A Comprehensive Newborn Falls Strategy: The First Two Years

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Huntsville Hospital for Women & Children

- Community-based, not-for-profit hospital located in Huntsville, Alabama
- 2nd largest hospital in Alabama
- ~ 5000 births per year
Seven infants were dropped by a parent between December 2011 & July 2012

Infant fall defined as:
A fall in which a newborn, infant, or child being held or carried by a healthcare professional, patient, family member, or visitor, falls or slips from that person’s hands, arms, lap, etc. and can occur when a child is being transferred from one person to another. The fall is counted regardless of the surface on which the child lands (e.g. bed, chair, or floor) and regardless of whether or not the fall results in an injury.
Serious injury from infant falls rare but possible

- Newborn infants are especially vulnerable to head injury because of the relative weight of the head
- The younger the child, the more likely they are to sustain a brain injury
- Abdominal injuries are less common but can occur
- Death resulted from infant falls in:
  - UK 2004
  - Rwanda 2013
- A fall of 3 feet increases the risk of brain injury
- Clinical signs & symptoms (bruising, external hematoma, loss of consciousness, vomiting, sleepiness, irritability) are poor indicators of brain injuries in children younger than 2
- Skull fracture & scalp hematoma are the most sensitive indicators of brain injury. However, brain injury can occur without skull fracture
Literature review

- **Intermountain Healthcare** in Utah & Idaho
  - 18 hospitals that deliver babies
  - Studied 14 falls from 88,774 live births over 3 years
  - Falls ranged from 0 - 4/10,000 births

- **Providence Health & Services System**
  - 24 hospitals that deliver babies in 5 states
  - Studied 33 falls from 79,681 live births over 4 years
  - Falls ranged from 1.6 - 4.14/10,000 Live Births

**Estimated 600-1600 Newborn Falls/Year in the U.S.**

In comparison...

- Huntsville Hospital had 7 infant falls/3307 births or 21.167/10,000 from 12/2011 – 07/2012
Common factors in literature

- Parent fell asleep while holding baby, usually in early morning hours
- Some mothers had received sedating medication within 6 hours of fall
- Cesarean delivery
- Adult carrying the newborn fell, tripped, or had a seizure & dropped baby (small number dropped by nurse)
- Mother/partner awake & newborn fell from mother’s bed
- Families were reluctant to report the fall
- Rarely discussed by nurses & providers
Interventions at other hospitals

- Parent education
- Safety letter on admission for parents
- Contract or pledge form
- No co-sleeping policy
- Promote maternal rest
- Fall risk prevention policy
- Fall reports posted
- Removed PRN sedatives from maternal order sets
- Implemented hourly rounding
- Newborn fall debriefing form
Newborn Infant Fall Prevention Committee

- The committee consisted of nurses, administrators, educator from Mother/Baby
- Multidisciplinary effort: neonatologists, pediatricians, anesthesiologists; committees (Safety, Policy, & Procedures and Adult Falls)
- Other hospitals contacted to learn about their experiences with Infant Falls

Objectives
- Develop parent education to prevent infant falls
- Develop staff education
- Write a Policy & Procedure
What has changed to cause these infant falls?

- Narcotic use had not changed in drug, dosage, or frequency
  - Morphine PCA–1/mg/ml w/ 10 min lock-out PRN
  - Oxycodone 5/325
  - Hydrocodone 5/325
- Epidurals/spinals had not changed in drug use, dosage, or timing of redosing
  - Duramorph
  - Anesthetics
- Postpartum beds & side rails had been in use for 2 years
- Visitor Policy had not changed on the Mother/Baby unit
- Intentional rounding had been put into practice December 2011, just days before the first infant fall
  - Hourly during the day
  - Q 2 hours during the night
Common factors in HH Infant Falls

- **Shared factors:**
  - Cesarean delivery
  - Early morning hours
  - Feeding times
  - Narcotic use

