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Impacting Adherence to Infant Safe Sleep Practice

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Abstract

This paper provides a complete microsystem assessment of a pediatric unit. The assessment includes identification of a process problem with infant safe sleep practice in the hospital setting. The paper explores six different published articles regarding clinical practice guidelines, best practices, and evidence-based interventions. The literature review indicates agreement amongst various authors following infant safe sleep guidelines in the hospital setting. The literature review also indicates that caregiver role modeling while in the hospital setting is the most influential component that affects parents' practices upon return to the home setting. The clinical project will include baseline needs assessments of both bedside caregivers in the hospital setting and parents, then coaching sessions with bedside caregivers will occur. Baseline safe sleep audit data will also be collected. Concurrently, a product analysis will take place to address the identified barrier of storage space. A cost benefit analysis will show that the crib pockets would save the health system money, and possibly save an infant's life. A post assessment will occur to measure effectiveness of coaching sessions. Safe sleep audit data will be graphed to indicate effectiveness of the interventions.

Keywords: infant safe sleep, safe sleep practice

Chapter 1: Microsystem Introduction and Background

When an infant dies, it is a tragedy. When an infant dies during sleep from an undetermined cause, the tragedy is defined as Sudden Infant Death Syndrome (SIDS). SIDS is the third leading cause of infant mortality and the leading cause of postnatal mortality in the United States (Canter, Rao, Patrick, Alpan, & Altman, 2015). Over the years, the incidence of SIDS has reduced dramatically with the implementation of safe sleep recommendations for sleeping environment and positioning. Prior to the initial guidelines being implemented in the United States in 1990, Sudden Unexpected Infant Death (SUID) rates were 154.6 deaths per 100,000 live births, compared to 92.6 deaths per 100,000 live births in 2015 (Centers for Disease Control and Prevention, 2017). The overall sleep related infant death rate has not declined in the last six years (Moon, 2011).

The purpose of this paper is to identify and introduce a clinical microsystem, identify gaps in the selected clinical setting while integrating theory, practice, and research in an effort to improve quality of care and outcomes. Masters prepared nurses in the Clinical Nurse Leader (CNL) role are accountable for patient care trends and identifying practices and processes, in their microsystem (Harris, Roussel, & Thomas, 2014). CNLs utilize evidence-based practices to design and implement quality improvement projects to impact patient and clinical outcomes.

Organizations and authors define evidence-based practice (EBP) differently. One definition of evidence-based practice that relates to this microsystem and safe sleep is, “a problem-solving approach to clinical decision making that ingrates the best available scientific evidence with the best available experiential evidence from patients and practitioners” (Harris et al., 2014, p. 222). EBP incorporates the organization’s mission, vision, and values as well as the internal and external influences on the practice. When implementing an innovation, all

stakeholders that are affected by the innovation should understand: why the change is necessary, the consequences of not making the change, and the benefits of doing so (Harris et al., 2014).

Various evidence-based research articles are available to help support the importance of implementing a safe sleep environment for infants. Evidence for implementing the safe sleep recommendations is strong. The American Academy of Pediatrics (AAP) is an American professional association of pediatricians dedicated to the health and well-being of infants, children, and adolescents. The AAP released their initial safe sleep recommendations in 1992; their main focus at this point was placing infants to sleep on their backs. These guidelines were recently updated in 2016 and will be updated every five years with new guidelines to include the most recent evidence-based practices. The AAP safe sleep recommendations are the strongest source of evidence (AAP, 2015; Moon, 2011).

Introducing the Microsystem

The microsystem assessed is a newly remodeled 30-bed pediatric unit that admits patients from one day to 21 years old. The unit serves patients that are acutely, chronically, and terminally ill. The unit has consistently had low scores on their safe sleep audits, conducted by the Department Manager, Clinical Educator, and Clinical Nurse Specialist on a random, unstandardized basis. Safe sleep guidelines apply to infants less than one year of age, and these infants are not consistently in the recommended safe sleep environment while in the hospital. Parents tend to model behaviors of healthcare professionals once they return to their home setting, putting infants at a higher risk for SIDS (Moon, 2011).

The hospital implemented an initial safe sleep policy in 2006. It was one of the first hospitals in Michigan to initiate safe sleep protocols in the pediatric/pediatric intensive care unit population. During the implementation process, the Clinical Nurse Specialist gave surveys and

questionnaires to both parents and caregivers. Complete details and results of the survey were not available for review; a general overview was communicated in conversation with the Clinical Nurse Specialist (CNS preceptor, personal communication, November 15, 2016). The parents surveyed reported they had heard about safe sleep, but didn't believe in it. Some parents observed their baby on their side while they were in the hospital so they placed their baby on their side at home. It was noted that some nurses verbally discounted the safe sleep message. Parents' practice at home was influenced by the nurse's messages and behavior in the hospital. These parents' responses highlighted the impact non-compliance with safe sleep practice in the hospital can have at home.

Key Stakeholders

The potential adopters within the unit include nurses, patient care technicians, leadership, respiratory therapy, parents, and physicians. The majority of the nurses that work on the unit have multiple years of experience. The unit is known for its low caregiver turnover rate. Caregivers use a shared governance model in order to address issues and implement changes on the unit. After a brief verbal survey, ten different nurses indicated that they lack knowledge on the issue of safe sleep as well as knowledge on all of the components of a safe sleep bundle. Various caregivers also expressed interest in developing a Safe Sleep Champion for the unit. Their direct and indirect responses confirmed their support of the project in general.

Process

The hospital's existing safe sleep bundle includes generic non-standardized parent/caregiver education on admission, safe sleep signs on the cribs to serve as a reminder, a contract for parents to sign stating they were educated on safe sleep, and no items with infants when they are in their cribs. Babies that are being held by their parents while sleeping are not

included in the audit. The safe sleep bundle is included in the hospital's safe sleep policy and should be followed by all health care professionals for all patients that meet safe sleep age requirements and specific criteria. The specific criteria are not identified in the safe sleep policy. Unfortunately, at this time the hospital's safe sleep policy is generic and vague, which leaves room for questions, including identifying criteria.

Potential Barriers and Facilitators

While completing the microsystem assessment barriers and facilitators to implementing the safe sleep protocol were identified. Key barriers included a lack of standardized locations to find pieces of the bundle, a lack of space in the patient's room to store items, and no consistent standardized education being provided to parents about safe sleep. Key facilitators are a supportive leadership team including the Clinical Nurse Specialist and Nurse Educator, and the presence of caregivers who have volunteered to assume the role of safe sleep champions for the unit and to also participate in the educational portion of the project.

Safe Sleep in the Microsystem

In the pediatric unit, safe sleep is an indicator reported on the unit's National Database of Nursing Quality Indicators (NDNQI) quarterly scorecard as an internal benchmark. Data collection on the NDNQI scorecard began in the fourth quarter of 2010. The data reported to NDNQI is obtained strictly from visual audits conducted by the department manager, clinical nurse specialist, and nurse educator on an irregular basis (CNS Preceptor, personal communication, November 15, 2016). After reviewing the scorecard, it was observed that there was only one quarter in the last two years that the pediatric unit was 100% compliant with safe sleep recommendations. There were two quarters where there were no patients assessed and the other quarters ranged from 50-86% compliance. The most recent data from the third quarter of

2016 reveals that only one out of six infants met safe sleep requirements during audits. The health system's goal is 100% compliance. Currently the compliance results are only an internal benchmark reported on the scorecard, per communication, the goal is to eventually compare to other hospitals similar in size (CNS, personal communication, November 15, 2016). The problem identified in this microsystem is lack of consistent compliance with the safe sleep policy and bundle.

The other problem identified is related to the frequency of performing safe sleep audits to obtain an adequate sample size. Prior to 2016, safe sleep audits were only performed once per quarter during the pressure ulcer prevalence survey. The quarterly audit greatly limited the number of infants monitored. The limited process for assessment explains the two quarters when no patients were assessed; this is most likely related to low infant census. Establishing a more comprehensive, standardized approach to performing safe sleep audits would create a better understanding of the current practice and allow for a clearer assessment of the problem related to infant safe sleep.

Addressing the Clinical Problem

Prior to implementation of an innovation it is critical to ensure that the key stakeholders understand the *why* behind the change. Education alone does not create sustained change (Harris et al., 2014). A practice change must accompany education in order to achieve sustainability. A CNL is capable of forming an implementation team that includes high performing caregivers that support and understand the importance of the practice and the need for change (Harris et al., 2014). This team should include a bedside nurse or patient care technician that serves as the unit's safe sleep champion, an active pediatric medical resident or physician, the support of nursing leadership, and ideally input from parents would be extremely beneficial.

