



SAFE NEWBORN SLEEP PRACTICES ON A LARGE VOLUME MATERNITY SERVICE

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Abstract

Purpose: Reinforcing safe infant sleep conditions in the hospital setting supports continuation of safe sleep practices after hospital discharge and should be considered the first line of defense for reducing risk for sudden unexpected infant death (SUID) and sudden infant death syndrome (SIDS) at home. The purpose of this study is to determine knowledge of perinatal nurses, nursing assistants, physicians, and ancillary personnel about safe sleep recommendations and implementation of safe sleep practices on the mother–baby unit.

Study Design and Methods: Nurses and other members of the perinatal health care team in a level III maternity service were invited to participate in a survey about safe sleep knowledge and practices. An audit for safe sleep adherence was conducted on the mother–baby unit for 120 mother–baby couplets over 1 year as a process improvement project.

Results: $N = 144$ surveys were completed; most participants (86%) were nurses. They had high levels of knowledge about safe sleep

recommendations and 74% reported making at least one safe sleep adjustment during one shift per week. The most common modifications at least once per week were removing baby from a sleeping caregiver (30%) and removing items from baby's bassinet (26%). Safe sleep audit findings revealed 32 out of 120 couplets were not fully following safe sleep recommendations, with most common unsafe sleep practice metrics being items in the baby's bassinet (18%) and bassinets propped up (8%).

Clinical Implications: During the hospitalization for childbirth, new parents can learn about safe sleep practices from the perinatal health care team. Sharing information and role modeling safe sleep practices can promote continuation of safe sleep practices for the newborn at home after hospital discharge.

Key words: Infant; Infant death; Maternity care; Safe sleep practices; Sudden infant death.

Background

Sudden unexpected infant death (SUID) is the sudden and unexpected death of a child under 1 year of age when the cause of death is unidentifiable before further investigation (Centers for Disease Control and Prevention, 2022a). Sudden unexpected infant death includes accidental suffocations, sudden infant death syndrome (SIDS), and other unknown causes. Although some cases of SUID occur during the childbirth hospitalization, most occur at home after hospital discharge (Anderson et al., 2021). The United States Department of Health and Human Services created the “Back to Sleep” campaign in 1994 to educate the public and new parents on safe sleeping recommendations to reduce the risk of SIDS. The campaign focused on placing the infant in the supine position and removing all objects within the sleeping area (U.S. Department of Health and Human Services, n.d.). The name of the campaign was changed to “Safe to Sleep” in 2012.

Rate of SUID in the United States has steadily declined from 155 deaths per 100,000 live births in 1990 to 92.9 deaths per 100,000 live births in 2020. However, in Louisiana, the average rate of SUID is higher than the national SUID rate at 156 deaths per 100,000 live births in 2020 (Centers for Disease Control and Prevention, 2022b). Nonadherence to recommended sleeping conditions for infants is a primary cause of infant death. Role modeling safe sleep conditions in a hospital setting can reinforce continuation of following recommended behaviors at home (Gelfer et al., 2013). The American Academy of Pediatrics (AAP) outlined a summary of A-, B-, and C-Level recommendations for safe sleep (Moon et al., 2016). These recommendations have been recently updated and include important information for health care workers, parents, and others who provide care for infants (Moon et al., 2022a; Moon et al., 2022b). They include supine positioning, use of a firm, noninclined sleep surface, room sharing without bed sharing, avoidance of soft bedding, and overheating (Moon et al., 2022b, p. 1). Other AAP recommendations include promotion of human milk feeding and avoidance of exposure to nicotine, alcohol, marijuana, opioids, and illicit drugs. Routine immunizations are highly recommended, and for breastfed infants, the use of a pacifier should be delayed until breastfeeding has been firmly established (Moon et al., 2022b).

