

Child Passenger Safety: The Basics

National Highway Traffic Safety Administration

- Provides guidelines about car seat types and uses in children from infants through age 12
- Provides instructions and videos on how to install a car seat
- Allows parents to register their car seat(s)
- Provides a list of places where parents can go to get their car seat(s) inspected
- Rates car seats based on how easy they are to use (Figure 1)

Are All Car Seats Safe?

All car seats rated by NHTSA meet Federal Safety Standards and strict crash performance standards. While all rated seats are safe, they do differ in their ease of use in four basic categories:

1. Evaluation of Instructions: Examines the content and clarity of the instructions manual for the child restraint.
2. Vehicle Installation Features: Examines the ease of using features that pertain to installing the child restraint in a vehicle.
3. Evaluation of Labels: Examines the content and clarity of the labeling attached to the child restraint.
4. Securing the Child: Examines the ease of using features that pertain to securing a child correctly in the restraint.

Figure 1. Ease-of-use ratings by the NHTSA depend on four different categories.¹

Current Recommendations (adapted from the NHTSA):

- Depend on a child's age and size
- Children should remain in the highest-level restraint for as long as possible (until they exceed the maximum height or weight limit as stated by the manufacturer)
- Different car seat types include rear-facing and forward-facing car seats, as well as booster seats (see Figure 2 below)

Using the correct car seat or booster seat can be a lifesaver: make sure your child is always buckled in an age- and size-appropriate car seat or booster seat.



REAR-FACING CAR SEAT	FORWARD-FACING CAR SEAT	BOOSTER SEAT	SEAT BELT
<p>Birth up to Age 2* Buckle children in a rear-facing seat until age 2 or when they reach the upper weight or height limit of that seat.</p>	<p>Age 2 up to at least age 5* When children outgrow their rear-facing seat, they should be buckled in a forward-facing car seat until at least age 5 or when they reach the upper weight or height limit of that seat.</p>	<p>Age 5 up until seat belts fit properly* Once children outgrow their forward-facing seat, they should be buckled in a booster seat until seat belts fit properly. The recommended height for proper seat belt fit is 57 inches tall.</p>	<p>Once seat belts fit properly without a booster seat Children no longer need to use a booster seat once seat belts fit them properly. Seat belts fit properly when the lap belt lays across the upper thighs (not the stomach) and the shoulder belt lays across the chest (not the neck).</p>

Keep children ages 12 and under in the back seat. Never place a rear-facing car seat in front of an active air bag.

*Recommended age ranges for each seat type vary to account for differences in child growth and height/weight limits of car seats and booster seats. Use the car seat or booster seat owner's manual to check installation and the seat height/weight limits, and proper seat use.

Child safety seat recommendations: American Academy of Pediatrics. Graphic design: adapted from National Highway Traffic Safety Administration. www.cdc.gov/motorvehiclesafety/cps



Figure 2. Car seat recommendations depend on a child's age and size. (Adapted from the NHTSA)²



Figure 3. Different car seats offered at the UMass Memorial car seat check, as part of the Injury Prevention Program.

Enhanced Child Passenger Safety Law

- Became effective in Massachusetts on July 10, 2008
- Requires that all children riding in passenger motor vehicles be in a federally-approved safety seat that is properly secured until they are 8 years old or >57 inches tall
- Significantly increased the number of children required to ride in a booster seat

Population of Focus

POPULATION: Children Under Age 12

- Unintentional injury was the fifth leading cause of death among all age groups, and it was the leading cause of death in children under age 12
- In infants <1 year old, car seats reduce the risk of death in MVCs by 71%
- In toddlers 1-4 years old, car seats reduce the risk of death in MVCs by 54%
- In children 4-8 years old, child safety seats reduce the risk of death in MVCs by 45%
- In older children 8-12 years old, proper safety restraints reduce the risk of death in MVCs by 50%
- Child restraints were improperly used in 72% of MVCs
- Better technology and increased law enforcement has led to a 60% reduction in child passenger deaths since 1975 (Figure 3)

