



**PEDIATRIC NEWBORN  
MEDICINE CLINICAL  
PRACTICE GUIDELINES**

**INFANT CAR SEAT/CAR  
BED CHALLENGE**





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**Clinical Practice Guideline:**

**Points of emphasis/Primary changes in practice:**

1. All infants meeting outlined criteria must be challenged for safety to travel in a car seat or car bed.
2. Providers may order testing on babies for other criteria not specified in this CPG and should record their rationale in the EHR.

**Rationale for change:** Car Seat and Car Bed Challenge procedures have previously been documented as a Nursing PPG. Given that multiple disciplines participate in counseling, testing, and documenting these procedures, we are now providing a multidisciplinary CPG.



<b>Clinical Guideline Name</b>	Clinical Practice Guideline
<b>Effective Date</b>	
<b>Approved By</b>	Department of Pediatric Newborn Medicine Clinical Practice Council; Revision <u>12/2020</u> CWN PPG <u>10/10/18</u> BWH SPP Steering <u>10/17/18</u> Nurse Executive Board/CNO _____

**I. Purpose**

To provide policies, guidelines/information, and procedures for infant car seat/car bed challenge.

**II.** All CPGs will rely on the [NICU Nursing Standards of Care](#). All relevant nursing PPGs are listed below.

- [WNH Standard Policy Statements](#)
- [WNH H.1 CWN Hand-Off Communication](#)
- [WNH T.4 Infant Transport](#)
- [NICU/SCN M.2 Monitoring](#)
- [WNH I.1 Infant Identification](#)
- [WNH R.4 Newborn Rapid Response and Infant Codes](#)

**III. Scope**

**Who to Challenge**

All Infants:

1. <37 weeks gestation at birth
2. Birth weight <2500 grams
3. Per Licensed Independent Provider (LIP) order, depending on clinical indications.

**IV. Guidelines**

**Where and How to Challenge**

All Infants:

1. The car seat must be assembled by parent(s) prior to challenge.
2. Infants must be challenged in the car seat brand intended for use at discharge.



3. The car seat base will be used for challenging, when readily available.
  - The parent(s) will NOT be asked to remove a professionally installed base.
4. **The car seat used for challenging MUST be approved for infant's weight according to package instructions. For example, if a baby weighs 4 lbs 1 oz, the car seat must be approved for infants <5 lbs.**
  - **Infants in Well Baby Nursery** will use birth weight as the weight for car seat/car bed challenge, as any weight changes from birth weight in this population are transitory.
  - **Infants in the NICU** will use current weight as weight for car seat/car bed challenge. Birth weight is used for car seat/car bed challenge when current weight is less than birth weight.
  - Document car seat/car bed manufacturer information and seat measurements/safety features in appropriate flowsheet in electronic health record (EHR)
5. **Car seat/car bed challenge will be done for a minimum of 90 minutes or the length of the car ride home (up to 2 hours maximum) if the ride home is longer than 90 minutes.**
6. Infant must be continuously monitored on a cardio respiratory AND an oxygen saturation (O<sub>2</sub> sat) monitor with documentation q15 minutes and with any cardio respiratory event.
7. A rapid response should be called for any concern regarding the baby's clinical status while performing the test in the Well Baby Nursery.

#### NICU Infants:

1. The infant will not be challenged sooner than 1-2 days prior to the infant's anticipated discharge.
2. The RN assigned to an eligible NICU infant will perform the car seat/car bed challenge.

#### Well Baby Nursery (WBN) Infants

1. Infant must be brought in a bassinet to testing area (i.e. not strapped in the car seat) with appropriately sized car seat adjusted for infant.
2. Car seat challenge should be performed as soon as practically possible after the infant is 24 hours old.