The American Academy of Pediatrics promotes skin-to-skin care (SSC) and mothers and infants rooming-in together 24 hours a day for healthy infants while they are in the hospital (Feldman-Winter et al., 2016). Evidence-based findings for immediate SSC include stabilization of neonatal body temperature, cardiorespiratory regulation, and glucose stabilization, all of which are important to monitor during the transition phase after birth (Association of Women’s Health, Obstetric and Neonatal Nurses [AWHONN], 2020b; AWHONN, 2021). Rooming-in facilitates breastfeeding and family-centered care, but also provides the opportunity to promote a safe sleep environment (Feldman-Winter et al., 2016). Newborn drops and falls are a risk of rooming-in, in part due to maternal fatigue and unsafe newborn sleeping positioning in mothers’ or support persons’

arms or cosleeping with the mother (AWHONN, 2020a; Feldman-Winter et al., 2016; The Joint Commission, 2018). Therefore, it is important for perinatal health care clinicians to role model safe sleep behaviors and encourage positive interventions when safe sleep recommendations are not being followed by parents. By implementing safe sleep recommendations, risk of SIDS and rates of accidental suffocations can be lowered (Kattwinkel et al., 2000; Moon et al., 2022a; Moon et al., 2022b).

The purpose of this project was to evaluate safe sleep knowledge and practices of clinicians caring for newborns during the childbirth hospitalization and to determine safe sleep practices for newborns on the mother–baby unit. We hypothesized that we would find high knowledge of safe sleep recommendations among clinicians and that would be reflected in consistent safe sleep practices for the newborn via audit on the mother–baby unit.

Methods

Study Setting and Participants

This project was implemented in the inpatient setting in a large volume, level III maternity service. Perinatal nurses and other members of the perinatal health care team participated in a survey and mother–baby couplets were evaluated during safe sleep audits.

Study Design

Two independent projects on safe sleep were conducted. An anonymous survey titled *Safe Sleep Recommendations at Work Survey* was distributed to clinicians providing

TABLE 1. SURVEY RESPONDENT CHARACTERISTICS (N = 144)

Survey Respondents	
Characteristic	N (%)
Gender, n (%)	
Female	142 (99%)
Male	2 (1%)
Race	
White	132 (92%)
Black	11 (8%)
Other	1 (1%)
Ethnicity	
Hispanic	2 (1%)
Not Hispanic	14 (99%)
Occupation or Role	
Registered nurse	107 (74%)
Nurse practitioner	5 (3%)
Nursing assistant/technician	12 (8%)
Neonatal technician	5 (3%)
Other*	15 (10%)
Years of Experience in Role	
≤5 years	45 (31%)
6–10 years	17 (12%)
11–20 years	30 (21%)
>20 years	52 (36%)

*Physical therapist, occupational therapist, physician, research coordinator, respiratory therapist

direct care for newborns in inpatient hospital settings (including labor and delivery, mother–baby, and neonatal intensive care units) to evaluate their knowledge of safe sleep practices and reported safe sleep modifications they made during patient care activities. The survey was created by a team of experts in research, safe sleep practices application, and nursing at the hospital. Knowledge of safe sleep recommendations and modifications made by the respondents at work were adapted from AAP (Moon et al., 2016). The survey was tested among the study team prior to dissemination. The survey was advertised within internal hospital employee communications and open for 3 months from February 19 to May 19, 2021. REDCap electronic data capture tools hosted the survey at the study hospital (Harris et al., 2009, 2019). The study was approved by the hospital's institutional review board, and informed consent was obtained from survey respondents. The primary outcome for the *Safe Sleep Recommendations at Work Survey* was occurrence and frequency of reported safe sleep practices modifications by survey respondents caring directly for newborns. Asked as “in the past week at work, how often have you made these safe sleep corrections with parents or newborn caregivers?”, the primary outcome was defined as any answer of “every shift,” “several shifts,” “a few shifts,” or “one shift” for seven safe sleep modifications.

A random audit for safe sleep practices adherence was conducted for process improvement purposes quarterly on the mother–baby unit for 1 year (four audits) by two staff nurses responsible for special projects on the mother–baby unit. This audit was not considered research and was not reviewed by the hospital's institutional review board. Thirty mother–baby couplets were randomly selected once per quarter and a checklist of 11 safe sleep metrics, adapted from the “Modeling safe practices: A checklist for infant sleep & breastfeeding images” by the National Action Partnership to Promote Safe Sleep, were evaluated (National Action Partnership to Promote Safe Sleep, 2017). The primary outcome for the safe sleep practices audit was adherence to all applicable metrics. This adherence outcome is defined as a “yes” for all 11 safe sleep metrics assessed at time of audit.

