



Position Statement

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Child Passenger Safety in the United States

Description

One of the greatest achievements in injury prevention for children has been in child passenger safety, and children are much safer than they used to be.¹ The rate of motor vehicle crash deaths per million children younger than 13 is less than a quarter of what it was in 1975.¹ Nevertheless, motor vehicle crashes (MVCs) are a leading cause of unintentional deaths for children age 13 and younger,² and MVCs still cause one of every four unintentional deaths in children in the U.S.¹ The most effective way to reduce deaths and injuries to children is to use age- and size-appropriate child passenger safety restraints (child safety seats) every time children travel in motor vehicles.³

Child passenger safety has dramatically evolved over the past decade.⁴ Before 1967, when the first child passenger safety restraints designed for crash protection were introduced, child seats were intended to minimize driver distraction by the child and restrict movement, while still allowing the child to be able to look out the window.⁵ In 1971, Federal Motor Vehicle Safety Standard (FMVSS) 213, set by the National Highway Traffic Safety Administration (NHTSA), became effective.^{6,7} FMVSS 213 governs the performance and some of the design criteria for child safety seats for children who weigh up to 65 pounds, and child safety seat manufacturers self-certify that their products meet or exceed those performance criteria.³ FMVSS 213 includes crash worthiness, labeling, instructions, flammability, and buckle and release pressure criteria.³ Compliance labels containing manufacturer, model name, model number, and date of manufacture are also marked on the child passenger safety restraints.³ As a result, modern car safety seats are easier to use and have more rigorous safety features such as seatbelt guides, side impact protection, five-point harnesses with multiple harness and buckle slots, and easy adjustments to secure the child to the car seat. However, proper installation of child passenger safety seats continues to be a problem that impacts safety.

All 50 states and the District of Columbia have child protection laws that require children to travel in approved child safety seats or booster seats.¹ Tennessee enacted the first child restraint law in 1979.⁶ It is the position of the National Safety Council and the Insurance Institute for Highway Safety that all infants and children up to age 16 should be covered by enforceable child safety seat laws or seat belt laws and that enforcement of these laws be primary offenses – i.e., police officers may stop vehicles for suspected violation of a child safety seat law, as opposed to the officer needing to have another reason to make the traffic stop.^{1,7,8}

There are no uniform child passenger safety practices across the country; rather, there is a patchwork system of laws, regulations, and standards that may allow vulnerable travelers to slip through the cracks.⁹ Many children are still left unprotected, especially those in the 5–15 year-old age group, who are not covered by the child safety seat laws in many states.¹ For example, in three states, a 15-year old



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riding in the rear seat of a vehicle does not have to wear a seat belt; another state allows children age nine or older who are less than four feet, nine inches tall to ride unrestrained in the back seat of a vehicle.¹ In the other 46 states and the District of Columbia, all children younger than age 16 are covered by one or both laws.¹

ENA Position

It is the position of the Emergency Nurses Association (ENA) that:

1. The best way to protect children in a motor vehicle is to place the child in an age- and size-appropriate child safety seat using the manufacturer's guidelines.
2. Emergency nurses advocate for national, standardized child passenger safety laws that protect children through age 15.
3. Emergency nurses be provided with child passenger safety education training (basic awareness or certification curriculum) and maintain a basic level of knowledge of best practice recommendations.
4. Emergency nurses promote and participate in public awareness campaigns and educate parents/caregivers in the recommended child passenger safety standards and best practices.
5. Hospital leadership adopt and promote the consensus policy and recommendations for best practices for child safety seats set by the American Academy of Pediatrics (AAP), National Highway Traffic Safety Administration (NHTSA), Centers for Disease Control and Prevention (CDC), National Safety Council (NSC) and the Insurance Institute for Highway Safety (IIHS) as the standard of care for the safe transportation of children from birth through age 15.

Background

When an MVC occurs with an unrestrained child aboard, three different collisions occur in quick succession.^{3,10} The first collision is between the vehicle and object outside the vehicle.¹⁰ In the second collision, the unrestrained child travels forward at the pre-crash speed and the child comes to an abrupt stop against the decelerating vehicle interior.¹⁰ The third collision occurs between the child's internal organs and the bony structures that can cause internal injuries.^{3,10} Child safety seats, booster seats, and seat belts extend the time when the restrained child experiences the forces in a crash and distribute the energy load of the impact.^{3,10}



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Using an age appropriate and correctly-sized child safety seat can help decrease injuries. Developmental considerations such as incomplete vertebral ossification, more horizontally-oriented spinal facet joints, and excessive ligamentous laxity put young children at risk for head and spinal cord injuries.¹¹ The large head and the difference in the anatomy of the cervical spine in young children can lead to stretching and even transection of the spinal cord if a child is involved in a frontal crash.³ A properly installed car seat, attached firmly to the vehicle seat with a well-fitted harness with a chest clip adjusted at armpit level of the child, helps to restrain the child in the car seat.³ In the event of an MVC, the tighter the harness is adjusted to the child (snug without slack), the lower the body's initial deceleration, which decreases potential injuries.^{3,12} Age-appropriate car safety seats, with emphasis on selection, direction, location (preferably in the rear seats of the vehicle), correct installation, and proper harnessing of the child in the child safety seat, dramatically reduce injury in a collision.^{3,10,13}

