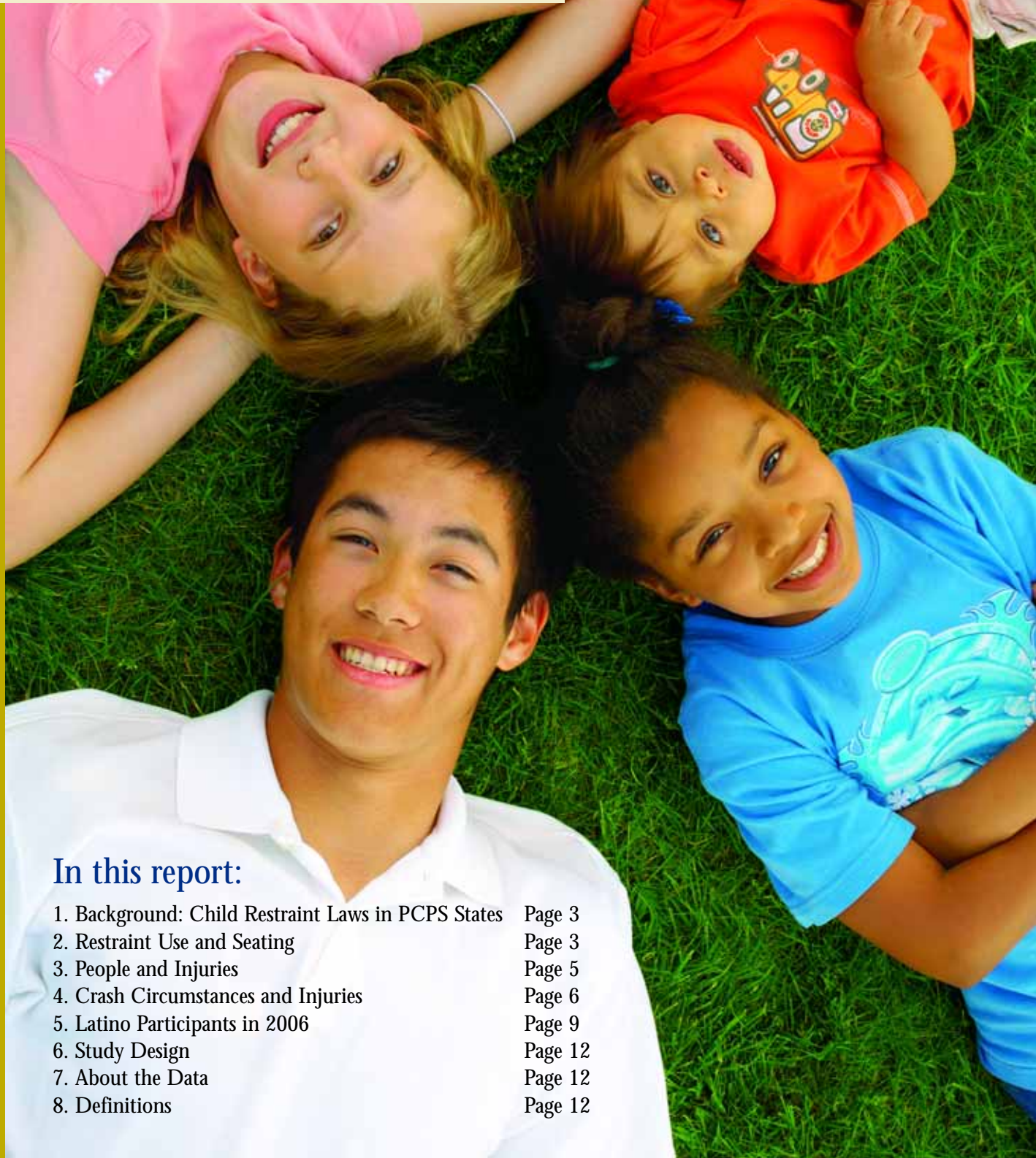


# Partners for Child Passenger Safety Fact and Trend Report

September 2007



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## *Partners for* Child Passenger Safety

Neighbors working together

The *2007 Partners for Child Passenger Safety (PCPS) Fact and Trend Report*, in its third year of publication, provides recent data on children involved in U.S. motor vehicle crashes and the injuries suffered in these crashes.

For the first time, the *Fact and Trend Report* is available in both Spanish and English. A new section reports on data regarding participants in the PCPS survey who identified themselves as Latino or Hispanic. In 2006, the PCPS study began collecting data from participants who preferred Spanish to English, in order to better understand the crash experience for **all** insured Latino children in our sample. Over the next several years, the research team at The Children's Hospital of Philadelphia will conduct more in-depth analyses of these data and will share the findings in the scientific literature. In this report, we provide a first-glance description of this important population's crash experience in 2006.

PCPS data reinforce the need for ongoing education on appropriate restraint use and rear seating for children. The data not only support the need for continued research and development, but also demonstrate the importance of the adoption of public policies to support the unique needs of child passengers and young drivers.

