Fall prevention in our healthiest patients: Assessing risk and preventing injury for moms and babies

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Attention is needed in preventing patient falls in newborns and in obstetric units of hospitals. The majority of prenatal, postpartum, and newborn falls are preventable. Little effort has been made to address fall risk during the prenatal period, during labor, and after delivery in the postpartum period for moms and babies. Risk factors for falls in these populations have been identified, and targeted risk assessments and fall prevention interventions have been developed to eliminate these falls. Evidence demonstrates success in reducing falls with a variety of low-cost but high-return initiatives, comprising prenatal education, patient and family engagement, implementation of unique fall risk assessment tools, postpartum mobility assessments, and changes in patient rounding frequency.

Preventing patient falls is always a hot topic to discuss in healthcare; however, these discussions generally focus on the elderly or confused patient and rarely consider the broader patient population. Falls in the hospital are not isolated to the ill and infirmed, as many suspect. Indeed, each year between 700 000 and 1 million people in the United States fall while in the hospital.[1] That includes our healthiest patients—the ones coming in to give birth and the infants they deliver. They, too, are at risk for a fall that can be a significant harmful adverse event.

Less attention has been paid to falls suffered by women preparing to give birth, women who have delivered a baby, and newborn infants. Most are under the impression that falls involving these patients rarely happen, so why not focus our risk reduction efforts elsewhere? The same could be said for infant abduction, a low-frequency occurrence, but what hospital would ever think of *not* having an infant safety and security plan and testing it over and over? In fact, while not to minimize abduction, according to the National Center for Missing and Exploited Children, there were only 4 documented abductions from healthcare facilities by nonfamily members in the United States in 2012 out of nearly 4 million births, or .01 abductions/10 000 births.[2] When compared to newborn fall rates between 1.6 and 6.6 falls/10 000 births, the argument is more convincing that attention is needed in preventing patient falls in newborns and in obstetric units of hospitals.[3]

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HOW SIGNIFICANT IS THE PROBLEM?

It seems logical that the majority of prenatal, postpartum, and newborn falls are preventable. There is a growing body of literature reporting the frequency of these events, a growing understanding of contributing factors, and more targeted interventions being developed to decrease and eliminate these falls, yet still there is no national benchmark for inpatient obstetric falls.

Taking a step back to the risk of falling during pregnancy, even before entering the hospital, Dunning et al reported that 27% of women fell at least once during their pregnancy, and of those, well over a third fell 2 or more times.[4] This compares to a rate of 25% for a person 70 years or older. Falls are the most common cause of injury during pregnancy, and one of the top reasons for an emergency department visit by this group. Injuries range from minor ones such as sprains and strains, to much more severe injuries including rupture of internal organs, abruption placentae, rupture of the uterus and membranes, and in rare instances, death.[4] Weiss et al noted premature birth or low birth weight to be more likely in infants born to injured pregnant women. Women aged 20–24 had an almost two-fold risk of falling than those over 35 years of age, with the conclusion that younger patients are more active, thus more likely to fall.[5] In considering the physics behind carrying a baby, increases in postural sway are seen during the second and third trimester, affecting a pregnant woman's balance and ability to catch herself when falling. The gestational month reported with the greatest number of falls was found to be in the seventh month of pregnancy, as reported by Dunning, et al.[4]

Opportunities for patient education in fall prevention abound for both physicians and nurses, and include prenatal classes, during prenatal care in physician offices, and through public service announcements. Risk reduction interventions identified by Dunning et al included avoiding slippery floors, holding on to the railing when using stairs, and using caution when carrying children or performing any activity that obstructs their view of the floor or ground.[4] By raising awareness of the potential risk of falling with patients and providing education and risk reduction strategies even before entering the hospital in labor, physicians and nurses have a head start on fall prevention after admission.

Is there a need to worry? For those hospitals with an antepartum unit, the risk increases when the patient is placed on bed rest. On top of changes in balance, patients requiring bed rest during pregnancy can quickly become deconditioned. Studies have reported antepartum side effects of bed rest including loss of muscle strength and muscle atrophy, dizziness, headaches, and more. If these findings were noted during any nonobstetric patient's physical assessment in the hospital, they clearly would be identified as a high risk for falls. The risk of falling for antepartum patients is likely the same or greater and continues after delivery. As reported by Brun et al,[6] during the first week postpartum, women who had been on complete or partial bed rest reported difficulty such as knees buckling, needing support to walk and sit, and difficulty using stairs.

