PEDIATRIC NEWBORN MEDICINE CLINICAL PRACTICE GUIDELINES

Management of a Neonatal Fall During Initial Hospitalization

Clinical Guideline Name	Management of a Neonatal Fall During Initial Hospitalization
Implementation Date	June 21, 2016
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Contact Person	Medical Director, NICU
Approved By	Pediatric Newborn Medicine Clinical Practice Council 5/12/16_ CWN PPG 5/11/16_____ BWH SPP Steering _5/18/16____ Nurse Executive Board/CNO__5/23/16____

This is a clinical practice guideline. While the guideline is useful in approaching care of the infant who has experienced a fall while hospitalized, clinical judgment and / or new evidence may favor an alternative plan of care, the rationale for which should be documented in the medical record. These guidelines are based on consensus and resources currently available at Brigham and Women's Hospital.

I. Purpose

To standardize the process of evaluation and management of neonates who experience a fall or drop to the ground during initial hospitalization after birth.

II. All CPGs rely on the NICU Nursing Standards of Care. All relevant nursing PPGs are listed below.

WNH R.4 Newborn Rapid Response Situations and Infant Codes

WNH R.1 Resuscitation of an Infant

WNH T.4 Infant Transport

WNH S.5 Identification and Referrals of Patients and/or Families to Social work

WNH I.1 Infant Identification

III. Background

The Joint Commission Sentinel Alert Event (2015), reports that every year in the United States, hundreds of thousands of patients fall in hospitals, with 30-50 percent resulting in injury. These patients require additional treatment and sometimes prolonged hospital stays. In-hospital falls are a major health hazard which prevention has been a major goal for The Joint Commission. In-hospital newborn falls are defined as a newborn falling onto the hospital floor accidentally. These falls are typically under-researched and under-reported. The incidence of newborn falls in the United States can reach 600 to 1,600 per year. These falls result in significant injury or even death of the newborn, legal issues for the institution, and severe emotional stress to the parents and caregivers.

IV. Procedure

Upon the discovery of an infant fall:

1. Transfer the infant to the nursery radiant warmer, and place pulse oximetry on the baby to initiate monitoring
2. Initiate a Neonatal Rapid Response (RR). Infant will be evaluated by NICU RR team.
3. The RR Team, in collaboration with the nursery nurse, will discuss the fall with the parent(s) to gather as much information as possible (see Appendix –I).
4. Prior to transfer to the NICU, the NICU MD who responded to the RR will update the parents on the plan of care and admission to the NICU unless emergent care of the infant is needed.
5. The baby will require a NICU admission for observation for minimum of 24 hours under continuous cardiovascular monitoring.
6. Upon arrival to the NICU, the NICU attending will be paged to complete a neurological assessment with the RR Team.
7. A safety report will be completed by the RN assigned to the parents.
8. The social worker will be consulted for family support.

V. Clinical Assessment and Management

1. Complete History and Physical Examination

2. RR Resident to complete Intake for Newborn Fall (Appendix –I)

3. Complete Neurological Examination Encephalopathy form (Appendix- II)

- Neurological check (by NICU Attending or Fellow) on admission, every 1 hour for 6 hours then every 3 hours for a minimum of 24 hours.

4. Feeding/ IV Hydration

- PO feeding will be allowed if normal neurological examination and vital signs.
- If any alteration in vital signs or neurological exam, IV will be inserted and maintenance IV fluids will be started.
- Central lines will be attempted in critically ill infants.

5. Blood work:

- HCT and type/screen on admission and repeat HCT in 24 hours.
- Other labs as clinically indicated including blood glucose measurement.

6. Imaging:

- In case of significantly abnormal physical findings, STAT CT scan at Boston Children's Hospital (BCH) and STAT neurosurgical consultation will be obtained.
- In less severe cases, MRI will be attempted in lieu of CT scan to avoid radiation exposure. MRI is to be completed within 24 hours at BWH or BCH according to availability.
- Other skeletal X-rays and a head ultrasound can be considered in a case-by-case after discussion with consulting services.

7. Consultations:

- Neurosurgery Service from BCH will be consulted on any infant with a documented fall
- Consider other consulting services for example:
  Ophthalmology consultation for retinal exam if concern for non-accidental trauma
  Neurology consultation for non-traumatic MRI findings, etc.

References:

1. Preventing falls and fall-related injuries in health care facilities. Sentinel Event Alert, 2015(55): p. 1-5.
2. Helsley, L., J.V. McDonald, and V.T. Stewart, Addressing in-hospital "falls" of newborn infants. Jt Comm J Qual Patient Saf, 2010. **36**(7): p. 327-33.
3. Monson, S.A., et al., In-hospital falls of newborn infants: data from a multihospital health care system. Pediatrics, 2008. **122**(2): p. e277-80.
4. Matteson, T., A. Henderson-Williams, and J. Nelson, Preventing in-hospital newborn falls: a literature review. MCN Am J Matern Child Nurs, 2013. **38**(6): p. 359-66; quiz 367-8.
5. Greenes, D.S. and S.A. Schutzman, Infants with isolated skull fracture: what are their clinical characteristics, and do they require hospitalization? Ann Emerg Med, 1997. **30**(3): p. 253-9.
6. Cohen, A.R., et al., Feasibility of "rapid" magnetic resonance imaging in pediatric acute head injury. Am J Emerg Med, 2015. **33**(7): p. 887-90.
7. Roguski, M., et al., Magnetic resonance imaging as an alternative to computed tomography in select patients with traumatic brain injury: a retrospective comparison. J Neurosurg Pediatr, 2015. **15**(5): p. 529-34.

