# New York City Child Fatality Report

## 2010 Report from the Child Fatality Review Team


NYC

Michael R. Bloomberg
Mayor

Department of Health & Mental Hygiene

Thomas Farley, M.D., M.P.H.
Commissioner

Michael R. Bloomberg
Mayor

Department of
Health & Mental
Hygiene
Thomas Farley, M.D., M.P.H.
Commissioner

Dear Fellow New Yorker,

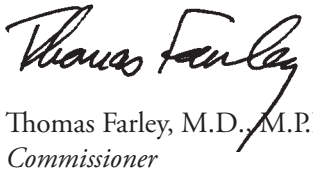
Keeping children safe from injury is a basic responsibility of families and society. In 2006, New York City established a multi-disciplinary Child Fatality Review Team to examine such unnatural deaths in children ages one through 12 and to identify strategies for prevention.

Past reports from the Child Fatality Review Team have described in detail the predominant causes of fatal child injury in New York City including traffic crashes (2007), fire and burns (2008), and unintentional injuries that occur in the home (2009). This fourth report analyzes individual and neighborhood disparities in fatal childhood injuries, highlighting factors that may place some children at greater risk than others.

New York City children die from injuries at just half the national rate, thanks mainly to a lower rate of traffic-related fatalities. Yet injuries as a whole are still the leading cause of child death in the City. This year's findings show that fatal injuries occur disproportionately among younger children, boys, black non-Hispanic children, and children in the City's most impoverished neighborhoods.

The reasons for these disparities may include both individual (the knowledge, behaviors, and resources of caregivers) and neighborhood factors (access to secure housing and traffic characteristics). Though New York City has done much to reduce the burden of child injury, this report identifies social, environmental, and regulatory measures that could make New York City an even safer place for our children. We hope it will foster continued progress.

Sincerely,



Thomas Farley, M.D., M.P.H.
*Commissioner*
New York City Department of Health and Mental Hygiene

# Annual Report 2010

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# Key Findings

1. **Between 2001 and 2008, the overall death rate for children aged one to 12 years old was approximately 35% lower in New York City (NYC) when compared with available national data between 2001 and 2006. Most of this difference was due to fewer injury-related deaths in NYC.**
   - Nationally, the death rate among children aged one to 12 years was 20 deaths per 100,000, compared with 15 per 100,000 children in NYC.
   - Injury-related deaths among children were more than two times higher nationally than in NYC (8.9 deaths per 100,000 compared with 4.2 deaths per 100,000).
   - Differences in national and NYC child death rates are largely due to lower rates of unintentional injury deaths in NYC. Specifically, the rate of injury-related fatalities due to accidents was two and a half times higher nationally than in NYC (7.3 deaths per 100,000 compared with 2.9 deaths per 100,000). This is mostly due to the difference in transportation-related fatalities: 3.7 deaths per 100,000 children in US compared with 1.2 deaths per 100,000 children in NYC.
2. **Deaths from injury accounted for 29% of the 1,535 child deaths in NYC between 2001 and 2008.**
   - Unintentional injuries comprised 69% of all child injury deaths (n=302). Of these, 41% were due to transportation accidents (n=124). Most transportation accidents among children were motor vehicle-related (n=106). Of these, 81 were among pedestrians hit by a motor vehicle, 14 were among motor vehicle passengers, and 11 were among cyclists. Leading causes of unintentional non-transportation accidents (n=178), were fire or burn-related injuries (n=86), suffocation (n=30), falls (n=27), and drowning (n=12).
   - Intentional injuries comprised 25% of all child injury deaths (n=109). Of these, 93% were certified as homicide (n=101) and 7% as suicide (n=8). The leading causes of child homicides included death from blunt impact (n=25), gunshot (n=15), fatal child abuse syndrome (n=13), and fire-related smoke inhalation (n=12).
3. **Between 2001 and 2008, injury deaths among NYC's children showed individual-level disparities.**
   - Younger children had a higher injury death rate than older children (6.8 deaths per 100,000 children one to three years old vs. 3.5 deaths per 100,000 children 10 to 12 years old). Intentional injuries contribute to this difference, as 33% of intentional injury deaths were among one to three year olds whereas 21% were among 10 to 12 year olds.
   - Boys had a higher injury death rate (4.6 deaths per 100,000) than girls (3.6 deaths per 100,000). Seventy-seven percent (n=193) of fatal injuries among boys were due to unintentional injuries as compared to 59% (n=109) among girls. In contrast, girls experienced a higher proportion of homicides than boys during this period (30%, n=57 vs. 18%, n=44).
   - The injury death rate among black, non-Hispanic children was nearly twice that of white, non-Hispanic children and twice that of Hispanic children (6.6 per 100,000 vs. 3.4 per 100,000 and 3.3 per 100,000 respectively). Black, non-Hispanic children had the highest percentage of intentional injury deaths (31%) followed by Hispanic children (29%).
4. **Between 2001 and 2008, child injury deaths occured disproportionately in NYC's most vulnerable neighborhoods.**
   - Thirty-six percent of child injury deaths occurred in neighborhoods with very low levels of employment even though only 26% of children lived in these neighborhoods; 39% occurred in NYC neighborhoods with very low income levels even though only 27% of children lived in neighborhoods.
   - The number and rate of fatal child injuries were highest in neighborhoods with very low socioeconomic status (SES) compared with neighborhoods with high SES. In very low SES neighborhoods 182 fatal child injuries occurred (5.2 fatal injuries per 100,000). In contrast, 31 fatal child injuries occurred in NYC's highest SES neighborhoods (2.3 fatal injuries per 100,000).
5. **Between 2001 and 2008, neighborhood-level disparities were primarily due to differences in homicides.**
   - The rate of fatal intentional injuries was nearly seven times (6.7) higher in NYC's very low SES neighborhoods than in high SES neighborhoods. Most of this disparity in intentional injuries was due to cases of homicide; 69 homicides occurred in very low SES neighborhoods whereas only 4 occurred in high SES neighborhoods.

