Vital Signs Data Tables

Understanding Child Injury Deaths: 2003-2012
Child Fatality Review Advisory Team Report

Data Tables

Data Sources

NYC DOHMH Vital Statistics: Injury death information was obtained from death certificates collected by the NYC DOHMH's Bureau of Vital Statistics. To classify intent and mechanism, we followed the National Center for Health Statistics external cause of injury matrix (based on the International Classification of Diseases, 10th Revisions (ICD-10) codes excluding injuries caused by legal intervention, available at: http://www.cdc.gov/nchs/injury/injury_tools.htm. The following ICD-10 codes were used to identify injury deaths: V01-X59, X85-Y09, X60-X84, Y10-Y34.

US Mortality Data: National data were obtained from the Centers for Disease Control and Prevention's (CDC's) **Wide-ranging Online Data for Epidemiologic Research (WONDER)** and CDC's **Web-based Injury Statistics Query and Reporting System (WISQARS)**. Data were accessed December 2014 at: http://wonder.cdc.gov/ and http://www.cdc.gov/injury/wisqars/index.html.

Office of Chief Medical Examiner (OCME) Case Investigation Records and NYC Department of Transportation's (DOT) Traffic Fatality Database case match: Using a detailed abstraction form and following standardized coding practices, researchers reviewed OCME files for traffic fatalities (ICD-10 codes V01-V89) during 2009-2011. Data from administrative police crash reports included in the OCME files were also used to gather information on crash circumstances. Additional crash information, such as crash location, contributing factors, and pedestrian behaviors, was obtained from the NYC DOT's Traffic Fatality Database; data were updated as of May 23, 2012. Cases included in DOT's database were matched to the OCME cases.

NYC DOHMH Population Estimates: Age-specific population rates were calculated using NYC DOHMH population estimates, modified from U.S. Census Bureau intercensal population estimates from 2000-2012 and last updated July 22, 2013.

Table 1. Leading causes of injury death among 1 to 12 year olds, New York City vs. United States, 2003-2012

Sources: CDC WONDER and NYC DOHMH Vital Statistics

Injury Cause (Mechanism)*	NYC (2003-2012)			US (2003-2012)		
	N	%	Rate[1]	N	%	Rate[1]
All causes	**438**	**100%**	**3.7**	**37,420**	**100%**	**7.7**
Leading causes[2]						
Motor vehicle, traffic	110	25%	0.9	11,536	31%	2.4
Fire/Flame	83	19%	0.7	3,674	10%	0.8
Suffocation	55	13%	0.5	3,181	9%	0.7
Other specified[3]	39	9%	0.2	1,123	3%	0.2
Fall	26	6%	0.2	625	2%	0.1
Not specified[4]	22	5%	0.2	2,409	6%	0.5
Poisoning	20	5%	0.2	1,026	3%	0.2
Not elsewhere classified[5]	19	4%	0.1	583	2%	0.1
Drowning	18	4%	0.1	6,638	18%	1.4
Firearm	14	3%	0.1	2,021	5%	0.4
Stabbing (Cut/pierce)	13	3%	0.1	338	1%	0.1

[1]Rate per 100,000.

[2]Table includes mechanisms causing >10 deaths of NYC children during 2003-2012.

[3]18 NYC child deaths classified as Other Specified were homicides classified as maltreatment by unspecified person (Y07.9).

[4]20 NYC child deaths classified as Not Specified were homicides due to assault by unspecified means (Y09-).

[5]13 NYC child deaths classified as Not Elsewhere Classified were homicides due to assaults (Y08-).

*See appendix glossary for more information about classification of injury mechanisms

Table 2. Injury deaths among 1 to 12 year olds by age, sex, race/ethnicity, borough of residence, neighborhood poverty, and District Public Health Office (DPHO) area, New York City, 2003-2012