Nature of the CNL Project

The safe sleep bundle currently exists as part of the policy, it has been identified that the bundle lacks standardization and consistent use. For the nature of the CNL led project, it is important to keep in mind that the nurses generally have the most direct contact with the infant's parents and caregivers during hospitalization, followed by the pediatric medical residents. An interprofessional team will be formed consisting of a pediatric staff nurse, a newly identified safe sleep champion, a pediatric resident, and the CNL student. This team will work together to assess the baseline understanding of the pediatric nurses, residents, and physicians. This data will then be used to compose educational information. In order to ensure that every caregiver's education is up to date with the most recent AAP guidelines, statistics, and areas of need identified from the baseline needs assessment, an informational station will be present at the annual mandatory skills fair that pediatric, pediatric intensive care, and regional neonatal intensive care nurses attend. Throughout the educational process, a product analysis will also take place. A barrier identified during the informational gathering was storage space. Nurses complained that lack of storage space often times contributed to various products being present in the infants crib while sleeping, putting the infant at risk and indicating non-compliance with the safe sleep bundle. Evaluating various storage products to utilize on the sides of the cribs and add to the infant safe sleep bundle. Hopefully this practice change will alleviate the storage barrier, as well as provide infant caregivers with a storage unit to keep and utilize in order to effectively carry out infant safe sleep at home.

Chapter 2: Literature Review

"Evidence-based practice has been defined as making clinical decisions using a problem solving approach" (Harris et al., 2014, p. 222). "Evidence-based practice utilizes and integrates the highest quality, most experiential, scientific evidence while also incorporating the organization's mission, vision, and values" (Harris et al., 2014, p. 222). One of the roles and responsibilities of the clinical nurse leader (CNL) is to utilize evidence-based interventions to impact quality improvement projects. In order to form a strong foundation of evidence-based knowledge, a thorough literature review of the clinical problem must be conducted first (Polit & Beck, 2017). A literature review provides an opportunity to gather information on the current processes, procedures, and existing guidelines prior to collecting organization specific data. The purpose of this chapter is to summarize and synthesize key concepts identified during a thorough literature review to present the current state of knowledge about infant safe sleep practice.

Literature Review Question

Since the initial infant safe sleep guidelines and national educational efforts were enacted, 4,000 infants die unexpectedly and suddenly every year in the United States (Centers for Disease Control and Prevention, 2017). According to Bartlow, Cartwright, and Shefferly (2016), nurses do not demonstrate complete compliance with the American Academy of Pediatrics (AAP) safe sleep positioning guidelines and do not consistently model correct care related to safe sleep practice and environment during hospital care. It is important for health care providers to educate parents and role model safe sleep practices while in the inpatient setting. The role modeling can have a strong influence on their practice at home (Rowe et al., 2016). A practice change must accompany education in order to achieve sustainability. Education alone does not create sustained change (Harris et al., 2014).

Polit and Beck (2017) describe the first step in evidence-based practice as the most crucial. It involves converting the information needed into a properly worded clinical question that can be addressed and answered with research. In this situation, the population, intervention, and outcome compose the information needed. The literature review was conducted to gather a strong knowledge base. The question to be addressed is, will caregivers on the pediatric unit who care for infants 0 to 12 months old show increased adherence to safe sleep practice as evidence by increased compliance during safe sleep audits three months post implementation of caregiver education and a practice changes inclusive of a revised safe sleep bundle?

Methodology

The literature was searched using the keywords: infant safe sleep, education, sudden infant death syndrome, infant sleeping arrangements, and parent education. The databases searched included CINAHL Complete, PubMed, and Cochrane Library. The dates of the literature reviewed ranged from 2010 through 2015. The journals that provided the most pertinent articles included *Journal of Community Health, Journal of Pediatric Nursing*, *Clinical Pediatrics,* and *Journal for Specialists in Pediatric Nursing*. The results were not necessarily limited, but they were not plentiful. The keywords sudden infant death syndrome yielded the most results in CINAHL Complete, but after reviewing some of the articles, the majority of them were not pertinent for this review. The keyword infant safe sleep yielded 214 results from CINAHL Complete. Limiting the publication dates to 2010 through 2016 and also selecting the source type of Academic Journals narrowed results. The literature review included ten articles that focused on either implementation of safe sleep practices or parental perception, and understanding of the practice.

Evidence-Based Practice Guidelines

Based on epidemiologic studies associated with SIDS and risk factors, the American Academy of Pediatrics (AAP) recommends that infants up to one year of age be put in a safe sleep position and a safe sleep environment (Moon, 2011). SIDS is most common among infants that are one month to four months old, but infants can die from SIDS up to one year old. Therefore, the recommendations to prevent SIDS should be used consistently for the infants until they turn one year (AAP, 2015). In 1992, the AAP released its initial safe sleep recommendation that infants be placed in a non-prone position for sleep (Moon, 2011). In 2005, the AAP updated its recommendations and published a policy statement identifying an increase in other causes of sleep related deaths in infants such as suffocation, asphyxia, entrapment, and unspecified causes of death (Moon, 2011). In 2011 the AAP expanded the policy statement again to include recommendations to decrease the risk of all sleep related infant deaths (Moon, 2011).

The AAP has a total of 19 safe sleep recommendations. A number of the recommendations are aimed towards parents to practice at home to help reduce the risk of SIDS, suffocation, entrapment, and strangulation. The guidelines recommend that infants be placed on their backs for sleeping; are in a crib without pillows or toys; and share a room with a parent but not a bed (Moon, 2011). Other recommendations are aimed towards health care professionals, policy makers, and expectant mothers. For example, the guidelines recommend that while pregnant, mothers should avoid smoking, smoke exposure, consumption of alcohol, and illicit drugs (Moon, 2011).

Parental Perception

Herman, Adkins, and Moon (2015) took a qualitative approach to find out the *Knowledge and beliefs of African American and American Indian parents and supporters about infant safe*

sleep. Their goal was to gain insight and input regarding African American and American Indian mothers' beliefs and knowledge regarding infant safe sleep practices due to the racial disparity associated with the problem. The infant mortality rates among African Americans and American Indians are almost twice the amount compared to whites. In Michigan, the disparities are even larger. In 2009, the African American infant mortality rates were 15.5/1000 live births and the American Indian rates were 9.0/1000 live births compared to 5.4/1000 live births among whites (Beebe, 2012). Participants in the study were audiotaped and later transcribed by an outside company. Quotes from the mothers and supporters, were displayed within the article. These were especially helpful, the discussions allowed the reader to gain a lot of insight about the beliefs and perceptions of the mothers.

Chu, Hackett, and Kaur (2015) took a similar approach. To better understand why infant caregivers placed their infants in an unsafe sleep environment, the authors analyzed over 100 SIDS cases. Themes emerged related to caregiver knowledge and behavior: sleep environment decisions were based on situational care needs, decisions were made due to infant or their own preference, and most decisions lacked knowledge about safe sleep practices. Promoting safe sleep practices and emphasizing the importance of consistently carrying out a safe sleep environment for infants are evidence-based interventions health care providers across the continuum can provide (Chu, Hackett, & Kaur, 2015; Rowe et al., 2015; Ahlers-Schmidt, Kuhlmann, Kulhlmann, Schunn, & Rosell, 2014).

Inpatient Caregiver Education

Caregiver education alone does not create sustained change, but sometimes the determining factor in whether or not quality improvement projects impact practices can come down to the successful presentation and dissemination of information to caregivers throughout

the organization (Harris et al., 2014). With infant safe sleep practice, evidence supports staff consistency as it relates to role modeling and educational approaches with parents. This consistency is an integral component in parental adherence to safe sleep practices at home (Andreotta, Hill, Eley, Vincent, & Moore, 2015; Ahlers-Schmidt et al., 2014; Chu et al., 2015).

Bartlow et al. (2016) state despite the existence of the AAP guidelines, nurses are still not following them and more research is needed to understand the disconnect between their knowledge and adherence in practice. Bartlow et al. (2016) focused on assessing safe sleep practices in two different hospitals and asked nurses if they were aware of the AAP guidelines and if they were practicing them. The study was an observational, quantitative, descriptive study. The observations revealed noncompliance with safe sleep recommendations. Nurses reported awareness of the AAP guidelines, but also reported they were reluctant to use them.

Literature supports collecting a baseline needs assessment for determining the focus of caregiver education (Rowe et al., 2016; Geyer, Smith, & Kair, 2016; Bartlow, Cartwright, & Shefferly, 2016). Surveys and questionnaires completed by caregivers were utilized in various studies to gather information including knowledge and beliefs regarding infant safe sleep practices. The intent of collecting a baseline knowledge assessment is to utilize the information obtained to develop the education plan. Themes will emerge from the survey results, making it easier to compose focus areas and to target specific educational needs for caregivers. Results from the surveys showed significant increases from pre and post educational intervention in knowledge of the AAP safe sleep guidelines (Rowe et al., 2016; Geyer, Smith, & Kair, 2016). Studies show that parents tend to replicate behaviors observed in the hospital setting once they are discharged back home (Geyer et al., 2016; Herman et al., 2015; Rowe et al., 2016; Chu et al.,

2015). Relaying the importance of role-modeling the safe sleep environment in the inpatient setting is also an important component of the caregiver education.

