

# School Transportation Safety

Committee on School Health and Committee on Injury and Poison Prevention

**ABSTRACT.** The following policy statement is a revision of the American Academy of Pediatrics' 1985 statement entitled "School Bus Safety." It provides updated information regarding relevant federal regulations and outlines recommendations that can enhance community systems for addressing school bus safety education, awareness, and practices. Pediatricians can assist in this process by sharing these recommendations at both the community and state levels.

According to Special Report 222 of the Transportation Research Board of the National Research Council, in the United States approximately 400 000 school buses are used to transport 25 million children nearly 4 billion miles to and from school and school activities each year. Approximately 85% of these buses are the large, type I school buses that carry more than 16 passengers and are usually not equipped with lap belts. Children riding in small school buses built in accordance with federal safety standards, including lap belts, fared very well in 24 crashes investigated by the National Transportation Safety Board. Children riding in type I school buses fared less well; school bus safety records, however, are considerably better than the safety records for private vehicles.<sup>1</sup>

Given the high numbers of children transported and miles traveled annually, the levels of deaths and injuries to children as a result of school bus-related crashes are relatively low. Of the approximately 150 persons killed in school bus-related events each year, only 12% are passengers on the buses: 8% student passengers, 2% adult passengers, and 2% drivers. The remaining deaths are of occupants of other motor vehicles (55%), bicyclists (3%), and pedestrians (30%). Of the fatally injured pedestrians, 84% were school aged and 16% were adults. Seventy percent of the victims were struck by school buses. The majority of pedestrians killed were young children who were struck by their own school buses. The number of injuries from school bus-related events is estimated to be 19 000 per year, and most injuries are minor. Half of these injuries are sustained by school bus passengers. An estimated 4% of school bus-related injuries are sustained by pedestrians and are typically more severe.<sup>1</sup>

Public outcry and demands for change predictably surface when tragic crashes occur, even though the

frequency of on-board deaths and injuries on school buses remains lower than that of incidents outside of the buses. Expectations for school bus safety should be upheld not as a result of public reactions, but from an ongoing commitment from communities and states to assuring the safest ride possible for children on school buses. Because travel by school bus plays such a consistent and long-term role in the daily lives of children from preschool through high school, pediatricians can help by serving as resources, educators, consultants, and advocates for school bus safety.

The National Traffic and Motor Vehicle Safety Act of 1966 authorizes the Department of Transportation to issue minimum standards for new school buses manufactured for sale in the United States.<sup>2</sup> This act was amended in 1974,<sup>3</sup> and the National Highway Traffic Safety Administration (NHTSA) developed the current minimum performance standards for school buses manufactured after April 1, 1977.<sup>4</sup> In recent years, school bus safety in the United States again has been closely scrutinized. Although certain topics continue to be controversial, there is a strong consensus regarding most issues. The recommendations below are derived from several recent studies.<sup>1-9</sup>

## RECOMMENDATIONS

### School Bus Safety

1. Many school systems provide for the transportation of preschool children. The use of child safety seats and other restraint systems on school buses for preschool children is recommended as a necessary practice to keep preschool children secured on the school bus seats. All restraint systems used during school bus transport should meet the requirements of Federal Motor Vehicle Safety Standard 213.<sup>4</sup> The American Academy of Pediatrics (AAP) recommends that school districts provide appropriate and federally approved child restraint systems for pre-kindergarten-aged children riding in school buses. Children with special needs and who are older than that age and require restraint should be evaluated individually to determine the most appropriate restraint that meets their needs for positioning during travel, regardless of their age, weight, and height. Further recommendations are outlined in the AAP policy statement on transportation of children with special needs.<sup>9</sup>

2. Compartmentalization, or keeping child passengers confined to a padded compartment in a crash, is the major principle by which school bus passengers are currently protected. In general, the higher the

The recommendations in this statement do not indicate an exclusive course of treatment or serve as a standard of medical care. Variations, taking into account individual circumstances, may be appropriate.

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seat back and the closer the spacing between rows, the better the compartmentalization of passengers in a crash. Current provisions are for a seat back height of 20 in above a reference point (about 22 in measured from the seat surface). A study committee of the National Transportation Safety Board has issued a recommendation that the NHTSA revise Federal Motor Vehicle Safety Standard 222 (School Bus Safety and Interiors) to require that seat backs be 24 in above the reference point. Seat backs would be slightly more than 26 in from the seat surface.<sup>1</sup> The AAP supports this recommendation.

3. The issue of school bus safety has been linked frequently with concerns about whether school buses should be required to have safety belts for all passengers. It is estimated that the use of seat belts on large, type I buses may reduce deaths and injuries by 20%, with an assumption that use rates are only 50%.<sup>1</sup> Belt use rates can be significantly increased through education and monitoring, and, therefore, effectiveness estimates can be enhanced when all students consistently wear the belts correctly. An additional benefit of seat belt use in buses is that it reinforces seat belt use in private vehicles. Although the cost-effectiveness of seat belt use on school buses may remain controversial, the AAP recommends the installation of seat belts on all newly purchased school buses. School districts that provide seat belts on school buses must ensure the appropriate education of administrators, students, teachers, drivers, and parents in their use.

