

## Patient Safety Tip of the Week

### January 14, 2020 More on Newborn Falls

In our July 28, 2015 Patient Safety Tip of the Week “[Not All Falls Are the Same](#)” we discussed newborn falls as being distinct from most other falls. Such falls or “drops” have characteristics and risk factors different from most other “falls” and, hence, merit discussion on their own.

Newborn falls are, fortunately, fairly rare. But they may have devastating consequences. We discussed newborn falls and the factors contributing to them in our March 2019 What's New in the Patient Safety World column “[Newborn Falls](#)”. But five recent events have brought newborn falls to our attention again. Two were reports of newborns being dropped during a delivery, one of which resulted in a video that went viral. Two others were safety alerts (one from The Joint Commission and one from the UK NHS). Last was a review article in the Pennsylvania Patient Safety Authority’s new journal “Patient Safety”.

In our July 28, 2015 Patient Safety Tip of the Week “[Not All Falls Are the Same](#)” and our March 2019 What's New in the Patient Safety World column “[Newborn Falls](#)” we highlighted a Pennsylvania Patient Safety Authority review that found a surprising number of newborn injuries related to falls ([Wallace 2014](#)). However, an increase in the number and rate of serious newborn fall events reported to PA-PSRS (Pennsylvania Patient Safety Reporting System) compared with that previous analysis has led to a new column by the PPSA in their new journal “Patient Safety” ([Kukielka 2019](#)). An analysis of reports submitted to the PA-PSRS from January 2014 through December 2018 identified 318 events specifically related to newborn falls plus 14 near-misses in the hospital following birth.

The authors estimated annual rates of newborn falls as ranging from 3.7 to 5.9 falls per 10,000 live births from 2014 to 2018, with an average annual rate of newborn falls of 4.8 falls per 10,000 live births over the five-year study period. Almost 70% occurred within the first 72 hours following birth and 90% within the first 7 days.

56.6% of newborn falls occurred between midnight and 7 a.m. 52.8% of events took place after the caregiver fell asleep. A couple happened when a caregiver lost consciousness following a seizure. Other circumstances included caregiver dropping the newborn while in motion (19.8%), caregiver dropping the newborn while stationary (12.6%), and the newborn falling from another surface, such as a bed or couch (5.7%).

There were 5 cases (1.6%) in which the newborn fall occurred following a precipitous delivery.

The following contributing factors were identified:

- Feeding of the newborn 22.6% (breastfeeding was specifically identified in 62.5% of these)
- Burping 4.4%
- Both feeding and burping 1.6%
- Bedding, sheets, pillows 5.2%
- Equipment 1.3% (eg. caregiver trips over equipment)
- Monitoring or treatment for neonatal abstinence syndrome 2.2%
- Mother's arm falls asleep/goes numb during feeding 1.97%

84.6% of events involved the mother, 10.3% the father, 2.9% another family member (most often a grandparent), and 1.9% a member of the hospital staff (most often a nurse).

Regarding harm to the newborn, 10.4% were classified as Serious Events though, fortunately, none of the events resulted in permanent harm or death. In 63% of those classified as Serious Events, the newborn experienced temporary harm that required treatment or intervention. In the remaining 36.4%, the newborn experienced temporary harm (eg. bumps, bruises, swelling, hematomas, hemorrhages, and fractures) that required initial or prolonged hospitalization.

Just as in the earlier PPSA study ([Wallace 2014](#)), the authors of the current PPSA study focused heavily on feeding and, in particular, **breastfeeding** as important contributing factors. Since many hospitals allow the infants to sleep in-room (in bassinets) with the mothers, the importance of putting the infant back in the bassinet becomes apparent.

The report focuses heavily on the **sleepiness of the parents**, particularly the mothers, noting studies demonstrating maternal sleep deprivation in the peripartum and postpartum periods. One of the most important points made by the authors is “The cluster of events during hours when parents or caregivers would otherwise be sleeping suggests that maternal sleep in the immediate postpartum period should be a focal point in newborn fall prevention strategies.”

Focusing on education for new parents may be an important intervention to prevent newborn falls. The authors give examples from some hospital interventions, such as giving new parents a welcome letter that includes information on newborn safety and safe sleep and discourages co-sleeping.

Parents should be encouraged to give their baby to nursing staff to take to the nursery if they are feeling tired or just need a break. Some also encourage parents to have a break in visiting hours from 2 p.m. to 4 p.m. each day to give them the opportunity to rest.

The earlier PPSA study mentioned hourly rounding as a potential preventive intervention, with nurses intervening when finding a sleepy mother with a newborn in her arms. One of

the hospitals in the more recent PPSA study noted nurses were already rounding every hour on the maternity ward, so they increased this to every 15 minutes as an added precaution when mothers are breastfeeding. Some even use handheld timers to support the nurses in this practice.

Staff training should include education on the American Academy of Pediatrics recommendations for safe sleep practices to prevent sleep-related deaths among infants, and learning how to lock hospital beds in the lowest position to reduce the likelihood of injury if a newborn were to fall from the bed.