Source: NYC DOHMH Vital Satistics

| | Unintentional | | | | | | Intentional | | | | | | | | | Total | | |
| | All causes | | | Motor vehicle | | | Homicide + Suicide | | | Homicide | | | Suicide | | | | | |
Demographic factor	N	%	Rate[1]	N	%	Rate[1]	N	%	Rate[1]	N	%	Rate[1]	N	%	Rate[1]	N	%	Rate[1]
Age																		
1 to 2	74	26%	3.6	13	12%	0.6	52	40%	2.5	52	45%	2.5	0	0%	0.0	143	33%	6.8
3 to 4	50	18%	1.1	19	17%	0.9	23	18%	0.5	23	20%	0.5	0	0%	0.0	78	18%	3.8
5 to 9	93	33%	3.1	41	37%	0.9	29	22%	1.0	28	24%	0.9	1	7%	0.0	125	29%	2.6
10 to 12	66	23%	3.3	37	34%	1.2	25	19%	1.3	12	10%	0.6	13	93%	0.7	92	21%	3.1
Sex																		
Male	182	64%	3.0	70	64%	1.2	64	50%	1.1	57	50%	1.0	7	50%	0.1	258	59%	4.3
Female	101	36%	1.8	40	36%	0.7	65	50%	1.1	58	50%	1.0	7	50%	0.1	180	41%	3.1
Race/ethnicity																		
Non-Hispanic black	112	40%	3.5	40	36%	1.3	74	57%	2.3	70	61%	2.2	4	29%	0.1	196	45%	6.4
Non-Hispanic white	68	24%	2.4	28	25%	0.9	10	8%	0.3	7	6%	0.2	3	21%	0.1	87	20%	2.9
Hispanic	83	29%	2.0	31	28%	0.7	38	29%	0.9	32	28%	0.8	6	43%	0.1	123	28%	3.0
Asian	13	5%	1.0	8	7%	0.6	5	4%	0.4	4	3%	0.3	1	7%	0.1	22	5%	1.7
Other	4	1%	1.5	1	1%	0.3	1	1%	0.4	1	1%	0.4	0	0%	0.0	5	1%	1.7
Borough																		
Brooklyn	116	41%	2.9	50	45%	1.2	55	43%	1.4	48	42%	1.2	7	50%	0.2	183	42%	4.6
Bronx	65	23%	2.6	20	18%	0.8	32	25%	1.3	30	26%	1.2	2	14%	0.1	104	24%	4.2
Manhattan	24	8%	1.6	10	9%	0.6	13	10%	0.8	12	10%	0.8	1	7%	0.1	39	9%	2.4
Queens	57	20%	1.9	25	23%	0.8	19	15%	0.6	16	14%	0.5	3	21%	0.1	80	18%	2.6
Staten Island	21	7%	2.9	5	5%	0.7	10	8%	1.4	9	8%	1.2	1	7%	0.1	32	7%	4.5
Neighborhood Poverty[2]																		
Low	39	14%	2.1	13	12%	0.7	5	4%	0.3	3	3%	0.2	2	14%	0.1	45	10%	2.3
Medium	86	30%	2.3	36	33%	0.9	28	22%	0.7	25	22%	0.7	3	21%	0.1	122	28%	3.2
High	66	23%	2.2	30	27%	1.0	51	40%	1.7	46	40%	1.6	5	36%	0.2	128	29%	4.3
Very High	92	33%	3.0	31	28%	1.0	45	35%	1.4	41	36%	1.3	4	29%	0.1	143	33%	4.6
District Public Health Office (DPHO)																		
Bronx	33	12%	2.9	9	8%	0.8	15	12%	1.3	14	12%	1.3	1	7%	0.1	48	12%	4.3
East and Central Harlem	5	2%	1.2	4	4%	1.0	8	6%	2.0	7	6%	1.7	1	7%	0.2	13	3%	3.2
Brooklyn	46	16%	3.6	16	15%	1.3	36	28%	2.8	32	28%	2.5	4	29%	0.3	82	20%	6.5
Outside DPHO	199	70%	2.2	81	74%	0.9	70	54%	0.8	62	54%	0.7	8	57%	0.1	269	65%	3.0
Total	**283**		2.4	**110**		0.9	**129**		1.1	**115**		1.0	**14**		0.1	**438**		3.7

[1]Rate per 100,000.

[2]Neighborhood poverty defined as proportion of residents in a ZIP Code with incomes below 100% of the Federal Poverty Level (FPL) per Census 2000 (for 2003 and 2004 estimates) and American Community Survey (2007-2011) (for 2005-2012 estimates), in four categories: Low (<10% FPL), Medium (10%-<20% FPL), High (20%-<30% FPL), and Very High Poverty (≥30% FPL).

See appendix glossary for more information about classification of injury mechanisms.