- **Factors not related to falls:**
  - Time since delivery
  - Sleeping medication
In most cases, the infant fell off the bed below the raised upper side rail.
<table>
<thead>
<tr>
<th>Fall</th>
<th>Birth</th>
<th>Time lapse Since birth</th>
<th>Time lapse Since meds</th>
<th>PCA/ Medication</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Cesarean</td>
<td>9 hours (1340)</td>
<td></td>
<td>Morphine 1mg/ml, 10 min. Had recently pushed</td>
<td>Breastfeeding, dozed off</td>
</tr>
<tr>
<td>2</td>
<td>Cesarean</td>
<td>20 hours (0410)</td>
<td></td>
<td>Morphine 1mg/ml, 10 min. 16 doses in 12 hrs</td>
<td>Breastfeeding, dozed off</td>
</tr>
<tr>
<td>3</td>
<td>Cesarean</td>
<td>63 hours (0310)</td>
<td>10 min.</td>
<td>Oxycodone</td>
<td>After breastfeeding, dozed off</td>
</tr>
<tr>
<td>4</td>
<td>Cesarean</td>
<td>68.5 hours (0400)</td>
<td>3 hrs.</td>
<td>Hydrocodone 5mg</td>
<td>Bottle feeding, dozed off</td>
</tr>
<tr>
<td>5</td>
<td>Vaginal</td>
<td>62 hours (0624)</td>
<td>&gt;6.5 hrs</td>
<td>Oxycodone</td>
<td>Breastfeeding, dozed off</td>
</tr>
<tr>
<td>6</td>
<td>Cesarean</td>
<td>32 hours (0245)</td>
<td>1.75 hrs</td>
<td>Oxycodone</td>
<td>Baby crying, placed beside her Dozed off</td>
</tr>
<tr>
<td>7</td>
<td>Cesarean</td>
<td>46 hours (0705)</td>
<td></td>
<td>Not applicable</td>
<td>Dad holding infant on chest on couch, dozed off</td>
</tr>
</tbody>
</table>
The bottle feeding mother reported she heard two thumps. She believed this was the baby hitting the bedside table, then the floor.
Height of side rails not sufficient to prevent infants from falling
Raising lower rail during infant feeding might prevent infant falls
Pediatrician response was inconsistent

- 2 babies seen promptly by resident
- Most pediatricians assessed baby on next rounds
- 3 ordered skull X-rays
- 1 ordered clavicle X-rays
- 2 ordered a CT scan

Pediatrician response that we desired

- MD assesses baby promptly or requests Neonatal Consult
- Skull X-ray considered
- Infant observed in Well Baby Nursery for ≥ 4 hours
- Mother to feed/breastfeed baby in WBN during this time
- Head Circumference q 4 hours
- Consult Neonatology if symptomatic
- CT scan only if baby symptomatic or X-ray revealed fracture
CT scans in infants carry serious risk

- Radiation exposure from single CT scan triples risk for leukemia & brain cancer in a young child
- Amount of radiation delivered during one CT scan as much as 10 times higher than a conventional X-ray
- For every 10,000 CT scans performed on children < 10, one case of leukemia & one brain tumor would occur
- The younger the infant, the more sensitive to carcinogenic effects of radiation
- Risk of cancer must be weighed with the benefits for children suffering major head injury

Interventions considered by HH committee but rejected

- Place padding on the floor around the bed - deemed to be a tripping risk
- Additional pillows along sides of bed - deemed to be a suffocation risk
- Adding netting or other cover over side rails
- Securing baby to mother’s chest with wrap or blanket
Parent/caregiver education

- Mirror cling with information on preventing infant falls placed in patient bathrooms
- Infant crib cards revised to include fall prevention information
- Infant identification and safety sheet amended with section on infant falls (in English & Spanish)
- Postpartum Booklet updated with infant falls/drops prevention information
- Sign posted in each patient room
Created mirror cling

Designed a mirror cling for the patient bathrooms

Keep your baby safe

While you and your baby are in the hospital, please remember these important safety tips to keep your baby safe.

- If you are feeling weak, faint or unsteady on your feet, **do not** lift your baby. Press the nurse call button and ask for help.
- Keep your bed in the lowest position (closest to the floor) at all times.
- **Do not sleep with your baby in your bed, sofa or chair** as this may place your baby at risk of serious injury.
- When you want to sleep, first place the baby in the bassinet.
- If we find you asleep with your baby in your arms, we will move your baby to the bassinet.
Redesigned infant crib card

It’s a Boy!

Room _____ Delivery Date _______ Time _______

Last, First Name ____________________________________________

Mother’s Name ______________________________________________

Father/Support ______________________________________________

Weight ____ pounds ____ounces ____grams

Length ____inches Feeding ________________________________

Pediatrician _______________________________________________

Obstetrician _______________________________________________

☐ No pacifier please

Help prevent SIDS
• Always place babies flat on their back in bassinet
• No blankets/rolls
• No pillows
• No heavy or fluffy blankets
• No stuffed animals

Keep your baby safe
• If you are feeling weak, faint or unsteady on your feet, do not lift your baby. Call your nurse.
• Keep your bed in the lowest position (closest to the floor) at all times.
• Do not sleep with your baby in your bed, sofa or chair as this may place your baby at risk of serious injury.
• When you want to sleep, first place the baby in the bassinet.
• If we find you asleep with your baby in your arms, we will move your baby to the bassinet.
• When you are feeding your baby, all four side rails on your bed must be raised. Your nurse will raise the side rails before each feeding and then lower them when you are done.
Revised newborn admission education