# Glossary

**Accident** – Fatal injury or poisoning that occurred without intent to harm or cause death, also called unintentional injury.

**Cause of death** – The illness, disease or injury responsible for the death. Examples of natural causes include heart defects, asthma and cancer. Examples of injury-related causes include blunt impact, burns, and drowning. Also known as mechanism.

**Child Fatality Review Team** – A group of individuals representing a variety of agencies, organizations, and disciplines who investigate preventable child deaths and make recommendations for policy and prevention.

**Community District** – New York City's 59 community districts illustrate the City's land uses and population, ranging in size from less than 900 acres to 15,000 acres, and populations from fewer than 35,000 residents to over 200,000.

**Death certificate** – A legal document containing details of an individual's death. Cause and manner of death and key demographic information are provided.

**External causes of death** – Deaths that are due to environmental events, poisonings or other adverse effects. Also known as unnatural deaths. They include injury-related causes of death and deaths due to complications of medical and surgical care. In this report, all child deaths due to external causes are referred to as injury deaths.

**Health disparity** – A difference in health outcomes observed between groups that reflects social inequalities such as discrimination, poor neighborhood environment or poor quality of health care.

**Drowning** – Death due to submersion in liquid, usually a large body of water. For children, this can also include a bathtub, pool or commercial bucket.

**Healthy Housing Index** – A neighborhood-level measure based on the percent of households seeing cockroaches daily, mice/rats in building, cracks/holes, leaks from outside the unit, three or more maintenance deficiencies, and the percent of pre-1950 constructed buildings or peeling paint in pre-1960 buildings.

**Homicide** – Death resulting from injuries sustained through an act of criminal negligence or violence committed by another person with the intent to cause fear, harm or death.

**Intentional injury** – Injuries resulting from the intentional use of force or purposeful action against oneself or others. Intentional injuries include interpersonal acts of violence intended to cause harm, criminal negligence or neglect (e.g., homicide), and self-inflicted (e.g., suicide).

**Manner of death** – The circumstances of the death as determined by postmortem examination, death scene investigation, police reports, medical records or other reports. Manner of death categories include: natural, accident (i.e., unintentional), homicide (e.g., intentional), suicide (e.g., intentional), therapeutic complication, and undetermined.

**Natural death** – Death due solely to illness or disease.

**Neighborhood-level factors** – Measures of population conditions (e.g., median family income, percent of high school graduates, employment rate, and racial composition) for each of NYC's 59 community districts.

**Non-transportation accident** – A subcategory of unintentional injury that encompasses a variety of injuries not associated with any mode of transportation, such as falls, drownings, and fires.

**Office of Chief Medical Examiner (OCME)** – The office that investigates cases of persons who die within New York City from violence or criminal neglect, by accident, by suicide, suddenly when in apparent good health, when unattended by a physician, in a correctional facility, in any suspicious or unusual manner or where an application is made for a permit to cremate the body of a person. The OCME is responsible for postmortem examination, death scene investigation, and final determination of cause and manner of death.