Analysis

Categorical variables were summarized by counts and frequencies, and continuous variables by means and standard deviations. Safe sleep practice adjustment occurrence was determined by a response of “every shift,” “several shifts,” “a few shifts,” or “one shift,” compared with “never” or “don't know.” Audit adherence was determined by a “yes” to all safe sleep metrics applicable at time of audit.

Results

Safe Sleep Recommendations at Work Survey Characteristics of Participants

Data used for this specific research question were from respondents who directly cared for neonates as part of their workplace responsibilities ($n = 144$; Table 1). Most (74%, $n = 107$) were registered nurses, 3% ($n = 5$) were

TABLE 2. SAFE SLEEP RECOMMENDATION KNOWLEDGE ($N = 144$)

	<i>n</i> (%) of Survey Respondents
Recognize the importance of safe sleep recommendations	144 (100%)
Recalled receiving safe sleep education from department	99 (69%)
Recalled receiving safe sleep education via hospital's online compliance modules	85 (59%)
Recalled learning about safe sleep recommendations in school	85 (59%)
Recalled receiving safe sleep education at new employee orientation	65 (45%)
No recollection of safe sleep education	7 (5%)

nurse practitioners, 8% ($n = 12$) were nursing assistants or technicians, 3% ($n = 5$) neonatal technicians, and the remaining 10% were other clinicians (physical therapist, occupational therapist, physician, research coordinator, respiratory therapist). Most were White (92%) females (99%), of non-Hispanic origin (99%) with a wide variation of health care work experience ranging from <5 years (31%) to >20 years (35%).

Safe Sleep Recommendations Knowledge

When asked questions about safe sleep, 90% answered all questions correctly on risk factors of SUIDs (including knowing to put baby to sleep on a hard firm mattress with a tightly fitted sheet with no toys, pillows, stuffed animals, bumpers, or blankets; not leaving baby to sleep in car seat or swing; not putting baby to sleep in same bed as a parent or caretaker; and putting baby to sleep on their back). Most (92%) were able to identify safe sleep protective factors for preventing SUID. Only 45% of respondents recalled receiving safe sleep education at new employee orientation, 59% remembered receiving education through their annual online compliance modules, and 69% recalled receiving education directly from their department (Table 2). Seven respondents reported no recollection of receipt of safe sleep education for their work at our hospital including four registered nurses, two nursing assistants or technicians, and one respiratory therapist. Of all respondents, 59% recalled learning about safe sleep practices in school. All agreed that educating patients about safe sleep practices is “very important” (Table 2).

Safe Sleep Modifications

On the *Safe Sleep Recommendations at Work Survey*, clinicians were asked if they make safe sleep modifications at work, which modifications specifically, and how frequently (Table 3). The most reported adjustment was “removed baby from a caregiver who was sleeping,” which occurred at least one shift per week by 30% of those surveyed. Of

note, 27% reported “uncovered baby’s face” and 26% reported “removed items from bassinet” during at least one shift per week. Moderately common safe sleep modifications were “corrected a propped-up bassinet” and “moved baby from sleeping on stomach to back” (23% and 22%, respectively). Only 7% “separated multiples to separate sleep areas” and 5% “removed baby from sleeping in a car seat” during at least one shift per week.

TABLE 3. SAFE SLEEP PRACTICES MODIFICATIONS (N = 144)

	<i>n</i> (%) of Survey Respondents Making Modification at least One Shift per Week
Removed baby from a parent or caregiver who was sleeping	43 (30%)
Uncovered baby’s face	38 (27%)
Removed items from bassinet	36 (26%)
Corrected a propped up/tilted bassinet	32 (23%)
Moved baby from sleeping on stomach to back	31 (22%)
Separated multiples (e.g., twins) to separate sleep areas	10 (7%)
Removed baby from sleeping in car seat	7 (5%)