Health System

INFANT IDENTIFICATION AND SAFETY INSTRUCTION SHEET

Identification:
DOB: / / Time: Sex: Weight Lbs. oz. grams
Race: / / Length: in. cm
Distinguishing Marks:
Information Completed by: Date: / / Time:

Tag #: Infant Tagged by:

☐ Feeding & Changing
- Please complete the “Dear Family” Sheet.
- Write in the time your baby ate.
- Write in how long he/she was nursed.
- Write in how much formula the baby drank.
- Write in when baby has a wet or dirty diaper.

☐ What to do if baby is choking.
If your baby is choking:
- Call the nurse.
- State: “My baby is choking.”
- Place the baby in a head down position and rub its back.
- If your baby is spitting:
  - Suction the sides of the mouth, then the nose with the bulb syringe.

☐ Safe Sleep Guidelines
- Keep baby wrapped in a light blanket.
- Position the baby on their back in the crib. (On the back is the safest sleep position)
- The baby’s bedding should not have extra blankets, comforters, stuffed animals or other soft items such as pillows.
- Baby’s face is kept uncovered during sleep for easy breathing.
- Baby is not dressed too warmly to prevent overheating.

☐ How can I help with keeping my Baby Safe?
- Do not leave baby alone.
- Do not give your baby to anyone who is not wearing a Huntsville Hospital Health System badge. The badge has a special indicator on it.
- If you are in doubt about anyone in your room, call staff immediately.

☐ How do I protect baby from falling?
- Please keep your bed in the lowest position (closest to the floor) at all times.
- Mother should use call button to alert nurse before feedings to raise all 4 side rails and after feedings to lower side rails.
- Do not sleep with your baby in your bed or on your chest, in a couch or a chair as this may place your baby at risk of falling and or serious injury.
- If you are feeling sleepy, weak or unsteady, DO NOT lift your baby. Call the nurse for help instead.
- Do not walk in the hall with your baby in your arms.
- If you want to go for a walk, put your baby in the crib.
- Keep the crib flat in the wheeled base while pushing the baby in the crib.

☐ I’m Sleepy
- When you want to sleep, first place the baby in the bassinet. If we find you asleep with your baby in your bed or arms, we will move the baby to the bassinet.
- If you are receiving a PCA pain medication, or other sedating medication, we will plan to have the baby in the nursery if you are alone.

☐ We have information for you on care of your baby.
- Please turn to channel #56 on your TV for newborn care instructions. (Channel #57 has the Spanish version of instructions.)
- Please watch the provided newborn care video “Baby’s First Months: What Do We Do Now?” prior to hospital discharge.
- Please review and read our helpful booklets and handouts.
  - Huntsville Hospital booklet
  - “Prenatal and Newborn Care”
  - Alabama Department of public health handouts on metabolic screening testing
  - SIDS: Safe Sleep handout from NICHD

☐ What do we need for going home?
- Please remember to provide your baby with a discharge receiving blanket and outfit.
- Alabama State Law requires an infant be transported in an infant car seat.
Infant fall information added to postpartum booklet

Prevent Falls and Suffocation
- To prevent falls, never leave your baby unattended on raised surfaces such as a changing table or countertop.
- If you are feeling weak, faint or unsteady on your feet, do not lift your baby. Call for help instead.
- Keep your bed in the lowest position (closest to the floor) at all times.
- **Do not sleep with your baby in your bed, couch or chair** as this may place your baby at risk of falling and of serious injury.
- When you want to sleep, first place the baby in the bassinet.
- If we find you asleep with your baby in your bed or your arms, we will move your baby to the bassinet.
- Small objects such as safety pins, small parts of toys, etc. should be kept out of reach of your baby. This includes the toys of older brothers and sisters.
- Keep plastic bags or wrappings out of your baby’s reach.
Rails up
Every time you feed your baby

To help keep your baby safe, please ask your nurse to raise all four rails on your bed before you begin to feed your baby.

When you are finished feeding your baby, please call your nurse to lower the rails for you.