Table 3. Injury death rate trend for children aged 1 to 12 years, New York City vs. United States, 2003-2012

Sources: CDC WONDER and NYC DOHMH Vital Statistics

Year	NYC		US	
	N	Rate[1]	N	Rate[1]
2003	48	3.8	4,260	8.9
2004	47	3.8	4,227	8.8
2005	55	4.6	4,126	8.6
2006	54	4.6	3,995	8.6
2007	47	4.1	3,846	8.0
2008	51	4.4	3,577	7.4
2009	31	2.7	3,478	7.1
2010	41	3.5	3,328	6.8
2011	22	1.9	3,343	6.8
2012	42	3.5	3,240	6.6
Total	**438**	**3.7**	**37,420**	**7.7**

[1]Rate per 100,000.

Table 4. Motor-vehicle (MV) related deaths among children aged 1 to 12 years, New York City vs. United States, 2003-2012

Sources: CDC WISQARS and NYC DOHMH Vital Statistics

Person	NYC (2003-2012)			US (2003-2012)		
	N	%	Rate[1]	N	%	Rate[1]
Pedestrian	78	71%	0.7	2,776	24%	0.6
MV Occupant	1	1%	0.0	4,326	38%	0.9
Motorcyclist	1	1%	0.0	146	1%	0.0
Bicyclist	6	5%	0.1	498	4%	0.1
Other	0	0%	0.0	19	0%	0.0
Unknown	24	22%	0.2	3,771	33%	0.8
All MV-related	110	100%	0.9	11,536	100%	2.4

[1]Rate per 100,000.

ICD-10 codes:

All Motor-vehicle-related:	V30-V39 (.4-.9), V40-V49 (.4-.9), V50-V59 (.4-.9),V60-V69 (.4-.9), V70-V79 (.4-.9), V81.1 V82.1,V83-V86 (.0-.3),V20-V28 (.3-.9),V29 (.4-.9),V12-V14 (.3-.9),V19 (.4-.6),V02-V04 (.1,.9),V09.2,V80 (.3-.5),V87(.0-.8),V89.2
Pedestrian:	V02-V04 (.1,.9), V09.2
Occupant:	V30-V39 (.4-.9),V40-V49 (.4-.9),V50-V59 (.4-.9),V60-V69 (.4-.9),V70-V79 (.4-.9),V83-V86 (.0-.3)
Motorcyclist:	V20-V28 (.3-.9),V29 (.4-.9)
Bicyclist:	V12-V14 (.3-.9) V19 (.4-.6)
Other:	V80 (.3-.5),V81.1 V82.1
Unknown:	V87(.0-.8),V89.2

Table 5. Leading causes of injury death among children aged 1 to 12 years by sex, race/ethnicity, borough, and neighborhood poverty, New York City, 2003-2012

Source: NYC DOHMH Vital Statistics

Table 5a. Leading causes of injury death among children aged 1 to 12 years by sex

	Boys				Girls		
Cause	N	%	Rate[1]	Cause	N	%	Rate[1]
Unintentional MV Traffic	70	28%	1.2	Homicide (all mechanisms)	58	35%	1.0
Homicide (all mechanisms)	57	23%	0.9	Unintentional MV Traffic	40	24%	0.7
Unintentional Fire/flame	44	18%	0.7	Unintentional Fire/flame	24	14%	0.4

Table 5b. Leading causes of injury death among children aged 1 to 12 years by age group

	1-2				3-4				5-9				10-12		
Cause	N	%	Rate[1]	Cause	N	%	Rate[1]	Cause	N	%	Rate[1]	Cause	N	%	Rate[1]
Homicide (all mechanisms)	52	36%	2.5	Homicide (all mechanisms)	23	29%	1.1	Homicide (all mechanisms)	41	33%	0.9	Unintentional MV Traffic	37	40%	1.2
Unintentional Fire/flame	18	13%	0.9	Unintentional MV Traffic	19	24%	0.9	Unintentional Suffocation	30	24%	0.6	Unintentional Fire/flame	13	14%	0.4
Unintentional Suffocation	15	10%	0.7	Unintentional Fire/flame	8	10%	0.4	Unintentional Fall	28	22%	0.6	Suicide	13	14%	0.4

Table 5c. Leading causes of injury death among children aged 1 to 12 years by race/ethnicity