The recent PPSA review ([Kukielka 2019](#)) does not comment on the role that maternal medications might have played. But the prior PPSA review ([Wallace 2014](#)) did note their literature review of risk factors noted cesarean birth, pain medication in the last two to four hours, and history of narcotic substance use and/or methadone treatment program as potential risk factors.

The Joint Commission, in a Quick Safety alert “Preventing Newborn Falls and Drops” ([TJC 2018](#)), advocated doing a **risk assessment** to identify newborns most at risk for falls, then educating the parents based on that assessment. The Joint Commission Quick Safety alert also recommends:

- Those at highest risk should be counseled on the risks for newborn falls and drops and the need to call for help when feeling tired or sleepy.
- All parents should be cautioned against falling asleep with their newborn in the bed or co-sleeping with their newborn.
- Rounding hourly by staff so mothers or other caregivers noted to be drowsy can be assisted to place their newborn in a bassinet.
- Promoting maternal rest.
- Developing signage for the patient room or a crib card to reinforce the increased risk of infant falls and the importance of placing the infant in a bassinet when the mother is sleepy or after the mother receives pain medications.
- Developing a standardized reporting and debriefing tool in the event of an infant fall. A standard tool will help capture important data to better understanding risk and environment when the event occurred and the result in consistent post-fall care to the newborn.
- In the event of a fall, providing emotional support to the family or caregiver who may suffer as a second victim in this event.

Note that we have stressed in several prior columns on falls the importance of doing **post-fall assessments** promptly. We’re not just talking about examining the newborn for evidence of physical harm. We are talking about determining factors that likely contributed to the event so that recurrences can be prevented. In prior columns we gave links to some examples of post-fall evaluation tools, such as an excellent [form for post-fall huddles](#) after newborn falls on the PPSA website.

The National Health Service (UK) also in 2019 released a safety alert on assessment and management of babies who are accidentally dropped in hospitals ([NHS 2019a](#)). A search

of their National Reporting and Learning System (NRLS) for a recent 12-month period identified 182 babies who had been accidentally dropped in obstetric/midwifery inpatient settings, 66 babies accidentally dropped on pediatric wards, and two in mother and baby units in mental health trusts. Almost all of these 250 incidents occurred when the baby was in the care of parents or visiting family members. Eight of those dropped in the obstetrical settings had significant reported injuries, including fractured skulls and/or intracranial bleeds,

The NHS found that responses to such incidents were quite variable, so the alert provided a resource to support providers to develop or update a tailored local guide on the initial actions to take when a baby has been accidentally dropped. Guidelines for the latter ([NHS 2019b](#)) include recommendations on:

- Initial stabilization and assessment
- Requirements for urgent (within 1 hour) CT scanning
- Referral for specialist advice if the CT scan is abnormal or any other injuries need treatment
- Ongoing observation and review if there is no indication for CT scanning or scanning does not reveal any injury
- Discharge criteria and information given at discharge

The 2 PPSA reviews, and other studies in our March 2019 What's New in the Patient Safety World column "[Newborn Falls](#)" such as the one from Driscoll et al. ([Driscoll 2019](#)), have emphasized **breastfeeding and rooming-in** as significant risk factors. Of course, we encourage breastfeeding. So, we need to take extra precautions to ensure that breastfeeding is done safely. In addition to the "educational" interventions, we like the ideas for signage and for upping the hourly rounding to every 15-minute rounding when the mother is breastfeeding. But that can be difficult on labor and delivery units, especially when there are several ongoing labors that may require staff be elsewhere during those nocturnal hours when newborns are at greatest risk. **Is this a scenario where technology might help?** Companies are working on smart cameras to detect when a car driver's eyelids are getting heavy. Perhaps that sort of technology could be used to identify mothers (or fathers) at risk of falling asleep while holding their newborns.

We like the idea of a technology intervention since most of the other interventions mentioned above rely heavily on education (of parents and staff). In one of our other January 2020 What's New in the Patient Safety World columns "[ISMP Canada: Change Management to Prevent Recurrences](#)" we again remind everyone that education/training rank lowest on our list of strengths of interventions. However, we also caution against overreliance on technology, since we may become complacent and assume the technology will prevent untoward events at the expense of our other interventions (see our Patient Safety Tips of the Week for August 23, 2016 "[ISMP Canada: Automation Bias and Automation Complacency](#)" and June 11, 2019 "[ISMP's Grissinger on Overreliance on Technology](#)").

And, yes, don't forget dads, too. Fathers are the caregiver with the newborn in about 10% of the newborn falls. While moms have done all the work and are entitled to be fatigued,

dads may get fatigued trying to balance visits to the maternity wing with caring for the other kids at home.