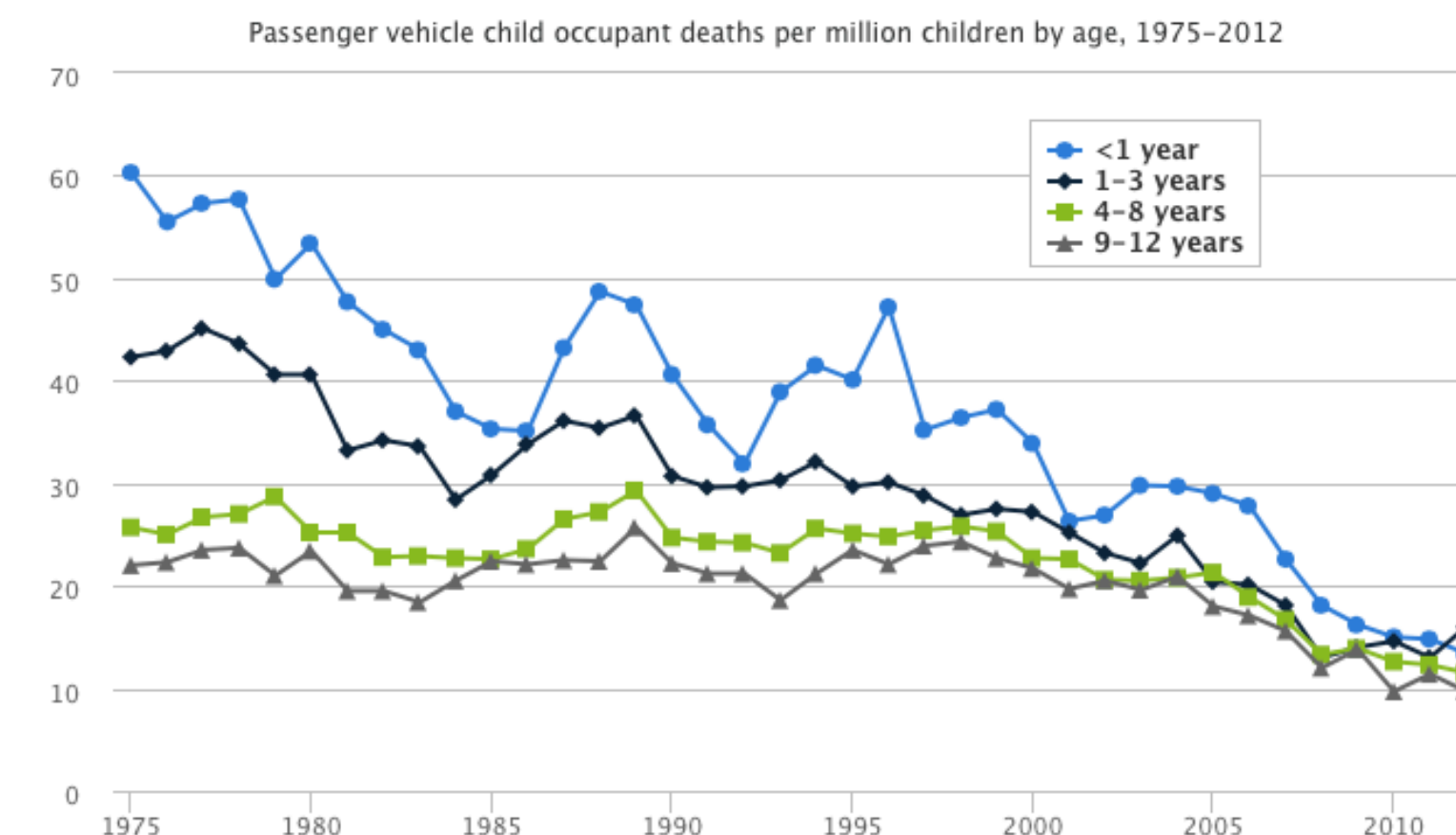


Figure 4. Motor vehicle related deaths among children of all age groups has steadily declined since 1975. (Adapted from IHS)³