**Postmortem examination** – External examination or autopsy used with other evidence to determine cause and manner of death.

**Socioeconomic status (SES)** – A combination of economic and social indicators such as education, employment, income, and race that defines an individual's or neighborhood's position in society.

**Suicide** – Fatality from an intentional, self-inflicted act with the intent to cause harm or death to self.

**Therapeutic complication** – Death resulting from causes associated with a medical or surgical intervention used to treat an illness or disease.

**Thermal injuries** – Fire or flame burns, scald burns due to contact with hot liquids or steam, or burns from contact with a hot object.

**Transportation accident** – A subcategory of unintentional injuries in which the victim was a passenger in or injured by a motorized vehicle (e.g., car, plane, train).

**Undetermined** – Categorization of a death when all available information is insufficient to point to any one manner of death. In some cases, both cause and manner of death may remain undetermined.

**Unintentional injury** – Injury that occurred without intent to harm or cause death; an injury not intended to happen. Also called an accident.

# Introduction

Childhood injuries are the leading causes of death and disability among children in the United States despite the fact that many of these injuries are predictable and can be prevented through proven measures. Injury-related deaths are categorized as either unintentional, such as deaths caused by a motor vehicle-related accident or accidental fall from a building, or intentional, such as deaths caused by injuries from child abuse or suicide.

The New York City Child Fatality Review Team (CFRT), created in early 2006 as mandated by Local Law 115, annually reviews these preventable causes of death among New York City (NYC) children aged one to 12 years old. The CFRT published its first annual report in 2007. It included an aggregate review of unintentional and intentional child injury deaths and an in-depth case review of all child deaths related to motor vehicle accidents, the single leading cause of injury deaths among children in NYC. The 2008 report focused on fire- and burn-related deaths, the City's second leading cause of unintentional injury-related deaths among children in this age group; and the 2009 report focused on unintentional child injuries in the home environment, the most common setting for fatal child injuries.

This 2010 CFRT report builds on findings from previous years and includes the most recent data available. Aggregate patterns of all injury deaths among children one to 12 years of age from 2001 to 2008 are presented. This year, committee members elected to also examine *disparities in injury-related child deaths*, which are differences in injury deaths between groups that reflect social and economic inequalities.

Disparities can be assessed at the individual-level (e.g., child's age, gender, race/ethnicity, and borough of residence), and at the neighborhood-level, meaning that the social, economic, and physical environment in which children live can influence their well-being and safety. For example, the 2009 CFRT report found that fatal unintentional injuries among NYC children disproportionately occurred among boys (individual-level) and in neighborhoods with excess poverty (neighborhood-level). In order to better describe fatal child injuries in NYC's unique urban environment, both individual- and neighborhood-level factors are further examined in this year's report. Based on report findings, CFRT members present recommendations for preventing unnecessary child deaths, with particular attention given to neighborhoods with the highest concentration of injury deaths.

# Background

## New York City's Child Fatality Review Team

The CFRT is a multi-disciplinary review committee comprised of experts in child welfare and pediatrics appointed by the Mayor, City Council Speaker, and Public Advocate, as well as representatives from several city agencies including:

- Administration for Children's Services
- Department of Education
- Department of Health and Mental Hygiene
- New York City Police Department
- Office of Chief Medical Examiner

The CFRT meets quarterly to review aggregate data and identify trends and risk factors for injury-related deaths among NYC children aged one to 12 years. For the 2010 review, the committee invited representatives from the following additional city agencies to participate in quarterly meetings:

- Department of Buildings
- Department of Homeless Services
- Department of Transportation
- Consumer and Product Safety Commission

- Fire Department of New York
- Housing Preservation and Development

The CFRT is chaired by the New York City Department of Health and Mental Hygiene (DOHMH). The goals of the CFRT are to examine significant social, economic, cultural, safety and health-systems factors associated with external causes of death among children to help identify preventable risk factors and to develop policy and program recommendations.

### Other Fatality Review Teams in New York City

There are several other fatality review teams that operate in New York City; all share the common goal of examining deaths to prevent future tragedies. Current teams include:

**The Department of Health and Mental Hygiene Infant Mortality Review Committee (IMRC)**: Reviews and summarizes NYC infant (birth to age 1 year) mortality trends. There is no overlap between this committee and the CFRT.

**The Department of Health and Mental Hygiene Maternal Mortality Review Committee (MMRC)**: Reviews NYC maternal deaths. There is no overlap between this committee and the CFRT unless a female child age 12 years or younger dies as a result of childbirth.

