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Not-in-Traffic Surveillance: Child Fatality and Injury in Nontraffic Crashes—2008 to 2011 Statistics

Summary

The Not-in-Traffic Surveillance (NiTS) data show that during the four-year period, 2008 to 2011, nontraffic motor vehicle crashes killed an estimated 1,043 children 14 and younger. Additionally, an estimated 30,000 children of this age group were injured in these crashes. About 85 percent of the killed and 60 percent of the injured children were nonoccupants such as pedestrians and bicyclists. Among the nonoccupant children killed, a vast majority (84%) were younger children (4 and younger).

Introduction

The nontraffic motor vehicle crashes are a class of crashes that occur off the public traffic ways. These crashes, subsequently referred to as "nontraffic crashes," are mostly single-vehicle crashes on private roads, two-vehicle crashes in parking facilities, or collisions with pedestrians on driveways. There are also noncrash incidents such as a vehicle falling on a person underneath or unintentional carbon monoxide poisoning. Both nontraffic crashes and noncrash incidents have the potential to kill or injure children. Nevertheless, no information on either of these was available until 2007, when Congress required National Highway Traffic Safety Administration (NHTSA) to start collecting and maintaining information pertinent to these events. Complying with the directive, NHTSA designed and implemented a virtual data collection system, NiTS, that would provide counts and details of the fatalities and injuries to people, including children, who are involved in nontraffic crashes and noncrash incidents. This Crash•Stats focuses only on nontraffic crashes and presents some salient statistics for the occupant and nonoccupant children (14 and younger) who were killed and injured in such crashes during 2008 to 2011. The statistics reported in this summary are based on the NiTS data from 2008 to 2011. Since a complete record of all nontraffic crash fatalities from States and police jurisdictions is not available, adjusted weights have been used to obtain national estimates. The background and details about collection of the NiTS data and the adjustment of weights adopted from the General Estimates System (GES) are provided in the appendix.

Children Killed in Nontraffic Crashes During 2008 to 2011

The NiTS data show that during the four-year period 2008 to 2011, an estimated total of 1,043 children 14 and younger were killed in nontraffic crashes (Table 1). This amounts to an average of 261 children killed in these crashes each year, accounting for about 16 percent of the estimated average of 1,621 people killed.

Nonoccupant children such as pedestrians and bicyclists accounted for 85 percent of the children killed in nontraffic crashes—47 percent of whom were struck by forward-moving vehicles and 43 percent had been hit by backing vehicles. Rollaway vehicles (unattended with no driver in control) killed another 3 percent of the nonoccupant children killed in these crashes.

A vast majority (87%) of the 40 occupant children killed in nontraffic crashes each year were victims of single-vehicle crashes. The remaining 13 percent of the occupant children killed in these crashes had been involved in multiple-vehicle crashes. In addition to the four-year totals and averages, Table 1 also presents yearly estimates of the occupants and nonoccupants killed in nontraffic crashes.

Table 1. Nonoccupant and Occupant Children 14 and Younger Killed in Nontraffic Crashes During 2008 to 2011

Occupant Status of Children	Killed By	2008		2009		2010		2011		Total*	Average	
		Number*	Percent	Number*	Percent	Number*	Percent	Number*	Percent		Number*	Percent
Nonoccupant Children	Forward Moving Vehicles	119	43%	124	57%	86	43%	86	44%	415	104	47%
	Backing Vehicles	123	45%	84	39%	86	43%	86	44%	379	95	43%
	Rollaway Vehicles (unattended with no driver in control)	5	2%	0	0%	14	7%	9	5%	28	7	3%
	Other (stopped, disabled, or parked vehicles)	27	10%	8	4%	13	7%	13	7%	61	15	7%
	Subtotal (85% of the total)	**274**		**216**		**199**		**194**		**883**	**221**	
Occupant Children	Single-Vehicle Crashes	22	100%	53	100%	51	71%	13	100%	139	35	87%
	Multiple-Vehicle Crashes	0	0%	0	0%	21	29%	0	0%	21	5	13%
	Subtotal (15% of the total)	**22**		**53**		**72**		**13**		**160**	**40**	
Total		**296**		**269**		**271**		**207**		**1,043**	**261**	

*Estimated
Data source: NiTS 2008–2011

Children Killed in Nontraffic Crashes During 2008 to 2011 by Age Groups

Table 2 shows child fatality statistics (yearly estimates, four-year totals and averages) for two age groups of children: younger children (4 and younger) and older children (5 to 14 years old). These statistics show that during 2008 to 2011, on average, 84 percent of the nonoccupant children killed in nontraffic crashes each year were younger children. In contrast, the older children accounted for 16 percent of the nonoccupant children killed. Thus, a vast majority of the children killed in nontraffic crashes during the four-year period were younger nonoccupant children. On the other hand, in the case of occupant children killed, more of the older children became crash victims. Of an estimated average of 40 occupant children killed in these crashes every year, 54 percent were older children and the remaining 46 percent were younger children.