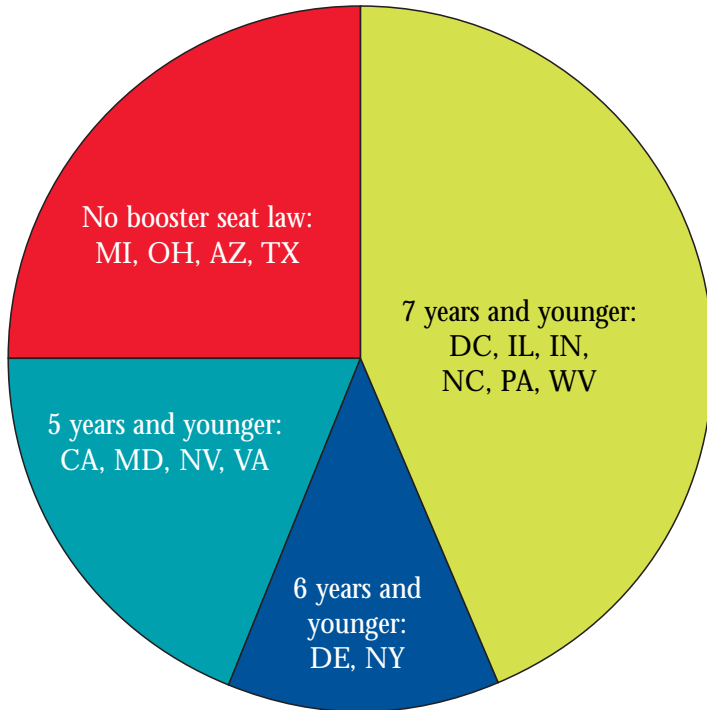
PCPS, the world's largest study of children in crashes, is a research partnership between The Children's Hospital of Philadelphia and State Farm Insurance Companies®. As of Dec. 31, 2006, more than 538,000 State Farm customers participated in the study representing 786,000 children. The study includes more than 33,000 in-depth interviews and more than 800 crash investigations. (See Page 12 for information about study design, data and definitions of technical terminology.)

Please contact Tracey Hewitt ([durhamt@email.chop.edu](mailto:durhamt@email.chop.edu)) with any questions about the uses and/or interpretation of the data.

*PCPS, the world's largest study of children in crashes, is a research partnership between The Children's Hospital of Philadelphia and State Farm Insurance Companies®.*

## 1. BACKGROUND

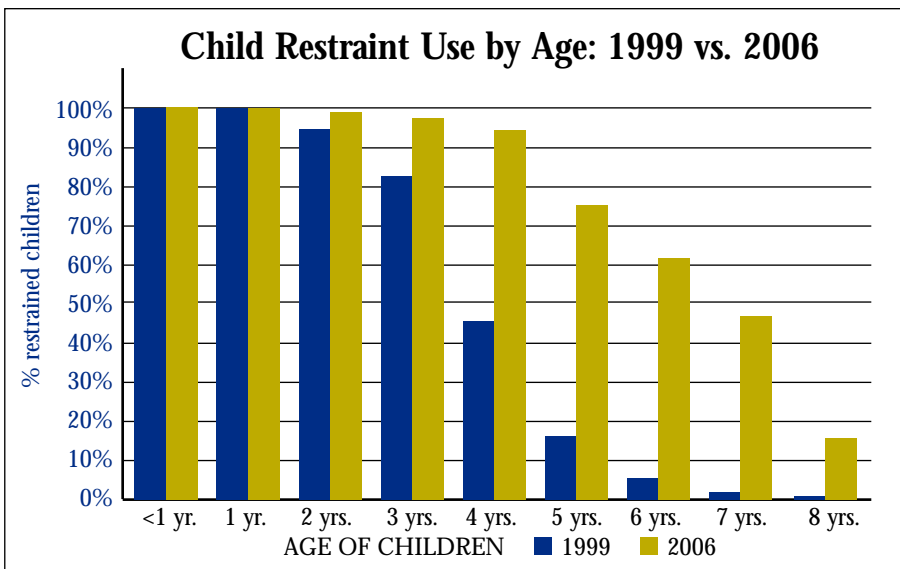
### Child Restraint Laws in PCPS States as of Dec. 31, 2006



- The 16 states listed below are those in which PCPS collects data on children in crashes. Read more about study design on Page 12.
- States that do not require child restraints to at least the 6th birthday do not have a booster seat law.
- More detailed information and updates on child restraint laws are available on the Insurance Institute for Highway Safety's Web site: [www.hwysafety.org](http://www.hwysafety.org).

AZ - Arizona	NC - North Carolina
CA - California	NV - Nevada
DC - District of Columbia	NY - New York
DE - Delaware	OH - Ohio
IL - Illinois	PA - Pennsylvania
IN - Indiana	TX - Texas
MD - Maryland	VA - Virginia
MI - Michigan	WV - West Virginia

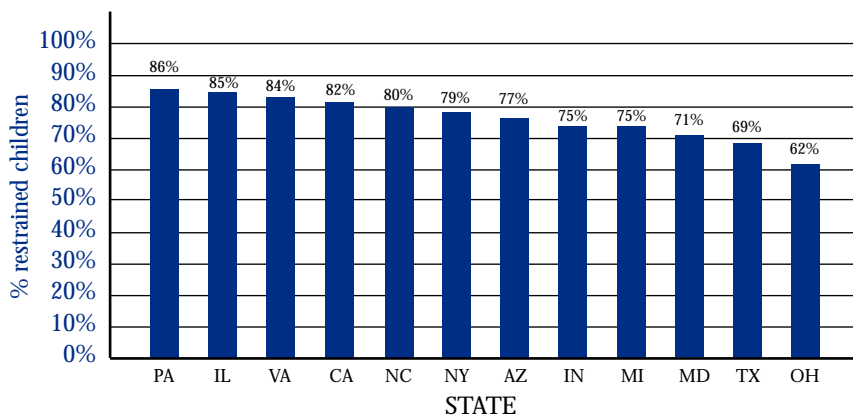
## 2. RESTRAINT USE AND SEATING



- This graph compares restrained children riding in *any type of child restraint system* in 1999 vs. 2006.
- For all children through age 8, child restraint use has increased from 51% in 1999 to 79% in 2006.
- Among children 4 to 8 years old, child restraint use has increased from 15% in 1999 to 60% in 2006.
- Although much progress has been made among 4- to 8-year-olds, 40% are still not appropriately restrained.