Women Children
Huntsville Hospital
Multidisciplinary effort

- Lactation consultants added information on hormones of breastfeeding in staff education.
- Childbirth Educators/Tour Guides included education about infant falls & side rails during class & tour.
- Photographers & Hearing Screeners instructed to report unsafe behavior to nurse.
- Handouts included in packet given to expectant parents in OB offices.
Education and tools for staff

- Policy and Procedure addressing Infant Falls
- Debriefing form to be used after an Infant Fall
- Newborn Fall Assessment Tool in Electronic Medical Record
- Charting for documenting falls education
- Designated Prevention of Infant Falls as Quality Improvement measure
Infant Falls Policy & Procedure with the following key points

- Infant transports to occur in crib with bassinet lying flat

- If mother on PCA/other sedating medication/seizure precautions, must have additional responsible person there for infant to be left in room

- Safety assessment with all rounds/room entries made by staff members

- Falls education on admission, every shift, when giving pain meds, PRN

- No co-sleeping

- Mother educated not to lift infant if feeling sleepy/unsteady; press call button for assistance

- Mother/family educated not to leave infant unattended on bed/couch
Infant falls policy and procedure

- Educate mother and family of the need for side rail x four for infant safety during feedings.
- Mother should use call button to alert nurse before feedings to raise side rails and after feedings to lower side rails.
Maternal/Newborn Post-Fall Debriefing Form

Mother's Sister

Baby's Sister

Date of Delivery: ____________ Time: ____________ C/S □ Vaginal? □ Epidural □ Spinal □ N/A
Date of Fall: ____________ Time: ____________ Time reported: ____________ To whom: ____________
Mother's Fall Risk Score at time of fall: ____________ Last fall risk assessment: Date: ____________ Time: ____________
Infants Fall Risk Score at time of fall: ____________ Last fall risk assessment: Date: ____________ Time: ____________
Was mother on PCA? Yes □ No □ When had she last received a dose? ____________
What medications had mother taken since delivery?
Medication: ____________ Last dose: ____________ Reported effects: ____________
Medication: ____________ Last dose: ____________ Reported effects: ____________
Medication: ____________ Last dose: ____________ Reported effects: ____________
Mother's mental status: Oriented □ Drowsy □ Difficult to wake □ Other: ____________
Mobility/Activity Level: Up Ad Ub □ Ambulates with assistance □ Restricted: ____________
Assistive Device: Sara Stips □ Cane □ Walker □ Wheelchair □ Other: ____________
Where was baby at time of fall?
Was baby being held? Yes □ No □ By whom: ____________
Was Mother's bed in low position? Yes □ No □ Was mother feeding baby at time of fall? Breast □ Bottle: No □
Was crib free of pillows & thick blankets? Yes □ No □ Was baby's crib flat in holder? Yes □ No □
What did you observe? ____________

How does mother/Significant other describe incident?

Instructions given during last risk before fall:

__________

What did other staff see last rounds before fall:

__________

MD called? Yes □ No □ Date/time: ____________ MD spoken with: ____________
Orders received:

__________

Results:

__________

Nurse reporting: ____________ Date/time: ____________
Nurse's printed name:

Manager/Designee to complete:

Was the fall documented in the patient's medical record? Yes □ No □
Was a QMR completed? Yes □ No □
Were fall criteria rated correctly? Yes □ No □
Unit doors at time of fall: ____________ Staff nurse in: EN □ Lab □ PCA □ NA
Nurse in Charge: ____________

Environments/Equipment:

□ Floor wet □ Lighting Poor □ Needed ____________ out of reach
□ Cluttered area □ N/A

Stryker Bed: □ Bed on □ Bed Alarm on □ Brake Engaged □ Bed in Low Position □ 2-3 Side Falls Up

Printed Name: ____________ Signature: ____________
Fall debriefing form

- Delivery type, date, time
- Date & time of fall
- Fall risk score
- Medications/PCA
- Location/circumstances of baby at time of fall
- Parents’ description of fall
- Most recent staff instructions/observations
- Physician orders
- Other pertinent information
Fall debriefing form

- Form filled out soon after infant fall by educator or charge nurse
- Told parents they were not the first to drop their baby
- Asked for details so staff could identify ways to prevent more infant falls
- Parents appeared relieved to help
Infant fall assessment tool

Assess:

- mother’s ability to stay awake while feeding infant
- mother’s use of Patient Controlled Analgesia or other medications that sedate
- environment for features that might encourage infant falls
- language barriers
Teach Infant Falls Prevention Safety

- Mom needs to be aware and alert when holding baby without support person in room
- Mom's bed to be in a low position
- Safety Provisions reviewed per ID/Safety Sheet
- Head of Crib to be flat when moving the cart
- Put baby in cart if walking.
- Educated about thick blankets/pillows, stuffed animals in crib.
- Mom's support person may raise/lower the side rails on the bed once they have been instructed on the operation of the bed by a staff member and feel comfortable taking the responsibility to perform this safety measure.
- Other

