

Traffic Safety Facts

Crash • Stats

DOT HS 811 116

A Brief Statistical Summary

June 2009

Not-in-Traffic Surveillance 2007 - Children

This issue of Crash*Stats focuses on information in NHTSA's Not-in-Traffic Surveillance (NiTS) system regarding children 14 and younger. The NiTS 2007 produced an overall estimate of 262 fatalities and 115,000 injuries to children 14 and younger in nontraffic crashes and noncrash incidents. Overall, an estimated 106 child fatalities occurred each year when pedestrians or other nonoccupants were struck by forward-moving vehicles, and 99 child fatalities occurred each year in backovers. The third most common not-in-traffic fatality scenario for children was hyperthermia or excessive heat while in the vehicle, which resulted in an average of 27 fatalities per year. The three most common not-in-traffic injuries involving children in declining order were extremities such as hands or feet caught in closing vehicle doors, falls while exiting or entering vehicles, and being cut by vehicle parts such as bumpers and license plates.

Background

The Not-in-Traffic Surveillance system is a virtual data collection system designed to provide counts and details regarding fatalities and injuries that occur in nontraffic crashes and in noncrash incidents. Information about these incidents has not routinely been collected by NHTSA, and the NiTS 2007 system provides its most comprehensive report yet. These fatalities and injuries include an estimated 218 fatalities and 10,000 injuries to children that occurred in nontraffic crashes such as single-vehicle crashes on private roads, collisions with pedestrians on driveways, and two-vehicle crashes in parking facilities. The remaining 44 fatalities and 105,000 injuries to children occurred in noncrash incidents that involve passenger vehicle occupants or otherwise involve passenger vehicles such as injuries from closing doors or falls from stationary vehicles.

Fatalities and Injuries in Nontraffic Crashes

The nontraffic crash fatality and injury component was based predominantly upon police reports received by NHTSA during 2007 through its existing crash data collec-

tion infrastructure. However, NHTSA is aware that NiTS does not have a complete count of all nontraffic crash fatalities from all States or of all nontraffic crash injuries from its statistical sample of police jurisdictions. Because of these limitations, NHTSA derived adjustment factors to account for the incompleteness of the NiTS system. The adjustment factor for nontraffic crash fatalities accounts for the difference between the expected number of fatalities, based upon death certificates, and the number of fatalities received in NiTS. For nontraffic injuries, NHTSA turned to its State Data System and used information from three States that collect information on both nontraffic and traffic injury crashes. The information from these States was then used to adjust for the difference between the expected number of nontraffic crash injuries and the number received.

Table 1 summarizes the fatalities and injuries in nontraffic crashes using the adjustment factors to produce national estimates. Table 1 indicates that almost all (210 of 218) of the nontraffic crash fatalities and about half (5,000 of 10,000) of the nontraffic crash injuries were child nonoccupants such as pedestrians or bicyclists. Backovers, where drivers reverse into and injure or kill nonoccupants, accounted for 45 percent of the nontraffic crash fatalities and 20 percent of the injuries to children.

Fatalities in Noncrash Incidents

The noncrash fatality component was based upon mortality data from death certificates contained in special mortality data files obtained from the Centers for Disease Control and Prevention's National Vital Statistics System (NVSS) for 2003 and 2004. The narrative sections of the accidental deaths that did not involve a transport accident were searched for indication of the involvement of passenger vehicles. Fatalities that occurred inside vehicles, while exiting or falling from vehicles or where the vehicles were otherwise a factor in the deaths were assigned incident types. Table 2 summarizes the noncrash deaths by incident type. Incidents of hyperthermia, involving excessive heat inside the vehicle, accounted for an annual average of 27 child fatalities and

Table 1: Estimate of Child (14 and younger) Nontraffic Crash Fatalities and Injuries (2007)

	Fatalities	Injuries
Nonoccupant in Nontraffic Crash: Backing Vehicle	99	2,000
Nonoccupant Struck by Driverless Vehicle	5	<500
Nonoccupant in Nontraffic Crash: Forward-Moving Vehicle	106	3,000
Vehicle Occupant in Nontraffic Crash	9	5,000
Total	218	10,000

Source: NiTS 2007

The estimate of 99 backover fatalities is smaller than the estimate in NHTSA's 2009 Advance Notice of Proposed Rulemaking on Rear Visibility because Table 1 does not contain adults or backover fatalities that occur in traffic crashes.

accounted for 61 percent (27 of 44) of the noncrash fatalities involving children. Vehicle window asphyxia accounted for an annual average of 5 fatalities per year and usually occurred from the closing of power windows. The only other two incident types with more than one average fatality per year were children struck by a tree, log, or rock while inside vehicles and carbon monoxide poisoning usually when a tailpipe was blocked.