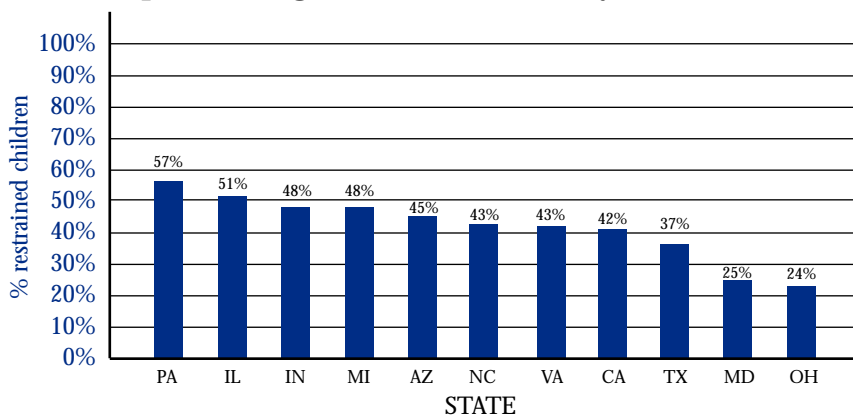
**All children younger than 9 years should be riding in a child restraint, unless 4'9" tall.**

**Child Restraint Use by State, 0 to 8 years: 2006**



- 99% of children age 0 to 3 years were riding in child restraints.
- Only 60% of children age 4 to 8 years were in child restraints.
- For Delaware, the District of Columbia, Nevada and West Virginia, data samples were too small to include.

**Belt-positioning Booster Seat Use by State: 2006**



- Overall, 43% of children ages 4 to 8 years old are riding in belt-positioning booster seats.
- Two of the three states with the lowest booster seat use, Ohio and Texas, *do not* have booster seat laws.
- The top three states: Pennsylvania, Illinois and Indiana, have booster seat laws through age 7.
- For the District of Columbia, Delaware, Nevada and West Virginia, sample populations were too small to include.

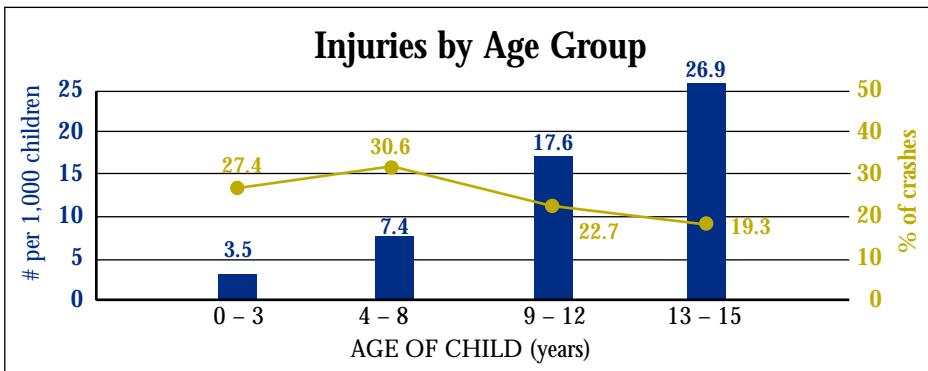
### EXPLANATORY NOTE

Sections 3 and 4 contain bar graphs showing the number of injuries per 1,000 children under various circumstances. The percentage of crashes in which these circumstances occurred is provided by the data line.

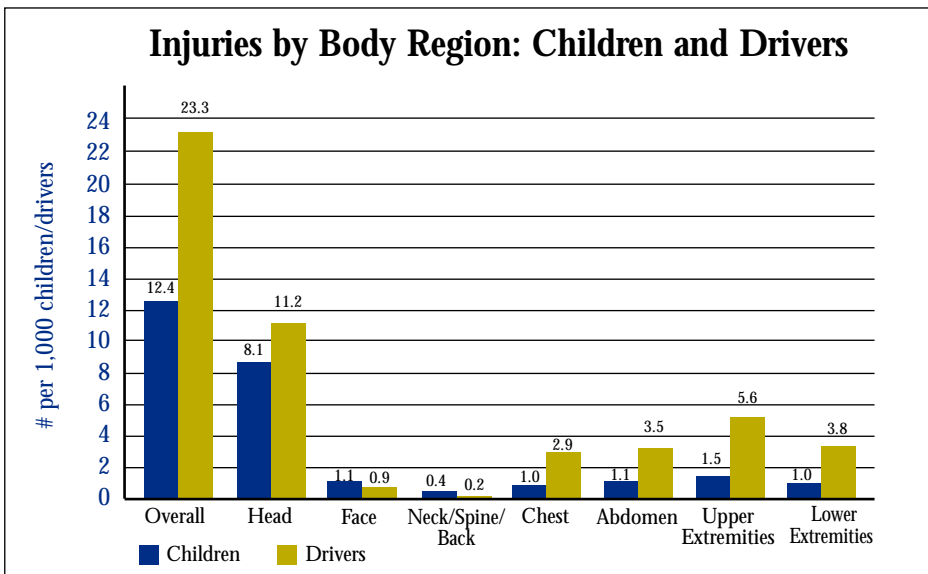
Injuries are defined as those that are clinically significant, including concussions and more serious brain injuries, skull fractures, facial bone fractures, spinal fractures and spinal cord injuries, injuries to internal organs, rib fractures and fractures of extremities. The data exclude cuts, bumps, bruises and burns.

## 3. PEOPLE AND INJURIES 2006

All injuries are per 1,000 children involved in crashes.