Implementing the Infant Safe Sleep Bundle

Evidence-based components of an effective safe sleep bundle, adjusted for the specific clinical setting, includes education on infant safe sleep practices and guidelines for nurses and resident physicians, an updated safe sleep policy, safe sleep champions, parent education, and storage products (Geyer et al., 2016). As discussed earlier, caregiver education is an important component of the safe sleep bundle. Caregiver education should include an information update on the newest version of the AAP guidelines and cover the focus areas identified in the surveys. Updating the safe sleep policy in this medium-sized Michigan hospital to reflect the current AAP guidelines and evidence-based practice is necessary to promote high quality care. Implementation of a safe sleep champion will help to reinforce safe sleep practices and adherence to the safe sleep policy providing feedback and mentorship to members of the clinical team who interact with parents. Implementing a storage product would encourage caregivers and families to store items outside of the infant's sleep area, allowing the sleeping environment to be safe, and removing one of the main barriers caregivers encounter (Geyer et al., 2016). Prior to initiating the use of a storage product, a thorough trial would need to commence to decide which product is most effective for the unit.

Literature Summary

Infant safe sleep is a known and utilized concept in hospital settings across the United States. The American Academy of Pediatrics (AAP) continues to update their recommendations every five years with the most up to date evidence-based research. Although not all literature reviewed involved hospitals with safe sleep policies, every article mentioned the AAP clinical

practice guidelines as their reference point, and most up to date version of the guidelines were utilized. Please refer to Appendix A for a brief overview of the literature review in table form. Various common themes were identified throughout the literature review. Although the AAP guidelines exist and are promptly updated every five years, majority of the articles identified non-compliance by parents and caregivers as an issue. Another theme that immerged frequently was the act of role modeling safe sleep practice and educating parents. Numerous articles mentioned the importance of educating and modeling the safe sleep practices because of the influence on the parents and their sleep practices at home (Rowe et al., 2016). It is known that there is effective evidence-based guidelines available to follow and it is known that there is a lack of compliance with these guidelines. What is still not known is the practice change, or interventions needed to comply and sustain the evidence-based practice guidelines. Hopefully, in the near future, this project and clinical question together can help address this issue.

Chapter 3: Conceptual Models

Various conceptual models and theoretical frameworks have been created to assist with the transferring of evidence-based research into clinical practice through quality improvement projects (Graham & Logan, 2004). With varying models and frameworks, all provide some valuable information or effectiveness guidance. However, one model or framework may be more suitable than another depending on the situation, current published evidence, and clinical practice. The purpose of this chapter is to identify and discuss an appropriate theoretical model that illuminates the clinical problem of implementing an infant safe sleep protocol.

Ottawa Model of Research Use

The Ottawa Model of Research Use (OMRU) promotes the integration and use of research in practice, commonly referred to as knowledge translation. OMRU is described as a comprehensive framework effective for an interdisciplinary approach to transfer evidence into bedside practice (Shojania, McDonald, Wachter, & Owens, 2004). OMRU is also considered a planned change theory, with the goal of using EBP recommendations to enact innovative change at the organizational level. This is complex work due to the multiple settings and provider groups involved. For example, an infant starts out in the labor and delivery unit then, is transferred to the mother/baby unit, and finally the infant goes home. Unfortunately some infants are readmitted to the hospital therefore, modeling behavior across the continuum is critical for the mother to ensure the behaviors are modeled at home. For the purpose of this chapter, the focus will be on the infants readmitted to the hospital after discharge.

There is a large amount of research available on safe sleep practice. In this particular specific microsystem, the clinical problem is implementing infant safe sleep practice. It was noted that the health care professionals are not routinely implementing all components of the safe

sleep policy (Bartlow et al., 2016). This is an interdisciplinary problem because all members of the health care team are responsible for carrying out infant safe sleep practice.

The OMRU is comprised of six key elements: practice environment, potential adopters, the evidence-based innovation, transfer strategies, adoption, and outcomes (Graham & Logan, 2004). This model correlates well with the clinical problem for various reasons. It will require an assessment of the area the practice is occurring in and an assessment of the health care professionals involved in carrying out the process, which is an interdisciplinary approach. The model also takes a close look at identifying different barriers to developing an innovation or practice change. This model was chosen to guide the approach of this clinical problem because of the thorough assessment of the clinical area, the identification of barriers, and the use of evidence-based research to implement an innovation to provide positive outcomes.

Applying OMRU to Safe Sleep Practice

The AAP clinical practice guidelines recommend infants up to one year of age be put in a safe sleep environment every time they are put to sleep (Moon, 2011). Sudden infant death syndrome (SIDS) is the most common cause of death among infants that are one month to four months old. However, infants can die from SIDS up until they are twelve months old. Therefore, a safe sleep environment should be used consistently for the infants until they turn one year old (AAP, 2015). The AAP has 19 different recommendations for parents to practice at home to help reduce the risk of SIDS, which includes preventing suffocation and strangulation. However, parents may forget these recommendations so they are not properly or fully implemented at the home. This problem is innately rooted to the hospital staff in making sure new parents gain proper awareness about SIDS and safe sleep. Please refer to the Appendix F for a visual diagram of the OMRU and how it is being applied to this specific clinical problem.

Practice Environment and Potential Adopters

The first part of utilizing the OMRU includes thoroughly assessing three components: practice environment, potential adopters, and the evidence-based innovation (Graham & Logan, 2004). The assessment will allow the identification of potential support and barriers throughout the process. The hospital's safe sleep bundle includes generic parent/caregiver education, a safe sleep sign on the crib to serve as a reminder, and no other items with the infant when in the crib. If the parent is awake and holding the infant while they sleep, then that particular patient is not audited at that time. This is hospital policy and should be followed by all health care professionals that enter that room, or care for that patient. An interdisciplinary approach should be used to address this problem; that of which, the OMRU supports and is well suited to guide any multidisciplinary group (Hogan & Logan, 2004).

Barriers, Facilitators, and Evidence

During the microsystem assessment barriers and facilitators were identified. Key barriers include: lack of standardized location to find pieces of the bundle needed to implement, lack of space in the patient's room to store items, and lack of standardized education provided to parents. Key facilitators identified include: leadership support for implementing change to improve outcomes and one particular caregiver volunteering to assume the role of safe sleep champion for the unit. The literature provided evidence-based practices to highlight and support the importance of a safe sleep environment for infants that meet criteria, every time they are put to sleep to aid in implementing change.

Strategies, Adoption, and Outcomes

Identifying the appropriate barriers and facilitators will assist in developing strategies for implementing an innovation to assist with improving safe sleep audit results and knowledge

throughout the unit. The utilization of the OMRU has provided a different mental model and created a different thought process to consider new approaches for implementation. Current strategies support a pre-implementation survey to help identify opportunities for caregiver education, interactive education for healthcare professionals and parents, and implementation of a safe sleep champion to assist with the adoption of the innovation, or practice change. Evidence supports the use of multiple transfer strategies; it has shown to be the most effective method of knowledge transfer (Hogan & Logan, 2004).

Adoption indicates the innovation, or practice change, is being carried out by all health care professionals. Implementing a safe sleep champion is an idea for a specific innovation. This role will offer assistance in monitoring the change on the unit, assist with barrier management, and act as a spokesperson between caregivers and leadership. The safe sleep champion will also be able to assist in measuring outcomes in real time. The OMRU includes evaluating outcomes (Hogan & Logan, 2004). A post-implementation survey to the nurses would provide a measurement of change in knowledge, skill, and ability. The OMRU suggests that continuous assessments, revisions, and tailored interventions are implemented and acted upon in order to respond to results appropriately (Hogan & Logan, 2004).

Conclusion

The Ottawa Model of Research Use is applicable in various settings and is used to guide the process of implementing an innovation, or practice change, in an area with a clinical problem. SIDS is currently an important public health issue in the community ripe for risk reduction and prevention interventions. It offers an educational opportunity for new parents that can be addressed while infants are admitted to the hospital. Safe sleep clinical practice guidelines established by the American Academy of Pediatrics should be implemented across the health

care setting and the infant's home. The microsystem assessment identified current processes, consistently low safe sleep audit results and an opportunity for improvement. The OMRU utilizes evidence-based research to implement a practice change to attempt to impact outcomes positively. The OMRU was identified and discussed to illuminate the clinical problem of implementing infant safe sleep protocol.

Chapter 4: Clinical Protocol

Clinical Nurse Leaders utilize evidence-based practices to design and implement quality improvement projects to impact patient and clinical outcomes. Implementing and sustaining successful projects that impact quality and safety in health care continues to be a worldwide challenge (Taylor et al., 2014). Finding an appropriate, effective quality improvement method to drive improvements is essential to assisting with implementation and sustainability. The Plan-Do-Study-Act (PDSA) cycle is commonly used in health care quality improvement initiatives. If utilized correctly, PDSA can be a continuous quality improvement method to help increase the chances of sustainability.