Table 2. Nonoccupant and Occupant Children 14 and Younger Killed in Nontraffic Crashes During 2008 to 2011 by Age Groups

Occupant Status of Children	Of Ages	2008		2009		2010		2011		Total*	Average	
		Number*	Percent	Number*	Percent	Number*	Percent	Number*	Percent		Number*	Percent
Nonoccupant Children 14 and Younger	4 and Younger	247	90%	164	76%	161	81%	171	88%	743	186	84%
	5 to 14	27	10%	52	24%	38	19%	23	12%	140	35	16%
	Subtotal (85% of the total)	**274**		**216**		**199**		**194**		**883**	**221**	
Occupant Children 14 and Younger	4 and Younger	0	0%	42	79%	31	43%	0	0%	73	18	46%
	5 to 14	22	100%	11	21%	41	57%	13	100%	87	22	54%
	Subtotal (15% of the total)	**22**		**53**		**72**		**13**		**160**	**40**	
Total		**296**		**269**		**271**		**207**		**1,043**	**261**	

*Estimated
Data source: NiTS 2008–2011

Children Injured in Nontraffic Crashes During 2008 to 2011

Based on the NiTS data, an estimated total of 30,000 children 14 and younger were injured in nontraffic crashes during 2008 to 2011 (Table 3). This made up an average of 8,000 people injured in these crashes each year. Of all the children of this age group who were injured in nontraffic crashes, 60 percent were nonoccupants—59 percent of whom were injured by forward-moving vehicles and 37 percent by backing vehicles. On average, rollaway vehicles injured about 2 percent of the nonoccupant children each year.

An estimated total of 13,000 occupant children were injured in nontraffic crashes during the four-year period. On average, single-vehicle nontraffic crashes injured about 60 percent of the occupant children as compared to 40 percent who were injured in multiple-vehicle nontraffic crashes. In addition to the four-year averages and totals, Table 3 also presents yearly estimates of the occupants and nonoccupants injured in nontraffic crashes.

Table 3. Nonoccupant and Occupant Children 14 and Younger Injured in Nontraffic Crashes During 2008 to 2011

Occupant Status of Children	Killed By	2008		2009		2010		2011		Total	Average	
		Number†	Percent*	Number†	Percent*	Number†	Percent*	Number†	Percent*		Number†	Percent*
Nonoccupant Children	Forward Moving Vehicles	2,000	49%	2,000	65%	3,000	56%	3,000	67%	10,000	3,000	59%
	Backing Vehicles	2,000	41%	1,000	32%	2,000	43%	1,000	31%	6,000	2,000	37%
	Rollaway Vehicles (unattended with no driver in control)	<500	3%	<500	3%	0	0%	0	0%	<500	<500	2%
	Other (stopped, disabled, or parked vehicles)	<500	7%	<500	0%	<500	1%	<500	<5%	<500	<500	2%
	Subtotal (60% of the total)	**5,000**		**3,000**		**5,000**		**5,000**		**18,000**	**5,000**	
Occupants Children	Single-Vehicle Crashes	2,000	78%	3,000	81%	2,000	63%	1,000	25%	8,000	2,000	60%
	Multiple-Vehicle Crashes	1,000	22%	1,000	19%	1,000	37%	3,000	75%	5,000	1,000	40%
	Subtotal (40% of the total)	**3,000**		**3,000**		**3,000**		**4,000**		**13,000**	**3,000**	
Total		**8,000**		**6,000**		**8,000**		**9,000**		**30,000**	**8,000**	

† Estimated frequency rounded off to the nearest thousand; the column entries may not sum to the totals shown.
*Percentages calculated prior to rounding off.
Data source: NiTS 2008–2011

Children Injured in Nontraffic Crashes During 2008 to 2011 by Age Groups

Table 4 presents injury statistics for two age groups of children: younger children (4 and younger) and older children (5 to 14 years old) who were injured in nontraffic crashes during 2008-2011. These statistics show that, on average, 43 percent of the injured nonoccupant children were younger children and the remaining 57 percent were older children. Occupant children injured in nontraffic crashes display the same pattern as the injured nonoccupants; on average, 42 percent of the occupant children injured in these crashes were younger children and the remaining 58 percent were older children. The difference between the injured nonoccupant children of the two age groups is in complete contrast with the difference found in the case of killed nonoccupants (Table 3) where younger children had much higher representation among the killed nonoccupants than the older children.