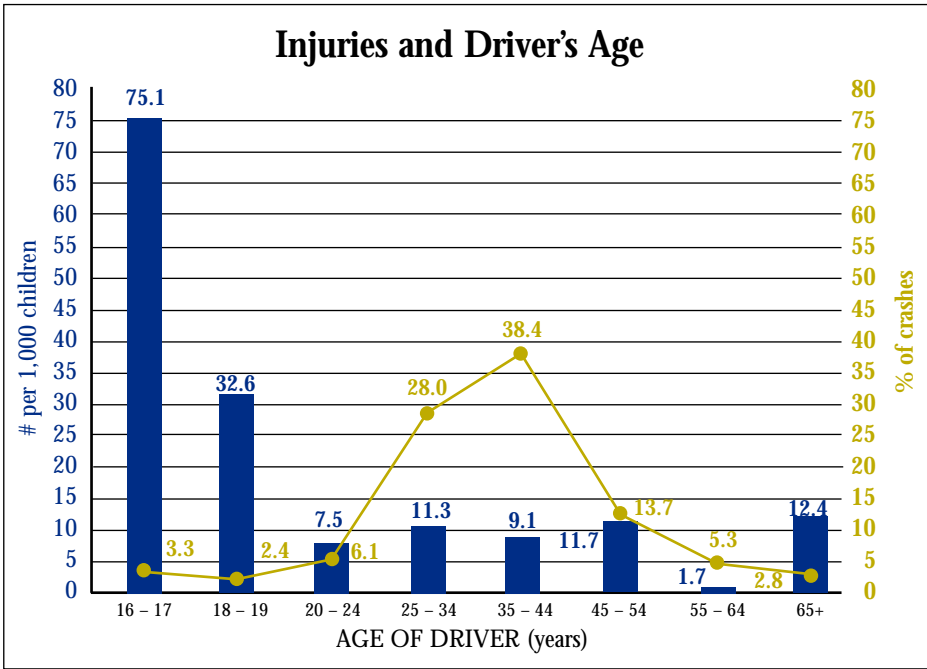


- As children age, their risk of injury in a crash rises. This is due, in part, to the different ways that children are restrained at each age, where they sit in the vehicle and other crash characteristics.
- While the burden of injury is highest in 13- to 15-year-olds, the percent of crashes is rather evenly spread across all age groups.



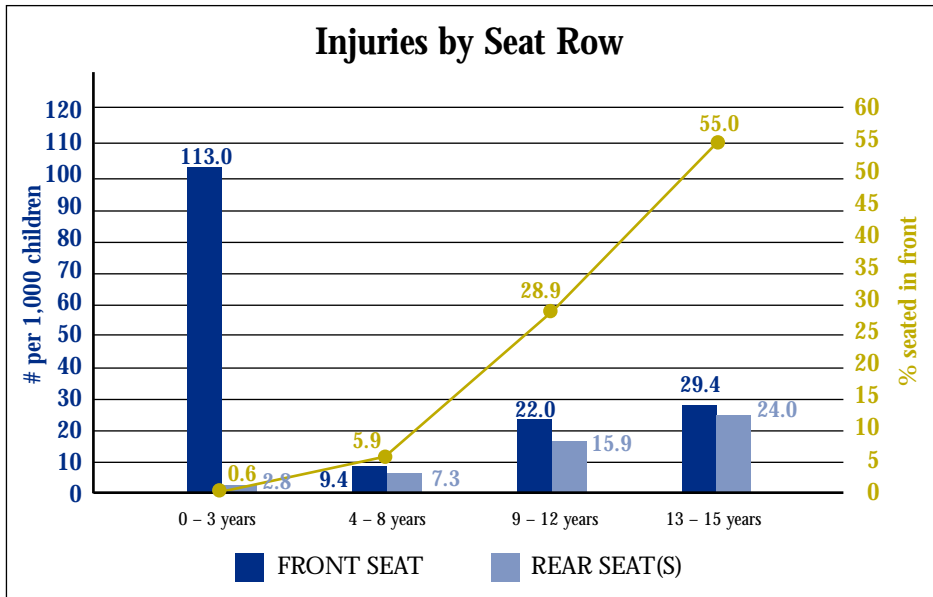
- In 2006, the overall risk of injuries for children involved in crashes was 12.4 per 1,000 children, approximately half the risk for drivers at 23.3 per 1,000.
- For both children and drivers, head injuries were the most common.
- 69% of the drivers were women.

**All injuries are per 1,000 children involved in crashes.**



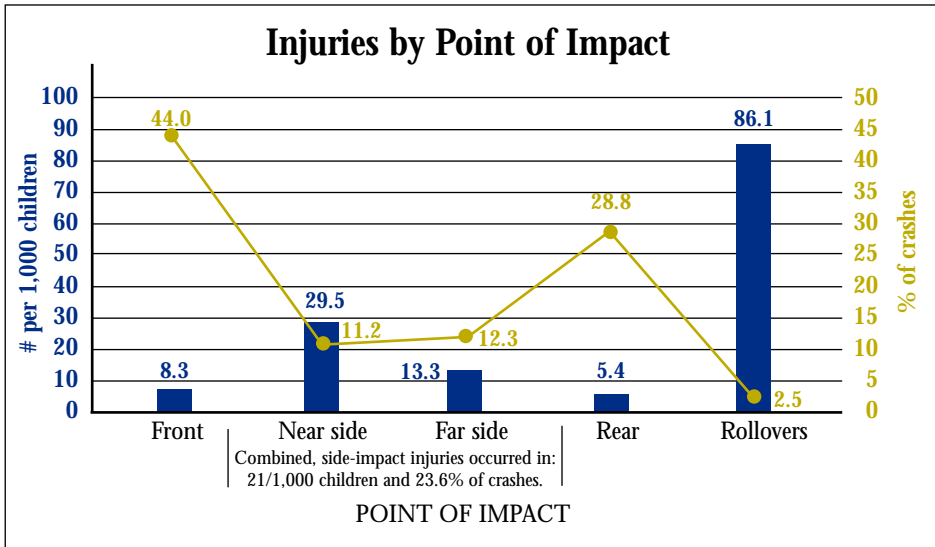
- Children have a much higher risk of injury (57.4 per 1,000) if the driver is younger than age 20. With drivers older than 20, the risk is reduced to 9.7 per 1,000.
- Although only 5.7% of crashes occur with drivers 16 to 19 years old, the children involved in these crashes are six times more likely to be injured than if driven by someone 20 years or older.