Fall Risk Newborn Score

<30 = Infant Fall Management Protocol Not Indicated
30-45 = Infant may be left in Mother's Room with an Alert, Awake Support Person At the Bedside
50-135 = Nurse Will Remain at the Bedside or the Infant Will be Removed via Crib to the Nursery

Newborn Falls Prevention Nursing Actions

- Mother Alone and follows directions for Falls Prevention of Newborn
- Support Person Assisting Mother and Agreed not to leave mother alone with baby.
- Nursing staff remaining at bedside to assist mother with newborn feeding and care.
- Baby to Nursery in Crib

Who was taught & Evaluation of Teaching

- Taught to Mother
- Taught to Father
- Taught to Caretaker
- Taught to Other, comment
- Received Information and Verbalizes Understanding
- Return Demonstration
- Reinforcement Needed
- Needs Assistance
- Performs Alone
- Declined Instruction
- Other

Newborn Falls Prevention Comments
Low fall risk

- Mother alert or easily aroused or
- Mother drowsy but has alert support person
- Bed low with upper rails raised
- Crib lying flat in bassinet
- Crib free of pillows and thick blankets
- Mother may keep baby in room with no support person
Moderate fall risk

- Mother drowsy without alert support person or
- Mother difficult to arouse with alert support person in room
- Mother taking sedating medications or PCA with no other risk factors
- Baby may remain in room with alert support person at bedside
High fall risk

- Mother difficult to arouse with no alert support person in room
- Mother’s bed in high position
- Pillows, fluffy blanket in crib
- Environmental hazards observed after repeated teaching

- Nursing staff must remain at bedside during infant feeding or take infant to nursery
Staff education

- Classes with PowerPoint presentation July 2012

- All staff required to attend

- Ample time allowed for staff questions
Designated as Quality Improvement

**ACT**
- Continue newborn falls protocol
- Re-assess employee use
  - Make changes as needed
  - Pilot Postpartum bed

**PLAN**
- Form committee
- Identify common factors in falls
- Review literature
- Contact other hospitals

**CHECK**
- Evaluate future falls
- Employee Survey

**DO**
- Develop education for staff and patients
- Policy & Procedure
- Newborn Fall Assessment Tool
- Charting
- Use of 4 side rails
Staff survey

- Round 1: 6 months post-implementation
- Round 2: One year after 1st survey
- Basic information: shift, position
- Use of newborn falls protocol
  - Class attendance
  - Familiarity with policy
  - Use of Newborn Falls Assessment Tool
  - Use of side rails
  - Rounding
Survey results

- Round 1: 101 staff members took survey
  - 85 RNs, 4 LPNs, 12 Patient Care Assistants
- Round 2: 77 staff members
  - 57 RNs, 5 LPNs, 15 Patient Care Assistants
- 100% of staff attended Newborn Falls class (Round 1)
- 99% of staff had read Newborn Falls policy (Round 2)
- RNs who report using Newborn Falls Assessment at least once per shift:
  - Round 1 – 89%
  - Round 2 – 95%
Use of newborn falls protocol

- Falls precautions - First Instructions
  - Every patient, every shift

- Falls precautions - Every patient, every shift
  - Tell patients to call to raise/lower side rails for feedings

- Patients call for side rails help each feeding

- See colleagues using side rails policy

- Take baby to nursery if patient on PCA, alone

- Round on patients at least every two hours

1 = Never  7 = Always
Are we still having babies fall?

- We’ve had a few incidents – but no pattern to them.
- One father fell asleep in the bed. He rolled off and took the baby with him. He said baby did not hit the floor.
- One mother was wide awake in the chair. She had a sudden pain and dropped the baby, who rolled down her legs to the floor.
- Mother fell asleep in bed following breastfeeding. All four bedrails were raised. Baby fell from her arms and rolled up against the bed rail.
Next Steps

- Explore options for postpartum beds
New bed designed specifically for postpartum patients

- Huntsville Hospital is presently piloting
- Designed specifically to prevent infant falls
- Lower height - 10” from floor
New bed designed specifically for postpartum patients

- Taller side rails
- Mother can raise and lower bottom side rail
- Rails may be customized with no openings and smaller space between rails
Next Steps

• Reconsideration of some aspects of falls protocol as our unit moves toward a procedural nursery

• Continued assessment of any falls events, with amendments to protocol/tools as needed

• Collaboration with Joint Commission to create Best Practice on newborn falls
Rails up
Every time you feed your baby

To help keep your baby safe, please ask your nurse to raise all four rails on your bed before you begin to feed your baby.

When you are finished feeding your baby, please call your nurse to lower the rails for you.