Failed car seat challenges:

a. **Babies weighing  $\geq$  5 lbs**

If the baby fails the car seat challenge, (s)he should be removed immediately from the car seat and placed on a warming table or in the bassinet with all monitoring devices still in place. If there are ongoing abnormalities after being removed from the car seat or if repeated desaturations are noted while baby is on pulse oximetry awaiting transfer, a Rapid Response should be activated. If vital signs return to normal after being removed from the car seat, the infant may remain on only a pulse oximeter while awaiting transfer to NICU for recovery monitoring and the car bed challenge. Transfer to NICU should occur within 30 minutes. Baby will be given a 2 hour period of recovery after the failed car seat challenge, remaining monitored in the bassinet or on a warming table and including a monitored feeding. If vital signs are stable, the car bed challenge will then be conducted.

b. **Babies weighing  $<$  5 lbs**

**As of November 2020, the  $<$ 5lb carbed is now available again and infants who fail their carseat test should be tested in the  $<$ 5lb carbed prior to discharge.**

Please note: IF there is NO car bed available for purchase approved for use with infants under 5 pounds, those infants who fail their car seat challenge must remain hospitalized until either; a. they reach a weight of 5 pounds; or b. they pass a re-attempt of the car seat challenge.

If the baby fails the car seat challenge, (s)he should be removed immediately from the car seat and placed on a warming table or in the bassinet with all monitoring devices still in place. If there are ongoing abnormalities after being removed from the car seat or if repeated desaturations are noted while baby is on pulse oximetry awaiting transfer, a Rapid Response should be activated. If vital signs return to normal after being removed from the car seat, the infant may remain on only a pulse oximeter while awaiting transfer to NICU for safety monitoring. Transfer to NICU should occur within 30 minutes. Baby will be given a 2 hour period of safety monitoring after the failed car seat challenge, including a monitored feeding. If vital signs are stable, the baby will return to the mother-baby unit for ongoing care and a repeat car seat challenge will be conducted in 48 hours in the NICU triage area. If there are abnormalities on



monitoring, the infant will be admitted to the NICU for ongoing care.

#### Car Bed Challenge for All Infants

1. If infant passes the car bed challenge, they will be discharged home in the car bed. Infants who must use a car bed for travel should not use other upright equipment (e.g. infant swings, slings, infant carriers), until approved by their PCP.
2. Car beds(>5lbs only) are available for purchase at the BWH gift shop. Both sizes (<5 lbs and >5 lb) are available through M&M Medical Supply. The NICU or postpartum NIC can be contacted to dispense a car bed provided by M&M Medical Supply(available in the nurse director's offices). Parents should then call 1-877-966-6337 to provide payment information.
3. Just as with a carseat, parents should review the instruction manual provided with the carbed on correct use and installation to their vehicle.
4. Infants who fail a car bed challenge will be admitted to the NICU for a period of observation and evaluation
5. Information on transitioning from a car bed to a car seat once the infant's cardiorespiratory system matures is not well established. Parent(s) should be instructed to talk with their PCP prior to changing from car bed to a car seat. Families can also be referred to the Car Seat Re-challenge Clinic at the Center for Healthy Infant Lung Development, Boston Children's Hospital. Phone: 617-355-1900.

#### Provider Documentation

Once a car seat or car bed challenge has been completed, the RN will notify the LIP caring for the baby of the result. The LIP will enter a note in the EHR with his/her interpretation of the car seat/bed challenge. The note should reflect that the car seat/bed challenge included continual nursing observation and continuous recording of pulse oximetry and monitoring of heart rate and respiratory rate and interpreted the findings. Epic Smart Phrases (.NBCARSEATCHARGE, .NBCARBEDCHARGE, and .CARSEATBWH for NICU patients) are available to assist with this documentation.

#### Re-challenging for All Infants

If an infant has previously passed a car seat/car bed challenge and then has a change in their clinical condition that requires further hospitalization (e.g. new onset of



apnea/bradycardia), they must be re-challenged in a car seat or car bed based on clinical judgment of the care team prior to discharge.

#### Parent Education

1. The RN caring for an infant who is being car seat/car bed challenged will review with the parents(s):
  - Seat adjustment with parents.
  - Safe Ride News Publications.
  - Any props necessary for infant, e.g. side roll, etc.
2. For car rides home that are > two hours in length, parent(s) will be advised to stop every two hours and remove infant from car seat/car bed for 10-15 minutes.
3. Infants who must use a car bed for travel should not use other upright equipment (e.g. infant swings, slings, infant carriers), until approved by their PCP.

