



Safe Transportation of Premature & Small Birth Weight Babies





**Oh, the places we
have come from...**

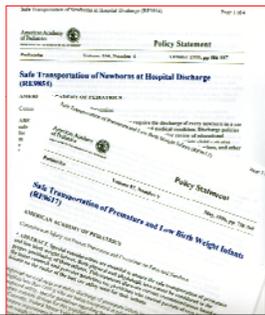


Joint Commission Emphasis

- Major focus on JCAHO visits to the NICU, Pediatric and Family Birthing Center areas.
- Looking for consistency in the car seat functions throughout the facility.



American Academy of Pediatrics Policy Statement



American Academy of Pediatrics Policy Statement

- Safe Transportation of Premature & Low Birth Weight Infants
 - (RE9617) – May 1996
- Safe Transportation of Newborns at Hospital Discharge
 - (RE9854) – October 1999

www.aap.org



American Academy of Pediatrics Policy Statement

- Safe Transportation of Premature & Low Birth Weight Infants at Hospital Discharge
 - Updated July 2009
 - <http://aappolicy.aappublications.org/cgi/reprint/pediatrics;123/5/1424.pdf>



American Academy of Pediatrics Policy Statement

- Safe Transportation of Newborns at Hospital Discharge
 - All hospitals should set policies that require the discharge of every newborn in a car safety seat that is appropriate for the infant's maturity and medical condition. Discharge policies for newborns should include a parent education component, regular review of educational materials and periodic in-service education for responsible staff.



American Academy of Pediatrics Policy Statement

- American Academy of Pediatrics Policy Statement
 - Special considerations are essential to ensure the safe transportation of premature and low birth weight infants. Both physical and physiologic issues must be considered in the proper positioning of these infants.

What gestation is considered "premature"?

- Less than 37 week gestation
- Other medical considerations for testing include:
 - Low birth weight - Those babies with IUGR or SGA status that may not be preterm
 - Neurological problems – hypotonia
 - Babies requiring oxygen
 - Down Syndrome babies
 - Babies with apnea (cessation of breathing longer than 20 seconds) and/or bradycardia (heart rate drops below 90-100 bpm)

Why these important considerations for premies?

- Premies have decreased muscle tone (hypotonia) compared to term infants. This can lead to occlusion of the airway when in an upright position.
- Apnea, bradycardia and desaturations (a decrease in the blood oxygen levels) are common in preterm infants.

How do hospitals meet this standard?

- Car seat technicians on staff/duty?
- Car seat check-up events/fitting stations?
- Promotion of services/resources ahead of delivery and in the NICU?
- Provision of car seats or resources for low birth weight babies?



Policy - Procedure

- Define who will do the angle tolerance testing
- Determine parameters for testing
- Define procedure when infant does not meet the criteria of the ATT
- Define expectations of the staff for car seat education
- Determine institution's position on staff entering the vehicle for installation



Procedure

ALPERT HEALTH SYSTEM
Grand Haven, MI

STANDARD PROCEDURE

Title: **CAR SEAT TRAINING**

Issued by: **WCTC**
 Revised by: **Pauletta**
 Date: **4/21**
 Revision: **1/21**
 Previous: **1/20**
 Page: **1 of 3**

PURPOSE: Promote safe transportation of infants and to minimize the risk of respiratory compromise.

APPLICABLE PERSONNEL: Staff validated as

DEFINITION:
 "Forward-facing" vehicle
 "Approved" child restraint
 "Car seat" - any child restraint
 "Infant head support" - any device (if applicable)
 "Car Seat Pamphlet"
 "Approved" child restraint (approx. 5)
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INCLUSION CRITERIA:
 Criteria: (A) Less than 17 weeks gestational age at birth, or
 (B) Other medical conditions, which place the infant at risk for
 apnea, desaturation and/or hypoxemia as determined
 by physician.

PROCEDURE:

INSTRUCTIONS TO REVIEW WITH PARENTS PRIOR TO TRAIN:

1. Review the most current recommended guidelines. All recommended guidelines regarding child/infant and correct strap dimensions for current fit are as follows:
 - a. For infants less than 7 pounds:
 Shoulder strap slots are recommended to be at or below
 5 1/2 inches to last from crutch strap to seat back.
 - b. For infants 7 pounds or greater:
 Shoulder strap slots are recommended to be at or below baby's
 shoulder level.
 5 1/2 inches or greater from crutch strap to seat back.