Harris et al., (2014), refer to the PDSA cycle as a rapid cycle review and break down each section of the cycle. The *plan* defines the problem and proposes the project to address the problem. The *do* identifies and defines the various steps of the project then carries them out. The *study* analyzes what has been learned so far in the process. The *act* takes a closer look at the outcomes, identifies the gaps, and then modifies the plan in order to initiate the plan again to attempt more improvement (Harris et al., 2014). For a visual of the model please refer to Appendix B. The purpose of the chapter is to provide a step-by-step protocol of the plan to address the problem related to infant safe sleep. The quality improvement process, PDSA, will guide the protocol, and a thorough timeline of the steps involved will also be provided.

Purpose of Project

The American Academy of Pediatrics (AAP) released their initial safe sleep recommendations in 1992; their focus at that point was placing infants to sleep on their backs. These guidelines were recently updated in 2016 to include the most recent evidence-based practices. The AAP safe sleep recommendations are the strongest source of available evidence

(AAP, 2015; Moon, 2011). The safe sleep bundle currently exists as part of the hospital's policy. Preliminary assessment of adherence to the safe sleep bundle in current practice has been inconsistent and sporadic. Caregiver behavior in the inpatient setting strongly influences sleep practices at home (Gelfer, Cameron, Masters, & Kennedy, 2013). The purpose of this project is to identify educational needs with both parents and caregivers and to educate accordingly. To identify gaps or barriers in providing a safe sleep environment in the inpatient setting, and to monitor for an increase compliance with the standardized safe sleep bundle, with the goal of having infants 12 months and younger in a safe sleep environment 100% of the time.

Needed Resources

Forming the team. Prior to implementing the plan, identifying key stakeholders and forming a team to assist with implementation is a crucial step. Recruiting the right team members will be a key component for successful implementation and sustainability. The Institute for Healthcare Improvement identifies three different types of team members to recruit when forming the team: a clinical leader, technical expertise, day-to-day leadership, and a project sponsor (Langley et al., 2009). In this particular project, team members and roles have already been identified. An interprofessional team was formed consisting of a pediatric staff nurse, two pediatric residents, a CNL student, the pediatric CNS, and the pediatric department manager. In the future, additional team members may be asked to join, including a patient care technician and a safe sleep champion.

Setting aims. Infants under the age of 12 months should be placed in a crib, without other objects, 100% of the time to avoid suffocation. In the pediatric unit, however, audits have indicated that infants have other objects in their cribs, indicating non-compliance with the safe sleep bundle, 17-83% of the time, over the last four quarters. Increasing adherence to safe sleep

practice affects patient safety, in the inpatient setting and at home upon discharge. AAP defines the guidelines for safe sleep practice. These evidence-based guidelines ensure effective care will be provided to every patient, every time. The goal of this project is to teach and provide safe, yet effective, care to patients in an efficient manner. The education provided to the parents, or infant caregivers, will be tailored to their needs in order to honor patient-centered and equitable care.

Measurement: Sources of Data and Tools

Establishing measures. The previously identified interprofessional team members are currently working together to assess the baseline knowledge and understanding of safe sleep practice with pediatric nurses, patient care technicians, pediatric residents, and physicians. Prior to distributing assessment tools, baseline adherence data was collected during safe sleep audits. Audits were performed, on average, three days a week on infants that met criteria for needing a safe sleep environment. Baseline adherence data will be used to compare post implementation results to assess effectiveness.

Literature supports collecting a baseline needs assessment for determining the focus of caregiver education (Rowe et al., 2016; Geyer, Smith, & Kair, 2016; Bartlow et al., 2016). Carolyn Ahlers-Schmidt, PhD, works at the University of Kansas School of Medicine, in the Department of Pediatrics. She holds various roles including, Director of Research, and one of her areas of interest includes infant safe sleep. With permission from Carolyn Ahlers-Schmidt, PhD, the safe sleep caregiver needs assessment tool will be used to provide baseline data from hospital caregivers involved in providing a safe sleep environment. Please refer to Appendix G for a copy of the e-mail verifying permission and a copy of this assessment tool can be found in Appendix C. Concurrently, the CNL student will be speaking with parents, or infant caregivers, of patients 12 months old and younger whom are admitted to the hospital. Angela Rowe, MSN, APRN,

PCNS-C is a pediatric Clinical Nurse Specialist at Arkansas Children's Hospital that has conducted research with integrating safe sleep practice in the hospital setting. With permission from Angela Rowe, MSN, APRN, PCNS-C, the "Safe Sleep Quiz" needs assessment tool will provide baseline safe sleep practice knowledge of parents and infant caregivers. Please refer to Appendix H for a copy of the e-mail verifying permission and a copy of this tool is located in Appendix D. The results collected from hospital staff and parents/infant caregivers will be utilized to develop education provided during the annual competency/skills fair to ensure every hospital caregiver's education is up to date with the most recent AAP guidelines, local statistics, and areas of educational need identified from the parent's needs assessment tool. A post assessment will be conducted after completion of the educational session to evaluate staff knowledge. Post intervention observational data will be collected to evaluate the effectiveness of the education and the impact of compliance with the safe sleep bundle. On the needs assessment, pre and post education, there is an area to describe barriers the caregiver encounters when attempting to provide a safe sleep environment for a patient. Once all pre-education needs assessments are collected, a Pareto chart will be utilized to document the number of occurrences associated with each barrier. Please refer to the Gantt chart in Appendix E to view the project timeline.

Steps for Implementation

As discussed earlier, caregiver education alone does not create sustained change. With infant safe sleep practice, evidence supports staff consistency as it relates to role modeling and educational approaches with parents. This consistency is an integral component in parental adherence to safe sleep practices at home (Andreotta et al., 2015; Ahlers-Schmidt et al., 2014; Chu et al., 2015). Studies show that parents tend to replicate behaviors observed in the hospital

setting once they are discharged back home (Geyer et al., 2016; Herman et al., 2015; Rowe et al., 2015; Chu et al., 2015).

Selecting the changes. During the microsystem assessment and conversations with pediatric caregivers, a barrier identified was storage space. Nurses, patient care technicians, and parents are complaining that lack of storage space often contributes to the lack of adherence to the safe sleep bundle. Without adequate storage space, products are being placed in the cribs or bassinets while the infant is sleeping. This puts the infant at risk for suffocation and indicates non-compliance with the safe sleep bundle. A product to alleviate the barrier of storage space has been identified. Various manufactures produce pockets to hang and tie on the side of the crib. The pockets would be a storage space for diapers, wipes, and toys, all items that are most commonly found in cribs. Through verbal communication with various caregivers and parents, these crib pockets would in alleviating the barrier of space. A product analysis will take place to identify which manufacturer is most suitable for the pediatric unit. An application for a mini grant, worth $2500 was submitted to the Women's Guild. A discussion with the director of women and children's services took place prior to submitting the application; her signature was required, and informing her of the project plan was necessary. She stated that if the crib pockets were effective in increasing adherence to safe sleep practice, they would be factored into the unit's budget. In the meantime, the mini grant, if received, will provide crib pockets for every patient under the age of 12 months, for approximately four to six months. The crib pockets will be utilized during the hospital stay, to role model safe sleep practice. Crib pockets will then be sent home with parents as a reminder to continue safe sleep practices in the home setting as well.

Testing changes. Using the crib pockets will be the change implemented. PDSA, which was previously described, will be utilized as the guiding quality improvement method during the

project. The plan is to analyze different crib pockets and find a suitable product for the unit. Next, the product will be trialed on the unit. Meanwhile, feedback from both parents and caregivers will be collected. Safe sleep audits will also be occurring on a daily basis. Information and data obtained during the trial will be used to study and assess if the product is effective. If adherence to safe sleep practice is impacted, the crib pockets will be an addition to the safe sleep bundle in the hospital.

Cost benefit analysis. Identification of the barrier of storage space has brought up the topic of purchasing a product to provide adequate storage, yet be cost effective for the budget. The hospital is currently trialing new bassinets for infants in the pediatric unit. The hospital currently has a contract with Stryker for hospital furniture. The contract pricing for the bassinets would $3,950 per unit. Purchasing ten units would cost a total of $39,500. For infants too large to use bassinets, eliminating the storage space barrier would require additional shelving. Stryker bedside shelving would cost $485 per unit. Purchasing ten units would cost $4,850. Initial review of the various crib pockets indicated costs were anywhere from $3.29 per unit to $20.00 per unit. A mid level price of $7.09 per unit was observed, at this cost 684 crib pockets could be purchased for the price of 10 shelving units. These items will go home with the family to continue adherence to safe sleep practice, potentially saving their infant's life, which is priceless.

Conclusion

The AAP established evidence-based clinical guidelines for infant safe sleep to be utilized in any setting an infant less than 12 months old might be laid to sleep. In the hospital setting, ensuring safe sleep practice is an interdisciplinary approach. Forming a team with members from various disciplines will assist the team in reaching their aims. Infant safe sleep should be practiced 100% of the time during hospital admissions. The baseline needs assessment

will help gain information on how to guide the coaching sessions with the bedside caregivers. Concurrently, the product analysis will hopefully assist with overcoming the barrier of storage space. PDSA will be utilized to ensure the process is effective and sustainable.