#### Family Resources:

- Car Seat Re-challenge Clinic Center for Healthy Infant Lung Development, Boston Children's Hospital. Phone: 617-355-1900
- Safe Ride News Publication (current) "Car Safety for Tiny Babies and Low Birth Weight Babies Need Special Care"
- Safe Ride News Publication (current), "Installing Your Child's Car Seat Tightly -Latch, Tethers, and Seat Belts Explained"
- Safe Ride News Publication (current) "This is the Way the Baby Rides: Using a Car Seat for your New Baby"

#### PROCEDURE

1. Avoid testing on day of discharge, whenever possible.
2. Equipment:
  - Cardio respiratory monitor
  - Oximeter
  - Infant's own car seat (testing car seat and car bed available in NICU if necessary - if the infant passes the car seat/car bed challenge in that seat, the parent(s) must buy that specific car seat/car bed.



3. Ask parent(s) to bring car seat into hospital at least 1-2 days prior to discharge for NICU babies and as soon as possible after delivery for WBN babies to avoid delay in challenging
  - Ask parent(s) to take car seat out of the box (if brand new), adjust to fit infant, and remove any items not included with car seat by manufacturer.
  - Base should be used with testing if readily available. If no base will be used or it is not readily available, then it is not necessary to test with base
  - Many “head support” systems may decrease the safety by introducing slack into the harness straps
4. Check measurements/safety features of car seat for proper fit. Measure seat for:
  - Less than 5 ½ inches from crotch to back of seat
  - Retainer clip is at level of axilla
  - Safety harness lock
  - **Car seats are required to have an expiration date per manufacturer’s guidelines. Please review each individual car seats expiration date to determine if the seat used for the car seat challenge is within the acceptable range.**
  - Seat partially reclines to 45-degree tilt
  - Shoulder strap is at or below level of shoulders
  - Shoulder strap should be 10 inches or less from the slots to the bottom of the seat
5. Secure infant in the car seat.
6. Check for proper positioning of head and neck. Proper positioning is described in car seat information book and Safe Ride News publications. Document use of blanket rolls (between legs, right side, left side or both sides)
7. Place infant on O2 sat monitor AND cardio respiratory monitor for a minimum of 90 minutes or max of 2 hours.
8. **A “FAILED” car seat/car bed challenge will be SPECIFICALLY defined as any of the following:**
  - a. **O2 sat <90% for ≥10 seconds.**
  - b. **HR<80 lasting ≥10 seconds.**
9. Assess and document HR and oxygen saturation during challenge and interpret result as PASS or FAIL.
10. Document the following:



- a. HR and sat q15 minutes.
- b. Whether the infant passed or failed the car seat/car bed challenge.
- c. Amount of time challenged
- d. Details with specific information for failed challenge

**References:**

1. American Academy of Pediatrics, Safe Ride News Publication (2016). "Car Safety for Tiny Babies and Low Birth Weight Babies Need Special Care."  
<http://saferidenews.com/srndnn/LinkClick.aspx?fileticket=UyIwLlidsjvs%3D&tabid=70>
2. American Academy of Pediatrics, Safe Ride News Publication (2016). Children with Special Health Care Needs and Premies.  
<http://saferidenews.com/srndnn/srndnn/SafetyTopics/ChildrenwithSpecialHealthcareNeedsPremies/tabid/101/Default.aspx>
3. American Academy of Pediatrics, Safe Ride News Publication (2016). "This is the Way the Baby Rides: Using a Car Seat for Your New Baby"
4. Bull, M.J., Engle, W.A., & the Committee on Injury, Violence and Poison Prevention and the Committee on Fetus and Newborn (2009). Safe Transportation of Preterm and Low Birth Weight Infants at Hospital Discharge. *Pediatrics* 123 (5), 1424-1429.
5. Davis, N. L., Zenchenko, Y., Lever, A., & Rhein, L. (2013). Car Seat Safety for Preterm Neonates: Implementation and Testing Parameters of the Infant Car Seat Challenge. *Academic Pediatrics*, 13(3), 272-277.
6. Davis, N. L., Condon, F., & Rhein, L. M. (2013). Epidemiology and Predictors of Failure of the Infant Car Seat Challenge. *Pediatrics*, 131(5), 951-957.