Preventing Newborn Falls While Supporting Family Bonding

Family education and monitoring by staff are crucial to newborn safety.

The Pennsylvania Patient Safety Reporting System is a confidential, statewide Internet reporting system to which all Pennsylvania hospitals, outpatient-surgery facilities, birthing centers, and abortion facilities must file information on incidents and serious events.

Safety Monitor is a column from Pennsylvania's Patient Safety Authority, the authority that informs nurses on issues that can affect patient safety and presents strategies they can easily integrate into practice. For more information on the authority, visit www.patientsafetyauthority.org. For the original article discussed in this column or for other articles on patient safety, click on "Patient Safety Advisories" and then "Advisory Library" in the left-hand navigation menu.

In the early 20th century, with the advent of obstetric anesthesia and a desire on the part of women for painless delivery, childbirth moved from the home to the structured environment of the hospital. In that environment, newborns were cared for in a nursery. Tired mothers typically stayed in their hospital rooms to get their rest after the long ordeal of labor and delivery and saw their newborns during feeding times.[1]

Years later, though, studies showed that mothers and their newborns benefited both physically and emotionally by "rooming in" together during their hospital stay. Hospital procedures were changed to allow mothers and newborns to spend as much time together as possible. Rooming in allowed for "skin-to-skin" contact and breastfeeding on demand.[1]

More recently, studies suggest that newborn injuries, such as falls, may be an unintended consequence of leaving newborns with fatigued parents in the first hours and days of life.[2,3] Although a relatively rare occurrence, dropping a newborn can be an emotional experience, especially if there is serious harm. Hospitals that have incorporated prevention methods such as family awareness and staff monitoring of new families have found success in the prevention of newborn falls.

The Pennsylvania Patient Safety Authority searched its Pennsylvania Patient Safety Reporting System (PA-PSRS) for reports of events that occurred while newborns were in the care of their families. Newborn falls were the most common events affecting newborn safety.

PENNSYLVANIA EVENT REPORTS

Analysis of events involving newborns 30 days old or younger that were reported in PA-PSRS from July 2004 through December 2013 revealed 272 falls in newborns who were in the care of their families.

Of the 272 newborn falls reported, 55.1% (n = 150) occurred after a family member fell asleep in a bed or chair; 27.2% (n = 74) occurred when a newborn slipped out of the arms of a family member who was lying, sitting, or standing. The other 17.7% of falls (n = 48) involved a newborn rolling out of a hospital bed or Isolette, being dropped while being transferred, or rolling off a family member's lap; in some cases, the nature of the fall wasn't specified (see Figure 1 for details).

Although the time of day at which an event occurs is a required field in PA-PSRS reports, the time was reported as unknown in 15 of the 272 newborn falls. Of the 257 events for which a time was recorded, 58% (n = 149) occurred between midnight and 7 AM, with the highest percentage of those (19.5%, n = 29) occurring between 5 AM and 6 AM.

EXAMPLES OF EVENT REPORTS

The following are examples of events related to newborn falls reported to PA-PSRS.

- Upon entering the mom's room, the nurse found a man crying and holding a crying infant. Mom stated she was sitting in the chair feeding the newborn when she fell asleep. The infant slid to the

floor off of [the mom's] lap. Mom stated the newborn's head was hit on the right side.

- Infant was sleeping on father's chest in chair at side of bed; father fell asleep, and infant rolled to the floor facedown. Infant found crying in father's arms. [Infant] returned to nursery for assessment by pediatrician. No apparent injury.
- Mom brought baby to the nursery [in the morning]. Mom stated that she dropped the baby onto the floor while changing breastfeeding position. Mom was sitting in her bed. Baby fell and hit back of head.
- Mother rang call bell and stated that she wanted nursing to come check the baby [because she had] dropped the baby on the floor. Mother had been feeding baby while in bed. Mother stated she was trying to get out of bed and the baby fell from her left arm.
- Mother of [newborn] reported that her baby had fallen out of her arms and onto the floor during the night[; she stated that she had been] holding her baby and fell asleep. X-ray revealed a skull fracture.
- Infant fell from mother's arms, landing on right side of head and body. Infant taken to [neonatal ICU]. Infant sustained . . . skull fracture and small subdural hematoma.

NEWBORN FALLS BY YEAR

Across all U.S. hospitals, the average length of stay in days among women who have given birth is 2.7 days.[4] Of the 272 falls reported to PA-PSRS, 85.3% (n = 232) occurred when the newborn was younger than four days old. Of those 232 falls, 42.7% (n = 99) occurred on day 1 and 32.8% (n = 76) occurred on day 2.

