

# Protecting Children

## A Guide to Child Traffic Safety Laws

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NATIONAL CONFERENCE *of* STATE LEGISLATURES

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December 2002



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Printed on recycled paper

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ISBN 1-58024-257-X

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## PREFACE AND ACKNOWLEDGMENTS

*Protecting Children: A Guide to Child Traffic Safety Laws*, is produced by the National Conference of State Legislatures in partnership with the National Highway Traffic Safety Administration (NHTSA). This book is intended to provide information to state legislators and other policymakers about child safety relating to motor vehicles, pedestrian and bicycling issues, school bus safety, child endangerment and teen driving.

The authors would like to thank the National Highway Traffic Safety Administration for their support of this effort to educate state legislators and other policymakers about traffic safety issues. Appreciation for reviewing the book and making helpful comments is extended to Steve Blackistone, National Transportation Safety Board and staff members with the National Highway Traffic Safety Administration. Thanks also are extended to NCSL staff who reviewed and assisted with the book: Leann Stelzer, Scott Liddell, Martha King and Matt Sundeen.

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# EXECUTIVE SUMMARY

Motor vehicle crashes cost \$32.6 billion in medical care and \$230.6 billion in overall expenses each year. According to the National Highway Traffic Safety Administration (NHTSA), every American shares that burden at about \$820 per person per year. Each state's economy is affected by the costs associated with motor vehicle crashes. The per capita crash costs for each state vary from roughly \$600 to \$1,200, or between 1.3 percent and 3.8 percent of the per capita income for each state.

On average, crashes cause about 41,000 deaths each year and millions of non-fatal injuries. Most people believe that these fatalities and injuries happen by chance and cannot be prevented. However, most motor vehicle crashes are caused by behaviors that are predictable and preventable. Behaviors such as not wearing seat belts, not using child safety seats and drunk driving can lead to injuries—and even fatalities—resulting from car crashes. Seat belt use alone saved 11,900 lives, 325,000 serious injuries and \$50 billion in medical care, lost productivity and other injury related costs in 2000. Therefore, steps to improve traffic safety save both lives and tax dollars.

One group most affected by traffic crashes is children. In fact, motor vehicle crashes are the leading cause of fatal unintentional injuries for children between the ages of 4 and 14. In 2001, 2,658 children under age 16 died in car crashes—slightly lower than the 2000 toll of 2,811 children. The rate has dropped by nearly 50 percent during the past 25 years. State legislators can take credit for this improvement. Whether by passing stronger child occupant protection laws, endorsing public education efforts or informing their constituents, state legislators play an important role in working toward improved child passenger safety.

## Occupant Protection and Children

As vehicle miles traveled have increased during the last few decades, traffic fatalities have continued to decline. This pattern can be attributed to safer cars, a more educated public and increased seat belt use. One proven way to increase seat belt use is through state seat belt laws. Forty-nine states (New Hampshire is the exception) have seat belt laws and all 50 states have child passenger protection laws. The child passenger protection laws throughout the 50 states are primary enforcement laws: police officers can stop a vehicle solely for violation of this law. (Certain provisions of the child passenger protection laws in Colorado and Nebraska call for secondary enforcement.) Such laws provide protection to most children, but some fail to cover all children in all seating positions. Each year, state legislatures consider hundreds of bills that are designed to strengthen child passenger protection laws and close gaps in coverage.

One gap is protection for child passengers between the ages of 4 and 8. Often, children who reach age 4 are too big for car seats but not big enough to use an adult-sized safety belt. NHTSA recommends that children should ride restrained in booster seats until they are 8 years old, unless they exceed 4'9" in height. Studies have shown that children under 4'9" are too small to ride safely when restrained by an adult-sized seat belt. During the past few years, more and more states have proposed booster seat laws. Today, 13 states have passed laws requiring the use of booster seats.

Some opponents of child passenger protection laws argue that the laws pose a burden to low-income families. In answer to this dilemma, many states already have established child safety seat donation and loan programs. Under these programs, low-income families can receive a child safety seat or can borrow one. Some of these programs are funded through private companies and grants; in some cases, funds are generated through fines from child safety law violations. However, some booster seats are relatively inexpensive and cost as little as \$20.

Since their inception, air bags have been tremendously successful in saving lives. They also have been blamed for the deaths of many young children, however. The primary reason for these deaths was that the child was too small to absorb the force of the inflating air bag. Today, air bag deaths among children have decreased. Some attribute this decrease to public awareness campaigns designed to inform parents about the risks associated with air bag use and the benefits of having children sit in the rear seat. Further, air bag on and off switches are available for vehicles such as pickup trucks that have only front seats. A few states have passed laws requiring that children under a certain age to be seated in the rear seat if they are riding in a vehicle that is equipped with a passenger air bag.

The cargo areas of pickup trucks are designed to carry cargo, not passengers. Cargo areas do not meet occupant safety standards that apply to passenger seating positions. However, space limitations inside pickup truck cabs sometimes force passengers to sit in the back. People who ride in these cargo areas are taking a substantial risk. On average, between 1994 and 2000, 63 child fatalities (ages 1 to 17) per year were associated with pickup truck cargo areas. Thirty-one states address passengers riding in the cargo areas of pickup trucks to varying degrees through state law.

## **Pedestrian and Bicycle Safety Issues**

Children suffer hundreds of injuries each year in pedestrian and bicycle crashes. Communities in many states have joined to increase awareness and safety for pedestrians and bicyclists. Some communities have redesigned streets and sidewalks to ensure a higher level of safety, while others have increased enforcement of current laws. Many states have laws governing pedestrians and bicyclists.

Safe streets and neighborhoods are not the only problems facing child pedestrians. Many children ride their bikes, skate and ride scooters. Head injuries among child bicyclists account for nearly 60 percent of fatalities resulting from bicycle crashes. To combat this problem, several states have passed laws requiring helmet use by children.



## Getting to School Safely on the Bus

Although some children choose to ride their bikes or walk to school, thousands of others begin and end their day with a trip on a big yellow school bus. Statistically, school bus travel is one of the safest forms of transportation. To keep it that way, safety organizations continue to study current school bus occupant protection and structural guidelines. NHTSA has established Federal Motor Vehicle Safety Standards governing the manufacture of school buses and guidelines for school bus safety. Once these guidelines have been incorporated as state law or regulation, a state then can strengthen the federal standards.

A major controversy surrounding school bus travel is occupant protection on the buses. Currently, school buses are equipped with compartmentalized seats, which provide crash protection through protective pockets consisting of strong, closely-spaced seats with energy-absorbing seat backs. In an effort to further protect children, California, Florida, Louisiana, New Jersey and New York have passed laws requiring the installation of seat belts on school buses. To ensure that school bus drivers receive adequate training, some states have passed laws that strengthen school bus driver training and licensing requirements.

Most children killed in school bus crashes are pedestrians. These crashes usually occur when the students are getting on or off the school bus. The area surrounding the school bus is extremely dangerous, since passing motorists frequently do not obey the stop arm and illegally pass the school bus. Many states have passed laws that enhance penalties for illegally passing a school bus.

## Child Endangerment and Drunk Driving

Another traffic safety issue facing children is alcohol-related crashes. More than 500 children are killed each year in alcohol-related motor vehicle crashes. In most cases, the children were riding in a vehicle operated by a drunk driver. To combat this problem, at least 27 states have passed laws to protect children and punish those drunk drivers who put them at risk.

## Teen Drivers

Once children reach the teenage years, child passenger protection might not be considered an issue. Fatalities run high, however, among teen drivers and passengers. In an effort to save teen lives, many states have implemented some form of graduated licensing laws. Under these laws, teens receive their licenses gradually after they gain driving experience and, in some cases, take a driver's education course. Other states have gone a step further to place additional restrictions—such as restricting the number of passengers and establishing nighttime driving curfews—on teen drivers.

State legislatures, safety organizations, community groups, law enforcement officials and parents play an important role in reducing childhood deaths and injuries associated with motor vehicle crashes. State legislative efforts not only have helped increase seat belt and child safety seat use but also have reduced the number of child passengers riding in pickup truck beds. The legislative efforts also have helped reduce the number of teen drivers involved in fatal crashes and have helped keep school bus travel one of the safest modes of transportation. The above efforts are only a few of the ways state legislators have worked to

improve traffic safety for children. Suggested improvements to traffic safety are continually raised, and state legislators will continue to pass new laws, strengthen existing laws, and educate the public about how to keep their children safe.

# 1. INTRODUCTION

Motor vehicle travel can be dangerous for children. In fact, the leading cause of fatal injuries to children between the ages of 4 and 14 is car crashes. During the past 25 years much progress has been made in the area of child passenger protection. State laws have been passed, federal standards have been published, and parents have become more educated about how to keep their children safe in the car, on the school bus, while walking and while biking. These new laws, together with educational campaigns have helped to reduce the fatality rate for child passengers by nearly 50 percent over the past 25 years.

Although those in the traffic safety community are pleased with the progress that has been made, many feel there is still much work to be done to keep child occupants safe. They believe that the gaps in current state child occupant protection laws need to be closed. State legislatures consider hundreds of bills each session designed to close these gaps and to strengthen current laws designed to keep child occupants safe. Legislators also consider laws to increase safety for child pedestrians and those who ride on school buses. Laws and programs designed to keep young drivers safe also have been passed by state legislatures. These programs include:

- Education campaigns to raise public awareness about child occupant protection and other traffic safety issues.
- Community programs to encourage safe walking and biking practices.
- State agency partnerships with private companies to provide car seats to low-income families.

These and other state laws, programs and education campaigns have been shown to effectively promote the use of child safety seats, bike helmets and seat belts, thereby assisting state legislators, parents and other members of the community to help ensure the highest level of safety for child occupants.

This book provides state legislators and other interested parties with general information and policy options concerning children and traffic safety. Each chapter provides background information about a specific policy issue. A separate section in each chapter describes state laws on each policy topic. Chapter one discusses child occupant protection issues, including child safety seats, air bags and pickup trucks, in addition to current state laws and programs. Chapter two addresses pedestrian issues facing children, including bicycle helmet laws and walking to school safely. Chapter three details state and federal

laws regarding school buses. Chapter four discusses alcohol-related child endangerment issues. Chapter five provides information related to teen drivers, including graduated licensing laws and other tools designed to keep teen drivers safe. Appendices provide additional information, resources and state-by-state information about laws.

## 2. OCCUPANT PROTECTION

### Background

As motor vehicle use increased during the 1950s and 1960s, so did injuries and fatalities resulting from crashes. Individuals and groups that were concerned about safety began to scrutinize motor vehicle design. Some argued that most crashes were the result of driver error, while others felt that the crashes could not be prevented and, therefore, the best way to reduce injuries and fatalities was to build more crashworthy cars.

In 1966, Congress passed the National Traffic and Motor Vehicle Safety Act and the Highway Safety Act. These acts marked the first federal government action regarding motor vehicle injury prevention. The National Highway Safety Bureau, created as a result of the two acts, focused on making changes to motor vehicle and highway design. Today, the National Highway Traffic Safety Administration (NHTSA), an arm of the U.S. Department of Transportation, places major emphasis on occupant protection in motor vehicles. NHTSA works to educate the public regarding a variety of occupant protection issues, publishes motor vehicle safety standards, and conducts studies to evaluate both current traffic safety equipment in motor vehicles and driver behavior.

Public awareness campaigns also are used by NHTSA to educate and inform the public about traffic safety issues. These campaigns help to promote traffic safety activities and issues in cities and communities throughout the country. NHTSA sponsors four annual safety events, including Child Passenger Safety Week in February, Buckle Up! America Week in May, Back to School Safely in September, and Operation America Buckles Up Children in November.

NHTSA, traffic safety organizations and state legislatures have helped to increase motor vehicle safety and decrease the number of fatalities and injuries associated with crashes. However, thousands of people are killed each year in motor vehicle crashes, including, on average, more than 2,000 children. Children—like adults—are put at the greatest risk for death and injury by riding unrestrained or improperly restrained in cars. In 1996, the National Transportation Safety Board (NTSB) conducted a study to examine child passenger restraint use. Results of the study indicate that, in 62 percent of the cases, the child

#### What State Legislators Can Do

Motor vehicle travel continues to become safer through the passage of new laws and the strengthening of existing laws. However, each year more than 40,000 people are still fatally injured in traffic crashes that cost society \$230.6 billion. State legislators can continue to evaluate and improve—when necessary—existing state child and adult occupant protection laws. By ensuring that the gaps in child passenger protection laws have been closed and parents are aware that the safest place for a child passenger is buckled up in the back seat, additional lives could be saved and injuries prevented.

State legislators also can have an effect in their communities. By working with community groups and organizations, state legislators can support child passenger education programs, fitting inspection stations and car seat loaner programs.

### The Four Es

According to NHTSA, four basic approaches are used to control motor vehicle injury:

- Education,
- Enforcement,
- Engineering, and
- Economic Incentive.

Through education, the public is presented with information, new skills or training that can be used to reduce the risk of injury. The ultimate purpose is to change behavior.

Enforcement is a tool that can be used to compel traffic safety. Traffic safety laws provide both regulations and consequences.

Roadway improvement, air bags and speed bumps are examples of engineering's role in reducing injuries sustained in motor vehicle crashes. Through safer roads and safer cars, injuries can be reduced.

Economic incentives can be used to encourage or deter certain types of behavior.

safety seat was used incorrectly. Specifically, the seat was either improperly installed in the motor vehicle or the child was secured improperly. In 1999, the NTSB estimated that approximately 10 million children were riding in child safety seats that were used incorrectly. Further research has shown that about 96 percent of parents think they have installed and are using the safety seat correctly. In reality, studies show that only two of 10 are correctly installed and used.

To increase the correct use of child safety seats, the NTSB recommends the establishment of child safety seat fitting inspection stations. Optimally, these fitting inspection stations are staffed with certified child safety seat technicians who are able to provide instruction to parents and guardians about proper child safety seat selection, installation and use. Fitting inspection stations may be established at automotive dealerships, repair shops, firehouses, health centers and at mobile stations. Since the NTSB made its recommendations in 2000, several automobile manufacturers, state safety agencies, fire departments and other agencies have established child safety seat fitting programs.

Following the NTSB's recommendations, several states have trained and certified state troopers and fire personnel as child safety seat technicians and have established permanent fitting inspection stations. To protect technicians from liability, Georgia, Maryland and Virginia passed laws that provide immunity if the technicians acted in good faith.

### What Happens in a Crash?

First, the vehicle hits an object or is hit by another vehicle. The vehicle comes to a sudden stop and buckles and bends as it absorbs the energy.

Second, the body strikes the interior of the vehicle at the same speed as the vehicle strikes the object. Energy is transferred from the vehicle to the person. The energy is absorbed either by bending the person or by bending the restraining device.

Third, the internal collision occurs when the body's organs are propelled against each other and internal structures. This collision often causes life-threatening injuries.

DaimlerChrysler created a program, *Fit for A Kid*, with permanent fitting inspection stations at dealerships in all 50 states. In partnership with the National SAFE KIDS Campaign, General Motors donated 81 minivans to be used as mobile fitting inspection stations. General Motors also has established 30 permanent fitting inspection stations. The Ford Motor Company established the *Boost America* program to provide booster seats to low-income families and to support existing fitting inspection stations.

### Federal Vehicle Standards

NHTSA is responsible for publishing *Federal Motor Vehicle Safety Standards* (FMVSS). Effective April 1, 1971,

FMVSS 213 requires that child safety seats must be designed to restrain and protect children in a crash. Further, FMVSS 213 (49 CFR 571.213) requires that child safety seats have the ability to be attached to the vehicle by using the seat belts and that the safety seat distribute—rather than concentrate—crash forces over the child's torso. An updated standard, which became effective on Jan. 1, 1981, requires a 30-mph crash test with specific results. One goal of the NHTSA standards is to eliminate the sale of inadequate child safety seats. NHTSA recently proposed revisions to the current FMVSS regarding child safety seats. The revisions include updating the seat assembly used to test child restraints; adding state-of-the-art infant and child test dummies and a new, weighted dummy to

better test booster seats; adding new injury criteria to protect against neck injury; and extending the standard to child restraints recommended for use by children up to 65 pounds.

NHTSA is responsible for issuing recalls for motor vehicles and other safety items—including tires and child safety seats—that do not meet FMVSS. NHTSA also maintains a child safety seat recall database to inform parents and other interested parties about child safety seat defects and has established procedures for the public to report safety problems. (See appendix A for the NHTSA glossary of child passenger safety terms).

#### NHTSA Child Passenger Safety Certification Process

In 1995, a blue-ribbon panel was created to establish distribution plans for low- or no-cost child safety seats. Once this group established guidelines for distributing the seats, it was made apparent that a standardized training program for child passenger safety was needed. NHTSA coordinated a group of interested organizations to develop and plan for the pilot testing of standardized child passenger safety training. Today, NHTSA has a Standardized Child Passenger Safety Training Course and a certification process for technicians and instructors. This course provides high-quality, consistent training to child passenger technicians across the country. NHTSA maintains a database containing the names and locations of certified technicians.

## Types of Child Safety Seats

### *Infant-Only*

Infant-only child safety seats usually are designed to transport infants up to at least age 1 and who weigh up to 20 pounds. These seats are intended to face the rear and usually are equipped with a three-point or five-point harness. Rear-facing child safety seats are designed to protect infants from injury because their necks are not strong enough to support their heads. In a severe frontal crash, it is likely that, if the infant were facing forward, the injuries sustained would cause death.

Infant seats are small, lightweight and portable. Some are even equipped with carrying handles. Some models include a detachable base that can be attached, with a seat belt, to the car. The infant is secured in the seat, then the seat is snapped into the base.

As with other types of car seats, weight and age limits apply to infant seats. In most cases, infants outgrow their car seats once they weigh more than 20 pounds (although some infant seats can accommodate infants up to 35 pounds). For maximum protection, the top of the infant's head should be no higher than 1 inch from the top of the safety seat. Table 1 provides more information about child safety seats.

### *Convertible Seats*

These car seats are larger and heavier than infant seats. Such seats are designed to last longer because most can be used for children who weigh between 20 pounds and 40 pounds. These seats can be used as rear-facing infant seats and as forward-facing seats for children more than 1 year old. The seats are designed so infants can remain rear-facing until they meet the weight and age guidelines for a front-facing seat.

Some convertible seats have recently been put on the market that can accommodate higher height and weight limits. These seats usually cost more, but in some cases can be used until the child reaches 100 pounds.