Social Determinants

LACK OF KNOWLEDGE

- Children were more likely to be unrestrained if the driver was also unrestrained
- Children in cars and trucks were less likely to be appropriately restrained
- As child age increased, there was a decline in safety seat use

LEGISLATION & LAW ENFORCEMENT

- Children in the Northeast were significantly less likely to be unrestrained than children in any other part of the nation
- The Northeast has stricter child passenger safety laws

RACE & ETHNICITY

- Overall, minority children showed lower proportions of age-appropriate restraints as compared to white children
- Children <3 years old showed lower proportions in rear-facing car seats as compared to white children
- Differences in car seat recommendation adherence may be due to lack of knowledge or due to a lack of accessibility to age-appropriate restraints

Societal Manifestations & Implications

PHYSICAL & MENTAL HEALTH

- Physical: injury and/or disability, these can prevent normal development, may delay a child's return to school
- Mental: PTSD, Acute Stress Disorder, these may impact family dynamics

SOCIETAL COSTS

- MVCs are both common and costly (in 2012, health care and loss of productivity cost \$80 billion)
- Prevention saves money: seatbelt enforcement campaign has estimated savings of \$19,974,000/year and expects to reduce 14 fatalities/year and 1,436 injuries/year

Car Seat Safety: Current Players

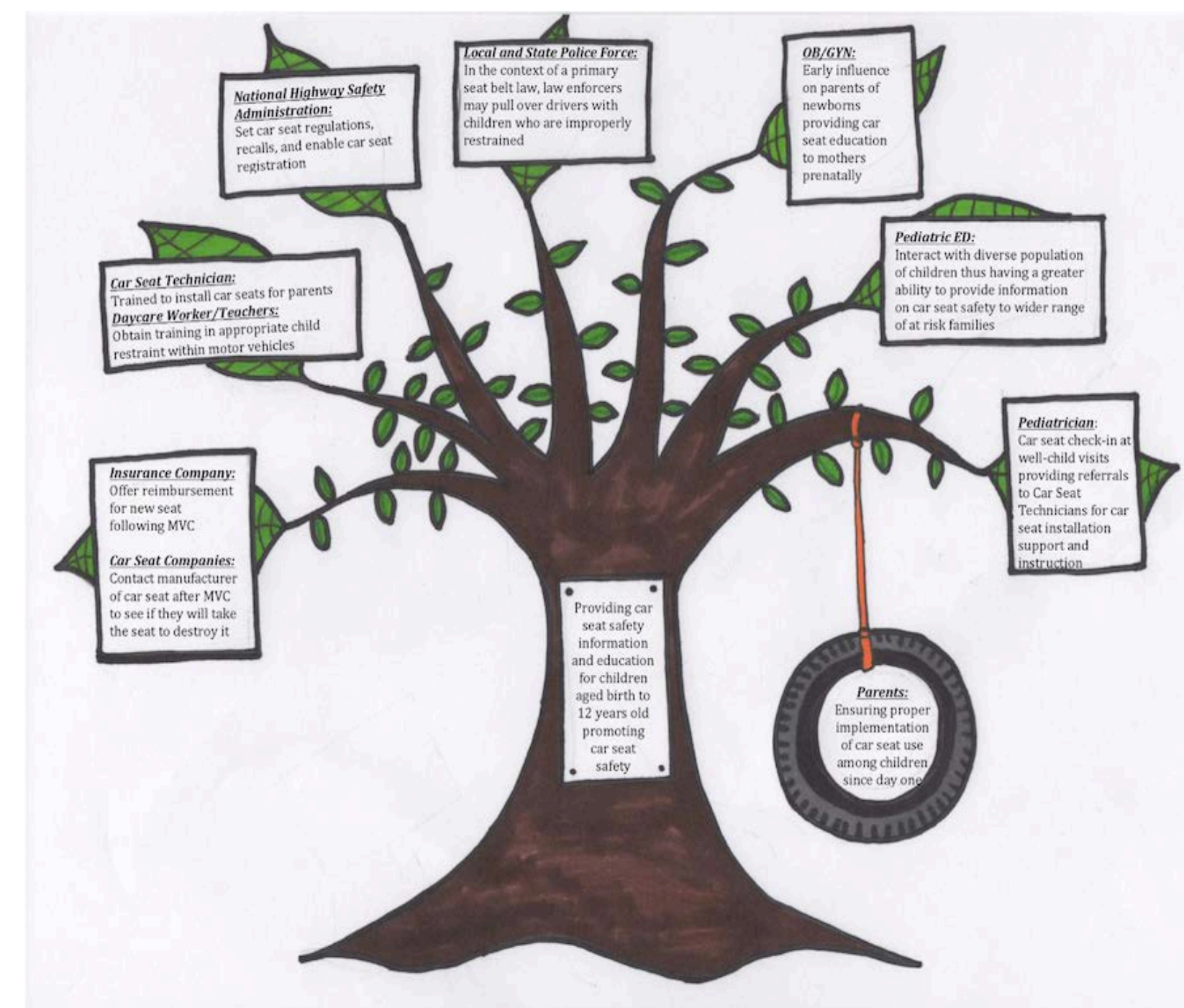


Figure 5. Schematic showing the current players in child passenger safety and a brief description of their roles.

Taking Action: Promoting Child Passenger Safety

Proposed interventions

INSTRUCTIONAL VIDEOS

- These will explain car seat installation and how car seat recommendations change as a child grows
- YouTube advertisements = videos will appear as part of the ads that play before a YouTube video
- Social media advertisements (Facebook, Twitter, Pandora, Spotify) = videos will appear as ads on these pages⁴
- Television commercials = videos will appear on channels targeting all audiences (e.g. PBS, news channels, ABC, NBC, Food Network, etc.)
- These videos will also be provided on DVDs that come in the box of a new car seat will be offered in all language⁵



INFORMATIONAL BOOTHS



- These booths will be present at malls twice a year during holiday photos with Santa Claus and the Easter Bunny⁶
- These are advantageous because they don't require that parents go out of their way to ensure that their car seats are safe – instead, they're already going to the mall and can conveniently also get a car seat check and/or additional information