THE BABY HAS ARRIVED! PROBLEM SOLVED?

Both the US Department of Health and Human Services Partnership for Patients (P4P) and the Joint Commission are targeting fall reduction as a major patient safety initiative in a National Patient Safety Goal. As previously mentioned, little effort has been made to address fall risk during labor and after delivery in the postpartum period for both moms and babies, and the common fall risk assessment tools are not always useful when assessing these typically healthy patients. For some P4P participating facilities, the problem grew to a noticeable level such that further evaluation and action needed to be taken. Indeed, one facility had a maternal postpartum fall rate of 16 falls/10 000 births,[7] with another springing into action after experiencing more than 40 falls/10 000 births.[8]

A team at Ronald Reagan UCLA Medical Center, responding to an increase in falls on their unit, undertook a quality improvement project to evaluate current evidence in the literature, leading them to develop the Obstetric Fall Risk Assessment Score (OFRAS™) Tool. The developers sought to identify all the potential fall risk factors that might be encountered during a woman's obstetric hospitalization. The result was the OFRAS™ Tool that stratified risk across 6 categories: Prior History, Cardiovascular, Hemorrhage, Neurologic Function and Anesthesia, Motor/Activity, and Medication. Assessment of the patient within each of these categories results in a risk score and a subsequent designation of low, moderate, or high risk for falls. While some of the risk factors identified are common in general fall risk assessments, such as visual disturbance, hypotension, and history of a fall, other risks are more closely aligned with the obstetric patient, such as preeclampsia, epidural for pain control, postpartum hemorrhage, and sensory deficits related to pushing posture during the second stage of labor.[9]

Certain medication can have a detrimental effect on a postpartum patient's ability to ambulate safely. Medications to manage blood pressure may cause hypotension or dizziness, pain medication may cause sedation or muscle relaxation, and medication for sleep can decrease balance. As reported in a recent study published by Kolla et al from the Mayo Clinic, the use of zolpidem, a sleep aid commonly prescribed and administered to postpartum patients, has been associated with a significantly greater fall rate—almost twice as high as hospital in-patients who did not take this hypnotic agent for sleep.[10]

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Consistently, in study after study, the event most commonly associated with a postpartum fall is a new mother's attempt at ambulating when she is not ready to do so safely. To assess this risk, other leaders in this area have approached the problem by implementing egress testing to evaluate a new mother's ability to safety ambulate. Dionne's Egress Test is a series of 3 tests completed at the patient's bedside prior to transferring them or allowing them to ambulate independently. It evaluates the patient's mobility to go from a sitting position to standing, march in place, and step forward and back. All 3 steps must be completed successfully to ambulate independently. In a study under way at Hartford Hospital (Connecticut), staff has now hard-wired the Egress Test into their patient assessment practices, and have significantly decreased falls to where the only ones occurring have been witnessed by staff with the patient lowered to the floor.[7] A similar strategy has also achieved success at Christiana Care Health (Delaware) that implemented the Egress Test along with more frequent fall risk assessments and alternative nursing interventions, including the use of gait belts to assist patients while ambulating.[8]

A NEWBORN FALL? BUT THEY CAN'T EVEN WALK YET!

Reports in the literature have substantiated that newborn falls or "drops" do occur, and may indeed be more frequent than what has been documented. Parents may be reluctant to report their newborn dropped or rolled to the floor because they are ashamed or are fearful someone may take action against them for neglect and thus do not report the event.[11] What has been seen as the most common scenario is that of a newborn falling out of the arms of a parent who fell asleep while holding them, more commonly occurring in the early morning hours. While some speculate adoption of the Baby Friendly initiative contributes to an increase in newborn drops—due to the fact that the infant is always in the room and the new mother is more sleep deprived—data have not yet been published to substantiate this hypothesis. Nonetheless, because of the more common finding of infants falling out of their parent's arms to the floor in the early morning hours, some hospitals are now increasing the frequency of their rounding during night and early morning hours from hourly to every 30 minutes.