Criteria	Infant	Toddler/Preschool	Young Children
Weight	Birth to 1 year, at least 20-22 pounds	Between 20 and 40 pounds (older than age 1)	More than 40 pounds; ages 4-8, unless 4'9"
Type of Seat	Infant only or rear-facing convertible	Convertible/forward-facing	Belt-positioning booster seat
Seat Position	Rear-facing only	Forward-facing	Forward-facing
Always Be Sure:	Children to one year and at least 20 pounds; should be in rear-facing seats  Harness straps should be at or below shoulder level	Harness straps should be at or above shoulders; most seats require top slot for forward-facing seat	Belt positioning booster seats must be used with both lap and shoulder belts  The lap belt fits low and tight across the lap/upper thigh area and the shoulder belt fits snug crossing the chest and shoulder to avoid abdominal injuries
Warning	All children age 12 and under should ride in the back seat	All children age 12 and under should ride in the back seat	All children age 12 and under should ride in the back seat
<small>Source: National Highway Traffic Safety Administration, 2000; and American Academy of Pediatrics, 2000.</small>			

### *Booster Seats*

During the last few years, several safety organizations have begun to publicize the need for older children to ride secured in booster seats. Booster seats are designed for children between the ages of 4 and 8 who weigh more than 40 pounds. NHTSA recommends that all children age 12 and under ride in the back seat, properly buckled into age-appropriate safety seats. A study recently conducted by NHTSA showed that only a little more than 6 percent of children who should have been in a booster seat—according to age and weight guidelines—actually were. Because of this, NHTSA created a public education campaign, *Boost 'Em Before You Buckle 'Em*, to instruct people about booster seats and their use.

Many children outgrow their safety seats when they reach 40 pounds. At this point, they should be moved to a booster seat until they are big enough to wear an adult seat belt. According NHTSA, all children who have outgrown child safety seats should be properly restrained in booster seats until they are age 8, unless they are 4'9" in height. Whether the determination is based on height or weight, NHTSA firmly believes that children who are too big for traditional car seats may be too small to use adult-sized shoulder and lap belts.

In 1997, the Partners for Child Passenger Safety, a collaborative group including Children's Hospital of Philadelphia, University of Pennsylvania and State Farm Insurance Companies, began collecting data to study child passenger safety in car crashes. The study, which continues through 2003, has developed a child-focused crash surveillance database, conducted phone interviews with drivers to gain details about crashes, and used computerized simulations to reconstruct crashes. The purpose of this study is to gain a better understanding of vehicle characteristics, restraint use and misuse, crash dynamics, and the effects of these elements on child injuries.



### *Car Seat Loaner Programs*

One issue facing low-income families is the expense associated with purchasing child safety seats. To address this issue, states, cities and communities have created programs designed to distribute free car seats or to loan car seats to low-income families. Programs like these exist in every state. In some cases, the programs are coordinated at the state level; in other cases, the programs are set up in local communities, cities and counties.

One example of such a program is the Child Passenger Safety Program in Ohio, which is coordinated by the Ohio Department of Health. The program distributes child safety seats to low-income families in Ohio. Not only does the program provide car seats to the families, it also provides education about their proper installation and use. The child safety seats for the program are purchased through grant funds and fines from violations of child safety seat laws.

### *Child Restraint Anchorage System*

NHTSA has issued new regulations to make child safety seat installation easier. The new regulations require forward-facing child safety seats manufactured after Sept. 1, 1999, to have a top tether strap that attaches the back of the safety seat to the shelf behind the rear seat of a passenger car or the seat back or floor of a van or SUV. Most vehicles and child safety seats manufactured after Sept. 1, 2002, must be equipped. By Sept. 1, 2002, new vehicles and child safety seats will be equipped with lower anchors and tethers for children (LATCH) systems, which include two lower anchorage points and top tether systems installed in the back two seating positions in most cars, minivans and light trucks.

### **Air Bags**

Another issue facing child motor vehicle passengers is air bags. According to the Insurance Institute for Highway Safety, more than 120 million (56 percent) of the more than 211 million cars and light trucks on U.S. roads have driver air bags. More than 95 million (45 percent) of these also have passenger air bags. Another 1 million new vehicles with air bags are being sold each month.

As of the 1999 model year, the federal government required automobile manufacturers to install driver and passenger air bags for frontal protection in all cars, light trucks and vans. Air bags—energy-absorbing buffers between people and the hard interiors of vehicles—inflate in a fraction of a second ( $1/25^{\text{th}}$ ) immediately after a serious crash begins. Most air bags are designed to inflate in crashes at speeds above 10 to 12 miles per hour. Air bags installed in the steering wheel for the driver and in the right front instrument panel for the front seat passenger are designed to protect people in serious frontal crashes that account for more than half of all crash deaths.<sup>1</sup> In crashes, the people riding inside a vehicle do not stop moving immediately. Instead, in frontal crashes people continue to move forward as the vehicle's front end crushes. At this point in the crash, air bags and seat belts work together to protect people by allowing them to slow down within the vehicle. Air bags also help protect people's heads and chests by preventing them from hitting the steering wheel, instrument panel or windshield.

According to NHTSA, more than 7,585 people are alive as of February 2002 because of automobile air bags. Driver deaths are being reduced by 14 percent and passenger deaths by approximately 11 percent.

However, the energy required to inflate air bags can injure people who are on top of, or very close to, air bags as they begin to inflate. The injuries occur because of people's positions when the air bags begin to inflate. Many air bag deaths involve people who were not using seatbelts or who were positioned improperly. People who are not using seat belts are at risk because they are likely to move forward if hard braking or other such maneuvers occur before a crash.

Most deaths resulting from inflating air bags have been children. The majority of these have been infants in rear-facing seats who were placed in the front seat of vehicles with passenger air bags. In 1996, air bags were blamed for the deaths of 35 children. The use of air bags was increasing during this time, and many were concerned that, as use increased, so would deaths associated with their use. By 2000, however, as the use of air bags continued to increase, the number of children killed by them dropped to 18. Improvements in technology have contributed to the decrease in deaths. However, many safety advocates believe that parents also can take some of the credit; more parents are following safety recommendations to place their children in the back seat.

Because the passenger air bag in the front seat is too close to the infant's or child's head, the rear seat is the safest place for children of any age to ride. According to NHTSA's air bags brochure, rear-facing infant seats should never be placed in the front seat if the air bag is turned on. "Children age 12 and under should ride in the back seat."<sup>2</sup> The only exception is if the vehicle is specially equipped with sensors that detect a rear-facing infant seat in the front seat and automatically switches off the air bag or if a switch can be used to turn off the passenger air bag. In May 2000, NHTSA issued a rule that will affect some 2004 model year vehicles. The rule requires either that the air bag turn off automatically if a young child is in the front seat or that the air bag deployment is such that it is much less likely to injure the child.

The National Transportation Safety Board completed a study in 1996 on the performance and use of child safety restraint systems, seat belts and air bags for children in passenger vehicles. The study analyzed the data from 120 vehicle crashes in a two-year period. Air bags deployed in 13 crashes in which a child was seated in the front passenger seat. In seven of the 13 crashes, the child was either critically injured or killed because of contact with the air bag. As a result of this study, the NTSB issued a series of safety recommendations between 1995 and 1997 to address the dangers that air bags pose to children. Following the NTSB's recommendations, the following actions were taken.

- The automobile industry sent warning letters and labels to owners of 60 million vehicles on the road at the time that were equipped with air bags, advising the owners about air bag dangers to children.
- NHTSA required warning labels about the dangers of air bags to children in all newly manufactured vehicles equipped with air bags, effective February 1997.

- NHTSA and the automobile and insurance industries initiated the Air Bag and Seat Belt Safety Campaign in May 1996 to educate the public about the importance of seating children in the back seat of vehicles that are equipped with air bags.
- Since May 1997, automobile manufacturers have been permitted to install depowered air bags in newly manufactured vehicles.
- Certain at-risk groups can apply for permission from NHTSA to install on-off switches for one or both front air bags.
- In May 2000, NHTSA established performance criteria for advanced air bags that will be safe for all occupants, regardless of age and size.
- Child passenger safety literature now advises that children age 12 and under ride in the back seat of a vehicle that is equipped with front passenger air bags.

On-off switches allow air bags to be turned on and off. The switch can be installed for the driver, the passenger or both. Beginning Jan. 19, 1998, consumers could choose to have an on-off switch installed for the air bags in certain risk groups. Consumers must certify that they—or the vehicle user—are in one of four risk groups: 1) infants in rear-facing infant seats; 2) drivers or passengers with unusual medical conditions; 3) children ages 1 to 12 who must ride in the front seat; or 4) drivers who cannot sit 10 inches from the air bag. If eligible, the consumer must fill out an NHTSA request form. Upon approval, NHTSA sends the consumer a letter authorizing an automobile dealer or repair shop to install an on-off switch in the vehicle.

NHTSA cites several precautions when a driver chooses to switch off an air bag. First, drivers must remember to turn on the air bag when someone who is not at risk is in the vehicle; the air bags do not automatically switch on. Every on-off switch has a light to remind the consumer when the air bag is turned off. Second, air bags increase the protection from crashes. In some vehicles, the air bag works in conjunction with specifically designed seat belts. In these vehicles, the seat belt yields to avoid concentrating too much force on the chest. The air bag, designed to prevent the occupant from moving too far forward after the seat belt yields, cushions forward movement. Without this cushion, chances are increased that the occupant will hit the vehicle interior.

Air bag on-off switches may not be necessary in the future. Automobile manufacturers are developing “smart” or “advanced” air bags that may be able to tailor deployment based on crash severity, occupant size and position, or seat belt use. These bags are expected to eliminate the risks attributed to current air bags.

## Pickup Trucks

An additional area of occupant protection that concerns passengers—especially children—is riding in the cargo areas of pickup trucks. Pickup trucks have become more popular and now represent approximately one in five of the vehicles owned by U.S. households. Approximately 40 million pickups are registered in the United States. Pickups, routinely used to transport children, can be hazardous to the safety of children in several ways.

The cargo areas of pickup trucks are designed to carry cargo, not passengers. Cargo areas do not meet occupant safety standards that are applicable to passenger seating positions. However space limitations inside the cabs of pickup trucks sometimes force passengers into the back. People who ride in these cargo areas are taking a substantial risk. Most deaths and injuries attributed to pickup truck crashes are a result of passengers being thrown out of the cargo area during a rollover. A person riding in the cargo area of a truck is 26 times more likely to be ejected than a person riding in the cab. Compared with properly buckled cab occupants, the risk of death for those in the cargo area is eight times higher.

According to information from the National Children's Center for Rural Agricultural Health and Safety and the Fatality Analysis Recording System maintained by NHTSA, 63 child fatalities (ages 1 to 17) were associated with pickup truck cargo areas, on an annual average between 1994 and 2000.

Studies from California, Kentucky, Mississippi and Utah show that ejections and falls account for most youth injuries involving pickup truck cargo areas. These studies also indicate that one-third of such injuries occur during non-crash events such as stopping or swerving or involve a youth falling from a moving truck. One-third of the victims were standing up, sitting on the tailgate or "horsing around."

Truck camper shells do not necessarily prevent ejections from pickup truck cargo areas, and passengers may be injured by the shell or harmed by carbon monoxide fumes that collect in the shell from a leaking or a rear exit exhaust system. Pickup truck cargo area fatalities and injuries commonly occur during summer months, in daylight or dusk hours, on paved roads, and in rural areas. Males are three times more likely than females to sustain injuries that require medical treatment. Statistics from Alberta, Canada, for the period 1995 to 1999 indicate that the average age of injured males was 23 years, the average age of injured females was 16, and 45 percent of injury cases occurred on a Saturday.<sup>3</sup>

As previously discussed, air bags can endanger children and most pickups have no back seat to safely seat children. Vehicles other than pickups should be used to transport children whenever possible. In addition, according to a recent Children's Hospital of Philadelphia study, children transported in the rear seats of extended cab compact pickups run a five-fold greater risk of injury than children riding in other vehicles. Finally, recent compilations of death and injury statistics have highlighted the problem of children being killed or injured by SUVs, trucks and minivans backing out of driveways. An article in the *Orange County Register* on March 24, 2002, documented 14 deaths and nine injuries of this type in Orange County, Calif., since 1995.

## State Laws

### *Child Occupant Protection*

Today, 49 states—New Hampshire is the exception—have seat belt laws. Eighteen states—Alabama, California, Connecticut, Georgia, Hawaii, Indiana, Iowa, Louisiana, Maryland, Michigan, New Jersey, New Mexico, New York, North Carolina, Oklahoma, Oregon, Texas and Washington—and the District of Columbia have primary enforcement seat belt laws that allow police officers to stop a vehicle solely for a seat belt violation. In the remaining 31 states, officers must stop the vehicle for some other traffic offense before they can issue a citation for a seat belt violation; this is known as a secondary offense. (See appendix B.)

Seat belt use is one of the most effective ways to prevent injuries and deaths from motor vehicle crashes. In the states that have primary seat belt enforcement laws, seat belt use is, on average, 17 percentage points higher than in the states that have secondary enforcement laws. By increasing the national seat belt use rate from its current rate of 68 percent to 90 percent, more than 5,500 lives could be saved and approximately 132,000 injuries could be prevented, leading to a savings of \$8.8 billion each year, according to NHTSA. The National Safety Council reports that, from 1975 to 1998, seat belts have been credited with saving an estimated 112,086 lives.

Seat belt laws for the general population also have a bearing on child passenger protection. A 1996 NHTSA study revealed that, if a driver is wearing a seat belt, 86 percent of the time toddlers also will be restrained. If the driver is not wearing a seat belt, however, the restraint rate for toddlers drops to 24 percent.

All 50 states and the District of Columbia have some form of child restraint law, and all are primary enforcement laws. The exceptions are Colorado—where the new booster seat law for children ages 4 through 5 allows for secondary enforcement—and Nebraska—where the law is secondary only for children who may use seat belts and standard for those who must be secured in a child safety seat. Most require the use of child restraint systems by a certain age group of children. Some safety advocacy groups argue that gaps exist in coverage for the child restraint laws in some states. In some cases, the laws fail to cover children in all seating positions or the laws may provide an exemption for out-of-state visitors. Regardless of the current gaps in state laws, 49 percent fewer children died in motor vehicle crashes in 2000, compared to such deaths in 1975. (See appendices C and D for Child Safety Seat Laws.)

Although the rate of death for children in motor vehicle crashes has declined, thousands of children still die each year and thousands more are injured. Child safety seats and booster seats are an effective way to keep child passengers safe. Children are put at greater risk when they ride unrestrained or improperly restrained in a motor vehicle. NHTSA estimates that, when child safety seats are used correctly, they reduce fatal injuries by 71 percent for infants and by 54 percent for toddlers. In 1999, more than 50 percent of all children ages 5 to 9 who were killed in crashes were completely unrestrained.

### *Booster Seats*

Arkansas, California and Washington were the first states to pass laws requiring the use of booster seats by children who have outgrown their safety seats. The California law requires children who are age 5 and younger or who weigh less than 60 pounds to ride in a booster seat. In Washington, children between the ages of 4 and 5 and between 40 pounds and 60 pounds are required to use a booster seat. The law in Arkansas requires children 5 years and under and less than 60 pounds to ride restrained in a booster seat.

Today, 13 states have some type of booster seat law. Some safety organizations argue that certain new booster seat laws are not strong enough. In a few states, for example, the law covers only children up to 40 pounds.

At least 15 states considered similar legislation during the 2002 legislative sessions. Colorado passed a law requiring children between the ages of 4 and 5 to ride restrained in

booster seats. The Maine Legislature passed a law to require children who weigh between 40 pounds and 80 pounds and are younger than age 8 to ride in a booster seat.

### *Air Bag Safety*

Delaware is one of the few states to have a law to address the risk of air bags. Specifically, children under 65 inches and younger than age 12 are required to ride in the back seat of vehicles that are equipped with passenger air bags. North Carolina and Washington have similar laws. In North Carolina, children under age 5 who weigh less than 40 pounds must be seated in a child safety seat in the rear seat if the vehicle has a passenger air bag. Washington's new law, effective July 1, 2002, requires children under age 6 who weigh less than 60 pounds to be seated in a child safety seat in the back seat in vehicles equipped with passenger air bags. Louisiana, Rhode Island and South Carolina laws require children of a certain age to ride in the rear seat of any vehicle. Connecticut passed legislation in 2001 that requires children under age 4 to sit in the back seat of motor vehicles that are equipped with airbags.

### *Pickup Trucks*

Thirty-one states directly address passengers riding in the cargo areas of pickup trucks to varying degrees through state law. Eight states prohibit people of all ages from riding in cargo areas with some exceptions. Twenty-one other states prohibit children of varying ages (from 8 to 18) from riding in a cargo area, also with some exceptions. Exceptions often include parades, agricultural workers—if the bed is completely enclosed—hunters, and emergency situations. Child passenger protection laws in virtually all states that require child safety seats would preclude very young children (generally age 4 and younger) from riding in the back of pickup trucks. (See appendix E for a detailed state chart.)

Evidence from California shows that laws prohibiting passengers in cargo areas in California prevents deaths: before the law was passed, deaths totaled 57; after it was enacted, deaths totaled 32. One-third of those killed were 18 or younger. Implementation of the law was aided by the “Don't Be Human Cargo” educational campaign. The American Academy of Pediatrics believes the best way to reduce the number of deaths and injuries to children in pickup trucks is prohibiting them from riding in the cargo area and requiring they use age-appropriate restraints inside the cab.

Since 1997, 24 states have considered bills on this topic. In 1998, Tennessee enacted SB 2061, which encourages the Department of Public Safety to educate the public about the risks of allowing children to ride in the cargo areas of pickup trucks. The next year, the Tennessee Legislature passed a bill that prohibits children under age 12 from riding in the back of pickup trucks.

Michigan also passed legislation regulating passenger use of cargo areas of pickup trucks. According to the law, which went into effect on March 28, 2001, no person under age 18 is permitted to ride in the open bed of a pickup truck that is traveling at speeds higher than 15 miles per hour. The law allows for the use of the open bed by passengers for parades and farm operations. In 2001, seven states considered 12 bills that would have prohibited passengers from riding unrestrained in the cargo areas of pickup trucks. None of the bills passed.

Four bills were considered during the 2002 legislative sessions. An Iowa bill failed to pass that would have required seat belts in pickup truck cargo areas. In Mississippi, legislation died in committee that would have prohibited passenger use of pickup truck beds.