Policy - Procedure

- Videotape for the parents to view
- Handouts for the parents
 - Applicable state laws
 - Proper positioning of premature babies
 - Car seat basics
- Angle tolerance testing form
- Disclaimer (release of liability) form
- Recall list

Skills Validation

- Define appropriate staff to be validated
 - Angle Tolerance Testing/Car Bed Use vs. Basic Car Seat Training

- Determine how often validations need to take place

- Determine who will serve as the skills validator

Skills Validation

SKILL COMPETENCY VALIDATION

Name: _____
 CNA Seat, Positioning and Trial: _____
 Date: _____ Dept: _____
 Education Points: _____
 Recommended Completion Time: _____, Maintained By: _____
 Date (Original): _____
 Date (Revised): _____
 Revised/Revised Date: _____

Pre-requisites: 1) Review the video/age entitled "Special Delivery" 2) Review Formulario CNA Seat, Positioning 3) Review spreadsheet entitled "CNA Seat Trial Requirements"

OBJECTIVE - Upon completion the participant will be able to:
 Perform the seat trial per protocol.

SKILL	DATE	VALIDATOR
1. State 8 points to review with parents prior to the seat trial.		
2. State 10/10 age and weight requirements for pediatric beds.		
3. Assemble necessary supplies and equipment.		
4. State 8 preparation steps prior to placing infant in car seat.		
5. State alarm limits.		
6. State location of car seat trial and performed by whom.		
7. State possible complications and steps to address them.		
8. State required documentation for car seat trial.		

CNA Seat Trial:

1. State 3 indications for a car seat trial.
2. Measure dimensions.
3. Demonstrate infant positioning.
4. State position of car seat angle and how to obtain.

Validator Initials: _____ Signature: _____ Title: _____

www.cna.com Health - Education - CNA - Insurance

Procedure For Testing

- Car seat trial vs. angle tolerance testing



Angle Tolerance Testing

- If the baby does not tolerate (do not say “does not pass”) the angle tolerance test, other considerations include:
 - No swings
 - No infant seats
 - No carrier slings
 - No propping up on furniture
 - Careful assurance of airway when holding upright for feedings, etc.

Conducting an ATT (Angle Tolerance Test)

- Necessary supplies
- Length of testing
- When to test
- Seat options
- Procedure for conducting the testing

Necessary Supplies

- Monitors
 - Leads and non-disposable sat probe



Necessary Supplies

- Staff to observe for length of trial
 - Done in the NICU at our institution



Necessary Supplies

- Sample "trial" premie car seats
- Seats available for those that need special seats
 - Available in home supply store
 - Supply resource list for other stores in town that carry the seats

Length of trial

- Should be at least (60) 90-120 minutes or the duration of the ride home.
- Do not exceed 2 hours.

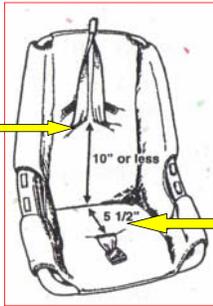


When to conduct testing?

- After baby has eaten and will settle in the seat for 1-2 hours (adjust harness tightness, etc. before eating and place lead wires on baby)
- After baby is "stable" and discharge is anticipated. Don't wait until the last minute!!!
- When there is a staff person to assess and record "events"

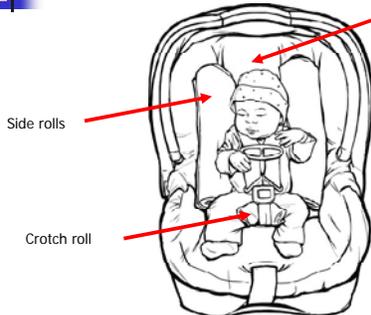
Premature Size Infant Carriers

Shoulder strap height no more than 10" from bottom to strap insertion site



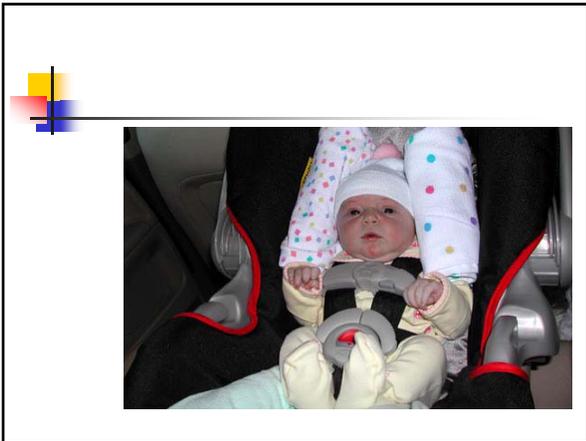
Crotch strap to back of seat no more than 5 1/2"

Placement Of Baby In the Car Seat



Arched roll over the head or the side rolls can be placed in a "candy cane" shape.

Receiving blankets work best for this positioning.