In response to an increase in infant falls or drops, Winthrop University Hospital (New York) instituted a Newborn Safety Partnering Agreement for Parents as an element of their infant fall prevention program.[12] The Agreement, along with the discussion with staff, raises parent awareness of the potential for falls and when and why they are more likely to occur. It includes information about preventing infants falling to the floor, such as placing the infant in a bassinet next to the bed when drowsy, as well as environmental safety and security information. Implementation of the Agreement was found to be most successful when it was initiated before delivery. Since implementation of this Agreement, the unit has been successful in eliminating infant falls.[12] A similar initiative was undertaken at St. Francis Hospital (Connecticut), where in addition to a Safety Pledge signed by the parents, they implemented hourly rounds, infant safety signage, promotion of maternal rest, and parent teaching.[13] They, too, have achieved success in eliminating infant falls through diligence and staff and patient engagement.

While infants falling from a parent's arms seems to be the more common cause of falls, other contributing factors reported include falls from bassinets during transport, for example, when wheels of the cart get caught in the gaps between the elevator and the floor when moving through the hospital; falls from scales when being weighed; falls from swings or bouncy seats; and infants falling out of isolettes. By closely evaluating the events around the falls and other contributing factors, staff can generate fall prevention initiatives that address the primary factors affecting newborn falls on their unit. A number of possible contributing factors were further identified as part of a Maternal-Newborn Case Study at Carondelet St. Joseph's Hospital, which included maternal exhaustion, narcotic or sedative medications, another adult in the room who was also exhausted or unaware of the risk, breastfeeding, the increased emphasis on rooming-in, insufficient education on the dangers of bed sharing, and hospital bed design.[11]

While most of the preceding noted contributing factors have been identified elsewhere, little has been mentioned about bed design and how that may increase the risk of an infant being dropped when a mother falls asleep while breastfeeding. As noted by Helsley et al in their review of actual falls, 5 postfall evaluations determined the mother fell asleep in her bed with a newborn in her arms, with the infant subsequently falling to the floor. Hospital bed design does not support prevention of these falls, with gaps between mattresses and side rails large enough for an infant to slip through. Worse may be when an infant gets caught in this gap, possibly contributing to a skull fracture.[14] Increasing the frequency of rounding on patients by staff, particularly at night, may help prevent these infant falls through diligent observation of the mother's activity and assessing her level of exhaustion.

Equally important is establishing guidelines for evaluating an infant after an in-hospital fall or drop. Injuries are reported to be more significant when the fall is from a distance greater than 4 feet.[15] At a minimum, as noted by Monson et al,[3] a postfall evaluation for a newborn should comprise a physical exam, skull radiographs, and 24 hours of monitoring in the hospital. Helsley et al[14] took this postfall evaluation further, and with their work group of physicians developed a standardized algorithm for evaluation and management of newborns postfall. The workup focuses on a physical exam by a provider, observation for a 12-hour period to include neurologic checks, and a CT of the head when criteria for clinical symptoms are present.

Once a postfall care plan has been established and implemented to ensure the infant is receiving proper care, a newborn fall debrief should be conducted and documented as part of quality improvement efforts. Helsley et al[14] developed a form that captures data unique to newborn falls, such as identifying if other adults were in the room at the time of the fall, whether they were awake, how long the infant had been in bed with the mother before the fall/drop occurred, and how frequently staff had rounded on the couplet. Consistent collection and analysis of this data can help target fall prevention education to parents and staff.

BRINGING IT ALL TOGETHER

There is clear evidence that attention must be paid to eliminating patient falls in the obstetric and newborn patient populations. Research findings by leaders who have recognized the importance of addressing this area of risk have demonstrated success in reducing falls with a variety of low-cost but high-return initiatives, including unique fall risk assessment tools, postpartum mobility assessments, and changes in patient rounding frequency. While not necessarily the highest risk on an organization's list, addressing this critical patient safety concern should be on the minds of all clinicians caring for this healthy, yet still vulnerable patient population.

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