And what about those falls/drops that occur during deliveries? The viral video and the other report of newborns falling or being dropped during deliveries are particularly distressing. In one incident, a newborn was dropped on her head while being handled by staff immediately following delivery ([Westfall 2019](#)). Video of the incident shows three staff members transferring the baby from one set of blankets to another. The newborn is lifted up by one of them, who is still gripping a medical instrument. Then the worker loses control of her. The baby flips, lands on her head on the table and almost falls over the edge. The workers snatch her up, turn her over and wrap her in a blanket. The baby apparently had some sort of cerebral hemorrhage, though the article did not clarify whether that was the result of the drop or due to prematurity.

In the other incident, a newborn died during delivery ([Penza 2019](#)). His mother had reportedly been told to push, but he came out too fast and fell onto the ground. According to the father “My wife was in labor and was just about to have the baby and they asked her to push and she pushed so he would come out. He came out really fast and no-one grabbed him and he fell to the floor. The midwife didn’t have time to catch him and the obstetrician didn’t react.”

Seems to be a rarity. However, the UK NHS alert ([NHS 2019a](#)) also notes that 4% of their incidents occurred during “precipitate” birth and the recent PPSA study ([Kukielka 2019](#)) found 5 events over the 5 year period (1.6% of the total newborn falls) in which the newborn fall occurred following a precipitous delivery. Few details were provided though they note high-risk situations have been identified including delivery, especially when the mother has lost a significant amount of blood. The infant in the case described above ([Westfall 2019](#)) was a twin, though the article does not mention whether she was the first or second delivered (though one of many articles with the viral video said the father was watching delivery of the other twin while he was filming the video). Either way, it suggests some sort of urgency during the delivery. So, we’d probably add **distractions** (such as maternal hemorrhage or multiple births) as risk factors for newborn falls during delivery.

The increase in occurrence of newborn falls as noted by the PPSA and the Joint Commission and UK NHS should raise our awareness of the risks and contributing factors. Particularly if your organization takes care of newborns in any setting, you might consider doing a FMEA (Failure Mode and Effects Analysis) to identify your potential vulnerabilities. And learn from the many valuable lessons in this and our other columns on newborn falls.

**Update:** Regarding a technology solution, the very day we posted the original column we received notice of an iPhone app called “Keep Alert”. It appears to do exactly what we are looking for! You focus the iPhone camera on your face and, if your eyelids droop or close, it sets off an alarm. We tried it on ourselves and it clearly delivered as advertised.

Maybe one of you with a maternity ward can try this out on your moms who are breastfeeding.

**Some of our prior columns related to newborn falls:**

- July 28, 2015 [“Not All Falls Are the Same”](#)
- March 2019 [“Newborn Falls”](#)

**Some of our prior columns related to falls:**

- April 16, 2007 [“Falls With Injury”](#)
- July 17, 2007 [“Falls in Patients on Coumadin or Heparin or Other Anticoagulants”](#)
- January 1, 2008 [“Fall Prevention”](#)
- October 7, 2008 [“Lessons from Falls....from Rehab Medicine”](#)
- November 18, 2008 [“Ticket to Ride: Checklist, Form, or Decision Scorecard?”](#)
- August 4, 2009 [“Faulty Fall Risk Assessments?”](#)
- September 22, 2009 [“Psychotropic Drugs and Falls in the SNF”](#)
- December 22, 2009 [“Falls on Toileting Activities”](#)
- January 2010 [“Falls in the Radiology Suite”](#)
- June 2010 [“Seeing Clearly a Common Sense Intervention”](#)
- May 29, 2012 [“Falls, Fractures, and Fatalities”](#)
- June 5, 2012 [“Minor Head Trauma in the Anticoagulated Patient”](#).
- January 15, 2013 [“Falls on Inpatient Psychiatry”](#)
- March 2013 [“Sedative/Hypnotics and Falls”](#)
- December 3, 2013 [“Reducing Harm from Falls on Inpatient Psychiatry”](#)
- June 2014 [“New Glasses and Fall Risk”](#)
- July 8, 2014 [“Update: Minor Head Trauma in the Anticoagulated Patient”](#)
- August 2014 [“Cataract Surgery and Falls”](#)
- November 4, 2014 [“Progress on Fall Prevention”](#)
- March 2015 [“Another Paradox: Falls Due to Walking Aids”](#)
- June 9, 2015 [“Add This to Your Fall Risk Assessment”](#)
- July 28, 2015 [“Not All Falls Are the Same”](#)
- October 2015 [“Patient Perception of Fall Risk”](#)
- October 27, 2015 [“Sentinel Event Alert on Falls and View from Across the Pond”](#)
- February 16, 2016 [“Fall Prevention Failing?”](#)
- March 14, 2017 [“More on Falls on Inpatient Psychiatry”](#)
- July 2017 [“Mobility vs. Falls”](#)
- February 2018 [“Global Sensory Impairment and Patient Safety”](#)
- February 20, 2018 [“Delirium and Falls”](#)
- March 2019 [“Newborn Falls”](#)

- July 2019

[“Increasing Mortality After Falls in Elderly”](#)

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