Placement Of Baby In the Car Seat



- Add on items such as fleece liners are especially concerning with premies due to their small size. Discourage their use.
 - Encourage parents to add blankets on top of the baby once in the seat.
 - Warm car up prior to use.
 - Bring seat into the house so it remains warm.

Procedure For Conducting an ATT

- Discuss the testing with the parents.
- Avoid using the terminology "Did Not Pass".
- Relay that premies are and act differently than term babies. Prepare them that not tolerating an upright position would be "normal" and that there are seat options for these instances.

Procedure For Conducting an ATT

- Place baby in seat with proper positioning devices (blanket rolls).
- Monitor HR, respirations and saturations for 90-120 minutes.
 - Low HR at 90-100 bpm
 - Respirations at 20 second apnea
 - Saturations at low of 90%



Procedure For Conducting an ATT

- Monitor baby's status. Reposition baby as needed but don't manipulation the seat to "get them to pass".
- Going home in a car bed should not be thought of as a "bad" thing.
- If baby has an "event", observe to see how baby responds and if interventions are needed.

Procedure For Conducting an ATT

- Just because there are "events" does not necessarily indicate that a car bed would be required.
- Inform the MD of results.
- Consider other medical issues that may have caused the results of the testing.
- Determine plan for discharge and seat style.



Other Considerations

- If the baby is being discharged with other medical equipment (oxygen, pumps or monitors), determine a plan to secure those items as well.
- It is often helpful or recommended to have another adult ride in the back seat with the baby to observe them.
- Even if the baby tolerates the ATT, long distance rides should be limited.



Other Considerations

- Often times, premies are the results of a multiple delivery. If there is more than one newborn, or siblings to transport, this may pose issues with the vehicle and positioning.
- Babies are better protected in a rear-facing infant car seat rather than a car bed so that style would be recommended if the baby can tolerate the upright angle.



Other Considerations

- Remind parents that car seats are for transportation only and babies should NOT be allowed to sleep in their seats when not used for transporting.
- What to do when baby tolerates an infant-style seat but is under 5# (lowest weight limit for many standard seats)??
 - Now what??

Other Considerations

- Rear-facing to 20# AND one year of age minimum rule – How does this pertain to premies?
- Best practice recommendation: Rear-face to upper limits of the seat (30-35#)



Other Considerations

- Retesting to determine when the baby is ready for a traditional infant seat.
 - To do or not to do????
 - When to do??



Other Considerations

- Traditional infant car seat – Baby does not tolerate
- Retest in the car bed???





Other Considerations

- Retesting in the car bed is often times helpful to assure there is not another medical condition leading to the apnea, bradycardia and desats associated with the upright position.
- Apnea and Bradycardia of Prematurity
- G.E. Reflux
- Seizures





Conventional Car Seat Options For Premies





Resources for Car Beds & Conventional Car Seats For Premies

- <http://www.saferidenews.com/SRNDNN/AdvocatesProfessionals/ProductLists/Premie/tabid/145/Default.aspx>
- http://fcs.tamu.edu/safety/passenger_safety/certified-tech/car-seats-for-preemies.pdf
- http://www.carseat.org/Resources/173_spec_needs.pdf

Premie Car Seats: Chicco KeyFit 30 Infant Car Seat



- 4-30# weight limit
- Premie insert used to 11# and provides better support for the small framed baby.
- Price - \$180

Premie Car Seats: Graco SnugRide



- 5-32#
- Several harness height adjustments at shoulder and crotch
- Price - \$160-\$180

Premie Car Seats: Compass 1420 Infant Seat

- 4-22 # weight
- Lower harness height and small crotch strap position
- Cost - \$170



Car Bed Style Seat Options For Premies



Premie Car Seats: Cosco Dream Ride Car Bed

- 5-20# - 3 point harness system
- In the past, it could be used upright
Now it cannot.
- Not LATCH compatible.
- Takes up almost 2 seating positions
- Can be used in front of an airbag
(important consideration with twins).
- Cost: \$90



Dream Ride Considerations



Dream Ride Considerations

- Seat can be used up to 20# as per manufacturer's instructions
- At around 12#, the child will not fit in the seat as well. The feet tend to extend to the end of the seat.
- Older models could be used in the upright position as per the manufacturer's instructions. But



Premie Car Seats: Angel Guard Car Bed



AngelGuard

- 9# or less
- 3 point harness system
- Takes up only 1 seating position
- Cannot be in front of an airbag
- Cost: Around \$100

Car Bed Features

- Infants can be prone, supine or side-lying in these seats if medically indicated.
- Both car beds can be reused as in hospital loaner programs. Harness needs to be changed between use on the Angel Guard seat (\$16 for replacement).
- Needs to be placed with head of baby away from the door (center or passenger seating location) – Can be an issue with twins and/or small vehicles!