Most newborn falls occurred between midnight and 7 AM.

Research on falls in hospitals has generally focused on adults. Few studies have addressed newborn falls. Even determining the true incidence of newborn falls can be a challenge. Some events submitted to the authority describe how a fall was only reported several hours after it occurred, by the mother, a staff member, or a patient's roommate after a change in the newborn's behavior or physical condition was noticed. By taking the total number of newborn falls reported to PA-PSRS between 2005 and 2013 and using the total number of live births in Pennsylvania during that time, a rate of newborn falls was estimated per 10,000 live births. That calculated rate ranged from 0.4 to 3.8 newborn falls per 10,000 live births, resulting in an estimated 160 to 1,520 falls per year in the United States.

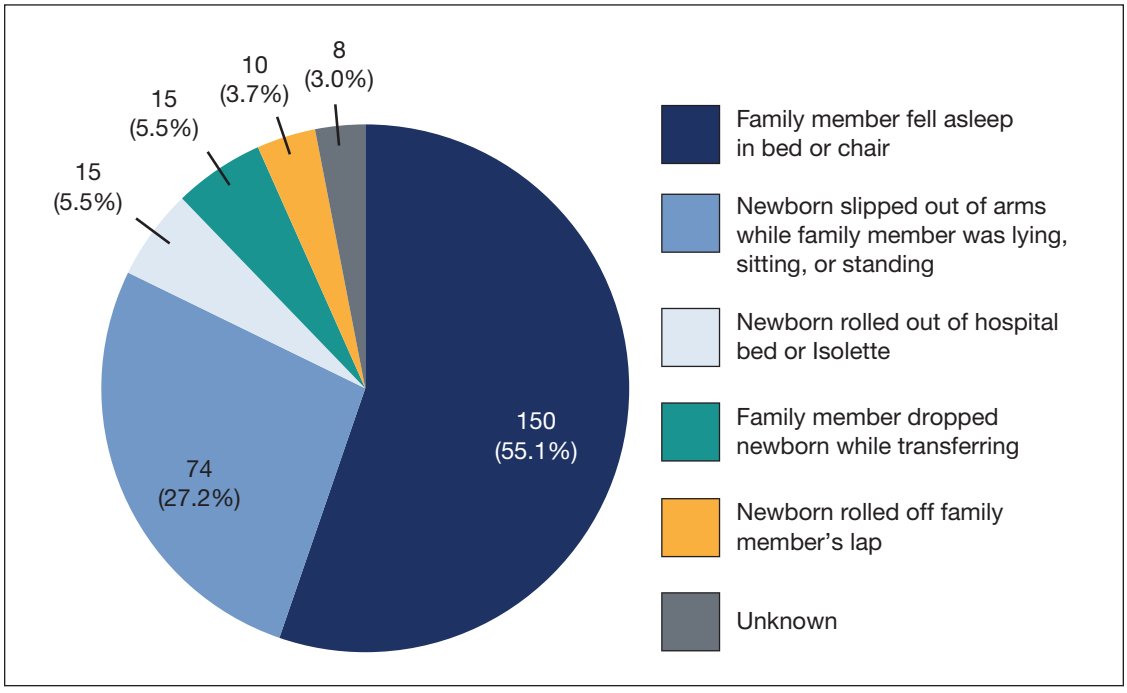
Photo by Joseph Sacchetti.

NEWBORN FALLS PREVENTION PROGRAMS

Some hospitals have initiated comprehensive falls prevention programs after they realized that newborn falls were an issue. Abington Memorial Hospital in Abington Township, Pennsylvania, where about 5,000 babies are delivered each year, was able to bring its newborn fall rate to zero.[5] In 2012 the hospital decided to make changes to its policies and to training of both staff and new parents after five newborn falls occurred in five years.

Another hospital, Huntsville Hospital for Women and Children in Huntsville, Alabama, also experienced a drop in newborn falls after adopting new protocols on parent and staff education, transport of newborns, placement of newborns for sleeping, review of maternal medications, and assessment of the mother's environment and level of consciousness.[6] Staff attended a required class on newborn falls and began using two

Figure 1. Newborn Falls Reported to PA-PSRS Between July 2004 and December 2013 (N = 272)



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new tools to assess a newborn's risk of falling and perform a postfall debriefing. The staff educated parents on falls at admission, at the beginning of each shift, and as needed and instructed parents to call before and after infant feedings so that bedside rails could be raised or lowered as necessary.