**The Administration for Children's Services (ACS) Accountability Review Panel**: Reviews fatalities of children (birth to age 17 years) reported to the State Central Registry of Child Abuse and Maltreatment whose family history was previously known to the child welfare system. Between 2001 and 2008, family history was known to ACS for 19% of all child injury death cases for children aged one to 12 years (this includes 50% of homicide cases, 25% of suicide cases, 10% of unintentional cases, and 9% of undetermined cases). While the CFRT provides some descriptive data on homicide and suicide cases, in-depth case reviews are not included in the report to avoid duplication of efforts and/or hindrance to ongoing criminal investigations.

**The New York City Domestic Violence Fatality Review Committee (DVFRC)**: Examines all domestic violence fatalities, defined as "the death of a family or household member resulting from an act or acts of violence committed by another family or household member that does not include self-defense." Between 2001 and 2008, the DVFRC reviewed 67% of the 2001-2008 child homicide cases included in the CFRT report. While the CFRT provides some descriptive data on these cases, in-depth case reviews are excluded to avoid duplication of efforts and/or hindrance to ongoing criminal investigations.

# Methods

## Classification of Injury Deaths

To identify injury-related deaths among NYC children aged one to 12 between years 2001 and 2008, death certificates maintained by the NYC Office of Vital Statistics were reviewed. Cases were included in analyses if the certificates' Cause of Death listed an International Classification of Disease (ICD-10) code that was consistent with a non-natural, external cause of death. Death certificate data were verified and supplemented with information from files maintained by the Office of Chief Medical Examiner (OCME). These files contain autopsy or external examination reports, police and other investigative reports, toxicology, and other postmortem special studies. Abstraction of this information was conducted using a form adapted from the National Center for Child Death Review Case Report. In some cases, OCME files were not reviewed due to pending legal investigations and court cases.

External causes of death include injury-related deaths and deaths due to complications of medical and surgical care. For this report, injury-related deaths are the focus of reporting and were categorized by cause and intent

of the fatal injury. Because some causes occurred in very low frequency among NYC's children, this report uses the following general taxonomy:

**Unintentional injuries**–Injuries that were not deliberate, and occurred without intent to harm or cause death; an injury not intended to happen. This type of injury is described as accidental.

- **Transportation accidents**–Fatal injuries in which the victim was a passenger in or injured by a motorized vehicle (e.g., car, plane, train).
- **Non-transportation accidents**–Fatal injuries that encompass a variety of injuries not associated with any mode of transportation, such as a fall, drowning or house fire.

**Intentional injuries**–Injuries resulting from intentional use of force or purposeful action against oneself or others. Types include:

- **Homicide**–Death resulting from injuries sustained through an act of criminal negligence or violence committed by another person to cause fear, harm or death.
- **Suicide**–Fatality from an intentional, self-inflicted act with the intent to cause harm or death to self.

**Other injuries include:**

- **Undetermined**–The categorization of a death when all available information is insufficient to point to any one manner of death. In some cases, both cause and manner of death may remain undetermined.
- **Therapeutic complications**–Death resulting from causes associated with a medical or surgical intervention (complication of medical and surgical care) used to treat an illness or disease.

Natural deaths (e.g., deaths due to disease or the aging process) were not included in this report. World Trade Center-related deaths were also excluded from the report. For a complete listing of inclusion criteria and ICD-10 injury codes, please see the Technical Appendix. Data analyses were conducted by two dedicated DOHMH staff members. Only aggregate and de-identified information were shared and discussed with CFRT members at quarterly meetings. Based on suggestions by members, analyses were then refined.

## Health Disparities

Health disparities[1] are defined as the differences in health between groups of people as a result of social inequalities. NYC is one of the most racially and ethnically diverse cities in the United States and is also economically diverse, with a large gap between low and high incomes. Black and Hispanic New Yorkers are more likely than white New Yorkers to live in these low-income neighborhoods. As such, it is not surprising that the burden of child injury is not shared equally among all groups. To gain a better understanding of the burden, this report examines the relationship between individual- and neighborhood-level factors and disparities in child injury deaths by intent among NYC children aged one to 12 for years 2001 to 2008.

## Individual-Level Analyses

The demographics (e.g., age, gender, race/ethnicity) and information surrounding the fatal injury of each child decedent were abstracted from death certificates and medical examiner files (e.g., circumstances surrounding injury and location where injury occurred). Results and information about the specific cause of each child death are presented in aggregate form and classified according to intent (e.g., unintentional, intentional, other).