	NH White				NH Black				Hispanic				Asian		
Cause	N	%	Rate[1]	Cause	N	%	Rate[1]	Cause	N	%	Rate[1]	Cause	N	%	Rate[1]
Unintentional MV Traffic	28	32%	0.9	Homicide (all mechanisms)	70	36%	2.3	Homicide (all mechanisms)	32	26%	0.8	Unintentional MV Traffic	8	36%	0.6
Unintentional Fire/flame	16	18%	0.5	Unintentional MV Traffic	40	20%	1.3	Unintentional MV Traffic	31	26%	0.7	Homicide (all mechanisms)	4	18%	0.3
Homicide (all mechanisms)	7	8%	0.2	Unintentional Fire/flame	33	17%	1.1	Unintentional Fire/flame	18	15%	0.4	Unintentional Not Specified	2	9%	0.3

1. Rate per 100,000 .

Note: while unintentional deaths rank higher than homicide deaths across all demographic groups, when mechanisms of unintentional deaths are ranked separately, homicide deaths may outrank them. Homicide deaths include all mechanisms.

See glossary for more information about classification of injury mechanisms.

Table 5. Leading causes of injury death among children aged 1 to 12 years by sex, race/ethnicity, borough, and neighborhood poverty, New York City, 2003-2012

Source: NYC DOHMH Vital Statistics

Table 5d. Leading causes of injury death among children aged 1 to 12 years by neighborhood poverty[2]

Low				Medium				High				Very High			
Cause	N	Percent	Rate[1]	Cause	N	Percent	Rate[1]	Cause	N	Percent	Rate[1]	Cause	N	Percent	Rate[1]
Unintentional Fire/flame	13	29%	0.7	Unintentional MV Traffic	36	30%	0.9	Homicide (all mechanisms)	46	36%	1.5	Homicide (all mechanisms)	41	28%	1.3
Unintentional MV Traffic	13	29%	0.7	Homicide (all mechanisms)	25	20%	0.6	Unintentional MV Traffic	30	23%	1.0	Unintentional MV Traffic	31	21%	1.0
Unintentional Drowning	3	7%	0.2	Unintentional Fire/flame	21	17%	0.5	Unintentional Fire/flame	14	11%	0.5	Unintentional Fire/flame	21	14%	0.7

Table 5e. Leading causes of injury death among children aged 1 to 12 years by borough

	Cause	N	Percent	Rate[1]
Bronx	Homicide (all mechanisms)	30	29%	1.2
	Unintentional MV Traffic	20	19%	0.8
	Unintentional Fire/flame	17	16%	0.7
Brooklyn	Unintentional MV Traffic	50	27%	1.2
	Homicide (all mechanisms)	48	26%	1.2
	Unintentional Fire/flame	25	14%	0.6
Manhattan	Homicide (all mechanisms)	12	31%	0.7
	Unintentional MV Traffic	10	26%	0.6
	Unintentional Fire/flame	6	15%	0.4
Queens	Unintentional MV Traffic	25	31%	0.8
	Homicide (all mechanisms)	16	20%	0.5
	Unintentional Fire/flame	15	19%	0.5
Staten Island	Homicide (all mechanisms)	9	28%	1.3
	Unintentional Fire/flame	6	19%	0.8
	Unintentional MV Traffic	5	16%	0.7

1. Rate per 100,000 .
2. Neighborhood poverty (based on ZIP code) defined as proportion of residents with incomes below 100% of the Federal Poverty Level (FPL) per Census 2000 (for 2003 and 2004 estimates) and American Community Survey (2007-2011) (for 2005-2012 estimates), in four categories: Low (<10% FPL), Medium (10%-<20% FPL), High (20%-<30% FPL), and Very High Poverty (≥30% FPL).

Note: while unintentional deaths rank higher than homicide deaths across all demographic groups, when mechanisms of unintentional deaths are ranked separately, homicide deaths may outrank them. Homicide deaths include all mechanisms. See glossary for more information about classification of injury mechanisms.

Table 6. Persons killed in motor vehicle (MV) crashes among children and youth aged 1 to 17 years by age group, New York City, 2009-2011

Sources: OCME Case Investigation Records and NYC Department of Transportation's Traffic Fatality Database

Person	1-12 years		13-17 years		Totals	
	N	%	N	%	N	%
Bicyclist	2	9%	1	4%	3	6%
Motorcyclist	0	0%	0	0%	0	0%
MV Driver	0	0%	3	12%	3	6%
MV Passenger	4	17%	7	28%	11	23%
Pedestrian	17	74%	14	56%	31	65%
Total	**23**	**100%**	**25**	**100%**	**48**	**100%**