**4. CRASH CIRCUMSTANCES AND INJURIES: 2006**

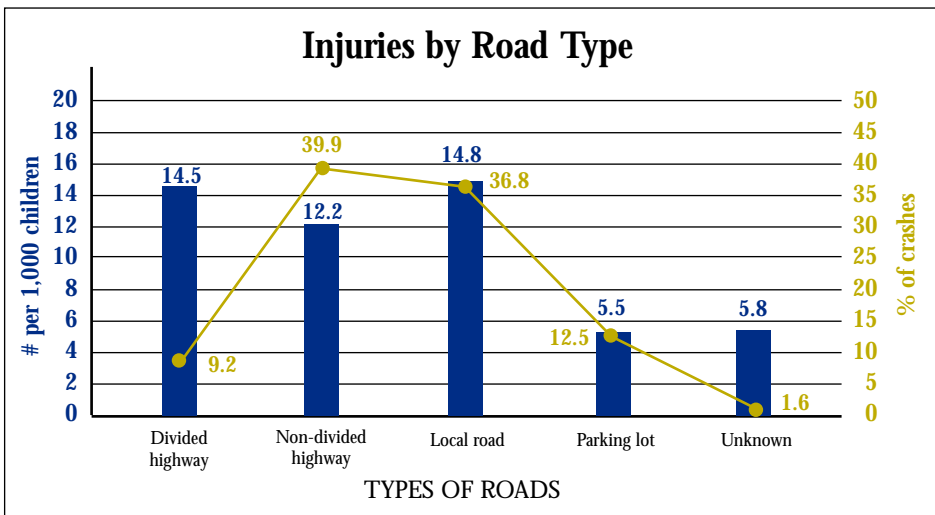


- The older the child, the more likely they are to sit in the front row.
- 45% of those seated in the front are younger than 13 years old *despite the recommendation that all children younger than 13 should be seated in the rear.*
- Although it is uncommon for a child younger than 3 to be seated in the front row, the injury rate is 113.0 vs. 2.8 per 1,000 in a rear-seating position.

**All injuries are per 1,000 children involved in crashes.**

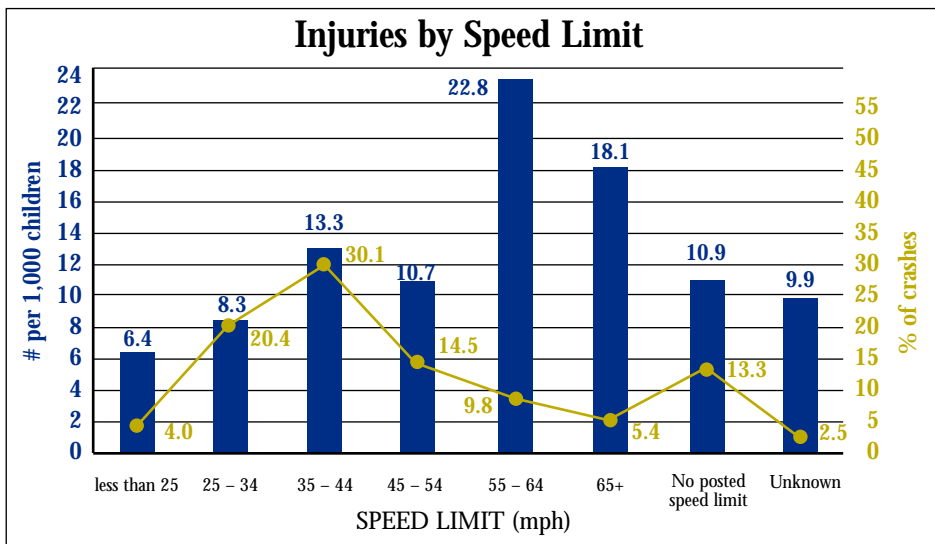


- Frontal impact crashes are the most common at 44.0%.
- Although only 2.5% of all crashes involve rollovers, they have the highest risk of injury at 86.1 per 1,000 children.
- Near side crashes account for 11.2% of the total but have an injury rate of 29.5 per 1,000 children; far side crashes are as common as near side crashes, but they result in fewer injuries.

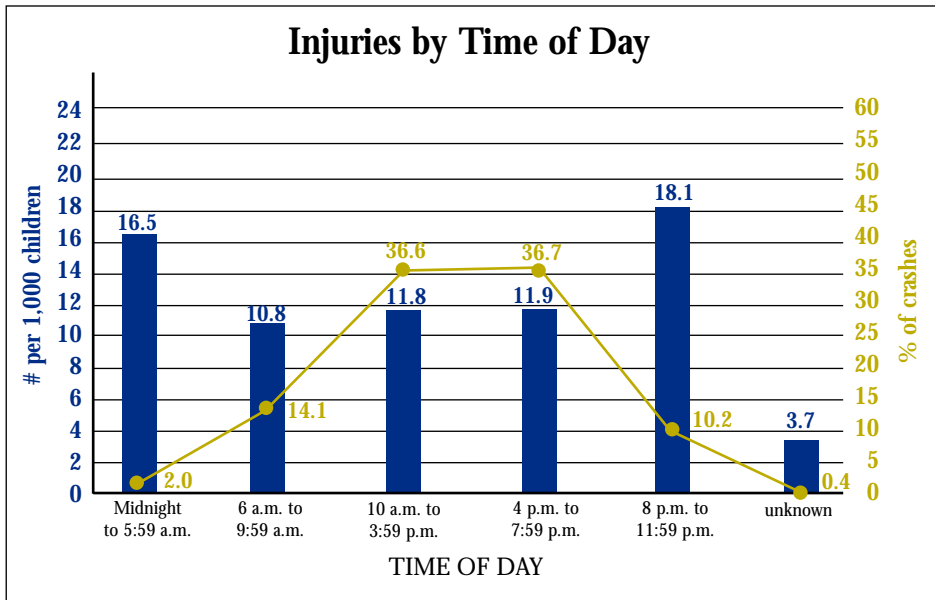


- While children have a near equal risk of injury on divided highways and on local roads, crashes involving children occur four times more frequently on local roads: 36.8% vs. 9.2%.