4. All school buses should be equipped with the following to prevent pedestrian injury: eight warning and loading lights (two flashing red and two flashing amber lights on both the front and back of the bus), stop signal arms, and a cross-view mirror system. The bus should meet all current recommendations for mirrors, including two large round mirrors that allow the driver to view more fully the front of the bus. Additionally, districts should consider installing strobe lights for use during reduced-visibility conditions, an external loudspeaker system to enable the driver to communicate with children outside of the bus, and loading and backing alarms or pulsating backup horns.<sup>8</sup> Electronic sensor systems are available but have not been evaluated adequately.<sup>1</sup>

5. It is recommended that school buses be equipped with brake retarder systems, which may be effective in reducing serious injuries and deaths attributable to sudden stops.

6. Mandatory state school bus inspections are recommended.

7. The state highway patrol (or other independent agency) should make detailed, unexpected, random school bus inspections in addition to regular annual school bus inspections.

8. All school buses, including private, for hire, and those for parochial schools, need to be in compliance with all federal regulations. Buses built before 1977 should be retired from use.

9. The use of wheelchairs is common for school bus transportation of children with disabilities. The AAP recommends that states adopt the requirements for

the use of wheelchairs on school buses outlined in the 1995 National Standards for School Buses.<sup>8</sup>

### **School Bus Driver Selection and Training**

School bus drivers should meet the following requirements annually:

1. Maintain a valid commercial driver's license;
2. Be a minimum of 21 years of age;
3. Show proof of a yearly health examination, including vision and hearing assessments, which documents the absence of problems that may compromise driving and child supervision;
4. Maintain a satisfactory driving record as determined by the school district and successfully pass a review for a criminal record, including child sexual abuse and incidents or arrests for driving under the influence of alcohol or other drugs;
5. Attend a minimum of 6 hours of instruction and successfully complete a written or oral test covering driver duties, bus operating procedures, traffic and school bus laws and regulations, record keeping, emergency and crash-related procedures, first aid, basic appreciation of the developmental stages and needs of school-aged children, child supervision responsibilities, and transportation of passengers with special needs;
6. Pass a driving performance test and demonstrate safe loading and unloading procedures; and
7. Pass a test for illicit drugs and alcohol as required by the district; mandatory testing is recommended if it is not already required.

### **School Bus Passenger Instruction**

Passengers of all ages need to be taught safe riding and pedestrian behavior, no matter how infrequently they ride the bus. Instruction should include safe pedestrian practices going to and from the bus stop, safe behavior while waiting at the bus stop, safe practices for boarding and disembarking from the bus, safe behavior on the bus, and procedures for emergency situations.

### **School Bus Passenger Supervision**

Adult supervision on school buses should focus on ensuring that passengers stay seated, use seat belts when available, and keep arms and heads inside windows; assisting in handling emergencies; assisting passengers with special needs; and escorting children across busy roadways. These objectives can best be met by a second adult (other than the driver) serving as a monitor on the school bus.

### **School Bus Routes and Stops**

Bus routes should avoid the need for the bus to back up, should minimize traffic disruptions, should provide good fields of vision at all stops, and should minimize the need for children to board or leave the bus on, or cross, a busy roadway. It is recommended that an adult supervise children who must cross a roadway after leaving a school bus.

## The Pediatrician's Role

Pediatricians can play important roles at the community, state, and national levels as child advocates and consultants to schools about transportation safety.

### Community Level

1. Inquire about current policies relating to school transportation. Find out mechanisms for proposing needed changes, and serve as a resource to the decision-making body.

2. Inquire about and help develop local training programs for bus drivers. Participate in planning and arranging delivery of local training for bus drivers in areas relating to child development and behavior, child safety seat use and positioning needs, and safety belt use. Provide direction for the development of test materials to evaluate driver competency in these areas.

3. Share and promote the recommendations of this policy statement at local school district meetings.

4. Encourage the development and distribution of educational materials on school bus safety through the local school systems.

5. Serve as consultants to local transportation directors, state directors of school transportation, or school boards on the physical and emotional development of preschool children and assist in developing training materials for transportation providers.

### State Level

1. Contact state directors of school transportation and request a copy of current state specifications for school buses. Compare this information with recommendations by National School Bus Safety Standards<sup>8</sup> and urge revisions of state specifications, if necessary, through appropriate decision-making channels at the state level.

2. Volunteer to serve on a writing committee for state specifications. Share information from AAP policy statements and recommendations by National School Bus Safety Standards.

3. Contact state departments of education and recommend the development of information on school bus safety for statewide distribution to elementary schools.

4. Serve as a resource and consultant to the state department of education regarding training of bus drivers in areas relating to child passenger safety and child development and behavior.

### National Level

The AAP recommends that research be directed toward understanding how child restraint systems perform under dynamic conditions when secured on the school bus seat. This research would assist the NHTSA in assessing requirements for the dimensions of school bus seats (depth, height, and recline angles) to provide for the proper and secure restraint of preschool-aged children.

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