Chapter 5: Clinical Evaluation

The purpose of this project was to acquire a baseline educational needs assessment from both hospital caregivers and parents, and then to educate both parties accordingly. To identify gaps, or barriers, in providing a safe sleep environment in the inpatient setting, and to monitor for an increased compliance with the standardized safe sleep bundle. The goal of this project is to have infants 12 months and younger in a safe sleep environment 100% of the time. Chapter four identified essential components of the project, including a general timeline, needed resources, data measurements, tools used, and the steps for implementation. The purpose of this chapter is to provide an overview of how the project was carried out. Identifying strengths, weaknesses, successes, and difficulties encountered along the way, while also displaying outcomes of the project to include any data obtained.

Project Outcomes

Implementation of the clinical protocol is still actively underway, the guideline provided in chapter four did not drastically change. There was a delay encountered during the implementation process related to funding which has put the project slightly behind. This delay will be discussed in detail later within this chapter. An interdisciplinary team was formed early in the project. Key stakeholders were identified and participants from various disciplines had input throughout the project. The aim of the project was agreed upon and identified early in the project as well.

Literature supports collecting a baseline needs assessment to determine the focus of caregiver education (Rowe et al., 2016; Geyer et al., 2016; Bartlow et al., 2016). The assessment tools provided in Appendices C and D, served as tools to collect baseline educational needs. With the assistance of a team member, there were a total of 60 baseline needs assessments

collected from hospital caregivers. This number includes a variety of disciplines: patient care technicians, health unit coordinators, social worker, physicians, registered nurses, department manager, and child life specialists. The Pareto chart in Appendix I has documented the number of occurrences associated with each barrier. There was a total of 11 baseline needs assessments collected from parents of infants 12 months and younger.

The information collected from these assessments was utilized to develop an educational plan to be presented at the annual competency skills fair. The competency skills fair took place over the course of two days. There were hundreds of registered nurses, patient care technicians, and child life specialists that came through each station. Coaching sessions with these caregivers were provided to help present the value of providing a safe sleep environment in the hospital and at home. The coaching sessions included local statistics, a review of the newest 2016 AAP guidelines for infant safe sleep, and a review of the hospital's existing safe sleep policy.

As mentioned in previous chapters, caregiver education alone does not create sustained change, evidence supports staff consistency as it relates to role modeling and educational approaches with parents. Maintaining a consistent safe sleep environment for an infant while in the hospital, could impact the parental adherence to safe sleep practices at home (Andreotta et al., 2015; Ahlers-Schmidt et al., 2014; Chu et al., 2015). A thorough microsystem assessment revealed storage space as a perceived barrier to providing a safe sleep environment 100% of the time. A variety of infant products are being placed within the crib with the infant while sleeping, due to lack of storage space. A type of product to alleviate the barrier of storage space was identified. A product analysis was performed on seven different types of crib pockets. Please refer to Appendix J for a table of the product analysis results.

An application for a mini grant worth $2500 was applied for in the beginning of March 2017. Word was received in April 2017 that the money was not granted. This is where the delay in implementation occurred, due to funding. A meeting took place with the Director of the service line to discuss other options to obtain funding to purchase crib pockets. With approval from the Director, a new application for funding is underway; it will be submitted to the Foundation for the same amount of money. The Director is supportive of the implementation and stated that if the change project is effective, then there would be a conversation regarding factoring the cost of the crib pockets into the unit's budget. In Appendix J, product #1 and #2 were purchased to begin the implementation and PDSA cycle.

Most recently, at a unit based council (UBC) meeting with various caregivers from the microsystem, the purchased products were assessed by the registered nurses, patient care technicians, and nurse managers. Positive feedback included size, ease of cleaning, and material (mesh) is breathable. Negative feedback included not being able to send the product home (Personal Communication, UBC members, June 26, 2017). Trialing the products will begin at the beginning of July 2017 and Safe Sleep audits will continue throughout the trial to trend the data to identify an increase in an adherence.

Project Strengths and Weaknesses

One of the most noticeable strengths of implementing this clinical protocol is the interdisciplinary approach. Involving various disciplines allows for increased chance of accountability. With the participating disciplines, it also allows for more opportunities to role model the appropriate safe sleep environment for parents while the infant is in the hospital.

Weaknesses identified at this point during the implementation include, the CNL student's inconsistent presence on the unit due to scheduling, small group of caregivers who are

not invested in the change, and the need for funding to fully carry out the project. Regarding funding, the cost benefit analysis discussed in chapter four helps break down actual costs of products. The number of infants 12 months and younger admitted to the pediatric unit in the year 2016 was obtained, this number was used to calculate the number of crib pockets to order and the cost for four to six months' supply.

Implications for Practice

Implementation of both the coaching sessions with hospital caregivers, and the crib pockets, are applicable to providing safe, quality care to every patient, every time. The project brought awareness of safe sleep practices to caregivers with varying years of experience. The AAP safe sleep recommendations are considered the strongest source of available evidence (AAP, 2015; Moon, 2011). It was noted that the review of the most up to date clinical practice guidelines was helpful for various caregivers to refresh their knowledge and stay up to date with the most recent information. The crib pockets specifically, could go both ways when it comes to cost effectiveness. Compared to new bassinets and new shelving systems, crib pockets are the more cost-effective plan.

Sustainability and Limitations

The purpose of utilizing the PDSA cycle is to have the ability to cycle through numerous times as a continuous quality improvement method to help increase chances of sustainability. Unfortunately, if the key stakeholders are not completely invested, the chances of the PDSA cycle continuing dwindles. During clinical time, the Clinical Nurse Leader (CNL) student is the project manager. The student can check in with caregivers and project progress on a frequent basis. During this clinical time, establishing a relationship with a key stakeholder to carry out the work once the CNL student completes the clinical time is essential for project success.

Identifying a safe sleep champion within the microsystem could be a plan for project sustainability. The largest limitations noted throughout the implementation include, caregiver participation and funding. Majority of the clinical time takes place during day shift, the seniority and engagement noted with the caregivers on that specific shift plays a role with decreased participation.

Synthesizing CNL Essentials

American Association of Colleges of Nursing (AACN) created the *Essentials of Master's Education in Nursing* (2013). The CNL competencies are built upon those essentials to reflect on the CNL practice in the current, ever changing, healthcare field. Throughout the clinical immersion various CNL essentials were practiced, or at the least, reviewed. Utilizing the clinical practicum log helps the student to reflect on the various experiences throughout the process and pair those experiences with the appropriate essentials.

The CNL student has plenty of opportunities to collaborate with healthcare professionals to plan, implement, and evaluate a quality improvement opportunity. Along with developing relationships, practicing this competency throughout the immersion as well as developing an appreciation for the various characteristics of different disciplines, seems to be a very important topic to assist with CNL role development.

The clinical immersion has provided numerous opportunities for the CNL student to advocate for the value of the CNL role and its value within an organization. Throughout the implementation process and class room time, there have been chances to develop skills using decision making tools, and graphs, such as Pareto charts, Fishbone diagrams, Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis, and Gantt charts. To display data

within these graphs and charts, the CNL student needs to become proficient with measurement tools and data collection.

Conclusion

When an infant dies, it is a complete tragedy. The tragedy is defined as Sudden Infant Death Syndrome (SIDS) when an infant dies during sleep from an undetermined cause. Over the years, the incidence of SIDS has reduced dramatically with the implementation of safe sleep recommendations for sleeping environment and positioning. CNLs utilize evidence-based practices to design and implement quality improvement projects to impact patient and clinical outcomes. Studies demonstrate that parents tend to replicate behaviors observed in the hospital setting once they are discharged back home (Geyer et al., 2016; Herman et al., 2015; Rowe et al., 2015; Chu et al., 2015). This paper identified and introduced a clinical microsystem, it identified gaps within the pediatric unit while integrating theory, practice, and research to improve quality of care and outcomes.