Many advocates exist of specific legislation to prohibit passengers riding in pickup truck cargo areas. One organization is Advocates for Highway and Auto Safety, which recommends that states enact laws to prohibit all passengers of all ages from riding in the rear cargo bed of pickup trucks under all circumstances. In a recent report, it states, "Despite the documented hazards of allowing passengers to ride in cargo areas, only 25 states have laws prohibiting this dangerous practice. Among these states, most have exceptions that apply the law only to children under a certain age or only under certain circumstances. In order to prevent future fatalities as the number of pickup trucks on the road increases, states must enact laws that prohibit all passengers at all times from riding in the cargo areas of pickup trucks."

Other advocates include families of injury victims, safety groups, health professionals and law enforcement agencies. Included are associations concerned with head injury and traumatic brain injury; pediatricians; medical, nursing and hospital associations; parent-teacher associations; the National Transportation Safety Board; Mothers Against Drunk Driving; and the American Automobile Association.

Groups concerned about the negative effects of such laws include agricultural businesses and associations, hunters, and people whose only means of transportation is a pickup truck.



### 3. PEDESTRIAN AND BICYCLE SAFETY ISSUES

#### What Legislators Can Do

Hundreds of children are killed each year and many more are injured in pedestrian-related crashes. At the same time, childhood obesity and inactivity are on the rise. To encourage safe pedestrian and bicycling activities for children, state legislators can evaluate current laws regarding pedestrians and bicyclists, speed limits in school zones and other pedestrian areas, and state use of traffic calming techniques in high-risk areas. Legislators can encourage the use of public education campaigns regarding child pedestrian and bicycling safety and safe routes to schools programs. Community groups and other governmental agencies can partner with state legislators to encourage safe walking and biking in neighborhoods through safer road and pedestrian area design.

#### Background

In 2001, nearly 5,000 pedestrians were killed in traffic crashes. About 480 of those killed were children between birth and age 15. These statistics have led many parents to restrict their children's pedestrian activities. Such restrictions can effect children's physical health by causing them to adopt a sedentary lifestyle. According to data from the Centers for Disease Control (CDC), childhood obesity had reached a plateau in the 1960s and 1970s, but increased substantially during the 1980s and 1990s. In fact, the percentage of children who are overweight has more than doubled in the last 30 years.

Health advocates believe that one way to help remedy this epidemic is to encourage biking and walking in childhood. By making streets safer, parents may be more inclined to send their children to school on foot or encourage after-school activities such as biking and in-line skating.

Most states have passed legislation to improve pedestrian and bicycle safety. These laws, which establish rules of the road for motorists when they encounter pedestrians or bicyclists and apply to people of all ages. Some states have passed laws that increase penalties for failing to yield to pedestrians in crosswalks, while others have enacted laws requiring state departments of transportation to improve sidewalk conditions.

#### International Walk to School Day

On Tuesday, Oct. 2, 2001, countries around the world helped celebrate the second International Walk to School Day. National Walk to School Day originated in 1997; school children from Chicago and Los Angeles participated. By last year, walkers in 49 states were part of the 3 million walkers around the world who celebrated Walk to School Day. The goal is to increase awareness of pedestrian safety and to help identify safe walkways to school.

The risk for children comes from drivers who speed through school zones and neighborhoods where many children live. Most child pedestrian injuries and deaths occur when the child darts out from between two parked cars into the middle of the street. These situations account for nearly one-third of all child pedestrian-related crashes.

Education is a useful tool to help keep child pedestrians and bicyclists safe. Children need to be educated about the safest way to cross the street, bicycle helmet use and safe places to play outside. Other ways to increase pedestrian and bicycle safety for everyone are through the use of traffic calming in neighborhoods that have high volume traffic and by strict enforcement of speeding laws.



## Walking to School Safely

Hundreds of pedestrians between the age of 5 and 18 are killed each year during “normal school transportation hours.” In order to increase safe bicycling and walking as a way to get to school, many communities are turning to “Safe Routes to Schools” programs. Under these programs, parents, teachers, students, state and local governments, and law enforcement agencies work together to identify pedestrian routes to schools and to improve the safety and usability of the routes.

As recently as 30 years ago, more than 60 percent of students walked and biked to school.<sup>1</sup> Today, research indicates that fewer than 10 percent of students are walking and biking to school. Some believe that safety is the main reason that many parents choose to drive their kids to and from school. Safe Routes to Schools programs assess current pedestrian conditions, then make changes to increase safety in the area; this results in increased walking and biking. The programs take a comprehensive approach by examining current traffic laws, speed limits, law enforcement, and education programs that are geared toward traffic safety.

Safe Routes to Schools proponents believe three key factors can make streets safer for students. First, engineering techniques can be used to slow down traffic. Engineering design tools like traffic calming can be used to slow the speed of motor vehicles and increase safety through the use of speed humps and roundabouts. Traffic calming not only can slow traffic, but it also can help because redesigned roadways can include walkways and bike paths.

The second factor is through enforcement. Law enforcement resources are used to aggressively enforce traffic violations and increase awareness about pedestrian issues in the area surrounding the school. Speed limit signs also can be used as a visual and regulatory reminder to motorists traveling through school zones.

Finally, educational programs can be used to help inform motorists, pedestrians and bicyclists about their respective rights and responsibilities. These programs can be taught in school and can be used to not only teach safety but also to promote walking and biking.

## Childhood Bicycling Safety

According to the National SAFE KIDS Campaign, “Bicycles are associated with more childhood injuries than any other consumer product except the automobile.” The rate of bicycle-related injuries is highest for children between the ages of 5 and 15. Bicycle deaths per 1 million people are highest among 13-year-olds.<sup>2</sup> Every year, almost 400,000 children under age 14 are treated in emergency rooms for bicycle-related injuries.<sup>3</sup> Head injuries, the leading cause of death in bicycle crashes, account for 60 percent of the fatalities.

### Colorado Senator Proposes Child Helmet Safety Act

A Colorado bill considered during the 2002 state legislative session would have made it a Class 2 misdemeanor traffic offense, subject to a \$15 fine, for a parent or guardian of a child under age 14 to knowingly allow a child to operate or be a passenger on a bicycle without a helmet.

The bill, sponsored by Senator Ed Perlmutter, passed out of committee but was defeated on the Senate floor.

Bicycle safety can be addressed in several ways. Education programs teach riders about safety. Improved road designs and bicycle paths can help motorists and bicyclists safely share the roads, and protective clothing and equipment can reduce some kinds of injuries.

In July 2000, the National Highway Traffic Safety Administration, the Federal Highway Administration and the National Center for Injury Prevention and Control convened a bicycle safety summit. Representatives of diverse public and private organizations and agencies attended to help develop a national bicycle safety agenda. The goals adopted include the following.

### *Goal 1: Motorists Will Share the Road*

- Create a coordinated “Share the Road” public education campaign that can be adapted at the state and local levels.
- Amend the motor vehicle code to give precedence to bicyclists in the absence of overriding traffic rules.
- Include components on safe bicycling and sharing the road in driver education programs.

### *Goal 2: Bicyclists Will Ride Safely*

- Create a national “Ride Safely” marketing campaign targeting bicycle riders.
- Encourage statewide bicycle safety conferences to promote the *National Strategies for Advancing Bicycle Safety*.
- Expand school-based and community-based programs that teach bicycle safety to children and adults.
- Educate community professionals on effective ways to promote safe bicycling.
- Motivate decision-makers at all levels to adopt policies that promote safe bicycling.

### *Goal 3: Bicyclists Will Wear Helmets*

- Create a national bicycle helmet safety campaign.
- Create tools to promote and increase bicycle helmet use that can be adapted for use at the state and local levels.
- Assist states and communities that decide to address bicycle helmet use through state and local laws and enforcement.

### *Goal 4: The Legal System Will Support Safe Bicycling*

- Improve the collection and quality of data concerning bicycle crash incidents, including both traffic and non-traffic sites.
- Create tools that help law enforcement officers enforce bicycle safety traffic laws aimed at bicyclists and motorists.

- Promote the most promising enforcement efforts at those local sites where they are most likely to be effective.
- Encourage the court system to follow through on bicycle safety enforcement by imposing meaningful penalties for both motorist and bicyclist violations.

*Goal 5: Roads and Paths Will Safely Accommodate Bicyclists*

- Document and evaluate the safety and effectiveness of facility design options.
- Improve 100,000 miles of existing streets and roadways to accommodate bicycle travel.
- Train professionals responsible for the planning, design, and operation of the transportation system to better consider and accommodate bicycle travel.

Conference participants were not able to agree on the inclusion of a strategy that promoted mandatory helmet laws for bicyclists. Proponents of the law argued it was the best way to promote helmet use. Opponents indicated that such requirements interfere with personal freedoms, exaggerate the dangers of cycling and reduce ridership. Participants in the summit and other bicycle groups will now try to implement the goals and strategies from the conference.

*Bicycle Helmets*

Wearing a helmet is one of the most effective ways to protect a rider from the risk of traumatic brain or head injury. Non-helmeted riders are 14 times more likely to be in a fatal crash than those wearing a helmet. Helmets are 85 to 88 percent effective in reducing head and brain injuries in all types of bicycle incidents. The American Academy of Pediatrics recommends all cyclists wear properly fitting helmets and those children riding as passengers also wear helmets.

Despite the fact that the majority of all fatal bicycle crashes involve head injuries, less than one-fourth of riders wear protective headgear. Some of the reasons for not wearing helmets include lack of social acceptance and a belief they are too hot in the summer.

A number of studies have examined the effectiveness of bicycle helmets in reducing head injuries. Researchers in Seattle found that bicycle safety helmets provide substantial protection against head injuries for cyclists of all ages. They included more than 3,000 cyclists who had been treated for injuries in hospital emergency rooms. This study found that wearing helmets reduced the risk of head injury by 69 percent to 74 percent. The study also compared the effectiveness of different kinds of helmets—those with a hard shell, a thin shell and no shell. No significant differences were found in the protective effect of the different helmets.

Compulsory helmet laws have been shown to increase helmet use and decrease bicycle injuries. In New York, the annual rate of cyclists hospitalized from bicycle-related traumatic brain injuries in the under age 14 group fell from 464 in 1990 to

**Bicycle-Related Head Injuries**

Bicycle-related head injuries account for about:

- 500 deaths per year,
- 17,000 hospitalizations,
- 153,000 emergency room visits,
- Two-thirds of bicycle related deaths, and
- One-third of bicycle-related injuries.

Source: National Bicycle Safety Network, 2002.

**Bicycle Safety Tips from the National SAFE KIDS Campaign**

- Always wear a bicycle helmet.
- Wear the helmet correctly and always buckle the straps.
- Buy a helmet that meets or exceeds safety standards.
- Learn the rules of the road and obey all traffic laws.
- Until a child is age 10 and able to show how well he or she rides and observes the rules of the road, cycling should be restricted to sidewalks and paths.

209 in 1995 after a helmet use law was adopted for that age group. After New Jersey enacted a helmet law for those age 14 and under, bicycle-related fatalities for that group fell by 60 percent. After the helmet use law passed in Victoria, Australia, injuries decreased by 48 percent, and usage rates increased to 80 percent.

A study in Maryland compared the effect of legislation—as opposed to education—on the rate of helmet use. The researchers compared the approach of three different Maryland counties: Howard County, which mandated helmet use for children; Montgomery County, which launched a helmet education campaign; and Baltimore County, which took no action. The helmet use rates dropped in Baltimore during the time of the study.

#### Segway Scooters

During the 2002 state legislative sessions, several states considered legislation to allow the operation of Segway scooters on pedestrian walkways and bike paths. The Segway Human Transporter can travel at speeds up to 12 miles per hour. The transporters, which use technology to imitate human balance and movement, are designed to travel along sidewalks and other pedestrian areas. Therein lies the problem; to protect the safety of pedestrians, many state and local laws ban the use of motorized vehicles and scooters on sidewalks.

At least 25 states have passed legislation that defines Segways as an “electric personal assistive mobility device” and provide an exemption for these devices from existing laws. Traffic safety advocates argue that not enough is known about these new transportation devices. Some feel that legislation is being introduced and passed without any data or research on the safety effects. Many traffic safety advocates believe the Segway has potential, but that legislators should carefully examine its use and develop proposals that encourage Segway use in safe and appropriate settings. Although legislation is being considered in several states, Segways will not be available for purchase by the public until late 2002. They will cost \$3,000.

In Howard County, the helmet use rate was 4 percent before the ordinance. The law, adopted on July 30, 1990, became effective in October 1990. Police lectured in schools about the impending change in the law. After it went into effect, bicycle helmet use increased to 47 percent.

Montgomery County initiated an intensive education campaign that included helmet promotion messages, public service announcements, bicycle safety rodeos and promotions at the county fair, and other events. Although helmet use increased to 19 percent, this is considerably lower than the rate achieved under legislation. The Montgomery County council subsequently passed a helmet bill in 1991, and in 1995, Maryland adopted a helmet requirement for those under age 16.

#### Scooter Safety

When lightweight, foot-propelled scooters came on the market a few years ago, their popularity exploded. With that popularity came a remarkable increase in injuries, how-

ever; scooter injuries now exceed in-line skating injuries.

According to the Consumer Product Safety Commission, more than 40,500 scooter-related injuries were treated in emergency rooms in 2000. About 85 percent of those injuries have been to children under age 15. Five deaths have been reported. Most of the injuries occurred when riders fell from the scooter. Fractures and dislocations to arms and hands were common.

### State Laws

#### *Walking to School Safely*

Funding is an issue for successful Safe Routes to Schools programs. In 1999, the California Legislature passed a bill that provided \$20 million per year for a three-year pilot project designed to implement Safe Routes to Schools programs throughout the state. In the fall of 2001, California Governor Gray Davis signed a bill that extends the pilot program through 2004. The program dedicates \$20 million to \$25 million each year from federal

transportation safety funds for local bicycle and pedestrian safety projects.<sup>4</sup> Examples of projects eligible for this funding include construction of new sidewalks, additions of crosswalks, construction of walk paths and bike paths, and development of programs designed to slow down cars in school zones.

The funding source for the California Safe Routes to School program is the federal TEA-21 law. The funds are apportioned to the state of California through the Hazard Elimination/Safety (HES) Program, which provides local governments with direct access to the funds. A few state legislatures have followed in California's footsteps and have introduced similar legislation. Each year, more states propose laws regarding these programs.

### *Bicycling and Scooters*

Many local jurisdictions have imposed helmet requirements, which are directed mainly at children (table 2). Nineteen states and the District of Columbia have enacted laws regarding bicycle helmet use. These laws, a relatively new phenomenon, began in the early 1990s. They target young riders, usually those age 16 and younger. Rhode Island and Tennessee amended their helmet laws in 1998 to increase the age to under 16, rather than age 9 and age 12, respectively. The American Academy of Pediatrics has proposed a model law to require the use of certain safety equipment by children when on bicycles.<sup>5</sup>

**Consumer Product Safety Commission Recommendations**

- Wear helmets, kneepads and elbow pads. (Wrist guards may make it difficult to grip the handle and steer the scooter.)
- Children under age 8 should not use scooters without close adult supervision.
- Avoid gravel and uneven pavement, which can cause falls.
- Don't ride scooters in traffic.
- Don't ride scooters at night; riders can't see where they're going or be seen by others.

**Table 2. State Bicycle Mandatory Helmet Use Laws**

State/ Jurisdiction	Age at Which Helmets Must be Used	State/ Jurisdiction	Age at Which Helmets Must be Used
Alabama	Under 16	Massachusetts	Under 13
California	Under 18	New Jersey	Under 14
Connecticut	Under 16	New York	Under 14
Delaware	Under 16	North Carolina	Under 16
Florida	Under 16	Oregon	Under 16
Georgia	Under 16	Pennsylvania	Under 12
Hawaii	Under 16	Rhode Island	Under 16
Louisiana	Under 12	Tennessee	Under 16
Maine	Under 16	West Virginia	Under 15
Maryland	Under 16	District of Columbia	Under 16

Source: Insurance Institute for Highway Safety, NCSL and Bicycle Helmet Safety Institute, 2002.

Many state legislatures have been quick to respond to scooter safety concerns. For example, several states have considered bills to address scooter injury problems. In most cases, the bills require the use of safety equipment such as helmets or protective pads. Maryland passed a law that requires individuals under age 16 riding on roads or pedestrian ways to wear helmets, which must meet or exceed certain safety standards. A new Maine law requires scooter riders to ride on the right side of the road.

## 4. GETTING TO SCHOOL SAFELY ON THE BUS

### What Legislators Can Do

School bus travel is one of the safest forms of transportation. State legislators, safety organizations and the federal government continue to work to ensure it remains that way. State legislators can evaluate current state laws regarding school bus safety, including vehicle safety standards, licensing of school bus drivers, and the use of passenger vans to transport children to and from school. Legislators can familiarize themselves with federal regulations regarding school buses and strengthen them at the state level if they choose.

Through partnerships with communities and other organizations, state legislators can encourage public education campaigns used to inform children and parents about the safest way to approach and board a school bus. Legislators can encourage strict enforcement of passing laws and speed limits.

### Background

Every week during the school year, 23.5 million children begin and end each day with a trip on a school bus. More than 400,000 school buses travel approximately 4.3 billion miles every year. Between 1989 and 1999, an average of 10 passengers were killed each year in school bus crashes. In comparison, during 2000 alone, motor vehicle crashes claimed the lives of approximately 2,197 children between the ages of 5 and 14.<sup>1</sup>

These statistics indicate that school buses are very safe. Because of the importance of school bus transportation, NHTSA has established several safety standards to maintain this high level of safety. Based on data from school bus crashes and crash testing, NHTSA is able to deter-

mine what types of school bus safety standards are necessary. Specifically, NHTSA has prepared safety standards focusing on the human, vehicle and environmental variables that affect the level of safety associated with school bus transportation.

Although NHTSA and several other safety organizations acknowledge that school bus transportation is virtually the safest transportation mode in the United States, these organizations remain committed to enhancing school bus safety. This commitment requires these organizations to continue the learning process and determine methods of making this safe form of transportation even safer.

### Federal Action

In 1974, Congress amended the 1966 National Traffic and Motor Vehicle Safety Act to include school bus safety requirements. Today, NHTSA has 35 federal motor vehicle safety standards that apply to school buses. These standards require that school buses be structurally and mechanically safe. They not only apply to the structural and equipment safety of the bus, but also to occupant and pedestrian safety. NHTSA also makes determinations regarding school bus recalls for mechanical and safety problems.