Car Bed Features

- Both seats can be used with the lap-only or the lap shoulder style seat belt.
- Some middle seating positions do not have long enough seat belts to accommodate the Angel Guard.
- Both seats can be purchased at a reduced price through hospital distributors.



Placement Of the Seat In the Vehicle: Conventional Seats



- Level of seat is vital to minimize airway obstruction.
- Acceptable level for seats range from 30-45 degree angle. May need a different seat based on acceptable level.
- Encourage parental assistance with placement of the base.



Placement Of the Seat In the Vehicle: Car Beds

- Dream Rides are tough to get less than 1" side to side movement. Recommended to install and then leave in the car. Carry the baby to and from the vehicle.
- Parents need to be aware that the car bed "lifts off the seat" so as to cocoon the baby.

Other Accessories:
Not recommended

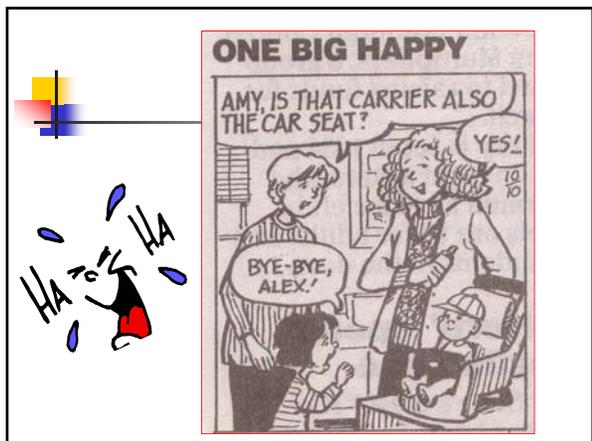


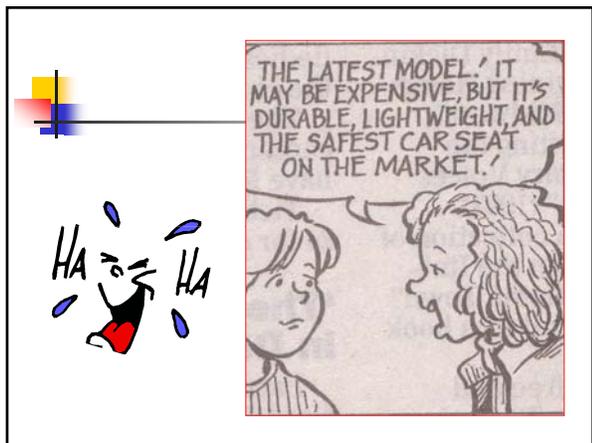
Patient Education Materials &
Resources For Techs and/or Hospital
Staff

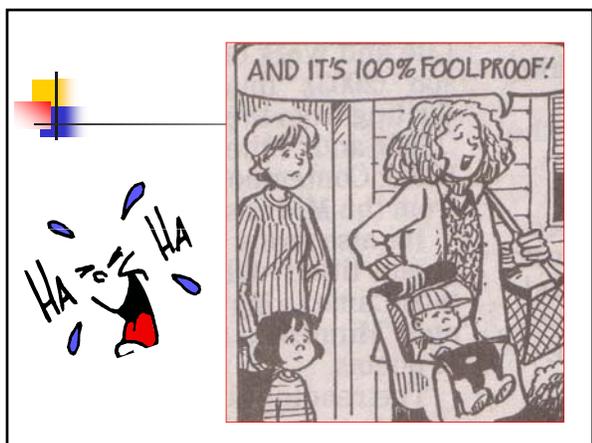
- Videotape – “Special Delivery” Video
- Positioning of Premature Babies Brochure
- Riley Hospital Resources

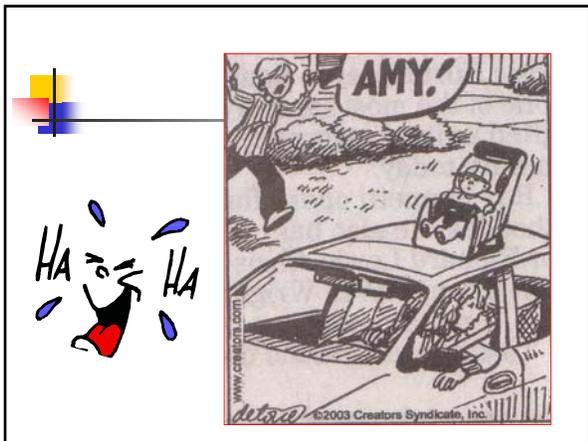












 Questions??



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