Table 7. Circumstances of fatal motor vehicle (MV) crashes among children and youth aged 1 to 17 years, New York City, 2009-2011

Sources: OCME Case Investigation Records and NYC Department of Transportation's Traffic Fatality Database

Crash Circumstance	N	%
Pedestrian action		
Crossing Midblock	11	35%
Crossing intersection		
Against the light	8	26%
With the light	1	3%
Unsignalized	1	3%
Unknown signalized	2	6%
On Sidewalk	5	16%
In street	1	3%
Crossing at unknown location	2	6%
Distance[1] from crash location to home		
Blocks[2] (Miles)		
< 2 blocks (<0.1)	11	35%
2-<10 blocks (0.1-<0.5)	8	26%
10-<20 blocks (0.5- <1.0)	4	13%
20+ blocks (1.0+)	8	26%
Time of Day[3]		
Morning (6:00am-9:59am)	8	26%
Midday (10:00am-2:59pm)	5	16%
Afternoon/Evening (3:00pm-7:59pm)	10	32%
Night/Early Morning (8:00pm-5:59am)	7	23%
Vehicle Type		
Car	15	48%
SUV/Truck/Van	10	32%
Bus	3	10%
Unknown	3	10%
Total	**31**	**100%**

[1]Distance from crash location to home was calculated using ArcGIS v10.2.1 street network analysis: Streets_LION_DCP_2012.

[2]City blocks calculated as 1 mile = 20 city blocks.

[3]Data were missing for one pedestrian death. Total N for this analysis was 30.

Note: Crash contributing factors are determined by NYPD at the scene of the crash, reviewing available evidence as well as driver and witness (when available) accounts of the crash circumstances. Multiple factors often contribute to a crash event, and determining the main cause of a crash is difficult, as most crashes are caused by a confluence of factors.

Table 8. Manner of external cause[1] deaths, New York City vs. United States, 2003-2012

Sources: CDC WONDER and NYC DOHMH Vital Statistics

Manner of external cause	NYC (2003-2012)		US (2003-2012)	
	N	Rate[2]	N	Rate[2]
Unintentional	283	2.4	29,919	6.2
Homicide	115	1.0	5,832	1.2
Suicide	14	0.1	679	0.1
Undetermined	26	0.2	990	0.2
Therapeutic complication	2	0.0	316	0.1

[1]Excludes deaths by legal intervention.

[2]Rate per 100,000.

Appendix: Glossary of injury mechanism terminology

This report uses the following terms to describe the mechanism that caused the injury death:

Motor vehicle-related:	death caused by injuries from a motor vehicle collision including injuries to an occupant, pedestrian, bicyclist.
Fire/flame related:	death caused by an injury resulting from severe exposure to flames, heat or smoke inhalation.
Suffocation:	death from injuries due to inhalation, aspiration, or ingestion of food or other object (e.g., choking), and mechanical suffocation (e.g., hanging). Note: most suffocation deaths among younger children (aged 1 to 9) were unintentional choking among older children (aged 10 to 12) were suicide by hanging.
Fall-related:	death from any injury received when someone descends abruptly as a result of the force of gravity and strikes a surface at the same or lower level.
Poisoning:	death resulting from ingestion, inhalation, absorption through the skin, or injection of so much of a drug, toxin, or other chemical that a harmful effect results (e.g., drug overdoses). This category does not include harmful effects from normal therapeutic drugs (i.e., unexpected adverse effects to a drug administered correctly to treat a condition) or bacterial illnesses.
Drowning:	death resulting from submersion in water or other liquid.
Firearm:	death resulting from penetrating force injury from a bullet or other projectile shot from a powder-charged gun.
Stabbing (cut/pierce):	death resulting from an incision, slash, penetration, or puncture or sharp instrument, weapon, or object.
Other specified:	death from an injury associated with any other specified cause that does not fit another category.
Not specified:	death from an injury missing either the manner (e.g., intentional, unintentional) or mechanism (e.g., motor vehicle, firearm) of the injury.
Not elsewhere classified:	death resulting from an injury not classifiable in another category.

Note: The above mechanism rankings are based on the International Classification of Diseases (ICD) Injury matrices, which are frameworks designed to organize ICD coded injury data into meaningful groupings for national and international comparability. Source: NCHS. ICD-10: External cause of injury mortality matrix. Available from: http://www.cdc.gov/nchs/injury/injury_matrices.htm