The safety standards require pedestrian safety devices (stop arms), rollover protection, body joint strength, and passenger seating and crash protection on school buses. Other school



bus standards relate to brake systems, lighting to indicate loading and unloading of the bus, mirror systems, emergency exits and fuel systems (both gasoline and natural gas). Through this system of safety standards, NHTSA has been able to monitor and ensure that school buses maintain high levels of safety.

School buses are required to have stop arms that signal passing motorists to stop while the school bus is dropping off or picking up students. The stop arms may be equipped with strobe lights to increase visibility. The primary goal of this safety standard is to increase the level of safety in the area around the school bus and to reduce the risk of injury and death associated with children being hit by passing motorists. In addition to the stop arms, NHTSA requires that buses be equipped with mirrors that allow the driver to see areas in front of and along both sides of the bus to decrease the likelihood of an unseen child being hit by the school bus.

The National Highway Traffic Safety Administration estimates that 96 percent of the estimated 8,500 to 12,000 children injured in school bus crashes usually are considered minor injuries—bumps, bruises and scrapes. Most injuries and fatalities involving school buses are pedestrian crashes that occur while the students are getting on and off the school bus.

The area surrounding the bus at loading and unloading areas is often referred to as the “danger zone,” because it is the area where children are at the greatest risk of being hit by the school bus or by a passing car. Every year, on average, 19 children are killed while loading and unloading around school buses. In most cases, the child is waiting to board the bus or has just gotten off and is struck by the bus or a passing motorist. Since bus drivers may have several blind spots, they are not always able to see students walking in front of or behind the bus. According to NHTSA, there are three times as many pedestrian fatalities as school bus occupant fatalities.

In an effort to reduce child fatalities in the “danger zone,” NHTSA has identified three areas of focus. First, it is important to educate children about the “danger zone” and instruct them about how to safely get on and off the bus. Next, school bus drivers must be trained in the necessary safety skills. Finally, motorists must be taught safe driving practices near a school or school bus.

To educate children, school bus drivers and other motorists, NHTSA has established partnerships with other safety organizations. In the mid-1970s (and updated in the late 1980s), NHTSA produced and distributed an educational program focusing on the most frequent type of pedestrian crash children are involved in: darting into the street without stopping first and looking for oncoming traffic.

In addition to pedestrian safety, NHTSA has established guidelines and standards to protect children while they are riding on school buses. The National Highway Traffic Safety Administration requires “compartmentalization” in school buses to provide crash protection; this is a protective pocket consisting of closely-spaced seats with energy-absorbing seat backs. The NTSB and the National Academy of Sciences (NAS) have confirmed the effectiveness of compartmentalization in frontal and rear impact studies. However, after several investigations of school bus crashes in the late 1990s, the NTSB found that compartmentalization does not provide adequate protection during side impacts. NTSB be-

believes that new seating systems need to be developed that provide occupant protection for all types of crashes. NHTSA is researching new school bus seating systems.

## Occupant Protection on School Buses

Debate continues about whether seat belts should be installed on school buses. Seat belts provide excellent protection in other types of motor vehicle crashes; however, the effectiveness of seat belt use on school buses is unknown. The types of seat belts that would be installed on school buses are not the same as those installed in motor vehicles. Currently, only lap belts can be installed on school buses. The lap belt or two-point belt fastens across the child's lower abdomen. Studies have concluded that lap belts may cause injuries to children.

Injuries caused by the two-point belt have been attributed to what is referred to as the "seat belt syndrome." This syndrome can, in the event of a crash, cause contusion to the abdominal wall, intra-abdominal bleeding and fracture of the lumbar spine. Three-point shoulder belts can cause the same injuries as two-point belts; however, they also protect the lumbar spine. The studies from which these conclusions were drawn were specific to motor vehicles, not to school buses.

According to a study conducted by the NTSB, occupants who were restrained within the seating compartment benefited from compartmentalization, while those not restrained in the compartment, came into contact with surfaces within the bus that are not designed to absorb energy. Injuries could be decreased if an occupant protection system were used to restrain passengers within the seating compartment and if hard surfaces within the bus—sidewalls, window frames and seat frames—were padded to offer protection. When occupants are seated in the impact area, they can be seriously or fatally injured.<sup>2</sup> The NTSB found that seat belts could not prevent these injuries.

The national statistics on school bus transportation indicate that it is the safest method of transportation in the United States. The difficulty in assessing whether seat belts would provide protection to children in school bus crashes is that very little data exist. The number of school bus crashes is minimal and such crashes usually result in no serious injuries. To date, no school bus crash that involved children who were wearing seat belts resulted in serious injuries, according to the NTSB. For this reason, data needs to be developed to determine the effects of these belts on children involved in a school bus crash. Some states have passed resolutions or created study committees to examine overall school bus safety in their states.

Some cost-benefit analysis on this issue has shown that installing seat belts on school buses is not cost-effective. The Partnership for Prevention published a report in 2001 to help state legislators understand the purpose and uses of cost-effectiveness analysis. According to this group, interventions costing no more than \$25,000 to \$75,000 per quality-adjusted life years saved or per life year saved are considered to be cost effective.<sup>3</sup> Quality-adjusted life is a measure that adjusts years of life based on quality. The cost per life year saved for installing seat belts on school buses is estimated to be almost \$3 million, which is not cost effective, according to the Partnership for Prevention guideline.

In May 2002, NHTSA released *The Report to Congress School Bus Crashworthiness Research Report*. This is the most comprehensive study on various concepts for improving passenger crash protection since the early 1970s.



The *Report* found that lap belts alone have little, if any, effect on reducing school bus crash fatalities and that three-point lap/shoulder belts, if used properly, might have saved one life per year, but could cost as much as \$100 million annually. School buses would have to be redesigned to allow for lap/shoulder belt restraint systems. This would diminish the bus carrying capacity by 17 percent, which could result in longer bus commutes and higher costs for parents and also cause some parents to use private vehicles rather than school buses to transport their children to and from school. The unintended consequence would be to shift children from the safest form of school transportation—a school bus—to a less safe option.

The research showed that the current method of compartmentalization is extremely safe, but it did point out some areas for possible improvement. NHTSA is considering making the following changes to the motor vehicles safety standards that govern school buses.

- Require mandatory lap/shoulder belts in small school buses, which are more similar to passenger vehicles than large school buses;
- Increase the seat back heights to 24 inches on all school buses;
- Develop performance requirements for optional installation of lap/shoulder belts in large school buses.

Another major school transportation study released in June 2002 complemented and supported the results of the *Report*. This study, *The Relative Risks of School Travel: A National Perspective and Guidance for Local Community Risk Assessment*, looked at each major mode used for school travel to determine comparable risks.

The report, by the Transportation Research Board of the National Research Council, confirmed that school buses are, by far, the safest form of school transportation. Each year, approximately 800 children are killed in motor vehicle crashes during school commutes. Of those, on average, five are school bus passengers and 15 are killed getting on or off the bus. By contrast, 617 are killed in passenger vehicle crashes. The remainder of the fatalities are pedestrian- or bicycle-related.

The report found that an alarming number of the passenger vehicle crashes were caused by teen drivers. In fact, teen drivers are greatly over-represented in these crashes. Although they account for only 14 percent of all school trips, they are involved in 55 percent of traffic deaths.

To help communities identify steps that could be taken to reduce the risks particular to their school transportation systems, the Relative Risks study also developed a risk-management framework. It includes checklists of risk mitigation options to provide a framework within which communities can undertake a systematic evaluation of school travel alternatives.

## Transporting Preschool Age Children

Although government agencies currently do not recommend the use of seat belts on school buses, they do believe restraints should be used for smaller children. The use of school buses to transport preschool-age children is increasing. The Head Start Bureau has issued a

Final Rule that will require its Head Start centers to use school buses by 2006. This could affect approximately 500,000 preschoolers.

School bus compartmentalization, designed for children in grades K-12, does not provide adequate occupant protection for preschool-age children, according to NHTSA. In 1999, NHTSA issued a *Guideline for the Safe Transportation of Pre-School Age Children in School Buses*, which recommends that preschool-age children be secured in child passenger restraints that are age, height and weight appropriate.

## Use of 15-Passenger Vans for Pupil Transportation

Another issue facing school bus transportation is the use of passenger vans to transport students to and from school and school activities. Although leasing such vans can reduce transportation costs to the school districts, they are not as safe as school buses. Any vehicle used to transport children to and from school and school-related activities is required to meet the same federal motor vehicle safety standards (FMVSS) as traditional school buses. Fifteen-passenger vans are not required to meet the same FMVSS as school buses. NHTSA research has shown that 15-passenger vans have a rollover risk that increases dramatically as the number of occupants increases from fewer than five to more than 10. The rollover rate of 15-passenger vans with 10 or more in single vehicle crashes was nearly three times the rate of those that were lightly loaded. Fifteen-passenger vans do not have the same occupant protection standards as school buses, nor are they built to the same crashworthy standards. NTSB has recommended that states prohibit the use of 15-passenger vans for student transportation.

Federal law prohibits the sale of new 15-passenger vans for transporting high school age and younger children to and from school or school-related activities. No such prohibition exists for the sale of used vehicles or for vehicles used to transport college students or other passengers.

## Licensing School Bus Drivers

The Federal Motor Carrier Safety Administration has developed regulations for states that issue commercial driver's licenses (CDL). The regulations include standards for licensing school bus drivers and help ensure that the drivers of school buses are qualified. In most states, strict standards are in place that go beyond the federal CDL requirements that regulate the licensing of school bus drivers. States are able to strengthen this program by requiring specific training, conducting background checks and fingerprinting individuals who apply for a license. In Hawaii, for example, school bus drivers cannot have any felony convictions in the past five years or misdemeanor convictions in the last three years.

### NHTSA Plans to Update School Bus Driver Training Program

NHTSA released the School Bus Driver Instructional Program in 1974. Since then, many states have used the program to instruct school bus drivers. NHTSA acknowledges that the program is out-of-date, however, and has agreed to update it. Once updated, the program will supplement current commercial driver's license (CDL) requirements and provide all school bus drivers with instruction on transporting children safely.

In many states, individuals who apply for a CDL to operate a school bus are required to attend training through that state's department of education. In Alabama, drivers must complete a 12-hour training program presented by the Department of Education. School bus drivers in Michigan must complete a school bus safety course and pass a

physical exam each year. In Rhode Island, bus drivers must take at least 10 hours of training, and West Virginia school bus drivers are required to pass the 30-hour West Virginia School Bus Operator Program.

## Safe Routing of School Buses

States also have recognized the importance of safely routing school buses. By thoughtfully developing the safest route for school buses and establishing the safest places for students to meet the bus, states are decreasing hazards. The National Association of State Directors for Pupil Transportation Services has released a report designed to assist school transportation officials to establish safe routes and stops.

States also have identified the risk associated with motorists who illegally pass school buses. Education campaigns have been geared toward decreasing the number of motorists who ignore the stop arm and pass buses illegally. Some states have passed laws in the last few years to increase penalties for motorists who are convicted of illegally passing a school bus.

School buses transport the nation's most precious cargo—children. Because of this tremendous responsibility, school buses must be held to the highest level of safety. NHTSA has instituted several safety standards and regulations to ensure that school buses provide higher levels of safety than other passenger vehicles. In addition, NHTSA has recognized the importance of training school bus drivers regarding the dangers associated with the loading and unloading area around the bus and with safe crossing at highway-rail grade crossings.

## State Laws

Although no federal requirement is in place regarding the use of seat belts on large school buses, state legislatures can, if they wish, require their use and installation. Each year, several states introduce legislation to require seat belts on school buses. New York and New Jersey were the first states to pass such laws. The New York law requires that seat belts be installed on school buses, but not that they be worn. A survey conducted in 1997 by the New York Department of Education found that 44 of the states' 709 public school districts require pupils to wear seat belts. In New Jersey, the law provides that seat belts be installed on school buses and that passengers wear them.

California, Florida and Louisiana are the most recent states to pass laws requiring the installation of seat belts on school buses. All three states passed laws during the 1999 legislative session. California requires that combination pelvic and upper torso passenger belts be installed on all school buses manufactured after Jan. 1, 2002. The Louisiana law requires that occupant restraint systems be installed on every school bus no later than June 30, 2004.

### New Technology to Reduce Illegal Passing of School Buses

According to NHTSA, some states report that motorists illegally pass stopped school buses approximately 10,000 times each day. One way to help solve this problem is through increased enforcement. In October 2000, NHTSA awarded a project to develop a system designed to detect and photograph motor vehicles that illegally pass school buses. A prototype device has been developed for field testing and a final report is due in 2002.

### Legislator Proposes Legislation to Track School Buses

After a Pennsylvania school bus driver kidnapped 13 children in January 2002, Pennsylvania state Senator Michael O'Pake introduced legislation that would require the installation of satellite tracking devices on school buses. "There is no excuse for failing to provide the security that modern technology allows," said O'Pake. "With satellite-tracking devices, operators and school officials can know almost instantly the exact location of school buses in case of any emergency. We owe children, their parents and their families that security." The location of the school bus in question was unknown for more than six hours. O'Pake's bill not only requires all school buses to be equipped with tracking devices but also requires school buses to have rooftop markings that permit them to be identified from the air. According to Senator O'Pake's office, school buses can be fitted with tracking systems for less than \$1,000.

In Florida, seat belts must be installed on school buses leased or purchased after Dec. 31, 2000.

Some state legislatures have addressed other safety issues relating to school buses. Most are related to the safety of the school bus itself. Examples include strobe-warning lights and sensors designed to detect children in the danger zone surrounding the bus. In North Carolina, bus monitors ride on the school bus to increase safety. These monitors allow the bus driver to concentrate on driving, while the monitors watch the children as they get on and off the bus and while they are riding on the bus. Other states have installed video cameras on school buses to monitor students' behavior. Some states have developed safety training programs to educate students and parents about how to avoid crashes while getting on and off the school bus. Indiana and South Carolina have passed legislation prohibiting the use of 15-passenger vans for student transportation, and Maryland and Virginia considered similar bills in 2002.

Many states have enacted legislation that provides for requirements in addition to the federal guidelines for school bus safety. Several states have added provisions to school bus driver licensing. Other state laws target motorists at school bus stops and in school zones. Some states require noise-reduction switches to be used by a driver stopped at a grade crossing so that a train's horn can be heard.

## 5. CHILD ENDANGERMENT AND DRUNK DRIVING

### Background

The safety of child passengers is affected by several factors, including the sobriety of the driver behind the wheel of the vehicle in which they ride. On average, more than 500 children are killed annually in alcohol-related traffic crashes. That is more than twice the number who die from unintentional firearm injuries each year.<sup>1</sup>

Between 1985 and 1996, more than 5,500 child passengers died as a result of alcohol-related traffic crashes. In 64 percent of those deaths, the child was riding as a passenger with the drunk driver, and almost two-thirds of those fatalities involved a parent-aged driver rather than an older driver such as a grandparent or a peer-aged driver, according to a study conducted by researchers at the National Center for Injury Prevention and Control.<sup>2</sup>

Although the majority of all drunk driving crashes occur between 6:00 p.m. and 6:00 a.m., a joint study by the Ford Motor Company and the University of Michigan Transportation Research Institute found that, for child fatalities with a drinking driver involved, the highest percentage of deaths occurred between 3:00 p.m. and 9:00 p.m., during after-school commutes and early evening activities.

Although parent-aged drivers account for most child passenger fatalities, peer-aged drivers are involved in a disproportionate number of crashes. Data from the Fatality Analysis Reporting System (FARS) indicated that peer-aged drivers are more likely than parent-aged drivers to be involved in alcohol-related traffic fatalities involving passengers ages 14 and 15. In fact, drivers age 21 and under, who are under the legal drinking age in every state, accounted for more than 30 percent of alcohol-related passenger deaths among children.

Alcohol traffic fatalities have declined 25 percent since 1990, but the percentage of child passenger deaths has not decreased as significantly as overall drunk driving deaths. According to a recent study by the University of North Carolina, the percentage of alcohol involvement for child fatalities has actually increased at times for specific age groups (table 3). The study also notes that drunk drivers who had children in the vehicle at the time of their offense were more likely to have previous drunk driving convictions or prior driver's

#### What Legislators Can Do

More than 500 children are killed each year in alcohol-related motor vehicle crashes. State legislatures play an active role in reducing fatalities and injuries associated with drunk driving crashes. State legislators can continue to evaluate current state laws regarding drunk driving and those specific to child endangerment. If state laws regarding drunk driving and child endangerment are strong, fewer children will be forced to ride in a car with a drunk driver. State legislators can team with organizations within their communities to help educate and inform the public.

license suspensions. Further compounding an already risky situation, a drunk driver is less likely to use seatbelts or child restraints to protect the occupants of the vehicle. The study found that the more intoxicated the driver is, the less likely he or she to buckle up child passengers, and, unfortunately, the more intoxicated the driver, the more likely a crash will occur.<sup>3</sup>

**Table 3: Child Alcohol-Related Traffic Fatalities, 1994-2000**

Year	Ages 0-5	Ages 5-9	Ages 10-14	Total Deaths
1994	682	441	693	1,816
1995	620	470	718	1,808
1996	656	454	707	1,817
1997	604	479	713	1,796
1998	575	518	683	1,776
1999	557	507	664	1,728
2000	539	484	645	1,668
<b>Totals</b>	<b>4,233</b>	<b>3,353</b>	<b>4,823</b>	<b>12,409</b>

Source: Fatality Analysis Reporting System (FARS), National Highway Traffic Safety Administration, U.S. Department of Transportation, 2002.

Drunk driving deaths are once again increasing, up 4 percent from 1999 to 2000. That represents the highest rate of increase in alcohol-related fatalities since the federal government began keeping such statistics in 1975. It does not bode well for the safety of children who may find themselves at increased risk of riding with a drunk driver, even with a parent-aged driver.

Combating the problem is a matter of both public policy and education. Although state lawmakers are strengthening laws to provide greater protection for children, a need exists for greater public awareness of the issue. Many parents have long been cautious about allowing their children to ride with younger, less experienced drivers, but seem to have greater confidence in allowing their children to ride with other adult drivers. That confidence might be misplaced, as evidenced by the astonishing statistics that, of the more than 550 children who die each year in drunk driving crashes, almost two-thirds of them were riding with the drunk driver and, in two-thirds of those cases, the drunk driver was an adult who was responsible for their safety.

Parents will want to ensure that any person who is driving their child is not only a safe driver but also a sober driver. Equally, kids need to know how to protect themselves as passengers. To help children think about their safety when they are passengers, MADD and General Motors have teamed up with a school-based education program called *Protecting You/Protecting Me*. The curriculum includes “Ten Rules for Riding” that will help children practice safe behavior as passengers and give them confidence to avoid riding with someone when they feel at risk.