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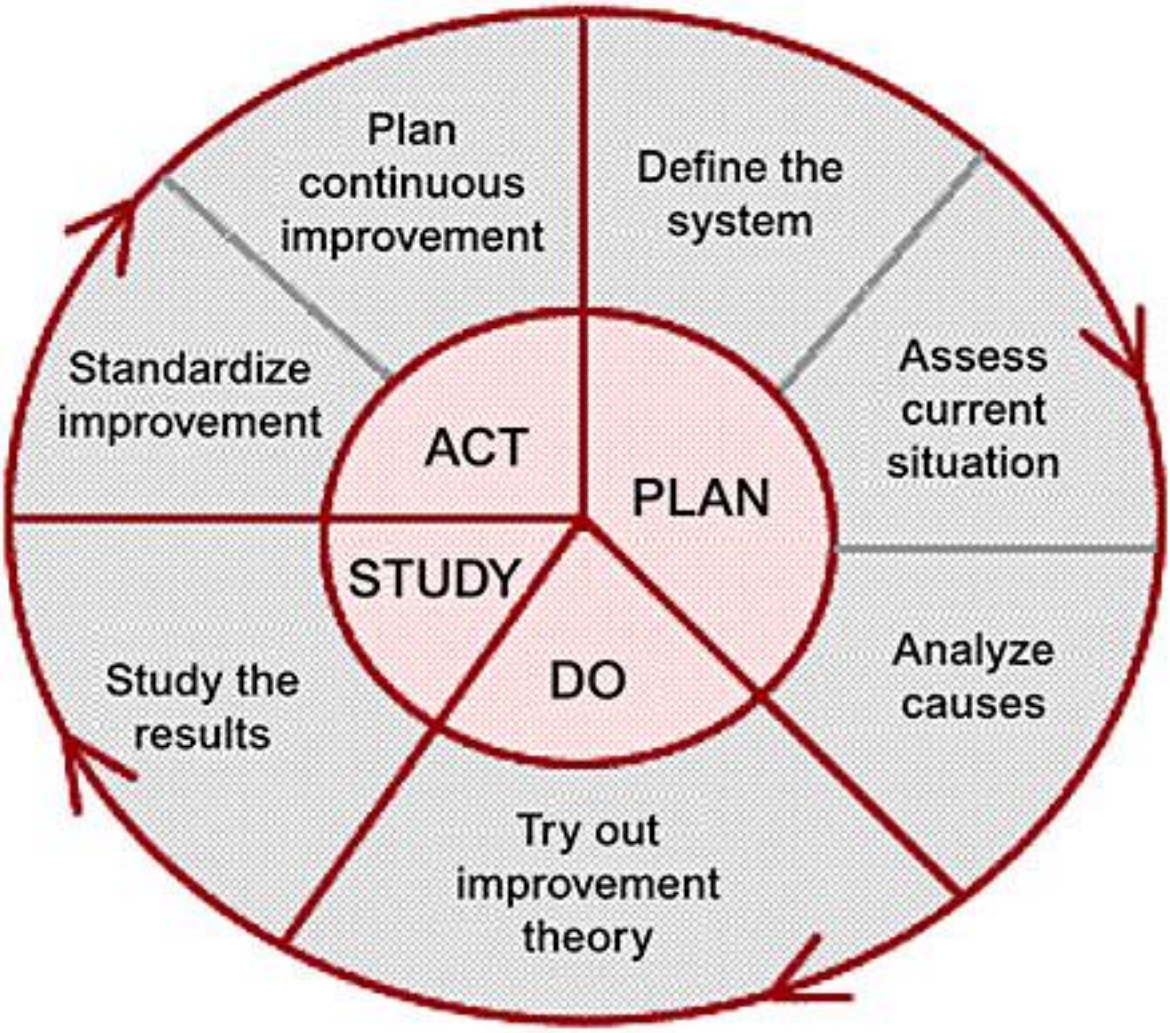
Appendix A

Author & Year	Source	Search Terms	Study purpose/Aims	Design/Sample	Data Collection	Major Findings
Canter, Rao, Patrick, Alpan, and Altman (2015)	CINAHL	Infant safe sleep, education	To evaluate whether an educational video would impact infant sleep practices among new mothers	43 new mothers watched the video and 49 new mothers did not watch the video	Surveys of new mothers who did and did not watch the educational video on safe sleep	A brief educational video for new mothers can be a component of new parent education
Rowe, Sisterhen, Mallard, Borecky, Schmid, Rettigant,& Luo, (2016)	CINAHL	Infant safe sleep	Increase knowledge of and adherence to safe sleep practice on inpatient units	Project team of nurses, administration, PT, child life, social work, interpreter services, and physicians	Pre and post surveys of staff including all stakeholders	Implementing safe sleep practice, and education showed a significant increase in knowledge of the AAP guidelines
Herman, Akins, & Moon (2015)	CINAHL	Infant safe sleep	Focus groups of primarily African American and American Indian mother and caregivers to obtain insight and input about beliefs about infant safe sleep practices and barriers	Sample was recruited by community programs that provide services to the mothers and infants – fathers and other caregivers were included as well	Demographic survey was collected first. Focus groups lasting 60-90 minutes were recorded and audiotaped. Topics were current safe sleep practices and how participants placed their babies for sleep	Three themes emerged: reasons for sleep decisions, and perceptions of physical and emotional comfort, and what is safe, effective and convenient

Ahlers-Schmidt, Kuhlmann, Kuhlmann, Schunn, & Rosell (2014)	CINAHL	Infant safe sleep	Develop and provide a safe sleep toolkit for providers that could facilitate a consistent safe sleep message	Obstetrical clinic and pediatric clinic parents of mothers at 28-36 weeks' gestation and pediatric parents of infants less than 6 months old	Infant caregivers were asked to fill out a survey while waiting for their scheduled outpatient appointment.	If infant caregivers responses indicated further educational needs, physicians would provide education during their appointment.
Bartlow, Cartwright, & Shefferly (2016)	CINAHL	Sudden infant death syndrome	Assessing SIDS prevention practices in two different hospitals	A convenience sample of direct observations	Collected data on infants' positioning and crib environment. Nurse' knowledge and attitudes were measured using an anonymous questionnaire	Despite the existence of the AAP guidelines, nurses are not consistently following the guidelines. Research is needed to figure out the cause of the disconnect between nurse's knowledge and lack of adherence in practice.
Smith, Colson, Rybin, Margolis, Colton, Lister & Corwin (2010)	PubMed	Infant sleep practices	To determine if mothers from at risk populations thought physicians were qualified to give advice about safe sleep practices and if maternal ratings of physician qualification were associated with sleep practices	Mothers of infants 8 months old or younger enrolled in the WIC program	In person semi-structured interviews with mothers of infants	Most mothers rated their physicians proficient in providing education about certain medical topics, but not as proficient in safe sleep topics

Appendix B



Retrieved from: https://www.researchgate.net/figure/45100022_fig1_Figure-1-Plan-Do-Study-Act-PDSA-cycle-from-University-of-Illinois-at-Chicago

Appendix C
Safe Sleep Caregiver's Survey

Primary Shift:	Days	Nights	
Role:	Nurse	PCT	Physician
Primary Area of work:	Pediatrics	PICU	Rotate
Age range:	21-31y	32-42y	>43y

1. I am knowledgeable of current, recommended Safe sleep guidelines

   Strong agree Agree Neutral Disagree Strongly disagree

2. Safe Sleep practices as recommended by the AAP are followed consistently by staff (RN's, PCT's, Ancillary staff)

   Strong agree Agree Neutral Disagree Strongly disagree

3. I routinely assess that my patients are in a Safe Sleep environment

   Strong agree Agree Neutral Disagree Strongly disagree

4. Implementation and providing education to caregivers/families on importance of Safe Sleep is a high priority

   Strong agree Agree Neutral Disagree Strongly disagree

5. I am confident in providing education and role modeling for caregivers/families on Safe Sleep practices

   Strong agree Agree Neutral Disagree Strongly disagree

6. What barriers have you encountered in providing Safe Sleep practices with your patients and families?

   _____

   _____

7. Reflux precautions should include elevation of head of bed

   a. Yes b. No

8. Swaddling techniques leaving the arms free is both effective and safe compared to tight papoose swaddling

   a. Yes b. No

Appendix D

SAFE SLEEP QUIZ

This questionnaire is a Quality Improvement project in the Children's Center. Your participation is voluntary. No personal identifying information will be collected, except date of birth. Your child's care will not be impacted if you decide not to answer survey questions. Your completion indicates your consent to participate in our project. Thank you for your time.

