of observing 20 transfers.**

- **Getting leadership involved early in the next PDSA cycle will set the expectations of the nurses and encourage their participation.**

- **Questions & Predictions:**
  - We anticipate push back from nurses not doing bedside NKE due to privacy concerns or perception of patient needs.

**Plan**

- **Who, What, Where, When:**
  - The QI group will witness 10 transfers from L&D to PP. Unit champions will be identified and educated on the NKE guide. The champions will then utilize the handoff guide during their shifts whenever they are involved in a patient transfer.

- **Questions & Predictions:**
  - We anticipate push back from nurses not doing bedside NKE due to privacy concerns or perception of patient needs.
Appendix M

Post-Intervention Observation Data

Figure M1

*Introduction and Background Post-Intervention Data*

- On-coming nurse introduction
- Name(s) **check bands**
- Age
- Allergies
- Pregnancy History
- Prenatal Labs
- Medical/Surgical History

Average Completion (%)

0%  20%  40%  60%  80%  100%

Bedside ONLY  Bedside OR Nurses Station
Figure M2

Situation Post-Intervention Data

![Bar chart showing the percentage completion of various tasks related to post-intervention data such as Time & Type of Delivery, QBL, Laceration/Assess dressing, Pain Control method/Type of anesthetic, Type of assisted delivery, and Complications (Mom + Newborn). The bars are divided into two categories: Bedside ONLY and Bedside OR Nurses Station. The average percentage of completion ranges from 0% to 100%.](image-url)
**Figure M3**

*Baby Progress Post-Intervention Data*

![Bar chart showing the average percentage of completion for various baby care metrics.](image-url)

- **APGAR score**
- **Weight**
- **Blood Glucose Check**
- **Medications**
- **Feeding plan/last feed**
- **Breastfeeding Assessment**
- **Vitals**
- **Void(s)/Stool**

The chart compares the completion rates for these metrics between Bedside ONLY and Bedside OR Nurses Station.
**Figure M4**

*Assessment Post-Intervention Data*

![Bar chart showing average percentage of completion for IV Sites, Fundal & wound assessment, Ambulation, Diet, and Void/foley catheter. The chart compares Bedside ONLY and Bedside OR Nurses Station.]*
Figure M5

*Computer and Recommendations Post-Intervention Data*

![Bar chart showing completion percentages for different tasks.
- **Computer used at bedside**: 60% completion at Bedside ONLY, 80% at Bedside OR Nurses Station.
- **Orders & care plan**: 80% completion at Bedside ONLY, 90% at Bedside OR Nurses Station.
- **Upcoming tasks & labs**: 80% completion at Bedside ONLY, 90% at Bedside OR Nurses Station.
- **Goals for the shift and discharge goals**: 70% completion at Bedside ONLY, 80% at Bedside OR Nurses Station.
- **Ask patient for input**: 80% completion at Bedside ONLY, 80% at Bedside OR Nurses Station.

*Average Percentage of Completion*

0% 20% 40% 60% 80% 100%