A study in the *Journal of the American Medical Association (JAMA)* examined alcohol use by drivers involved in crashes in which children died, assessed by age and sex of the child and driver and type of crash. Although the overall percentage of alcohol-related motor vehicle deaths for children declined between 1991 and 1996, experiences for passengers, pedestrians and bicyclists differ. Selected characteristics of children and drivers that elevate the risk of an alcohol-related motor vehicle death point to the need for further policy and clinical interventions.



Another study in *JAMA* examined characteristics of crashes involving child passenger deaths and injuries associated with drinking drivers to identify opportunities for prevention. The data indicate that the majority of drinking driver-related child passenger deaths in the United States involve a child riding unrestrained in the same vehicle with a drinking driver. Typically, the drinking driver who is transporting the child is old enough to be the child's parent or caregiver.

Ford Motor Company and the University of Michigan joined to study light vehicle crashes that killed or injured child passengers. The study focused on the safety records of specific driver groups who commonly transport children to develop a conceptual driver rating approach in order to assist parents to make informed decisions about drivers who transport their children.

A laboratory study conducted by NHTSA examined the effects of alcohol on driving skills at blood alcohol concentrations (BAC) of 0.00 percent to 0.10 percent in a sample of 168 subjects assigned to age, gender and drinking practices groups. The study was designed to determine the BACs at which impairment of specific experimental tasks occur and the interaction of age, gender and drinking practices with BAC on the magnitude of impairment.

## State Laws

State lawmakers have taken seriously the potential harm children face when they ride with a drunk driver. Since the early 1990s, at least 27 states have passed laws to expand protection for children and punish those drunk drivers who would put them at risk (see appendix F).

The approach most states have taken is to increase the penalties for drunk driving with a child in the vehicle. At least 21 states have added more stringent penalties if the basic drunk driving offense occurred with a child present. From significantly higher fines and longer mandatory jail sentences to longer license suspensions and felony convictions, penalties for drunk drivers who endanger children with the offense are double the penalties that would have been imposed had the children been left at home. Under the laws passed in most of these states, the child need not suffer physical harm for the stiffer penalties to apply.

At least four states have adopted laws making it a separate offense to have a child present in the vehicle while driving under the influence of alcohol or controlled substances. In creating separate offenses, Arizona, Georgia, Idaho and Ohio have followed the trend of creating aggravated drunk driving offenses where there are special circumstances, such as a particularly high level of intoxication or endangerment to a child. The child need not be injured or killed for the driver to be charged with the aggravated offense; the mere presence of a child in the vehicle at the time of the offense is sufficient to warrant the elevated charge.

### *Protecting You/Protecting Me*

*Protecting You/Protecting Me* is a science-based alcohol use prevention curriculum for students in grades one through five. Sponsored by Mothers Against Drunk Driving and General Motors, the goal of the curriculum is to prevent injury and death of children and youth due to underage consumption of alcoholic beverages and from vehicle-related risks, especially as passengers in vehicles in which the driver is not alcohol-free.

Based on the latest brain research, students learn about the role and importance of the brain, brain growth and development, the dangers of alcohol exposure to the developing brain, and the importance of protecting themselves by making good decisions.

The curriculum also teaches children safety skills, including how to refuse a ride from an unsafe driver and how to reduce the risks associated with riding with a driver who is not alcohol-free. The course includes Ten Rules for Safe Riding, designed to help children stay safe in vehicles, whether they are riding with their parents, other kids' parents, with peer drivers or in carpools.

Lessons are designed to be infused into a school's core curriculum and are taught by trained school personnel, high school students in a structured program, or volunteers. For more information about *Protecting You/Protecting Me*, contact your state MADD chapter or visit the national MADD Web site at <http://www.madd.org>.

Although enhanced penalties or separate drunk driving offenses are the more common approaches to addressing the problem, two states have used existing child abuse and neglect statutes to cover drunk driving with a child in the vehicle. In Colorado, a person is guilty of child abuse if he or she knowingly or recklessly commits an act that injures or kills a child. Colorado case law has supported that the child abuse statute applies to drunk driving, regardless of whether the child is in the car being driven by the drunk driver or is a passenger in another vehicle involved in a collision with the drunk driver. Iowa has a similar law, in that an adult can be charged with child neglect for recklessly exposing a child to danger by driving in an intoxicated condition with a child in the vehicle. As in Colorado, the Iowa statute has been tested and supported in the courts.



## 6. TEEN DRIVERS

### Background

According to NHTSA and the Centers for Disease Control and Prevention, unintentional injury from motor vehicle crashes is the leading cause of death among U.S. teenagers. Crash rates among drivers ages 16 to 19, per mile driven, are higher than those for all other age groups. The crash risk among 16- to 17-year-old drivers is almost three times as high as among 18- to 19-year-old drivers. According to the *Journal of the American Medical Association*, young driver inexperience and risk-taking have likely contributed to the high incidence of crashes. The inexperience of young drivers makes it difficult for them to recognize and respond to hazards, resulting in unsafe driving practices. Their immaturity manifests itself in risky driving practices such as speeding and tailgating. The concept of graduated driver licensing (GDL) addresses youthful risk-taking, which may result in traffic violations or crashes, by limiting access to driving privileges and providing serious consequences, such as curtailed license privileges, for driving infractions. GDL thereby ensures that young drivers gain experience and maturity under conditions of low risk before they progress to more risky driving situations.

### Elements of Graduated Driver Licensing

Several key elements of a comprehensive GDL program for novice drivers have been recommended by NHTSA. First, licensure should be staged to phase drivers into on-the-road driving. The stages should include a supervised learner's period, an intermediate licensing stage that permits unsupervised driving only in less risky situations, and a full-privilege license when the conditions of the first two stages have been met. Second, the learner's stage should be long enough for adequate practice in increasingly challenging situations and should require fairly extensive adult supervision of that practice. Third, when independent driving begins in the intermediate stage, it should be of substantial length and include restrictions on such risky activities as driving at night and with teenage passengers. Fourth, programs should ensure competence before passage through each stage, using a two-phase education program, written and road tests, and delays in progress if traffic violations or at-fault crashes occur.

#### What Legislators Can Do

Motor vehicle crashes are the leading cause of death for teenagers in the United States. Graduated driver's licensing programs have been shown to reduce the number of teenage crashes and, therefore, reduce the number of fatalities and injuries associated with these crashes. State legislatures during the past few years have passed graduated driver licensing laws and have supported programs regarding young drivers.

Legislators can evaluate current laws regarding teen drivers and make changes where necessary. During the past few years, some states have added passenger restrictions and nighttime driving curfews. Community groups can work with state legislators to educate parents and teens about the dangers associated with driving and how to reduce fatalities and injuries among the young driving population.

#### Key Elements of Graduated Driver's Licensing

- Staged licensure,
- Adequate length for learner stage,
- Restricted intermediate license level,
- Ensure competence during each stage, and
- Full licensure after all stages are met.

## Nighttime Driving Restrictions

In 1999, 41 percent of motor vehicle deaths among teenagers occurred between 9 p.m. and 6 a.m. The nighttime driving restriction is a key element of graduated licensing laws, according to safety advocates. It is not a curfew, but a requirement for supervised nighttime driving. Night driving is more difficult than day driving for all drivers. Visibility is reduced, the glare of oncoming headlights can be difficult, and drivers tend to be more tired. The risk of fatal crashes at night for all drivers is approximately 30 to 40 times greater than during the day, and the fatal risk for teen drivers at night is higher. A study in North Carolina showed that the time for highest risk to teens was between 9 p.m. and midnight. As a result of the study, the North Carolina legislature included a nighttime driving restriction from 9 p.m. to 5 a.m. in its graduated licensing law.

## Minimum Supervised Driving Practice

Another component of graduated licensing systems is the requirement that novice drivers complete a specified amount of supervised driving practice. For example, California, Michigan and Ohio require 50 hours with 10 of those at night. Other states have somewhat different requirements. For example, Illinois requires 25 hours and Massachusetts requires 12 hours. Increased parental involvement in the education process is a cornerstone of AAA's Licensed to Learn program.

## Passenger Restrictions

One rationale behind passenger restrictions is that teen drivers can be distracted by teen passengers. Studies by the Insurance Institute for Highway Safety show that teenage drivers are at much greater risk of being involved in a fatal crash when teen passengers are present as opposed to when they are driving alone or with an adult. In addition, a 1998 NHTSA report showed that 58 percent of fatalities in teen driver crashes are peers of the teen driver.

## Graduated Driver Licensing Studies

Numerous studies have been conducted following the passage of GDL laws. Michigan's comprehensive law, implemented April 1, 1997, included nearly all the recommended GDL components. In 2000, researchers at the Transportation Research Institute evaluated the crash rates of 16-year-old drivers before and after GDL implementation. The study found that the rate of 16-year-old drivers (per 1,000 population) involved in crashes declined from 154 in 1996 to 111 in 1999. After adjusting for population trends, the overall crash risk for 16-year-olds was significantly reduced (by 25 percent) from 1996 to 1999. Significant reductions also occurred for non-fatal injury and combined fatal and nonfatal crashes.

Evaluation of Florida's graduated license law that took effect on July 1, 1996, determined that the law resulted in a 9 percent reduction in fatality and injury crashes among 15- to 17-year-old drivers. North Carolina's law became effective on Dec. 1, 1997 and, despite an increase of nearly 500,000 new drivers, the number of youth fatalities declined slightly. A report by the University of North Carolina indicated that North Carolina's graduated licensing law is being credited with a 29 percent decline in crashes involving 16-year-olds. It

is believed that the law has had an even greater effect on nighttime crashes, reducing late night crashes for 16-year-old drivers by 47 percent.

## Driver's Education

Most states impose some kind of driver's education requirement for a novice driver's license. These courses, which typically include 30 hours of classroom instruction and six hours on the road, have been available for decades. It is assumed that these courses improve driver safety. However, a 1970s study conducted in DeKalb County, Ga., dispelled this assumption. Although such courses may not improve driver safety, they do teach the rules of the road at the appropriate time. Numerous states require teens to spend time in the classroom and behind the wheel. In Vermont and Virginia, the instruction includes specific information such as drug and alcohol abuse, aggressive driving, railroad crossing, and organ and tissue donation. The Kentucky administrative code details the components of the driver education curriculum. Curriculum must consist of at least 45 minutes on the dangers of alcohol and drugs, at least 45 minutes on defensive and perceptive driving, at least 30 minutes on seat belt usage, at least 45 minutes on driver behavior, and at least 30 minutes on rules of the road.

Safety groups have attempted to improve driver's education. The AAA Foundation for Traffic Safety developed a model curriculum in 1995 that suggests adaptive and experiential programs that stimulate and incorporate advances in knowledge and technology. The curriculum also provides for the development of interactive computer learning tools to improve decision making and instruction that supports parental involvement.

The AAA Foundation for Traffic Safety, NHTSA and the American Association of Motor Vehicle Administrators support the coordination of driver's education with licensing, such as a component of graduated licensing. Teens could have a basic driver education course in the learner stage and a more advanced safety course in the intermediate stage. Thus, teens could learn more about safety after they have gained some basic driving experience. Michigan was the first state to include this educational process as part of its graduated license law.

## Licensing Linked to Non-Driving Issues

Many states are linking the privilege to drive with school attendance with the hope that the driving will be an incentive to stay in school. At least 15 states require proof of enrollment and good standing in school to obtain a learner's permit or license. Other states penalize students who drop out of school by suspending their license.

Besides linking teen driving to school attendance, states have linked other issues to driving privileges. In Nevada, the court may suspend a license if a teen is guilty of a graffiti or firearms violation. Florida teens can lose their license if they are convicted of possession of tobacco products. In the 2002 legislative session, Colorado considered a bill that would revoke driving privileges if a teen is guilty of aggravated motor vehicle theft. The bill did not pass out of committee.

## State Laws

Forty-three states and the District of Columbia have enacted some or all of the elements of graduated licensing (appendix G). Thirty-two states—Alabama, California, Colorado, Delaware, Florida, Georgia, Illinois, Indiana, Iowa, Louisiana, Maryland, Massachusetts, Michigan, Missouri, New Hampshire, New Jersey, New Mexico, New York, North Carolina, Ohio, Oregon, Pennsylvania, Rhode Island, South Carolina, Tennessee, Texas, Utah, Vermont, Virginia, Washington, West Virginia and Wisconsin—and the District of Columbia have, according to safety groups, the core elements of a graduated licensing plan as compared with the National Committee on Uniform Traffic Laws and Ordinances (NCUTLO) model graduated licensing law. The NCUTLO core components are a learner's phase of at least six months, an intermediate license phase of at least six months that also includes a prohibition against unsupervised nighttime driving, and full licensure. Drivers must remain free of traffic violations during the license phases. Eleven other states have at least some of the core provisions.

California was the first state to impose passenger restrictions as part of its graduated licensing system. For the first six months of the provisional license, drivers in California are prohibited from transporting passengers under age 20 unless they also are accompanied by a parent or an adult over age 25. A family exemption allows teens unaccompanied by an adult to drive immediate family members under age 20 during the first six months at any time of the day or night as long as the teen has a letter authorizing it from his or her parent. Seventeen other states—Delaware, Georgia, Indiana, Maine, Massachusetts, New Jersey, New Mexico, Oregon, South Carolina, Tennessee, Texas, Utah, Vermont, Virginia, Washington, West Virginia and Wisconsin—and the District of Columbia now impose some kind of passenger restriction. South Carolina adopted stricter restrictions, limiting unsupervised nighttime driving from 6 p.m. to 6 a.m., the earliest cutoff for teen driving. Idaho restricts teen drivers from driving unsupervised from sunset to sunrise. Thirty-six states and the District of Columbia have similar restrictions, although the times vary.

## 7. CONCLUSION

Motor vehicle crashes are the leading cause of death among children. Each year, these crashes are responsible for the deaths of more than 2,500 child passengers under age 16 and serious injuries to more than 320,000. Progress has been made to reduce childhood injuries and fatalities resulting from car crashes. In fact, the fatality rate for children has declined by nearly 50 percent during the past 25 years.

Many tools have been used over the past few decades to make travel by car and bus safer for children. The federal government has instituted a series of federal safety standards designed to ensure the highest quality and safety of child safety seats and motor vehicles. Federal safety standards also have been implemented to ensure the safety of school buses. NHTSA has implemented public education campaigns targeting children and parents on a variety of issue areas including child occupant protection, pedestrian and bicycle issues, school bus safety, child endangerment and drunk driving and graduated driver's licenses for teens. This heightened level of awareness has helped to increase the safety of child passengers. More parents are using child safety seats correctly and insisting that their children ride in the back seat. These parents also have turned to fitting inspection stations in their communities to ensure proper installation and use of child safety seats. Other parents are becoming active in the education process relating to graduated driver's licensing for teens. Young pedestrians and bicyclists are educated, not only by their parents, but also in school regarding school bus safety as well as helmet use and safe ways to cross the street.

Public education campaigns have been successful in raising awareness and helping the public determine the safest way for their children to ride in a car, on a bus, on a bicycle, scooter or skateboard, the implications of drunk driving and eventually teaching teens how to drive. While these education campaigns are important, state laws also have played an important role in reducing the number of children killed or injured each year in traffic-related crashes.

Each year hundreds of bills designed to increase the level of safety for child passengers are proposed in state legislatures throughout the country. These proposed laws cover a wide range of issue areas including occupant protection, pedestrian and bicycle safety, school bus safety, child endangerment and drunk driving, and graduated driver's licensing for teens.

Safety advocates believe that gaps in child passenger protection laws must be closed in order to save additional lives and prevent injuries. In some states, child passenger protection laws only cover children up to a certain age, usually age 3 or 4. Thirteen states have

passed new laws in the last few years designed to extend the coverage of state child passenger laws to older children. Other states have passed laws that prohibit young passengers from riding in the back of pickup trucks.

Proposals designed to ensure school bus safety are considered by state legislatures each year. These bills cover issues including installing seat belts on school buses, licensing school bus drivers, cell phone use by school bus drivers and types of vehicles appropriate for school transportation. Legislators also consider legislation designed to ensure the safety of teen drivers. Through the implementation of graduated licensing laws and other provisions, state legislators have established licensing programs designed to reduce the high rate of fatalities and injuries facing teen drivers today.

State legislators can influence their communities, not only through the passage of laws, but also by working with community groups and organizations. By working with these groups and organizations, they can support child passenger education programs, fitting inspection stations and car seat loaner programs.

This book has identified various state laws, federal standards and education campaigns that have a beneficial influence on a variety of child safety issues, including child safety seats, seat belts, pedestrian and bicycle safety, school bus safety, child endangerment and drunk driving and graduated drivers licensing for teens. These tools and laws represent a few of the ways communities and state legislatures can work together to help ensure the highest level of motor vehicle safety for children.

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## Appendix A. National Highway Traffic Safety Administration Glossary of Terms—Child Passenger Protection

**2-Point Seat Belt**—A restraint system with two attachment points. A lap belt.

**3-Point Child Restraint Harness (CR) Harness**—A restraint system with three attachment points, two at the shoulder and one between the legs.

**3-Point Seat Belt**—A seat belt with both a lap and a shoulder portion, having three attachment points (one shoulder, two hips).

**5-Point Child Restraint (CR) Harness**—A child restraint harness with five attachment points, two at the shoulder, two at the hips, one between the legs.

**Advanced Air Bags**—Supplemental restraint systems with deployment adjustments to better protect children and improperly positioned adults.

**Air Bag**—A passive (idle) restraint system that automatically deploys during a crash to act as a cushion for the occupant. It creates a broad surface on which to spread the forces of the crash, to reduce head and chest injury. It is considered “supplementary” to the lap/shoulder belts because it enhances the protection the belt system offers in frontal crashes. Also known as SRS—supplemental restraint system; SIR—supplemental inflatable restraint; SIPS—side impact protection system; IC—inflatable curtain; SIAB—side impact air bag.

**Armrest (child seat)**—A U-shaped bar encircling the child on older models of child restraints; not connected to the shoulder straps and not part of the system intended to restrain the child. Not a shield. No longer allowed on child restraints meeting FMVSS No. 213 (Federal Motor Vehicle Safety Standard).

**Armrest (vehicle)**—Found in the middle of the back seat of some vehicles. These usually pull down from the top of the vehicle seat back cushion. Some child seat manufacturers recommend against placing a rear facing child seat in a seating position which has a pull down armrest.