Researchers from the Children's Hospital of Philadelphia (CHOP) have found that the primary reason injuries are sustained by restrained children in a crash is because they are prematurely turned forward-facing, before graduating to booster seats from harnessed child safety seats, or to seat belts.¹³ It is recommended that infants and toddlers ride rear-facing until they reach the upper weight or height limit allowed by the car seat manufacturer. Some children will outgrow a rear-facing only seat at about one year of age, at which time they can switch to using convertible seats (bigger seats that can be used rear-facing and forward-facing) that are installed rear-facing.¹² Most convertible seats have weight and height limits that permit children to ride rear-facing for two years or more. The next step is for children to be in a harnessed forward-facing car seat – either a convertible or combination seat – until they reach the upper weight or height limit of the seat. At that point they can transition to a booster seat.¹² Combination seats are forward-facing seats that can be made into a belt-positioning booster by removing the harness. With a harness system, most can accommodate children's weight up to 65 pounds (some can accommodate a child up to 90 pounds). Most children four to eight years old are not large enough to fit properly in a vehicle seat and will require a child safety seat or booster seat. A booster seat positions the child so that the lap belt fits across the hips and pelvis and the shoulder belt fits across the middle of the shoulders and chest. Children can transition to the vehicle seat belts only when they can sit with their back against the vehicle seat back and their knees bent at the edge of the vehicle seat without slouching.⁴ The lap belt must fit low across the hips and pelvis, and the shoulder belt must fit across the middle of the shoulder and chest.⁴ This correct fit requires a minimum height of four feet, nine inches.

Every transition from rear-facing to forward-facing to booster seats is associated with some decrease in protection. Rear-facing only child safety seats are engineered to distribute the forces of a crash across the entire head and body of an infant and young child.^{3,4} NHTSA and the American Academy of Pediatrics (AAP) recommend that children remain in rear-facing-only child safety seats or convertible seats as long as possible – that is, until they reach the highest weight or height allowed by the car seat manufacturer.^{4,14} The CDC and IHS have adopted and promoted this recommendation. NHTSA has



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issued an advisory that car seats be replaced following a moderate to severe crash for optimal crash protection for children, and car seats manufacturers have chosen to adopt these recommendations.¹⁵ NHTSA also issues child safety seat recalls. The complete policy statement from the AAP's Committee on Injury, Violence and Poison Prevention provides five evidenced-based recommendations for best practices in the choice of a child passenger restraint system to optimize safety in passenger vehicles for children from birth through adolescence.⁴ If the child has significant healthcare needs or has special transportation needs, the AAP offers complementary AAP policy and other resources for best practice recommendations.¹⁶

Child passenger safety laws are enacted to keep children safe while traveling in passenger vehicles. Ideally, state laws should be enforceable and cover all infants and children in all modes of transportation from birth to age 15.² At age 15 to 16, teen drivers are covered by the graduated licensing law.² Best practice recommendations and state/federal laws provide complementary approaches to educate parents and caregivers to help them make the best decisions to ensure children are restrained on every trip.¹⁷ Caregivers often look to laws for guidance on safe transportation of children, and these state laws have a positive impact on their use.⁸

Many emergency nurses have reported that they have not been provided training or were inadequately trained in child passenger safety seats, and some are unaware of child passenger safety guidelines.¹⁸ It is important that emergency nurses are provided with knowledge, skills, and confidence to provide child passenger safety education. Modifiable training courses are easily available to emergency nurses.¹⁸ One such course is the National Child Passenger Safety Board's Operation Kids: The Next Generation-Child Passenger Safety Basic Awareness Course. This course is developed to create awareness and provide basic knowledge on child passenger safety to those who can benefit from this information, including nurses, emergency medical technicians, paramedics, and police officers.¹⁹

One course that offers certification is the National Child Passenger Safety (CPS) Certification Training Program, which is overseen by several organizations, including NHTSA. The regularly-updated course provides participants with the basic knowledge and technical skills to educate parents and caregivers on how to correctly use and install car seats, booster seats, and seat belts. This course certifies the participants as CPS technicians, making them a valuable resource in their ED and their community.

Each year on the third week of September, National Child Passenger Safety Week is celebrated across the U.S. culminating in a nationally participated event, National Seat Check Saturday.²⁰ The campaign materials and a CPS Week Activities Planner provided by NHTSA have information on how to generate awareness about child passenger safety. The campaign materials may be useful for hospitals and EDs to distribute to patients and their families.

Emergency nurses play a significant role in child passenger safety.¹⁸ Emergency nurses are afforded a unique opportunity, whether routine or precipitated by traumatic events such as an MVC, to prevent future injuries by taking advantage of a teachable moment in the ED.¹⁸ These teachable moments are a

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fitting time to educate parents and caregivers and provide recommendations on how to keep children safe while traveling in motor vehicles.

Resources

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