Table 4. Nonoccupant and Occupant Children 14 and Younger Injured in Nontraffic Crashes During 2008 to 2011 by Age Groups

Occupant Status of Children	Of Ages	2008		2009		2010		2011		Total	Average	
		Number†	Percent*	Number†	Percent*	Number†	Percent*	Number†	Percent*		Number†	Percent*
Nonoccupant Children	4 and Younger	2,000	40%	2,000	49%	2,000	39%	2,000	45%	8,000	2,000	43%
	5 to 14	3,000	60%	2,000	51%	3,000	61%	3,000	55%	10,000	3,000	57%
	Subtotal (85% of the total)	**5,000**		**3,000**		**5,000**		**5,000**		**18,000**	**5,000**	
Occupant Children	4 and Younger	1,000	47%	2,000	60%	1,000	31%	1,000	29%	5,000	1,000	42%
	5 to 14	1,000	53%	1,000	40%	2,000	69%	3,000	71%	7,000	2,000	58%
	Subtotal (15% of the total)	**3,000**		**3,000**		**3,000**		**4,000**		**13,000**	**3,000**	
Total		**8,000**		**6,000**		**8,000**		**9,000**		**30,000**	**8,000**	

† Estimates rounded off to the nearest thousand; the column entries may not sum to the totals shown.
*Percentages calculated prior to rounding off.
Data source: NiTS 2008–2011

Appendix: NiTS — Background, Data Collection, and Adjustment Factors

In 2007, Congress required NHTSA to begin collecting and maintaining information about fatalities and injuries to people in crashes that occur off the public traffic ways, as well as in noncrash incidents such as a vehicle falling on a person underneath or unintentional carbon monoxide poisoning. This was made mandatory under Public Law Number 109-59, the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), and under Public Law Number 110-189, the Cameron Gulbransen Kids Transportation Safety Act of 2007 (K.T. Safety Act). To comply with this directive, NHTSA designed and implemented the "Not-in-Traffic Surveillance" system. This is a virtual data collection system designed to provide counts and details regarding fatalities and injuries that occur to people in nontraffic crashes and noncrash incidents.

NHTSA considered several sources to collect NiTS relevant information. These included police reports, trauma registries and hospital records, insurance company data, and newspaper stories. An assessment of the sources indicated that the most appropriate source of the data depended upon whether the event was a nontraffic crash or noncrash incident and whether the crash outcome was a fatality or nonfatal injury. Accordingly, the NiTS system was developed as a virtual data collection system comprised of four major components. The first component consists of the database of fatalities and injuries in nontraffic crashes. This component is primarily based on police reports. The second component is a database of noncrash fatalities obtained from death certificates. The third component is a database of noncrash injuries, which is based on a nationally representative sample of emergency department records. The fourth component is a collection of detailed investigations of particular types of incidents conducted by NHTSA under its Special Crash Investigations (SCI) program. More information about the SCI is available on the Web site www.nhtsa.dot.gov/portal/site/nhtsa.

This Crash•Stats is based on the first component, i.e., the information about nontraffic crash fatalities and injuries from police reports. NHTSA receives these annual reports through its existing crash data collection infrastructure. Nevertheless, NiTS does not contain a complete record of all nontraffic crash fatalities from all States or from a sample of police jurisdictions. To account for this incompleteness in the NiTS system, NHTSA derives adjustment factors from the difference between the expected number of fatalities (based upon death certificates) and the number of fatalities registered in the NiTS system. For nontraffic injury data, NHTSA relies on the State Data Program and uses information from those States that collect information on both traffic and nontraffic crashes causing injuries. The adjustment factors for the nontraffic injury data are derived from the difference between the expected and observed number of injuries in nontraffic crashes. The adjustment factors derived for fatalities and injuries are used to obtain national estimates related to nontraffic crashes. The information about the individual nontraffic crashes occurring in a year and the corresponding adjusted weights is compiled into the NiTS database. This database is available in SAS format. Additional information about the definitions and attributes of the NiTS variables is available in the *NiTS Analytical User's Manual 2008–2011.*

Note:

In 2007, the coding for NiTS nontraffic crashes was done based upon a small set of variables, while starting in 2008, the coding is being done using data elements that are similar to those used in the National Automotive Sampling System – General Estimates System (NASS-GES). For this reason, the estimates presented in this Crash•Stats may not be compared with the similar estimates reported in 2007. Regarding backovers (i.e., backing vehicle crashes), although the same definition was used in NiTS 2008–2011 as in NiTS 2007, different attributes were used in 2008–2011 to determine a backing maneuver.

For More Information

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