**Automatic Locking Retractor (ALR)**—A safety belt retractor that locks maintaining a fixed seat belt (lap belt) length during use. Good for child seat installation.

**Automatic Restraint**—Passive restraint that requires no action by the user; (e.g., shoulder or lap/shoulder belts that automatically wrap around the occupant; air bags).

**Base (of a child seat)**—The base of a child seat is the lower portion that rests on the vehicle seat. A detachable base that comes with many infant seats is used to permit a fixed installation into the vehicle allowing the child seat to be taken in and out of the vehicle without having to do a new installation each time.

**Belt Anchor Points**—Fixed locations where the safety belt’s latchplate and buckle are anchored to the vehicle structure.

**Belt Path/Route**—The manufacturer’s required place where the safety belt passes around or through the child restraint.

**Belt-Positioning Booster Seat (BPB)**—A platform that raises the child (provides a taller sitting height) so adult lap and shoulder belts fit better; some have high backs as well. Never use with a lap belt only across the child.

**Belt-Shortening Clip or Heavy Duty Locking Clip**—A heavy duty locking clip intended for use to shorten lap belts which have emergency locking retractors (ELRs) for use with a child restraint. Not to be confused with a standard locking clip. Heavy duty locking clips can only be obtained through a vehicle manufacturer.

**Belt Webbing**—A term used to refer to the vehicle seat belt material.

**Booster Seats**—Are intended to be used as a transition to lap and shoulder belts by older children who have outgrown convertible seats (over 40 pounds). They are available in high backs, for use in vehicles with low seat backs or no head restraints, and no-back; booster bases only.

**Buckle**—The locking mechanism of the vehicle belt and child safety seat buckle/latchplate system. Buckles are typically mounted/attached to fabric webbing and/or by metal or plastic stalks.

**Car Seat**—Common term for a specially designed device that secures a child in a motor vehicle, meets federal motor vehicle safety standards, and increases child safety in a crash.

**Chest Clip**—The chest clip is a device on the harness straps of the child safety seats used to position the straps properly on the child.

**Child Safety Seat/Child Restraint**—A crash tested device that is specially designed to provide infant/child crash protection. A general term for all sorts of devices including those that are vests or car beds rather than seats.

**Children With Special Transportation Needs**—Children whose physical, medical, or behavioral condition makes the use of particular, often specially-designed, restraints necessary.

**Cinching Latchplate**—(also known as lightweight locking latchplate) Found on some continuous loop lap and shoulder belts. A latchplate which has a sliding lock/cinch feature intended to keep the vehicle belt at a fixed length for child seat installation.

**Combination Child Seat/BPB**—A type of forward facing child restraint that is used with an internal harness system to secure a child up to 40 pounds and then, with the removal of the internal harness, is used as a high back belt positioning booster (BPB) seat.

**Combination (Switchable) ELR/ALR Retractor**—A safety belt retractor that can be operated in the emergency locking mode for adults and switched to the automatic locking mode for use with a child safety seat.

**Compliance Tests**—Rigorous crash and static testing done to assure that child safety seat manufacturers meet required federal motor vehicle safety standards (in this case, FMVSS 213). Performance requirements established by National Highway Traffic Safety Administration (NHTSA).

**Continuous-Loop Lap/Shoulder Belt**—A three-point belt that uses one continuous piece of webbing, that slides through a latch plate. It is connected at one end to the vehicle at the anchor point and the other to a retractor system.

**Convertible Child Safety Seat/Restraint**—A child restraint that can be used in more than one mode; usually rear-facing for infants and forward-facing for toddlers.

**CPS**—Child Passenger Safety.

**Emergency Locking Retractor (ELR)**—Allows the belt to move freely, locks only when the vehicle or occupant slows quickly/abruptly or stops suddenly. Will not secure a child safety seat. An ELR may be switchable, converting from an emergency locking to automatic locking system.

**Fixed Latchplate**—Latchplate is permanently sewn/attached to the lap belt to or the combination lap and shoulder belt.

**FMVSS 213 (49 CFR 571.213)**—Federal Motor Vehicle Safety Standard that pertains to all restraint systems intended for use as crash protection in vehicles for children up to 50 pounds.

**FMVSS No. 225 (49 CFR 571.225)**—Federal Motor Vehicle Safety Standard that pertains to the standardized vehicle anchorage systems for child safety seats (upper and lower) that are independent of the vehicle seat belts.

**Foam Noodle**—This is a foam rod or tube about 4-5 inches in diameter and five feet long; these are found in pool and toy stores. Cut off a piece the width of the child seat base and use to raise the base of the seat to obtain a 45 degree angle (placed under base where car seat cushion and base meet). A rolled up towel or newspapers, etc., serve the same purpose.

**Forward-Facing Child Restraint**—A restraint that is intended for use only in the forward-facing position for a child at least age one and at least 20 pounds up to 40 pounds.

**Free Sliding Latchplate**—Type of latch plate that has no lock feature to securely position the latchplate along the belt webbing. The latchplate “freely” slides along the belt. This type of system must have a locking retractor to keep the belt at a fixed length for child seat installation or it must be used with a regular locking clip.

**Frontal Air Bag**—A frontal air bag is one installed in the dashboard.

**Harness Retainer Clip**—A plastic tie or clasp that holds the two shoulder straps close together over the child’s chest at armpit level; intended to keep harness straps in position on the shoulders. Used for pre-crash positioning.

**Harness Strap**—This refers to the child seat straps used to secure the child into the safety seat.

**Harness Threading**—Harness straps should be in lowest slots for rear facing infants (at or below shoulder level); in top slots for forward facing use (at or above shoulder level). Always refer to the child seat manufacturers instructions for proper location.

**Heavy Duty Locking Clip (HDLC) or Belt Shortening Clip**—A flat, H-shaped metal clip, intended for shortening a lap belt with an emergency locking retractor so it will secure a child restraint. Can also be used to prevent webbing from sliding through a sliding latch plate. Heavy Duty Locking Clips can only be obtained from a vehicle manufacturer.

**Infant-Only Restraint**—A restraint designed for use only by a baby (usually weighing less than 17-22 pounds) in a semi-reclined, rear-facing position.

**Integral/Integrated Child Seat**—A child-sized, forward facing restraint or belt-positioning booster built into a vehicle seat. Some have a full harness and hold children over 20 pounds; others are belt-positioning boosters for use with the adult lap and shoulder belts.

**Lap Belt**—A safety belt anchored at two points, for use across the occupant’s thighs/hips.

**Lap/Shoulder Belt**—A safety belt that is anchored at three points and restrains the occupant at the hips and across the shoulder; also called a “combination belt”.

**LATCH (Lower Anchors and Tethers for CHildren)**—This new system makes child safety seat installation easier without using seat belts. LATCH is required on most child safety seats and vehicles manufactured after Sept. 1, 2002. LATCH is not required for booster seats, car beds and vests. LATCH-equipped vehicles have at least two sets of small bars, called anchors, located in the back seat where the cushions meet. LATCH-equipped child safety seats have a lower set of attachments that fasten to these vehicle anchors. Most forward-facing child safety seats also have a top strap (top tether), that attaches to a top anchor in the vehicle. Together, they make up the LATCH system.

**Latchplate**—The part of the buckle mechanism that slides into the buckle; usually the part that affects the length of the belt. Switchable latchplates have a lock button to allow the seatbelt to be locked around the child safety seat.

**Locking Clip**—A flat H-shaped metal clip intended to fasten together belt webbing (lap and shoulder portion) at a sliding latch plate, to prevent the webbing from sliding through. Typically the clip which comes attached with most child safety seats. Should be fastened just above the latch plate. Cannot be used in place of a Heavy Duty Locking Clip.

**Locking Latchplate**—A latch plate that holds the lap belt snug after it has been adjusted. Type of latchplate that contains a metal bar on the underside of the hardware that “locks” the belt in position.

**Lower Anchorage System**—New method to affix Child Restraint System (CRS) to vehicles independent of the vehicle seat belts.

**Manual Seat Belt**—A seat belt that must be fastened and adjusted by the occupant, often found in the rear center seating position.

**Model Year (MY)**—Date of manufacture of either a vehicle or a child restraint system.

**National Highway Traffic Safety Administration (NHTSA)**—The federal agency that sets performance requirements for motor vehicles and items of motor vehicle equipment such as child restraints.

**Overhead Shield**—See “Tray Shield”.

**Passenger-Air Bag**—An air bag that is in the right front part of the passenger compartment. It is larger than the driver bag and would restrain either center or right-front occupants. Air bags are a supplement to the use of seat belts and designed to protect adult occupants in frontal crashes.

**Rear-Facing Infant Seat**—Type of child restraint system that is specifically meant for use by children from birth up to 1 year and approximately 20 pounds used in the rear-facing mode only.

**Retractor**—A mechanism that rolls up the unused webbing of the safety belt when it is not in use and takes up slack around the user.

**Seat Belt**—The webbing, anchor and buckle system that restrains the occupant and/or child safety seat in the vehicle.

**Seat Belt Positioning Devices**—These are products marketed and sold to adjust the vehicle seat belt to fit a child. There are no federal safety standards for these products. NHTSA recommends the use of child safety seats and booster seats instead of these products.

**Seat Bight/Seat Crack**—The intersection between the bottom vehicle seat cushion and the back cushion.

**Sewn-On Latchplate or Fixed Latchplate**—Latch plate is permanently sewn to the lap or lap and shoulder belt.

**Shell**—The molded plastic structure of the child restraint. In some models, the shell is attached to or reinforced by a metal bar or frame.

**Shield Booster Seat**—A platform that raises the child and positions a small convex shield across the lap and lower abdomen to restrain the child. A vehicle lap belt restrains the booster seat with shield for children between 30 pounds and 40 pounds. Some models have removable shields and convert to a belt-position booster seat (BPB).

**Shoulder Belt Positioners or Comfort Guides**—Devices (some built in and some add-ons) that can be used to reposition shoulder belts so they fit across the shoulder rather than across the neck. Aftermarket belt positioners are not currently tested by NHTSA.

**Shoulder Harness Slots**—Slots in the back of the child restraint through which the shoulder straps are routed.

**Side Impact Air Bags**—Air bags that provide additional chest protection to adults in many side crashes. Children who are seated in close proximity to a side air bag may be at risk of serious or fatal injury if the air bag deploys. Check with the vehicle dealer or vehicle owner's manual for information about danger to children.

**Sliding Latchplate**—A latchplate that moves freely on a continuous loop of vehicle belt webbing.

**Stroller System**—A combination of child safety seat and stroller frame/wheels allowing the child safety seat to be removed from the vehicle and attached to the stroller frame for stroller usage.

**Switchable Retractor (ELR/ALR)**—Belts designed for adults to use emergency locking retractor (ELR) and children in safety seats to use the automatic locking retractor (ALR). Check the vehicle belt for a label describing the switchable function in addition to the information provided in the vehicle owners manual. Some convert from ELR to ALR by pulling the belt all the way out of the retractor, as it rewinds, it should lock and hold at the appropriate length.

**T-Shield**—Part of a restraint system in a child safety seat; a roughly triangular or "T" shaped pad that is attached to the shoulder harness straps, fits over the child's abdomen and hips and buckles between the legs.

**Tether Anchor**—Attachment point in vehicle for child safety seat tether strap. Refer to vehicle owner's manual regarding anchor location.

**Tether Strap**—An additional belt that anchors the child safety seat top to the vehicle frame; keeps the restraint from tipping forward on impact; can provide an extra margin of protection. Can be optional or factory installed. A tether strap is typically available on most child safety seats manufactured after Sept. 1, 1999.

**Tilt-lock tether strap adjuster**—Tether can be tightened or loosened after installation in the vehicle without unhooking or re-threading the strap.

**Tray Shield**—Part of a restraint system in a child safety seat; a wide, padded surface that swings down in front of the child's body, attached to shoulder straps and crotch buckle. Looks like a padded armrest, but is an integral part of the harness system.

**Vest**—A child restraint system that has shoulder straps, hip straps (and sometimes) a crotch strap. Can be specially made to order according to a child's chest measurement, etc. Must be used along with the vehicle belt system.

**Whiplash Injury**—An injury to the neck usually caused by sudden whipping of the head backward during a rear impact collision.

**Source:** National Highway Traffic Safety Administration, 2002.

## Appendix B. State Seat Belt Laws

State/Jurisdiction	Standard Enforcement?	Who Is Covered? In What Seats?	Maximum Fine 1st Offense	Damages Reduced for Nonuse?
Alabama	yes	6+ yrs. in front seat	\$25	no
Alaska	no	16+ yrs. in all seats	\$15	yes
Arizona	no	5+ yrs. in front seat	\$10	yes
Arkansas	no	15+ yrs. in front seat	\$25 <sup>1,2</sup>	no
California	yes	16+ yrs. in all seats	\$20	yes
Colorado	no	4+ yrs. in front seat	\$15	yes <sup>3</sup>
Connecticut	yes	4+ yrs. in front seat	\$15	no
Delaware	no	all in front seat	\$20	no
Florida	no	6+ yrs. in front seat; 6 through 17 yrs. in all seats	\$30	yes
Georgia	yes	5 through 17 yrs. in all seats; 18+ yrs. in front seat	\$15 <sup>4</sup>	no
Hawaii	yes	4 through 17 yrs. in all seats; 18+ yrs. in front seat	\$45	no
Idaho	no	4+ yrs. in front seat	\$5	no
Illinois	no	6+ yrs. in front seat; all in all seats if driver is younger than 18 yrs.	\$25	no
Indiana	yes	4 through 11 yrs. in all seats; 12+ yrs. in front seat	\$25	no
Iowa	yes	6+ yrs. in front seat	\$10	yes <sup>3</sup>
Kansas	no	14+ yrs. in front seat	\$10	no
Kentucky	no	more than 40 in. in all seats	\$25	yes
Louisiana	yes	13+ yrs. in front seat	\$25	no
Maine	no	18+ yrs. in all seats (eff. 1/1/03)	\$50	no
Maryland	yes	16+ yrs. in front seat	\$25	no
Massachusetts	no	12+ yrs. in all seats	\$25 <sup>4</sup>	no
Michigan	yes	4+ yrs. in front seat; 4 through 15 yrs. in all seats	\$25	yes <sup>3</sup>
Minnesota	no	all in front seat; 3 through 10 yrs. in all seats	\$25	no
Mississippi	no (yes for children <8)	4 through 7 yrs. in all seats/8+ yrs. in front seat	\$25	no
Missouri	no (yes for children <16)	4+ yrs. in front seat; 4 through 15 yrs. in all seats	\$10	yes <sup>3</sup>

## Appendix B. State Seat Belt Laws (continued)

State/Jurisdiction	Standard Enforcement?	Who Is Covered? In What Seats?	Maximum Fine 1st Offense	Damages Reduced for Nonuse?
Montana	no	4+ yrs. in all seats	\$20	no
Nebraska	no	16+ yrs. in front seat	\$25	yes <sup>3</sup>
Nevada	no	5+ yrs. in all seats	\$25	no
New Hampshire	no law	no law	no law	no
New Jersey	yes	7 yrs. and younger and more than 80 lbs.; 8 through 17 in all seats; 18+ in front seat	\$20	yes
New Mexico	yes	18+ yrs. in all seats	\$25	no
New York	yes	16+ yrs. in front seat	\$50 <sup>1</sup>	yes
North Carolina	yes	16+ yrs. in front seat	\$25	no
North Dakota	no	18+ yrs. in front seat	\$20	yes
Ohio	no	4+ yrs. in front seat	\$25 driver/\$15 passenger	yes
Oklahoma	yes	all in front seat	\$20	no
Oregon	yes	16+ yrs. in all seats	\$75	yes
Pennsylvania	no	4+ yrs. in front seat	\$10	no
Rhode Island	no (yes for children <13)	7+ yrs. in all seats	\$30	no
South Carolina	no (yes for children <18 yrs.) <sup>5</sup>	6+ yrs. in front seat; 6+ yrs. in rear seat with shoulder belt	\$10	no
South Dakota	no	5+ yrs. in front seat	\$20	no
Tennessee	no	4+ yrs. in front seat	\$10	no
Texas	yes	4 through 16 yrs. in all seats; 17+ yrs. in front seat	\$200	no
Utah	no (yes for children <19 yrs.)	16+ yrs. in all seats	\$45	no
Vermont	no	13+ yrs. in all seats	\$10	no
Virginia	no	16+ yrs. in front seat	\$25	no
Washington	Yes	all in all seats	\$35	no
West Virginia	No	9+ yrs. in front seat; 9 through 17 yrs. in all seats	\$25	yes <sup>3</sup>
Wisconsin	No	4+ yrs. in front seat; 4 through 15 yrs. in rear seat with shoulder belt	\$10	yes <sup>3</sup>
Wyoming	No	5+ yrs. in all seats	\$25 <sup>2</sup> driver/\$10 passenger	no
District of Columbia	Yes	16+ yrs. in all seats	\$50 <sup>1</sup>	no

## Notes

1. These states assess points for violations. For further details, please call the Institute.
2. Arkansas and Wyoming reward belt use by reducing the fine for the primary violation by \$10.
3. Under the safety belt defense, Wisconsin allows a maximum 15 percent damage reduction. In Missouri, a maximum 1 percent is allowed. In three states (Iowa, Michigan, and Nebraska), the damage reduction may not exceed 5 percent. In Colorado, damages may be reduced for pain and suffering only, not for economic or medical losses. In West Virginia, an award for medical expenses only may be reduced by no more than 5 percent.
4. In Georgia, the maximum fine is \$25 if the child is age 5 to 18. Drivers in Massachusetts may be fined \$25 for violating the belt law themselves and \$25 for each unrestrained passenger age 12 to 16.
5. Police are prohibited in South Carolina from enforcing safety belt laws at checkpoints designed for that purpose. However, safety belt violations may be issued at license and registration checkpoints.