Recording the number and characteristics of "near misses" (falls that nearly happened but didn't), MetroHealth Medical Center in Cleveland, Ohio, discovered that the vast majority of falls occurred overnight. Among other interventions, the frequency of rounding during the night was increased to more than once an hour, and ways of checking on mothers without disturbing them were devised. Education of staff and parents was enhanced, and a quiet time was instituted during the day to help mothers get more rest.[7] In the Women and Children's Program at Providence Health and Services–Oregon in Portland, Helsley and colleagues searched the system's voluntary adverse event reporting system for all newborn falls that occurred over a two-year period. There were nine falls, five of which happened between 2 AM and 8 AM. The researchers devised a number of interventions to help lower the fall rate, including a "safety contract" signed by the parents after they received education on newborn falls, enhanced monitoring of the mother, and separating the infant from the mother if she is sleeping or preparing for sleep or appears sleepy.[2]

MATERNAL CHARACTERISTICS

The initial assessment of the mother may help prevent her newborn from falling. Maternal characteristics that have frequently been present after a newborn fall include a high level of fatigue, cesarean delivery, and pain medication taken within two to four hours.[7,8] A list of factors to be used as part of a risk assessment on admission might include the mother's age, developmental status, and previous experience with newborns. Other factors include mental status, medications and sedation, and level of fatigue.[9]

NEWBORN SAFETY INFORMATION FOR PARENTS

An infant falls task force comprising staff members of the Couplet Care Unit (postpartum unit) was formed at Lancaster General Health's Women and Babies Hospital in Lancaster, Pennsylvania. After researching the literature, the task force developed an information sheet that outlines security and safety risk factors for the parents and their newborns during the hospital stay.[3]

The staff reviews the information sheet with the mother and other family members within the first two

hours of transfer to the Couplet Care Unit, and the mother signs the form to acknowledge the review.

At the mother's eye level on each newborn's bassinet, the unit also posts a "sleep safety crib card" with an ABC mnemonic to remind mothers and families of fall prevention and sleeping safety. It outlines safe sleeping habits for newborns, including sleeping alone (A); placing the infant on her or his back (B); and sleeping in the crib (C), without pillows, loose blankets, or stuffed animals. Other "safe sleep" education includes videos, pamphlets, and single sheets picturing correct placement of the newborn in the crib.

THE POSTFALL 'HUDDLE'

Evaluation by staff after a newborn fall occurs is crucial to identifying ways to prevent falls in the future. Such evaluation has been essential in evaluating adult falls. Providence Health and Services uses an online version of a standardized form created by the system's Providence St. Vincent Medical Center (another hospital in the system) called the Newborn Fall Unusual Occurrence Report Debrief Form Postevent to capture additional details for continued evaluation of factors involved in the event.[2]

Examples of the postfall huddle form, Lancaster General Health's information sheet, the ABC visual reminder, and other tools are available on the authority's Web site at http://bit.ly/1QGsnfM.

ROOMING IN WITHOUT SHARING THE BED

The American Academy of Pediatrics recommends rooming in without sharing the same bed to help prevent suffocation, strangulation, or entrapment that can occur when a newborn is sleeping in an adult bed.[10] The academy also recommends placing a bassinet close to the parent's bed to which the newborn can be returned when the parent is sleepy.

SAFER BED DESIGN

Staff at Providence Health and Services–Oregon evaluated beds used in the maternity suite to determine whether equipment could aid in newborn fall prevention.[2] Research revealed that in other countries, such as the United Kingdom, bassinets are often mounted to the bed frame, keeping the newborns within reach of their mothers,[11] whereas in the United States, bassinets are designed to be separate, independent units.

The team's research on bed manufacturers found no modifications of hospital beds or bed rails that addressed designs to prevent newborn falls, head entrapment, or suffocation. Side rails on hospital beds often have openings large enough for a newborn to fall to the floor when the mother is lying flat or when the head of the bed is elevated by 45°. Staff at the hospital are now working with bed manufacturers to develop safer beds for mothers and babies.[2]

NATIONWIDE CHANGE

By acknowledging that newborns can fall when they're placed in the care of parents who are fatigued, hospitals can take measures to ensure the safety of their youngest patients. Hospitals have experienced improvements by making families aware of such accidents, increasing monitoring by staff, and incorporating education for families and staff into hospital protocols. ▼

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