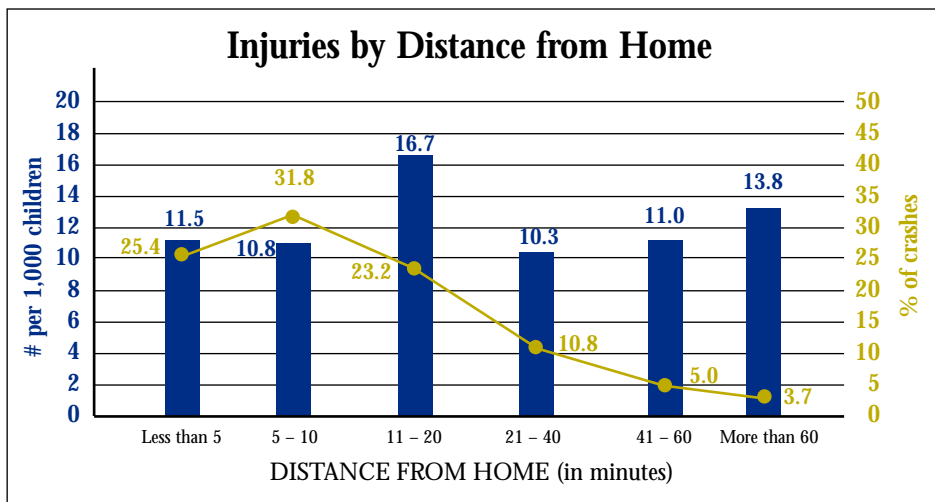
Note: A divided highway is one where opposing traffic lanes are separated by grass, raised median strip or a barrier. Lanes that are separated strictly by painted medians or a continuous left turning lane are not considered divided.



- Only 15% of crashes happen on roads with a posted speed limit of 55 mph or higher, but they represent the highest injury risk (21.1 per 1,000 children).
- Just over half (50.5%) of crashes involving children occur on roads with posted speed limits of 25 to 44 mph.



- Although only 12.2% of all crashes happen from 8 p.m. to 5:59 a.m., they are the most dangerous hours for children with an injury risk of 17.8 per 1,000 children.

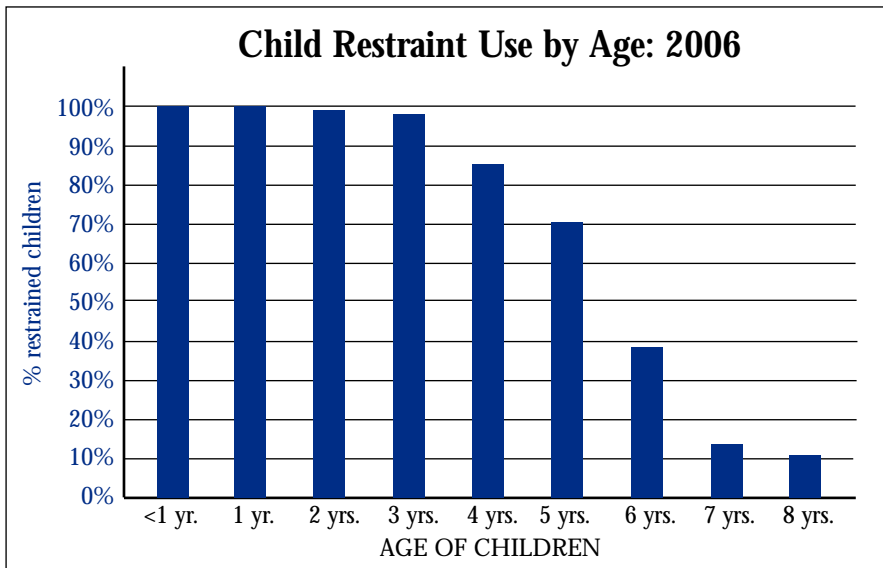


- The greatest injury risk occurs within 11 to 20 minutes from home, which accounts for almost one-quarter of all crashes.
- 57% of all crashes happen 10 or fewer minutes from home.

## 5. LATINO PARTICIPANTS IN THE 2006 PCPS SURVEY

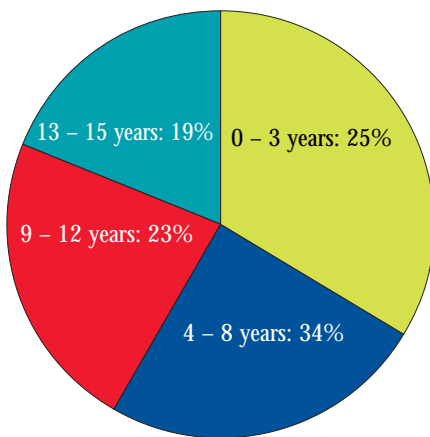
In 2006, the PCPS survey was offered in Spanish to all those who identified themselves as Latino or Hispanic and who preferred to speak in Spanish. These 2006 data on 307 children represent 4,760 Latino respondents, regardless of whether they chose to participate in English or Spanish. These data describe one of the largest samples of crashes involving Latino drivers with child passengers ever assembled and enable us to provide a descriptive “snapshot” of Latino children in crashes. It is important to note that these data come from a group of Latino families with crashes reported to their insurance company and may not describe the experience of uninsured families involved in crashes. However, knowledge of the restraint use practices, specific characteristics of the families involved in crashes, and the circumstances surrounding those crashes is an important first step in identifying issues specific to Latino families.