Source: Insurance Institute for Highway Safety, 2002



### Appendix C. State Child Occupant Protection Laws

State/Jurisdiction	Who Is Covered?		Maximum Fine 1st Offense
	Must Be in Child Restraint	Adult Safety Belt Permissible	
Alabama	3 yrs. and younger	4 through 5 yrs.	\$10
Alaska	3 yrs. and younger	4 through 15 yrs.	\$50 <sup>1</sup>
Arizona	4 yrs. and younger	not permissible	\$50
Arkansas	5 yrs. and younger and less than 60 lbs.	6 yrs. or 60+ lbs. through 14 yrs.	\$100
California	5 yrs. and younger or less than 60 lbs. <sup>2</sup>	6 through 15 yrs. or 60+lbs.	\$100 <sup>1</sup>
Colorado	3 yrs. and younger and less than 40 lbs.	4 through 15 yrs. or 40+ lbs.	\$50
Connecticut	3 yrs. and younger and less than 40 lbs.	4 through 15 yrs. or 40+ lbs.	\$60 <sup>3</sup>
Delaware	3 yrs. and younger	4 through 15 yrs. <sup>4</sup>	\$29
Florida	3 yrs. and younger	4 through 5 yrs.	\$60 <sup>1</sup>
Georgia	4 yrs. and younger	Not permissible	\$50 <sup>1</sup>
Hawaii	3 yrs. and younger	Not permissible	\$100 <sup>3</sup>
Idaho	3 yrs. and younger and less than 40 lbs.	Not permissible	\$100
Illinois	3 yrs. and younger	4 through 15 yrs.	\$50 (eff. 1/1/02)
Indiana	3 yrs. and younger <sup>5</sup>	Not permissible	\$25 <sup>1</sup>
Iowa	2 yrs. and younger	3 through 5 yrs.	\$10
Kansas	3 yrs. and younger	4 through 13 yrs.	\$20
Kentucky	40 in. or less	Not permissible	\$50
Louisiana	2 yrs. and younger	3 through 12 yrs; children 3+ yrs. must be in rear seat if available	\$50
Maine	Less than 40 lbs. in a child safety seat; 40-80 lbs. and less than 8 yrs. in a safety system that elevates the child so that an adult seatbelt fits properly; 11 yrs. and younger and less than 100 lbs. must be in rear seat if available – (eff. 1/1/03)	8 yrs. through 17 yrs. or less than 18 yrs. and more than 4'7"	\$500
Maryland	3 yrs. and younger or 40 lbs. or less	More than 40 lbs. through 15 yrs.	\$25
Massachusetts	4 yrs. and younger or 40 lbs. or less	5 through 11 yrs.	\$25
Michigan	3 yrs. and younger	Not permissible	\$10
Minnesota	3 yrs. and younger	Not permissible	\$50
Mississippi	3 yrs. and younger	Not permissible	\$25
Missouri	3 yrs. and younger	Not permissible	\$25
Montana	Younger than 2 yrs.	2 through 3 yrs. or less than 40 lbs.	\$100
Nebraska	5 yrs. and younger (eff. 7/20/02)	6 through 15 yrs. (eff. 7/20/02)	\$25 <sup>1</sup>
Nevada	4 yrs. and younger and less than 40 lbs.	Not permissible	\$100
New Hampshire	3 yrs. and younger	4 through 17 yrs.	\$25

## Appendix C. State Child Occupant Protection Laws (continued)

State/Jurisdiction	Who Is Covered?		Maximum Fine 1st Offense
	Must Be in Child Restraint	Adult Safety Belt Permissible	
New Jersey	7 yrs. and younger and less than 80 lbs. seated in rear seat if available	Not permissible	\$25
New Mexico	Younger than 1 yr. in a rear-facing infant seat, seated in the rear seat if available; 1 through 4 yrs. or less than 40 lbs.	5 through 17 yrs.	\$25
New York	3 yrs. and younger in all seats	4 through 15 yrs.	\$100 <sup>1</sup>
North Carolina	4 yrs. and younger and less than 40 lbs. <sup>4</sup>	5 through 15 yrs.	\$25 <sup>1</sup>
North Dakota	3 yrs. and younger	4 through 17 yrs.	none <sup>1</sup>
Ohio	3 yrs. and younger or less than 40 lbs.	Not permissible	\$100 <sup>1</sup>
Oklahoma	3 yrs. and younger and 60 lbs. or less	4 through 12 yrs.	\$10
Oregon	3 yrs. and younger and 40 lbs. or less in a child safety seat; 4 through 5 yrs. or 40-60 lbs. in a safety system that elevates the child so that an adult seatbelt fits properly	6 through 15 yrs. and 60+ lbs.	\$75
Pennsylvania	3 yrs. and younger	not permissible	\$25
Rhode Island	6 yrs. and younger, less than 54" and less than 80 lbs. Children 6 yrs. and younger must be in rear seat if available	6 yrs. and younger, 54" and 80+ lbs.	\$50
South Carolina	Younger than 1 yr. or less than 20 lbs. in a rear-facing infant seat; 1 through 5 yrs. and 20-40 lbs. in a forward-facing child safety seat; 1 through 5 yrs. and 40-80 lbs. in a booster seat secured by lap-shoulder belt. Lap belt alone is not permissible Children 5 yrs. and younger must be in rear seat if available	1 through 5 yrs. and 80 lbs. or more OR any child 5 yrs. and younger if the child's knees bend over the seat edge when sitting up straight with his/her back firmly against the seat back	\$25
South Dakota	4 yrs. and younger and less than 40 lbs.	5 through 17 yrs.; all children 40+ lbs., regardless of age	\$20
Tennessee	3 yrs. and younger in a child safety seat; 4 through 7 yrs. and less than 40 lbs. in a child safety seat	4 through 7 yrs. and 40+ lbs.; 8 through 14 yrs.	\$50 <sup>3</sup>

**Appendix C. State Child Occupant Protection Laws (continued)**

State/Jurisdiction	Who Is Covered?		Maximum Fine 1st Offense
	Must Be in Child Restraint	Adult Safety Belt Permissible	
Texas	3 yrs. and younger or less than 36 in.	not permissible	\$200 (eff. 9/1/01)
Utah	4 yrs. and younger	5 through 15 yrs.	\$45
Vermont	4 yrs. and younger	5 through 12 yrs.	\$25
Virginia	5 yrs. and younger (eff. 7/1/02)	6 through 15 yrs. <sup>6</sup> (eff. 7/1/02)	\$50
Washington	Younger than 1 yr. or less than 20 lbs. in a rear-facing infant seat; 1 through 3 yrs. or 20-40 lbs. in a forward-facing child safety seat; 4 through 5 yrs. or 40-60 lbs in a booster seat <sup>4</sup>	6 through 15 or 60+ lbs.	\$35
West Virginia	2 yrs. and younger	3 through 8 yrs.	\$20
Wisconsin	3 yrs. and younger	4 through 7 yrs.	\$75
Wyoming	4 yrs. and younger and 40 lbs. or less	not permissible	\$50
District of Columbia	2 yrs. and younger	3 through 15 yrs.	\$55 <sup>1</sup>

Notes:

1. These states assess points for violations. For further details, please call the Institute.
2. Children weighing more than 40 lbs. may be belted without a booster seat if they are seated in the rear seat of a vehicle not equipped with lap/shoulder belts.
3. The fine in Connecticut is \$15 if the child is age 4 to 16 and 40 lbs. or more. Connecticut also requires a mandatory child restraint education program for first or second violation. Hawaii drivers are charged \$50 for a mandatory child restraint education program. In Tennessee, the maximum fine is \$20 if the child is age 4 to 15.
4. In Delaware, children younger than 12 years/65 inches or less must be restrained in rear seat if vehicle has a passenger airbag unless the airbag has been either deactivated or is designed to accommodate smaller people. Exceptions: no rear seat or rear seat occupied by other children younger than 12 yrs./65 inches or less. In North Carolina, children younger than age 5 who weigh less than 40 lbs. must be restrained in a child safety seat in the rear seat if the vehicle has a passenger airbag, unless the child restraint system is designed for use with airbags. In Washington, effective 7/1/02, children younger than age 6 or weighing less than 60 lbs. must be restrained in a child restraint system in the rear seat, if the vehicle has a passenger airbag.
5. In Indiana, children younger than age 4 must be restrained in adult belts if it is reasonably determined they cannot fit in child restraints.
6. Children at least age 4 but younger than age 6 may be belted if the weight or size of the child make the use of a child restraint device impractical.

Source: Insurance Institute for Highway Safety, 2002.

## Appendix D. Children not Covered by Child Restraint or Seat Belt Laws

State/Jurisdiction	Those Not Covered
Alabama	Younger than 6 yrs. in out-of-state vehicle; 6+ yrs. in rear seat
Alaska	All children covered
Arizona	5+ yrs. in rear seat
Arkansas	15+ yrs. in rear seat
California	All children covered
Colorado	All children covered
Connecticut	All children covered
Delaware	All children covered
Florida	All children covered
Georgia	All children covered
Hawaii	All children covered
Idaho	4+ yrs. or 40+ lbs. in rear seat
Illinois	Younger than 4 yrs if driver is other than parent or guardian unless parent provides restraint
Indiana	Younger than 4 yrs. in out-of-state vehicle; 12+ yrs. in rear seat
Iowa	Younger than 6 yrs. in out-of-state vehicle; 6+ yrs. in rear seat
Kansas	14+ yrs. in rear seat
Kentucky	All children covered
Louisiana	Younger than 13 yrs. if driver is nonresident of state; 13+ yrs. in rear seat
Maine	All children covered
Maryland	All children covered
Massachusetts	All children covered
Michigan	All children covered
Minnesota	11+ yrs. in rear seat
Mississippi	8+ yrs. in rear seat
Missouri	All children covered
Montana	All children covered
Nebraska	All children covered
Nevada	All children covered
New Hampshire	All children covered
New Jersey	All children covered
New Mexico	All children covered
New York	All children covered
North Carolina	All children covered
North Dakota	All children covered
Ohio	4+ yrs. and more than 40 lbs. in rear seat
Oklahoma	13+ yrs. in rear seat; younger than 13 yrs. if driver is nonresident of state (this gap will be eliminated 11/01/02)
Oregon	All children covered
Pennsylvania	4+ yrs. in rear seat
Rhode Island	6 yrs. and younger in front seat if vehicle does not have a rear seat
South Carolina	6+ yrs. in rear seat without shoulder belt

### Appendix D. Children not Covered by Child Restraint or Seat Belt Laws (continued)

State/Jurisdiction	Those Not Covered
South Dakota	All children covered
Tennessee	15+ yrs. in rear seat
Texas	All children covered
Utah	All children covered
Vermont	All children covered
Virginia	All children covered
Washington	40+ lbs. seated in a position without a shoulder belt
West Virginia	All children covered
Wisconsin	8+ yrs. in rear seat without shoulder belt
Wyoming	All children covered
District of Columbia	All children covered

Source: Insurance Institute for Highway Safety, 2002.

## Appendix E. State Pickup Truck Laws

State/ Jurisdiction	Prohibited	Highway	Streets	Speed	Seat Restraints*	Penalty	Exceptions	Other Restrictions
Alabama No law								
Alaska 28.05.095	Under age 16					Infraction, \$15	If vehicle lacks safety belts	Seat belt law requires safety restraints for all occupants
Arkansas 27-35-104	All ages						Employee on duty; people riding within bodies of trucks in space intended for merchandise	
Arizona No law								
California Veh. 23116	All ages	X	X	15 mph	X	Class A infraction, \$15	Campers; farming; emergency situations; and parades	
Colorado RSA 42-4-201	All ages					Class A infraction, \$15	Truck bed is completely enclosed; sitting in the flat area; parades; and exhibitions	
Connecticut GSA 14-272a	Under age 16	X			X	Infraction	Farming vehicles; parades; and recreational hayrides between August and December	
Delaware No law								
Florida FSA 316.2015	All ages	X	X		X	Driver, \$60 moving violation; rider, \$30 fine	Sitting in the flat area; parades; and work- related activities	
Georgia OCGA 40-8-79	Under age 18	X				Mis- demeanor		
Hawaii RSA 291-14	All ages					\$25 non- moving violation	No seats available in the cab; truck bed is completely enclosed; parades; passengers do not attempt to control unlashed cargo; sitting on the flat area; and entities operating businesses that serve the public	Standing prohibited at all times while the vehicle is in operation
Idaho No law								
Illinois No law								
Indiana No law								
Iowa No law								
Kansas 8-1578a	Under age 14	X	X		X	\$10 fine	Employee on duty, officially authorized parades, caravan or exhibitions	

**Appendix E. State Pickup Truck Laws (continued)**

State/ Jurisdiction	Prohibited	Highway	Streets	Speed	Seat Restraints*	Penalty	Exceptions	Other Restrictions
Kentucky KRS 189.125 KRS 281.735 (Commercial vehicles)	All ages				X		Medical reasons, postal workers	
Louisiana LSA 32: 284c	Under age 12	X		15 mph			Parades and emergency response situations when the child is accompanied by an adult	
Maine §2088	Under age 19	X	X				Agricultural workers; parades; passengers secured by seat belts	
Maryland ACM 21-1121	Under age 16	X		25 mph			Truck bed is completely enclosed; work-related activities; and farming	
Massachusetts GLA 90-13	Under age 12			5 mph			Parades, "owner repair" or "farm" plates and engaged in farming activities	
Michigan 257.682b	Under age 18	X	X	15 mph		Civil infraction	Permitted parades; a vehicle operated in farming, construction or similar enterprises; military vehicle; emergency vehicle; search and rescue vehicle	
Minnesota 169.686	Under age 11				X	\$25	Vehicle driven in reverse; all seat belts taken; medical reasons; postal workers; pre-1965 vehicles; employee on duty required to alight and reenter vehicle at speeds under 25; postal workers	
Mississippi No law								
Missouri 304.665	Under age 18	X				Class C mis- demeanor	Enclosed cargo area; employee on duty; agricultural activities; authorized parade, caravan or exhibition; a vehicle with some means of securing person from being discharged; "special events;" person providing assistance or ensuring safety of those doing recreational activity; all cab seating taken in family-owned vehicle	
Montana No law								
Nebraska No law								

## Appendix E. State Pickup Truck Laws (continued)

State/ Jurisdiction	Prohibited	Highway	Streets	Speed	Seat Restraints*	Penalty	Exceptions	Other Restrictions
Nevada NRS 484.473	Over age 18	X Counties more than 100,000				\$35 to \$100 mis- demeanor	Vehicle operated on roads of one lane in each direction; farming or ranching activities; authorized parade	
New Hampshire RSA 265:106 RSA 265:107	All ages						People enrolled in recreational and religious activities; and work-related transportation	Applies only to vehicles carrying passengers for free
New Hampshire RSA 265:107-a	Under age 18	X	X		X	\$25 for first offense, \$50 for second		This statute is called "Child Passenger Restraints Required"
New Jersey NJSA 39:4-69	All Ages						Employee engaged in the necessary discharge of a duty	Bans riding on portions of vehicle not intended for passengers.
New Mexico NMS 66-7-369	Under age 18	X	X		X			Covered under child passenger restraint law
New York V & T 1223 MV 1222	All ages; prohibits more than one-third of the occupants from standing in or on an "auto truck"						If trip is of five miles or less; truck bed has 3-foot-high side racks and a tailgate; and entities operating businesses that serve the public	If more than five people under age 18 are in the body of the truck, at least one adult must be present; this law applies only to trucks driving a distance in excess of five miles
North Carolina GS 20-135.2B	Under age 12					\$25 non- moving violation.	Presence of an adult; emergency situations; parades; farming; and unincorporated areas with less than 3,500 people	
North Dakota	Under age 17				X			Covered by seat belt law
Ohio ORC 4511.51	Under age 16			25 mph			Emergency situations; truck bed is completely enclosed; tailgate must be closed	
Oklahoma No law								
Oregon No law								
Pennsylvania 75 Pa. C.S.A. § 3719	Under age 18						Vehicle traveling more than 35 mph; if cargo area is enclosed; parades, hunting and farming	
Rhode Island 31.25.10	Under age 16				X	\$100 to \$500 fine		



### Appendix E. State Pickup Truck Laws (continued)

State/ Jurisdiction	Prohibited	Highway	Streets	Speed	Seat Restraints*	Penalty	Exceptions	Other Restrictions
South Carolina 56-5-3900	Under age 15			35 mph		\$25 mis- demeanor	If an adult is present; if child is restrained by seat belt; in emergency situations; authorized parade or organized hayride; hunting or farming activities; in county with no city over 3,500; closed metal tailgate traveling under 35 mph	
South Dakota No law								
Tennessee TCA 55-8-189	Under age 12	X	X	20 mph		Class C mis- demeanor	Parades; ceremonies; and farming	
Texas TRC 545.414	Under age 12			35 mph		Mis- demeanor; \$25 to \$200	Emergency situations	
Utah UCA 41-6-108	All ages	X			X	Class C mis- demeanor	Work-related activities; sitting on the flat area	
Vermont No law								
Virginia §46.2-1156.1	Under age 16	X					Parades and farming	
Washington No law								
West Virginia 17C-15-46	Under age 9	X	X			Mis- demeanor \$10 to \$20		Covered under child passenger protection law
Wisconsin WSA 346.92	All ages				X		Work-related activities; if cargo area is enclosed	
Wisconsin WSA 346.922	Under age 16	X					Farming; parades; transportation of licensed deer hunters during the authorized deer hunting season	
Wyoming No law								
District of Columbia	All ages						Employee on duty; People riding within bodies of trucks in space intended for merchandise	Seat belt law requires all passengers to be secured by safety belts, except where the number of passengers exceeds the number of belts

Note: Some states allow passengers in the running bed of pickup trucks if the passengers are restrained by safety devices on their seats.

Source: NCSL, 2002.

## Appendix F. State Drunk Driving Child Endangerment Laws

State/Jurisdiction	Citation	Provisions
Alabama	§32-5A-191(n)	Minimum sentences are double the usual sanction if an offender over age 21 was transporting a minor under age 14 at the time of the offense.
Alaska	none	
Arizona	§§13-604(A), (C) & (U)(1)(a), 13-701(C), 13-801, & 28-1383(A)(3), (F), (G) & (L)(2)	A person commits a class 6 felony (aggravated DUI) if he or she violates the drunk driving laws while transporting a passenger under age 15. Sanctions: 1 <sup>st</sup> offense: 1 year; conviction with one prior felony: 1 to 2.5 years; conviction with two or more prior felonies: 3 to 4.5 years and fine of \$150,000.
Arkansas	none	
California	Veh Code §23572	For non-injury offenses where a minor under age 14 was a passenger, the following mandatory jail sanctions are imposed: 1 <sup>st</sup> offense: 48 continuous hours; 2 <sup>nd</sup> offense: 10 days; 3 <sup>rd</sup> offense: 30 days; 4 <sup>th</sup> offense: 90 days. (These sanctions are not imposed if the driver has been convicted of endangering the life or health of a child under Penal Code §273a.)
Colorado	§§18-1-105(1)(a)(III) & (V)(A), and 18-6-401(1), (2), (7)(a)(I) & (III)	A person is guilty of child abuse if he or she knowingly or recklessly commits an act that either kills or injures a child under age 16. A person commits a class 2 felony where death results from such abuse and is subject to eight to 24 years in jail and a fine of \$5,000 to \$1 million. A person commits a class 3 felony where injury results from such abuse and is subject to four to 12 years in jail and a fine of \$3,000 to \$750,000. For abuse resulting in either injury or death, a parole of five years is mandatory. In <i>People v. Deskins</i> , 927 P.2d 368 (Colo. 1996), it was held that a drunk driver is guilty of child abuse if he or she kills or injures a child riding in another vehicle that is involved in a collision with the offender's vehicle at the time of the offense.
Connecticut	none	
Delaware	21 §4177(d)(5)	A person who commits a drunk driving offense while transporting a child under age 17 is subject to the following sanctions, in addition to the standard sanctions for drunk driving offenses: 1 <sup>st</sup> offense: an additional fine of \$230 to \$1,150 and 40 hours of community service benefiting children; for subsequent offenses: an additional \$575 to \$2,300 and 80 hours of community service benefiting children.