Injuries in Noncrash Incidents

The noncrash injury component was based upon emergency department records contained in the Consumer Prod-

uct Safety Commission's (CPSC) National Electronic Injury Surveillance System All Injury Program (NEISS-AIP) from 2003 through 2006. NEISS-AIP is a nationally representative statistical sample of emergency department visits and provides sample weights for calculating national estimates. Per CPSC's recommendation, national estimates could not be made for incidents that account for fewer than 20 cases out of the 8,321 possible cases. Table 3 contains all the injury scenarios with an estimate of at least 1,000 emergency department visits per year. While Table 3 is not a complete list, the incident types represent 97 percent of the noncrash injuries. Children injured by a closing door accounted for half (52,000 of 105,000) of the noncrash injuries. Falls while

Table 2: Annual Average Child (14 and younger) Noncrash Fatalities by Incident Type (2003-2004)

Hyperthermia (excessive heat)	27
Vehicle Window Asphyxia (lack of oxygen due to mechanical strangulation)	5
Struck by Object	4
Carbon Monoxide Poisoning From Vehicle Exhaust	3

Source: National Vital Statistics System special mortality file, 2003-2004

boarding (entering) or alighting (exiting) a vehicle were the second most common injury scenario with an estimated 11,000 injuries per year involving children. The third most common injury scenarios involving children were cuts from parts of vehicles, usually involving bumpers and license plates, and accounted for an estimated 8,000 injuries per year. The fourth most common injury scenario involving children was striking the vehicle (such as kicking a tire) or being struck by a vehicle part being opened (such as a tailgate or door) with an estimated 7,000 injuries per year. The fifth most common cases involved children who struck the door or door frame while boarding or alighting at an estimated 6,000 injuries per year.

The NiTS system provides information about fatalities and injuries involving children in nontraffic crashes and in

noncrash incidents that has not routinely been collected by NHTSA in the past. Additional information about the NiTS system can be found in the reports "Not-in-Traffic Surveillance 2007 - Highlights," "NiTS 2007: Nontraffic Crash Database User's Manual," "NiTS 2007: Noncrash Fatality Database User's Manual," and "NiTS 2007: Noncrash Injury Database User's Manual." All documents and databases are available through the NHTSA Web site under NCSA Available Data. Additionally, NHTSA has created a new Web site, "Keeping Kids Safe: Inside and Out," to provide parents and caregivers with information about the potential dangers to children in and around motor vehicles, which may be accessed through www.nhtsa.dot.gov or through www.safercar.gov.

Table 3: Annual Estimate of Child (14 and younger) Noncrash Injuries by Incident Type (2003-2006)

Injured by Closing Door	52,000
Boarding or Alighting: Falls	11,000
Cut by Part of Vehicle	8,000
Struck Vehicle or Struck by Vehicle Part (not closing door, hood, trunk or window)	7,000
Boarding or Alighting: Door Injury	6,000
Fall Against Vehicle	4,000
Fall From Vehicle (not boarding or alighting)	4,000
Boarding or Alighting: Other Injuries (such as strains or sprains)	2,000
Struck by Other Product (usually cargo)	2,000
Cut by Other Product (in vehicle)	1,000
Overexertion	1,000
Injured by Closing Trunk	1,000
Fall Inside Vehicles	1,000
Other Foreign Body or Aspiration (in vehicle)	1,000
Closing of Vehicle Window	1,000

Source: National Electronic Injury Surveillance System All Injury Program, 2003-2006



U.S. Department of Transportation
National Highway Traffic Safety Administration

For questions regarding the above reported data, contact Rory Austin, rory.austin@dot.gov. This issue of Crash•Stats and other general information on highway traffic safety may be accessed by Internet users at: www-nrd.nhtsa.dot.gov/CATS/index.aspx.