1. **How to you lay your baby down to sleep?**

☐ On the back ☐ On the tummy ☐ On the side ☐ Not sure

2. **Where does your baby sleep at home?**

◯ In a bassinet next to my bed
◯ In a portable crib next to my bed
◯ In a crib in my room
◯ In a crib in the baby's room
◯ In my bed
◯ In a big bed
◯ Don't know/not sure
◯ Other (*specify*)_____

3. **Please check the items that are already in your baby's sleeping area at home or that you plan to get for your baby's sleeping area:**

◯ Firm mattress ◯ Blanket ◯ Pillow
◯ Fitted sheet ◯ Bumper pad ◯ Stuffed toy
◯ Other_____

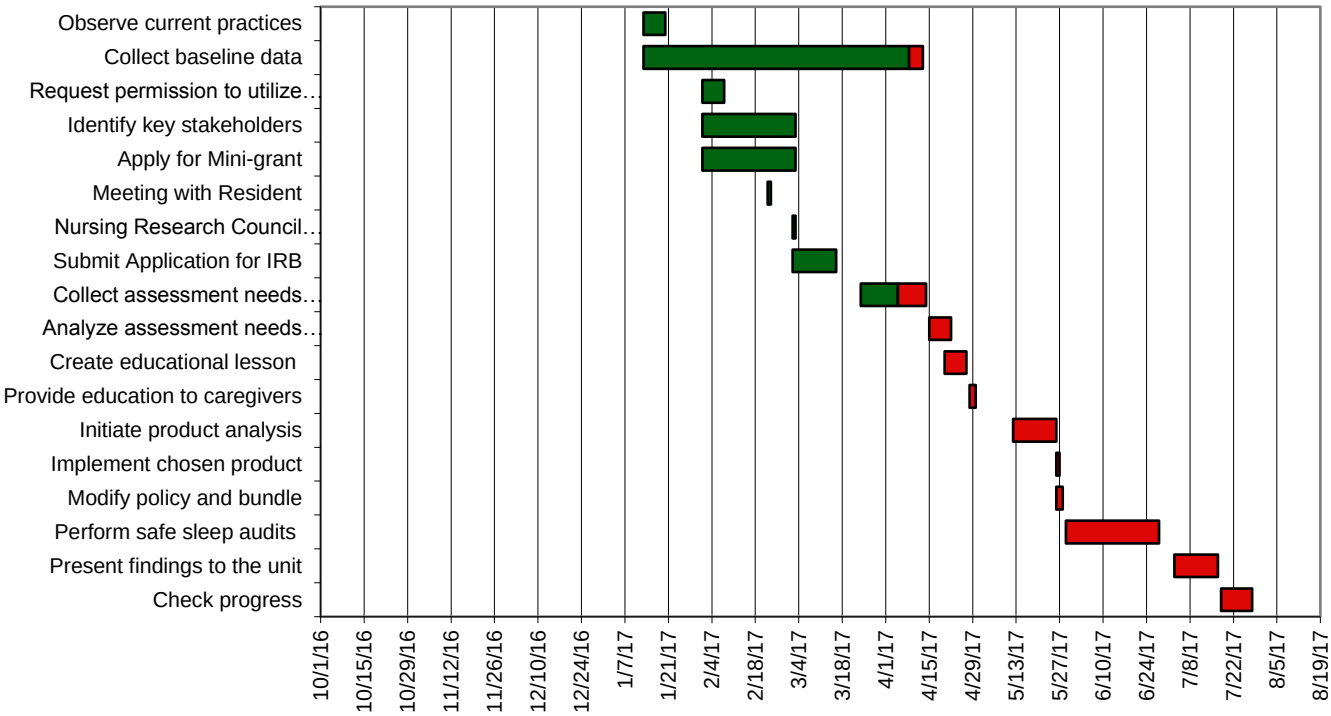
4. **Have you talked about Safe Sleep with others who may put your child down to sleep?**

◯ Yes ◯ No

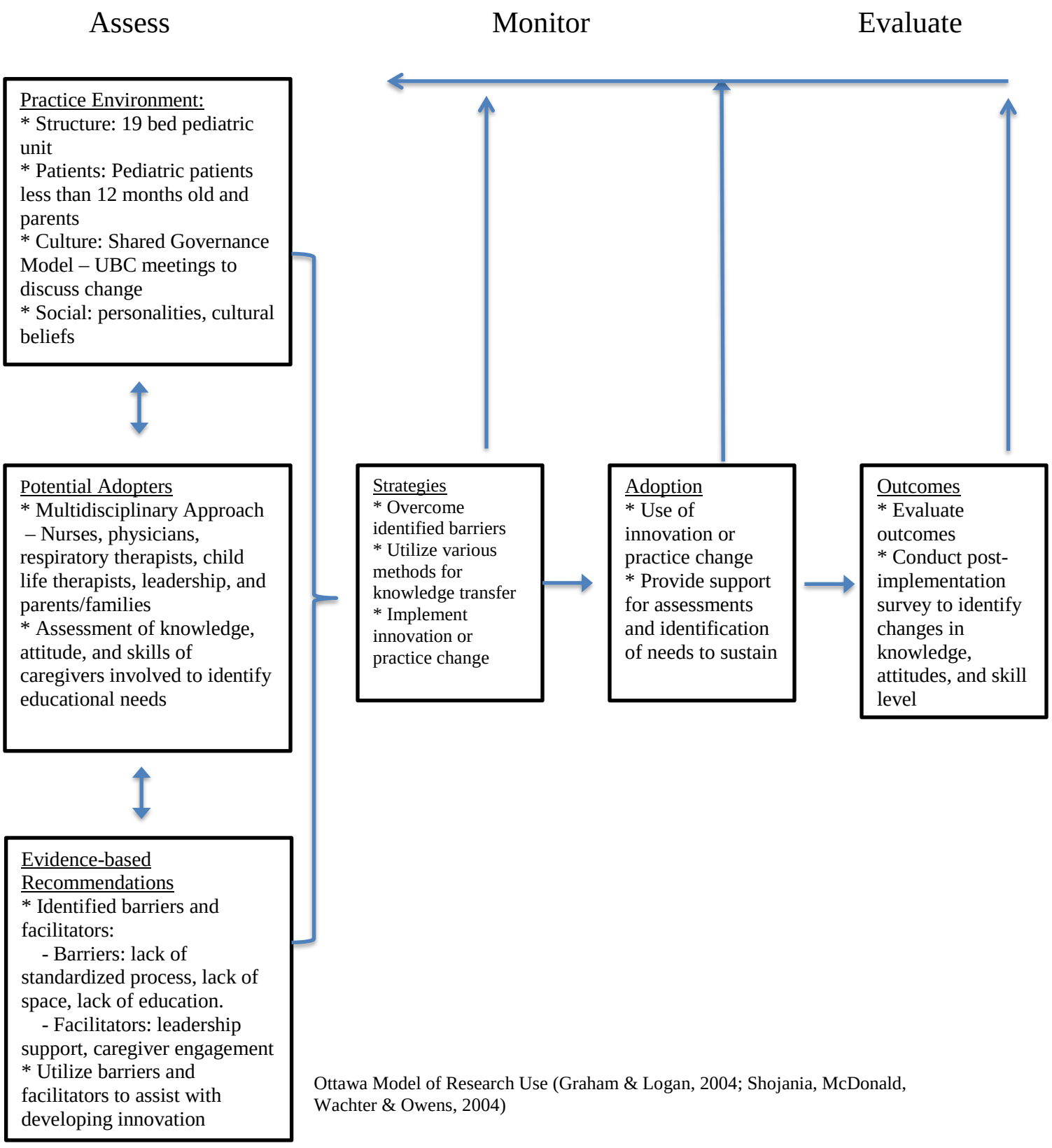
OPTIONAL INFORMATION
If you are willing to give us more information to use in our quality improvement project, please fill out the questions below. Again, your responses are anonymous. Participation is voluntary.
How old are you? _____
How many children do you have? _____

Appendix E

Gantt Chart Displaying Project Timeline



Appendix F



Ottawa Model of Research Use (Graham & Logan, 2004; Shojania, McDonald, Wachter & Owens, 2004)

Appendix G

Improving Safe Sleep Practices as a Clinical Nurse Leader student

Danielle Hartig <hartigd@mail.gvsu.edu> Mon, Jan 23, 2017 at 12:35 PM To: cschmidt3@kumc.edu

Hello Dr. Carolyn Ahlers-Schmidt,

My name is Danielle Hartig, BSN, RN. I am a MSN student in the Clinical Nurse Leader track at Grand Valley State University in MIchigan. My clinical background includes Neuroscience and Cardiac Progressive care in the acute care setting. I am currently working through my clinical immersion in the Pediatric/Pediatric ICU area. I am focusing on Infant Safe Sleep for my scholarly project and I came across your research article published in the Clinical Pediatrics journal. The article "To improve Safe-sleep Practices, More Emphasis should be placed on Removing Unsafe Items from the Crib" provided the Safe Sleep toolkit to help facilitate a consistent safe-sleep message to caregivers. I thoroughly enjoyed the article and the components of the Safe Sleep Toolkit, especially the Safe Sleep questionnaire given to infant caregivers. I believe this article will be very beneficial in guiding my scholarly project, I am seeking permission to use the Safe Sleep Toolkit, specifically the "Safe Sleep Quiz" to gather information from the infant caregivers in this clinical setting. If there are validity and reliability statistics available from the questions and you are willing to share, I would appreciate that information.

Thank you for your time and consideration,

--Danielle Hartig BSN, RN, PCCN Graduate Student - Grand Valley State University hartigd@mail.gvsu.edu Cell - 517-927-8965

Cari Schmidt <cschmidt3@kumc.edu> To: Danielle Hartig <hartigd@mail.gvsu.edu> Mon, Jan 23, 2017 at 12:41 PM

Yes, you may use the Quiz and any other items in the toolkit. The materials are available at http://www.kidsks.org/safe-sleep-toolkit.html. We are still working on validating the toolkit, but two additional studies using the materials in an OB clinic and as an outcome measure related to providing wearable blankets are attached for you as well. Good luck with your project!