TABLE 4. SAFE SLEEP AUDIT SUBGROUP WITH AT LEAST ONE OCCURRENCE OF UNSAFE SLEEP PRACTICE (N = 32 OF N = 120)

	<i>N</i> (%) of Occurrences of Unsafe Sleep Practices Identified from Audit on Mother–Baby Unit
Nonadherence to any safe sleep recommendation metric	32 (27%)
Nonadherence to individual safe sleep recommendation metric:	
Item(s) in bassinet	22 (18%)
Bassinet propped up	10 (8%)
Poor swaddle	5 (4%)
Baby not sleeping on firm surface	5 (4%)
Pacifier not cordless/ attached to clothing or stuffed animal	3 (3%)
Baby asleep not on back	0 (0%)
Baby asleep on a positioner/ wedge	0 (0%)

Note. One couplet can have multiple nonadherent occurrences.

Safe Sleep Audit

Characteristics of Participants

There were 120 mother–baby couplets included in the audit from September 2020 through June 2021. Couplets were randomly selected for the audit. Fifty-three percent of audited parents were White, 37% were Black, less than 1% were Asian or “other” race, and less than 1% were Hispanic.

Inpatient Safe Sleep Practices Adherence on Mother–Baby Unit

Approximately 73% of inpatient mother–baby couplets were found to be adherent with all safe sleep metrics, whereas 32 couplets were found to have at least one non-adherent occurrence. Details of unsafe sleep practices of these 32 couplets are presented in Table 4.

Clinical Nursing Implications

The inpatient setting presents an opportunity to promote safe sleep environments at home after hospital discharge through role modeling and reinforcement of safe sleep practices and education by perinatal nurses and other members of the health care team. Knowledge of safe sleep practices among clinicians (primarily nurses) caring directly for neonates at work is high. At our institution, safe sleep education is disseminated upon hire, reoccurs annually through online training modules, and is a requirement of employees caring directly for neonates. We use AWHONN (2022) nurse staffing standards for couplet care of 1 nurse to 3 couplets. Couplet rounding occurs every 2 hours. Over a quarter of couplets audited on the mother–baby were not in full adherence with safe sleep guidelines, thus there remains an opportunity to intensify safe sleep education and attention in the inpatient setting for new parents. Highest frequency modifications reported by included removing baby from a caregiver who was sleeping, removing items from bassinet, and uncovering baby’s face. The most consistent metric between survey respondents and mother–baby unit audit was removing items from the bassinet, similar to findings by Geyer et al. (2016), where they noted 68% of audited couplets containing unsafe objects in the bassinet. In our audit, 18% of babies were found with unsafe objects in the crib, possibly demonstrating progress in safe sleep practices. The second most frequent audit adjustment was having the bassinet propped up. Possible reasons for this finding could be that the tilted bassinet is not as obvious to see by the new parent or clinician, particularly if baby is not in bassinet.

In response to this project and in conjunction with the safe sleep taskforce active in our hospital, several enhancements have been put into place to further support inpatient safe sleep practices. These include revising patient safety instructions on admission to the mother–baby unit to include a review of safe sleep recommendations, placing signs in patient rooms as a visual reminder for safe sleep practices, and reviewing audit findings with clinicians on the mother–baby unit.

CLINICAL IMPLICATIONS

- The inpatient maternity environment offers opportunity to support safe sleep recommendations through role modeling safe sleep practices and education for new parents.
- Reinforcement and updates of safe sleep recommendations for nurses and other clinicians should be included in unit orientation and annual unit education.
- Periodic audits of safe sleep practices should be a standard part of maternity quality improvement in the inpatient setting.
- At discharge, safe sleep education and parents' plan for sleep accommodations for the newborn should be reviewed and include return demonstration and verbalization of safe sleep practices.
- Routine mother-baby rounding offers opportunity to intervene as needed and provide education about unsafe sleep practices in the maternity inpatient setting.

Summary

Safe sleep recommendations are the first line of defense for prevention of SUID. There is opportunity in the inpatient setting to educate new parents about safe sleep recommendations, role model safe sleep practices, and leverage clinician-identified needed safe sleep modifications as opportunities to reemphasize recommendations. ❖

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