### Characteristics of Latino Families Who Participated in the Survey

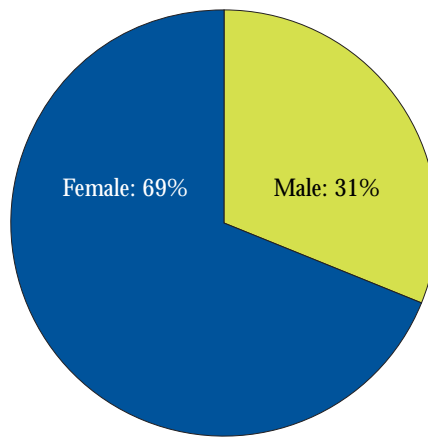


- This graph refers to children riding in *any type of child restraint system (CRS)* in 2006.
- For all Latino children through age 8, child restraint use is 68%.
- Among children 4 to 8 years, child restraint use is 44%.
- Significant drop-off in child restraint use begins at age 6.

**All children younger than 9 years should be riding in child restraint systems, unless 4 feet, 9 inches tall.**



Ages of Children



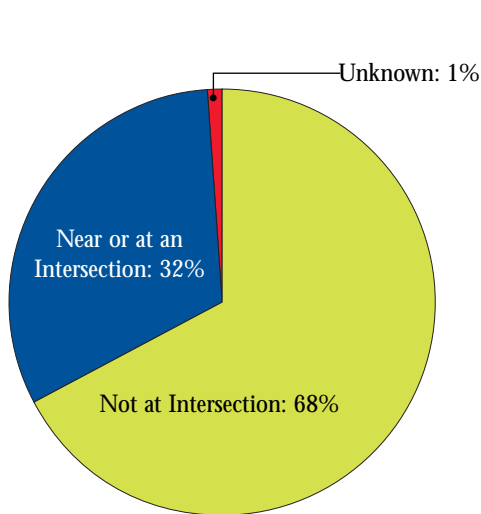
Driver Gender

What we know about the Latino/Hispanic families who participated in the survey:

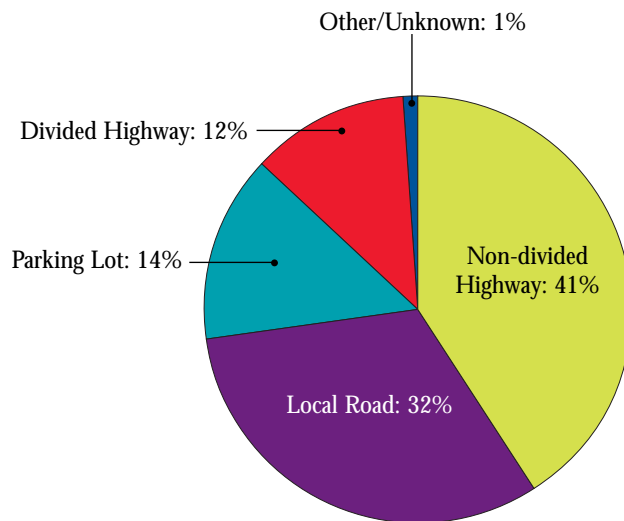
- Average number of children per vehicle: 1.8.
- Most of the drivers were female: 69%.
- The largest percentage of children involved in crashes were in the 4- to 8-year-old range: 34%.

## Characteristics of Crashes Involving Latino Children

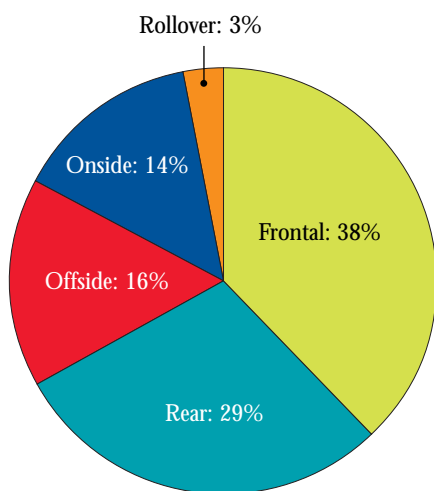
- Frontal crashes were most common.
- 58% of crashes were on roads with a posted speed limit of less than 45 mph.
- Almost one-third of crashes occurred at or near an intersection.
- Nearly one-half of all crashes took place on local roads or in parking lots.