Sincerely,
Cari

Carolyn R. AhlersLSchmidt, PhD
Director of Research

Director of the Scholars in Research and Medicine Training (SMART)
Program Associate Research Professor University of Kansas School of Medicine Wichita Department of Pediatrics
1010 N. Kansas Wichita, Kansas 67214 Phone: 316-293-1810 Fax: 316-293-2686 cschmidt3@kumc.edu

Danielle Hartig <hartigd@mail.gvsu.edu> Mon, Feb 6, 2017 at 4:26 PM To: Cari Schmidt <cschmidt3@kumc.edu>

Hi Cari!

Thank you so much for your prompt response! I really appreciate the articles that you sent over and granting me permission to utilize all the components of the Safe Sleep Toolkit. I am looking to utilize the toolkit as part of my scholarly project to be conducted at ********, Michigan. I wanted to clarify that I have your permission to use the tools within the hospital as well as my presentation for school? Thank you again for your time and support!

--Danielle Hartig BSN, RN, PCCN Graduate Student - Grand Valley State University hartigd@mail.gvsu.edu Cell - 517-927-8965

Cari Schmidt <cschmidt3@kumc.edu> To: Danielle Hartig <hartigd@mail.gvsu.edu>

Mon, Feb 6, 2017 at 4:28 PM

Yes. You have my permission to use the tools within the hospital as well as you presentation for school. Best of luck!

Cari

From: Danielle Hartig [mailto:hartigd@mail.gvsu.edu] **Sent:** Monday, February 06, 2017 3:27 PM **To:** Cari Schmidt **Subject:** Re: Improving Safe Sleep Practices as a Clinical Nurse Leader student

Thank you!!

Danielle Hartig hartigd@mail.gvsu.edu

Appendix H

Improving Safe Sleep Practices as a Clinical Nurse Leader Student

Danielle Hartig <hartigd@mail.gvsu.edu> Wed, Feb 8, 2017 at 5:35 PM To: angela.d.rowe@gmail.com

Hello Angela,

My name is Danielle Hartig, BSN, RN. I am a MSN student in the Clinical Nurse Leader track at Grand Valley State University in Michigan. My clinical background includes Neuroscience and Cardiac Progressive care in the acute care setting. I am currently working through my clinical immersion in the Pediatric/Pediatric ICU area. I am focusing on Infant Safe Sleep for my scholarly project and I came across your research article published in the Journal of Pediatric Nursing. The article "Integrating Safe Sleep Practices into a Pediatric Hospital: Outcomes of a Quality Improvement Project" provided a lot of great information regarding safe sleep practice, as well as audit tools and surveys. I thoroughly enjoyed the article and the surveys the Safe Sleep Taskforce composed. I especially am interested in the Safe sleep staff knowledge/beliefs survey questions that was sent out to the clinical staff. I believe this article will be very beneficial in guiding my scholarly project, which will take place at ******, Michigan and my information/results will be presented at Grand Valley State University. I am seeking your permission to use the Safe sleep staff knowledge/beliefs survey questions in part, or in whole, for my project to gather information from the caregivers in this clinical setting. If there are validity and reliability statistics available from the questions and you are willing to share, I would greatly appreciate that information.

Thank you for your time and consideration,

--Danielle Hartig, BSN, RN, PCCN Graduate Student - Grand Valley State University hartigd@mail.gvsu.edu Cell - 517-927-8965

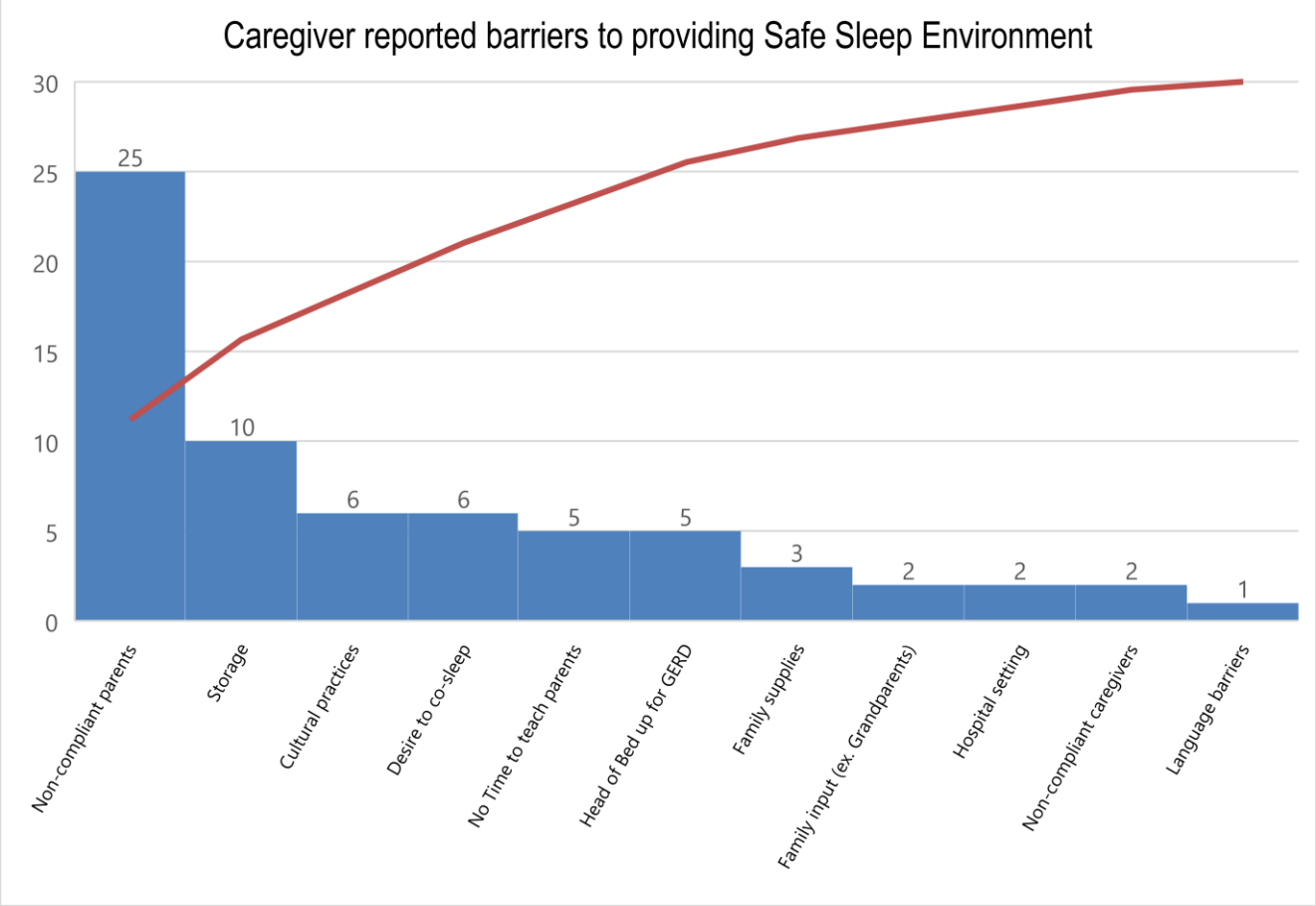
Angela Rowe <angela.d.rowe@gmail.com> To: Danielle Hartig <hartigd@mail.gvsu.edu> Wed, Feb 22, 2017 at 1:06 PM

Danielle -

So sorry for the delayed reply. Yes, you may use the survey. It has not been psychometrically tested so there are no validity and reliability statistics for the tool. We do request that you credit the tool to us and that you also share your results with us. Other than that you are free to use.

Angela

Appendix I


Caregiver reported barriers to providing Safe Sleep Environment
30
25
20
15
10
5
0
25
10
6
6
5
5
3
2
2
2
1
Non-compliant parents
Storage
Cultural practices
Desire to co-sleep
No Time to teach parents
Head of Bed up for GERD
Family supplies
Family input (ex. Grandparents)
Hospital setting
Non-compliant caregivers
Language barriers

Appendix J

Product	Price	Ease of Use	Cleanliness	Size	Aesthetics	Durability	Safety	Total
Product #1: Sleeping Lamb Baby	$8.99 Free Shipping on Amazon	1	1	1	3	2	1	**9**
Product #2: Just Nile	$12.99 Free Shipping on Amazon	2	4	3	2	3	4	**18**
Product #3: Lebogner	$12.96 Free Shipping on Amazon	1	1	2	3	2	1	**10**
Product #4: Reperkid	$15.95 Free Shipping on Amazon	1	3	2	2	2	4	**14**
Product #5: TDKIDO	$16.95 Free Shipping on Amazon	2	4	5	2	3	4	**20**
Product #6: Alnoor USA	$17.95 Free Shipping on Amazon	2	4	2	2	5	3	**18**
Product #7: Fakeface	$25.98 Free Shipping on Amazon	2	4	1	2	2	4	**15**

Rating Scale 1-5

1-Very Good
2-Good
3-Fair
4-Poor
5-Very Poor