- Parents and children are encouraged to stop by the booth either before or after they get their photos to receive some brief education about car seat safety and current recommendations
- Families will also receive information about car seat checks and when/where they can get a car seat inspected or installed
- For families that cannot or do not wish to stay, information pamphlets and accompanying magnets that contain this information will be provided
- Parents will also receive a language-appropriate DVD and a card that contains a link to a YouTube video that demonstrates car seat safety

COMMUNITY SAFETY DAYS

- Car seat safety demonstrations and car seat checks will take place during community fairs that focus on safety⁷
- Car seat "buybacks" = parents are encouraged to bring old/expired car seats that they still have, or car seats that have been involved in an MVC (and are therefore compromised), in exchange for a \$50 voucher for a new car seat
- Car seat vendors (Graco, EvenFlo) will be present to provide new car seats to parents with a voucher for a new or upgraded seat or to parents that come with a pediatrician's prescription (based on financial need)
- Car seat safety checks and installations will be provided by Child Passenger Safety Technicians (CPSTs) for parents that bring their own car seats as well as for those that receive new car seats at the event



HOSPITAL SECURITY CHECKPOINTS



- New babies born at the hospital can have their hospital bracelet removed only after a CPST (security personnel at the hospital exit) has verified that the infant is properly restrained⁸
- Pediatric ER patients and pediatric patients that are discharged from the hospital cannot have their hospital bracelet removed until a CPST has verified that the child is properly restrained

PEDIATRICIANS' OFFICES

- Pediatricians will educate parents/guardians about age- and size-appropriate car seats and where to get car seat checks
- Pediatricians should provide updated information at each annual well-child visit

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References

Web Images Shown (in order of appearance):

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All other photos were taken as part of the Car Seat Check on October 23, 2014

For a complete list of all other references, please refer to the accompanying Framework entitled, "Child Passenger Safety Interventions in Motor Vehicle-Related Trauma"