Intake for Newborn Fall

Date of event

Time of event:

Age (in hours):

Location of event:

Time event was reported to staff:

Who was involved in the newborn fall:

☐ Mother ☐ Staff ☐ Father/family/visitor

Type of newborn fall:

☐ From maternal hospital bed ☐ Ambulation

☐ Person in chair fell asleep and newborn fell to floor ☐ Fall from isolette/warmer

☐ Others:

Type of Delivery:

☐ Vaginal ☐ C-section

Maternal medications at time of fall:

☐ Narcotics ☐ Epidural ☐ Magnesium

☐ None ☐ Others:

Time medications last administered prior to newborn fall:

Documented maternal history of substance abuse:	☐ Yes	☐ No
Other adults in the room at time of fall?	☐ Yes	☐ No
Other adults awake?	☐ Yes	☐ No

Identification that newborn had fallen:

☐ Mother awake or woke up when newborn fall

☐ Nursing staff came to room and discovered that the newborn had fallen

☐ Others:

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Immediate parental report to nursing staff:	Yes	No
Newborn injuries identified:	Yes	No

Describe:

Estimated distance newborn fell:	feet	inches
NICU Rapid Response called:	Yes	No

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Appendix-II

Neonatal Encephalopathy Examination Scoring Sheet

1- Observe spontaneous activity	0 2 3	Normal Decreased= decreased frequency or amplitude of spontaneous facial and extremity movements Absent
2- Observe for Heart rate	0 1 2 3	0 Normal Tachycardia = resting HR 160-180. Only occasionally decreased to 120 Bradycardia= resting HR 80-90. Only occasionally increases to 120 Variable= resting HR varies considerably without a consistent baseline
3- Observe for respiration	0 2 3	Normal Periodic Breathing= 3 or more respiratory pauses ≥ 3 sec separated by normal breathing and < 20 sec. Often associated with shallow breathing Apnea= no breathing for ≥ 20 sec or < 20sec with HR changes or O2 desaturation
4- Observe for posture	0 1 2 3	Normal Mild Distal Flexion = **Mild** Fingers, toes in strong flexion, incomplete extension of fingers when stroked on dorsal surfaces. Thumbs flexed, adducted, opposed across palms "cortical thumb" Strong Distal Flexion= **Strong** Decerebrate= Head, neck and back are arched in extension (opithotonus), elbows are extended, wrists are pronated and hips are abducted.
5- Observe for level of consciousness		**<u>Use Auditory stimulation, Visual stimulation and Tactile stimulation to assess level of consciousness</u>**
	0	Normal
	1	Hyperalert — Full wakefulness with eyes open/ staring but decreased frequency of blinking/ tracking. Spontaneous motor activity normal or decreased with lowered threshold to all stimulus types Irritable — lowered threshold with excessive responses to all stimulus types. Can be seen with varied states including hyperalert, lethargy or obtundations
	2	Lethargic — Slightly delayed but complete response to stimuli with slightly increased threshold for eliciting responses and decreased spontaneous activity Obtunded — Delayed and incomplete response with marked increased threshold to all sensory stimuli and little or no motor activity.
	3	Stupor — No spontaneous eye opening to tactile stimulation elicits poorly sustained eye opening. Responds only to strong noxious stimuli. Absent gag and cornel reflex Coma — No eye opening with vigorous tactile stimulation
6- Tone Assessment	0 2 3	Normal Hypotonic= Focal or generalized decreased resistance to passive movement. Associated with greater extension of extremities than normal Flaccid= " Flat on the mat" appearance. Maybe associated with frog-leg posturing with arm and hips/legs lying in abduction

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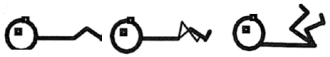
		A- Arm Recoil: Quickly extend (straighten) both arms; put next to body. Count to two. Let go. Repeat 3 times. **Normal:** Arms flexes and remains flexed  **Hypotonia:**  **B- Leg Recoil: Take both ankles, bend hips+ knee. Quickly extend when infant not pushing. Let go. Repeat 3 times.** **Normal:** Complete Fast Flexion  **Hypotonia:**  C- **Vertical Suspension: Hold baby upright by placing hands under axillae** **Normal:** No Slip through **Hypotonia:** Slip Through D- **Head Lag: Pull baby to sit by the wrists and support head slightly.** **Normal:** Lifts head in line with body  **Hypotonia:**  **E- Ventral Suspension: Hold baby horizontal under the belly. Look at posture of back, arms, legs and head.** **Normal:** Back straight, head in line with body, limb flexed  **Hypotonia:** 
7- Reflexes		**a- Sucking reflex**
	0	Normal
	1	Weak
	2	Weak/Incoordinated
	3	Absent
		b- Moro Reflex
	0	Normal
	1	Exaggerated
	2	Weak/Incomplete
	3	Absent
		c- Light Reflex
	0	Normal
	1	Dilated
	2	Constricted
	3	Unequal/ Fixed dilated
Total NE Score		

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