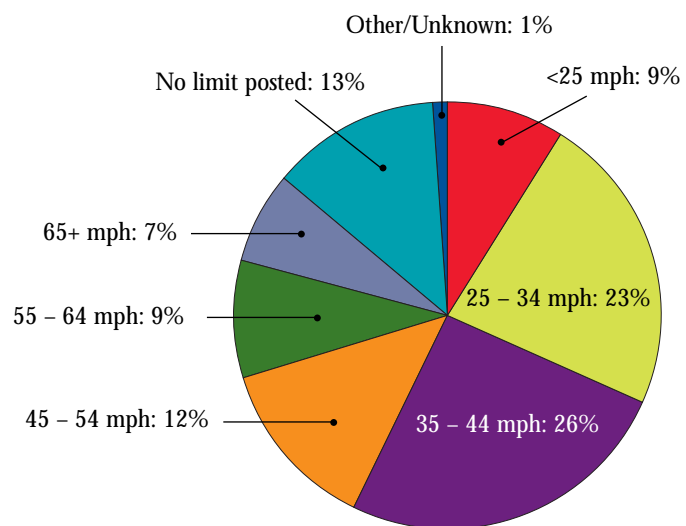
Location of Crash



Type of Road

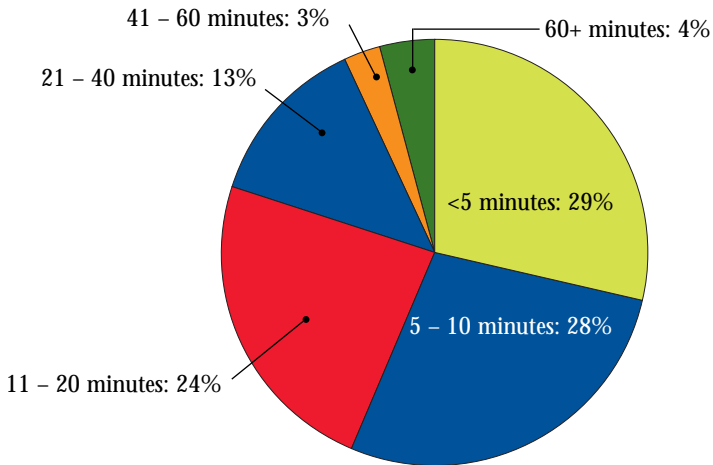


Direction of Crash

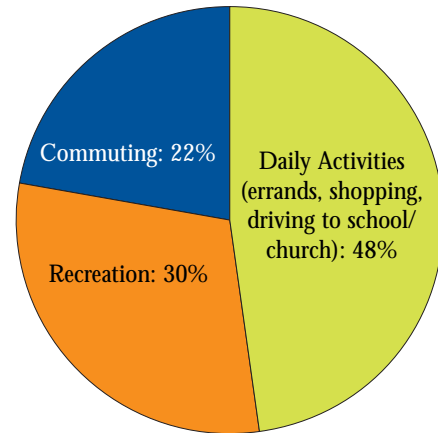


Posted Speed Limit (mph)

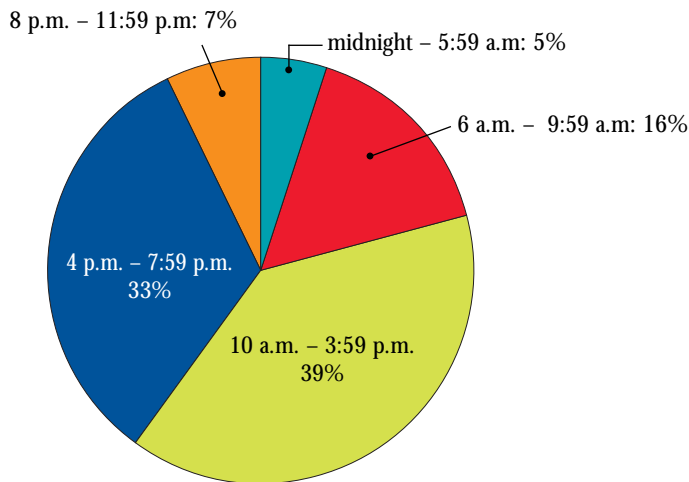
## Characteristics of Crashes Involving Latino Children (continued)



**Distance from Home**



**Reason for Trip**



**Time of Day**

- 57% of crashes occurred 10 minutes or less from home, while 81% took place 20 minutes or less from home.
- Almost half of all crashes took place while conducting daily activities, such as shopping or driving to school or church.
- 72% of crashes happened between 10 a.m. and 8 p.m.

## 6. STUDY DESIGN

PCPS is a research partnership between The Children's Hospital of Philadelphia and State Farm Insurance Companies®. State Farm-insured children younger than 16, riding in a model year 1990 or newer vehicle that has been involved in a crash, are included in the study. Since 1998, the study has collected information from consenting State Farm Automobile Insurance policyholders.

The data included are from the District of Columbia and 16 states: Arizona, California, Delaware, Illinois, Indiana, Maryland, Michigan, Nevada, New Jersey (through November 2001), New York, North Carolina, Ohio, Pennsylvania, Texas (since June 2003), Virginia and West Virginia.

A stratified cluster sample is used to select vehicles involved in crashes for inclusion in the study. Vehicles containing children who received medical treatment are over-sampled so that the majority of those injured are selected while still representing the overall population. Those who were selected and agreed to participate took part in a 30-minute telephone interview designed to give researchers a comprehensive picture of the characteristics of the crash, as well as the severity of the injuries. On-site crash investigations provide further information on injury mechanisms.

As of Dec. 31, 2006, more than 538,000 State Farm customers had participated in the study. The crashes represented in the study involved more than 786,000 children. Included were more than 33,000 in-depth interviews and more than 800 crash investigations.

## 7. ABOUT THE DATA

- The data are from Jan. 1, 2006 to Dec. 31, 2006 unless otherwise noted.
- Trend graphs cover eight years of the study through Dec. 31, 2006.
- Child restraint use is presented by age of child and not by optimal restraint as defined by the American Academy of Pediatrics (see Definitions).
- All children in the PCPS study have been involved in crashes.
- The data are from an insured population; uninsured drivers may have different practices.

## 8. DEFINITIONS

**Far side crash** – A side-impact crash in which a child sits on the opposite side as the impact

**Near side crash** – A side impact crash in which a child sits on the same side as the impact

**Optimal restraint** – The American Academy of Pediatrics set the following guidelines as best child restraint practices:

- Use a rear-facing seat until a child is at least 1 year and at least 20 pounds.
- Use a forward-facing seat with a harness until a child is too tall or too heavy for the seat. Generally, this is when a child weighs 40 pounds (usually around age 4).
- Use a belt-positioning booster seat until an adult seat belt fits (usually when a child's height reaches 4'9").
- For a child too big for a booster seat (usually older than age 8), use the lap-and-shoulder seat belt .
- All children younger than 13 years should sit in the back seat.

**Side-impact standard** – All passenger cars are required to comply with Standard 214 concerning side-impact protection. Currently, this standard applies to all passenger vehicles. The standards were phased into the U.S. fleet beginning in 1994, with full compliance required by 1999.

[www.chop.edu/carseat](http://www.chop.edu/carseat)  
[www.chop.edu/asientos\\_infantiles](http://www.chop.edu/asientos_infantiles)



*Partners for*  
**Child Passenger Safety**  
Neighbors working together

Information on child passenger safety and videos on child safety seat installation in both English and Spanish.

*The results in this report are the interpretation solely of the Partners for Child Passenger Safety research team at The Children's Hospital of Philadelphia and are not necessarily the views of State Farm Insurance Companies.*



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