**Appendix F. State Drunk Driving Child Endangerment Laws  
(continued)**

State/Jurisdiction	Citation	Provisions
Florida	§§316.193(3) & (4), 775.082, 775.083 & 775.084	For a drunk driving offense with a passenger under age 18 in the vehicle, the following sanctions apply: 1 <sup>st</sup> offense not more than nine months in jail and a fine of \$500 to \$1,000; 2 <sup>nd</sup> offense not more than 12 months in jail and a fine of \$1,000 to \$2,000; 3 <sup>rd</sup> offense not more than 12 months in jail and a fine of \$2,000 to \$5,000.
Georgia	§§16-12-1(d) & 40-6-391(1)	It is a separate offense to transport a child under age 14 while drunk. Sanctions: 1 <sup>st</sup> offense (misdemeanor), jail one to 5 months, fine \$200 to \$500; 2 <sup>nd</sup> offense (misdemeanor), jail three months to one year, fine \$400 to \$1,000; 3 <sup>rd</sup> and subsequent offenses (felony), jail one to three years, fine \$1,000 to \$5,000.
Hawaii	§291-4(b)(4)	A driver age 18 or older who is convicted of an alcohol offense while transporting a passenger under age 15 is subject to the following additional sanctions: mandatory jail term of 48 hours (total jail term not to exceed 30 days) and a mandatory fine of \$500.
Idaho	§§18-113 & 18-1501(3)	It is an offense for a person over age 18 to operate a motor vehicle in violation of the drunk driving laws while transporting a minor. If there is no injury or death associated with the offense, it is a misdemeanor with a jail term of not more than six months and/or a fine of not more than \$300. If the minor is injured or killed, it is a felony with imprisonment of one to 10 years.
Illinois	625 ILCS 5/11-501(c)	If, at the time of the offense, the defendant was transporting a person under age 16, jail sanctions are enhanced as follows: 1 <sup>st</sup> offense, 2 days; 2 <sup>nd</sup> offense, 10 days; 3 <sup>rd</sup> offense, 30 days; 4 <sup>th</sup> or subsequent offense, 90 days. For a 1 <sup>st</sup> or 2 <sup>nd</sup> offense within five years, a fine of \$500 is mandatory. The defendant also is subject to mandatory community service: 1 <sup>st</sup> offense, five days; 2 <sup>nd</sup> offense within five years, 10 days.
Indiana	none	
Iowa	§§702.5, 726.3 & 726.6	Iowa's criminal law provides for sanctions against people who either abuse or neglect a child age 14 or younger, who is under their control. The Iowa Supreme Court has held that a parent can be charged with child neglect, recklessly exposing their child to a danger, a Class C felony, if, while transporting their child, they operate a motor vehicle in an intoxicated condition. ( <i>State vs. Caskey</i> , 539 N.W. 2d 176 (Iowa 1995)). The possibility also exists that general criminal child endangerment laws may apply, which make it an offense to create a situation where a child is exposed to substantial risk.

## Appendix F. State Drunk Driving Child Endangerment Laws (continued)

State/Jurisdiction	Citation	Provisions
Kansas	none	
Kentucky	none	
Louisiana	§14:98(J)	A DUI offender is subject to the following mandatory sanctions if a child age 12 or younger was a passenger in the vehicle at the time of the offense: 1 <sup>st</sup> offense, 10 days in jail and \$125 fine; 2 <sup>nd</sup> offense, 30 days in jail and \$300 fine; 3 <sup>rd</sup> offense, six months in jail; 4 <sup>th</sup> offense, two years in jail.
Maine	29-A MRSA §§2451(5), 2472(4), 2411(5)	For those over age 21 who refuse to take a breath test and had a passenger under age 21 in the vehicle at the time of the refusal, an additional mandatory 275-day license suspension applies. For those under age 21 who refuse to take a breath test and had a passenger under age 21 in the vehicle at the time of the refusal, an additional mandatory 180-day license suspension applies. Upon conviction for DUI, the following mandatory jail terms apply: 1 <sup>st</sup> offense, not less than 48 hours (96 hours for refusal); 2 <sup>nd</sup> offense within 10 years, seven days (12 days for refusal); 3 <sup>rd</sup> offense, 30 days (40 days for refusal); 4 <sup>th</sup> or subsequent offenses within 10 years, six months (six months and 20 days for refusal).
Maryland	Tran. §27-101(q)	For conviction of an illegal per se drunk driving offense, while transporting a minor under age 18, the following sanctions apply: 1 <sup>st</sup> offense, jail not more than two years and fine not more than \$2,000; 2 <sup>nd</sup> offense, jail not more than three years and fine not more than \$3,000; 3 <sup>rd</sup> and subsequent offenses, jail not more than four years and fine not more than \$4,000. For conviction of driving under the influence of alcohol, drugs or a controlled dangerous substance while transporting a minor under age 18, the following sanctions apply: 1 <sup>st</sup> offense, jail not more than six months and fine not more than \$1,000; 2 <sup>nd</sup> offense, jail not more than one year and fine not more than \$2,000.
Massachusetts	none	

**Appendix F. State Drunk Driving Child Endangerment Laws  
(continued)**

State/Jurisdiction	Citation	Provisions
Michigan	§§257.319(8)(e) & 257.625(7)	For conviction of any DUI offense while carrying a passenger under age 16, the following sanctions apply: 1 <sup>st</sup> offense (misdemeanor), jail one to five years (with either mandatory 48 consecutive hours in jail or 30 days (mandatory) to 90 days of community service) and a fine of \$200 to \$1,000 and license suspension of 180 days (90 days mandatory); for subsequent offenses within seven years (felony): one to five years in jail or with probation, 30 days (48 consecutive hours mandatory) to one year in jail and community service for 60 to 180 days, and a fine of \$500 to \$5,000. For conviction of the .02 (zero tolerance) law by those under age 21, while carrying a passenger under age 16, the following sanctions apply: 1 <sup>st</sup> offense, not more than 93 days in jail, not more than 60 days community service, a fine of not more than \$500, and license suspension of not more than 180 days (90 days mandatory); for subsequent offenses, jail of five days to one year (48 consecutive hours mandatory), community service for 30 to 90 days, and a fine of \$200 to \$1,000. For either type of violation, vehicle forfeiture or immobilization sanctions also may apply.
Minnesota	§§169.121, subd 3(a) and 169.1217	Driving while intoxicated with a child under age 16 in the vehicle, where the driver was at least 36 months older than the child, is a gross misdemeanor. In addition to the standard penalties for a DUI-related gross misdemeanor, the vehicle used in the offense may be subject to forfeiture.
Mississippi	none	
Missouri	none	
Montana	none	
Nebraska	none	
Nevada	§484.3792(7)	If a child age 15 or younger was present in the vehicle at the time of the DUI offense, such fact shall be considered an aggravating factor when determining sentence.
New Hampshire	§265:82-b, VIII	If the DUI offender was transporting a person under age 16 at the time of the offense, the offender must have his or her driving privileges revoked for the maximum time period provided by law.
New Jersey	none	
New Mexico	none	
New York	none	

## Appendix F. State Drunk Driving Child Endangerment Laws (continued)

State/Jurisdiction	Citation	Provisions
North Carolina	§20-179	Upon conviction, the level of punishment is determined by weighing aggravating and mitigating factors (child endangerment is an aggravating factor), with Level 1 being more severe punishment and Level 2 being less severe sanctions. The court must impose Level 2 punishment if there was a child under age 16 riding with the offender at the time of the offense. The court must impose Level 1 punishment if there was a child under age 16 riding with the offender at the time of the offense and there was any additional aggravating factor involved.
North Dakota	§§12.1-32-1 & 39-08-01.4	It is a Class A misdemeanor, with a jail term for not more than one year and /or a fine of not more than \$1,000, for a person age 21 or older to commit a drunk driving offense while transporting a minor (the specific age is not defined in the law but generally defined in N.D. to be anyone under age 18).
Ohio	§§2919.22, 2929.14, 2929.18 & 2929.21	It is a separate offense to operate a motor vehicle in violation of the drunk driving laws while carrying a passenger who is under age 18. Sanctions: 1 <sup>st</sup> offense (1 <sup>st</sup> degree misdemeanor), imprisonment for not more than six months and/or a fine of not more than \$1,000; on a 1 <sup>st</sup> offense where there has been serious physical harm to the child or for subsequent offenses (5 <sup>th</sup> degree felony), imprisonment of six to 12 months and /or a fine of not more than \$2,500; subsequent child endangerment offense where there has been serious physical harm to the child or where there has been serious harm to the child and the offender has a prior drunk driving conviction (4 <sup>th</sup> degree felony), imprisonment of six to 18 months and/or a fine of not more than \$5,000. In addition to the above, offenders are subject to not more than 200 hours of community service, which is not in lieu of community services that may be imposed via probation, and license suspension for 90 days, which is consecutive to any other licensing action.
Oklahoma	none	
Oregon	none	
Pennsylvania	none	
Rhode Island	§31-27-2(d)(4)	An offender who is over age 18 is subject to an imprisonment term of not more than one year if he or she was transporting a passenger under age 13 at the time of the offense.

**Appendix F. State Drunk Driving Child Endangerment Laws  
(continued)**

State/Jurisdiction	Citation	Provisions
South Carolina	§56-5-2947	A person over age 18 who commits either a drunk driving offense or a death/serious bodily injury drunk driving offense while transporting a child under age 16 is subject to additional jail and fine sanctions that are equal to not more than half the maximum jail and fine sanctions for these offenses. These additional sanctions are mandatory if jail or fine sanctions have been imposed for the original offense. In addition, the offender's driving privileges must be suspended for 60 days.
South Dakota	none	
Tennessee	§§40-35-111(b)(3) & (4), 40-35-111(e)(1) & 55-10-414	A person commits a class A misdemeanor if he or she commit a drunk driving offense and at the time was accompanied by a child under age 13. Sanctions: jail term of not more than 11 months and 29 days (30 days are mandatory) and a fine of not more than \$2,500 (\$1,000 is mandatory). If the child was injured at the time of the offense, the person commits a Class D felony. Sanctions: jail term of two to 12 years and a fine of not more than \$5,000. If the child was killed at the time of the offense, the person commits a Class C felony. Sanctions: jail term of three to 15 years and a fine of not more than \$10,000.
Texas	none	
Utah	none	
Vermont	none	
Virginia	§18.2-270	A person convicted of a drunk driving offense while carrying a child age 17 or younger is subject to the following additional sanctions: 1 <sup>st</sup> offense, a fine of \$500 to \$1,000 (\$500 mandatory) and 40 hours of mandatory community service benefiting children; for subsequent offenses, a fine of \$500 to \$1,000 (\$500 mandatory) and 80 hours of mandatory community service benefiting children. Under <i>Commonwealth vs. Carter</i> , 462 S.E.2d 582 (Va.App. 1995), a drunk driving offender who operates a motor vehicle while transporting a child under age 18 may be subject to prosecution for child abuse and neglect under §18.2-371.1.
Washington	none	

## Appendix F. State Drunk Driving Child Endangerment Laws (continued)

State/Jurisdiction	Citation	Provisions
West Virginia	§§17C-5-2(l) & 17C-5A-2(m)	A person who violates the drunk driving law while transporting a child under age 16 commits a misdemeanor and is subject to a jail term of two days to 12 months (48 hours mandatory) and/or a fine of \$200 to \$1,000 (\$200 mandatory). A person who violates the administrative per se law while transporting a child under age 16 is subject to a mandatory two-year license revocation. If the person has a previous administrative per se suspension or revocation within 10 years, the revocation period is 10 years (mandatory); if the person has more than one previous administrative per se suspension or revocation within 10 years, the revocation period is for life (mandatory).
Wisconsin	§§343.305(10)(b)(4m), 343.31(3)(f), 346.65(2)(f) & (3), 343.31(3)(c) and 940.09(1b)	For refusal to take an implied consent breath test while transporting a child under age 16 at the time of the refusal offense, the minimum and maximum license revocation periods are doubled. For conviction of a drunk driving offense while transporting a child under age 16 at the time of the offense, the offender's drivers license is revoked for four years. For conviction of either injury or non-injury drunk driving offenses while transporting a child under age 16 at the time of the offense, the maximum and minimum imprisonment, forfeiture and fine sanctions are doubled. For conviction of homicide by vehicle while transporting a child under age 16 at the time of the offense, the maximum imprisonment and fine sanctions are doubled and the revocation period is 10 years.
Wyoming	none	
American Samoa	none	
District of Columbia	none	
Guam	none	
Puerto Rico	none	
Virgin Islands	none	

Source: National Highway Traffic Safety Administration, U.S. Department of Transportation, *Digest of State Alcohol-Highway Safety Related Legislation, 19<sup>th</sup> edition*. January 2001.



### Appendix G. State Graduated Licensing Laws

State/Jurisdiction	Learner Stage with a Mandatory Holding Period of at Least 6 Months	Learner Stage with a Minimum Amount of Supervised Driving Required	Intermediate Stage with a Nighttime Driving Restriction
Alabama			
Alaska	X		
Arizona		X	
Arkansas	X		
California	X	X	X
Colorado	X	X	X
Connecticut	X*		
Delaware	X		X
Florida	X	X	X
Georgia	X	X	X
Hawaii			
Idaho		X	X
Illinois		X	X
Indiana			X
Iowa	X	X	X
Kansas		X	
Kentucky	X		
Louisiana			X
Maine		X	
Maryland		X	X
Massachusetts	X	X	X
Michigan	X	X	X
Minnesota	X	X	
Mississippi	X		X
Missouri	X	X	X
Montana			
Nebraska		X*	X
Nevada		X	
New Hampshire		X	X
New Jersey	X		X
New Mexico	X	X	X
New York			X
North Carolina	X		X
North Dakota	X		
Ohio	X	X	X
Oklahoma			
Oregon	X	X	X
Pennsylvania	X	X	X
Rhode Island	X		X
South Carolina			X
South Dakota	X*		X
Tennessee	X	X	X
Texas	X		X
Utah		X	X

## Appendix G. State Graduated Licensing Laws (continued)

State/Jurisdiction	Learner Stage with a Mandatory Holding Period of at Least 6 Months	Learner Stage with a Minimum Amount of Supervised Driving Required	Intermediate Stage with a Nighttime Driving Restriction
Vermont	X	X	
Virginia	X	X	X
Washington	X	X	X
West Virginia	X	X	X
Wisconsin	X	X	X
Wyoming			
District of Columbia	X	X	X

\*Driver's education class reduces the requirement.

Source: Insurance Institute for Highway Safety and NCSL, 2002.

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## RESOURCES

Airbag and Seat Belt Safety Campaign  
1025 Connecticut Avenue N.W., Suite 1200  
Washington, D.C. 20036  
Phone: (202) 625-2570  
Fax: (202) 822-1399  
E-mail: [airbag@nsc.org](mailto:airbag@nsc.org)  
World Wide Web: <http://www.nsc.org/airbag.htm>.

Bicycle Helmet Safety Institute  
4611 Seventh Street South  
Arlington, Va. 22204-1419  
Phone and fax: (703) 486-0100  
World Wide Web: <http://www.bhsi.org>.

Boost America!  
Phone: (1-866) BoostKid  
World Wide Web: <http://www.boostamerica.org>.  
E-mail: [info@boostamerica.org](mailto:info@boostamerica.org).

Fit for a Kid  
Phone: (1-877) Fit-4-AKID  
World Wide Web: <http://www.fitforakid.org>.

Insurance Institute for Highway Safety  
1005 North Glebe Road, Suite 800  
Arlington, Va. 22201  
Phone: (703) 247-1500  
Fax: (703) 247-1588  
World Wide Web: <http://www.highwaysafety.org>.

Governors Highway Safety Association  
750 First Street, N.E., Suite 720  
Washington D.C. 20002  
Phone: 202-789-0942  
World Wide Web: <http://www.naghsr.org>.

National Bicycle Safety Network  
World Wide Web: <http://www.cdc.gov/ncipc/bike>.

National Center for Injury Prevention and Control  
4770 Buford Highway N.E. Mailstop K65  
Atlanta, Ga. 30341-3724  
Phone: (770) 488-1506  
Fax: (770) 488-1667  
E-mail: [OHCINFO@cdc.gov](mailto:OHCINFO@cdc.gov).  
World Wide Web: <http://www.cdc.gov/ncipc/default.htm>.

National Highway Traffic Safety Administration  
400 Seventh Street, SW  
Washington, D.C. 20590  
Phone: (1-800) 424-9393  
World Wide Web: <http://www.nhtsa.dot.gov>.

National Safe Kids Campaign  
1301 Pennsylvania Avenue N.W., Suite 1000  
Washington, D.C. 20004  
Phone: (202) 662-0600  
Fax: (202) 393-2072.  
World Wide Web: <http://www.safekids.org>.

National Safety Council  
1121 Spring Lake Drive  
Itasca, Ill. 60143-3201  
Phone: (630) 285-1121  
Fax: (630) 285-1315  
World Wide Web: <http://www.nsc.org>.

National Transportation Safety Board  
490 L'Enfant Plaza, S.W.  
Washington, D.C. 20594  
Phone: (202) 314-6000  
World Wide Web: <http://www.nts.gov>.

Pedestrian and Bicycle Information Center  
730 Airport Road, Suite 300  
Campus Box 3430  
Chapel Hill, N.C. 27599-3430  
Phone: (919) 962-2203  
Fax: (919) 962-8710  
E-mail: [pedbike@willow.hsrc.unc.edu](mailto:pedbike@willow.hsrc.unc.edu).  
World Wide Web: <http://www.walkinginfo.org>.