## Neighborhood-Level Analyses

To better understand the relationship between neighborhoods and child injury deaths, neighborhood-level education, employment, income, and racial concentration were obtained using U.S. Census data from the NYC Department of City Planning's website (http://www.nyc.gov/html/dcp/html/census/census.shtml). Using these neighborhood indicators, a series of maps were created in which NYC's community districts

1 Source: Summers C, Cohen L, Havusha A, Slinger F, Farley T. Take Care New York 2012: A Policy for a Healthier New York City. New York City Department of Health and Mental Hygiene, 2009.

were classified into quartiles ranging from high to very low (e.g., high median household income to very low median household income). The location of fatal child injuries were then plotted on each map with a slight offset to protect confidential information. Comparisons were made to determine whether fatal injuries were disproportionately distributed among an indicator's quartiles. The report's appendices contain maps of NYC's 59 community districts (Appendix A), a ranking of child injury deaths by district (Appendix B), and maps combining neighborhood-level indicators and child injury deaths (Appendix C). A socioeconomic (SES) index was also created by combining the neighborhood-level indicators of education, employment, income, and race. SES was mapped into quartiles and the locations of fatal child injuries were plotted. Analyses were conducted to investigate whether patterns exist in child injuries by SES.

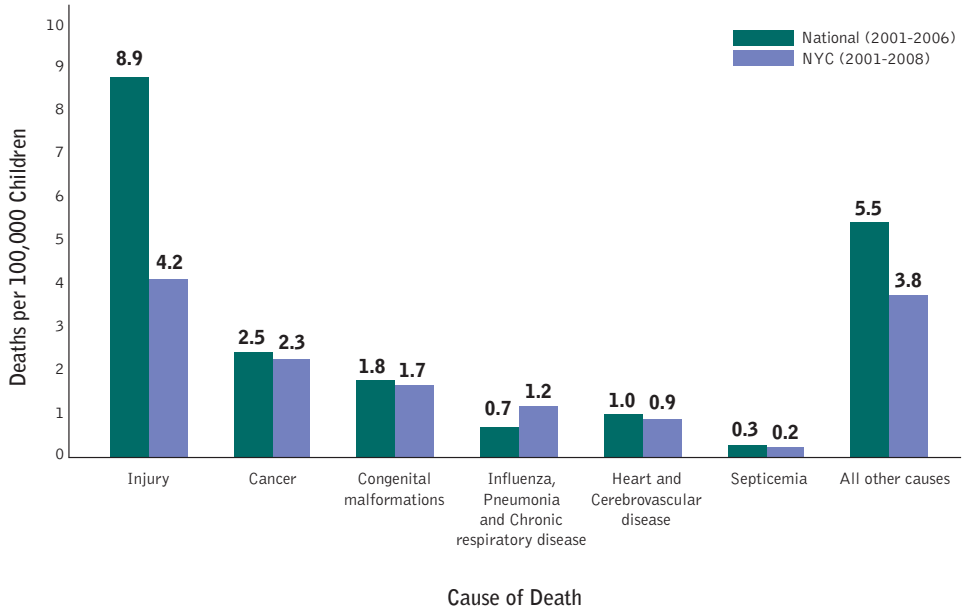
The NYC DOHMH's Division of Environmental Health created a healthy housing index using data from NYC's 2008 Housing and Vacancy Survey. The index, divided by sub-boroughs (SB), calculated neighborhood need for healthy housing interventions based on the percent of households seeing cockroaches daily, mice/rats in building, cracks/holes, leaks from outside the unit, three or more maintenance deficiencies, and the percent of pre-1950 constructed buildings or peeling paint in pre-1960 buildings. Healthy housing was mapped into quartiles, and the locations of fatal child injuries were plotted on the map with slight offset to protect confidential information. Analyses were conducted to investigate whether patterns exist in child injuries by neighborhood-level needs for healthy housing. See Technical Appendix for further details.

# Results

## What Do Children Die From?

Compared with the national rate, NYC reports approximately 35% fewer deaths among children aged one to 12 years old. Nationwide, approximately 20 per 100,000 children die each year, compared with approximately 15 per 100,000 in NYC. Most of this difference is due to fewer injury deaths (4.2 injury deaths per 100,000 NYC children compared with 8.9 per 100,000 nationally). Still, injury deaths are the most common cause of death in this age group both nationally and in NYC, with higher fatality rates than other leading causes, such as cancer, congenital malformations, and other diseases.

**Causes of Death Among Children (1–12 years), National vs. NYC**



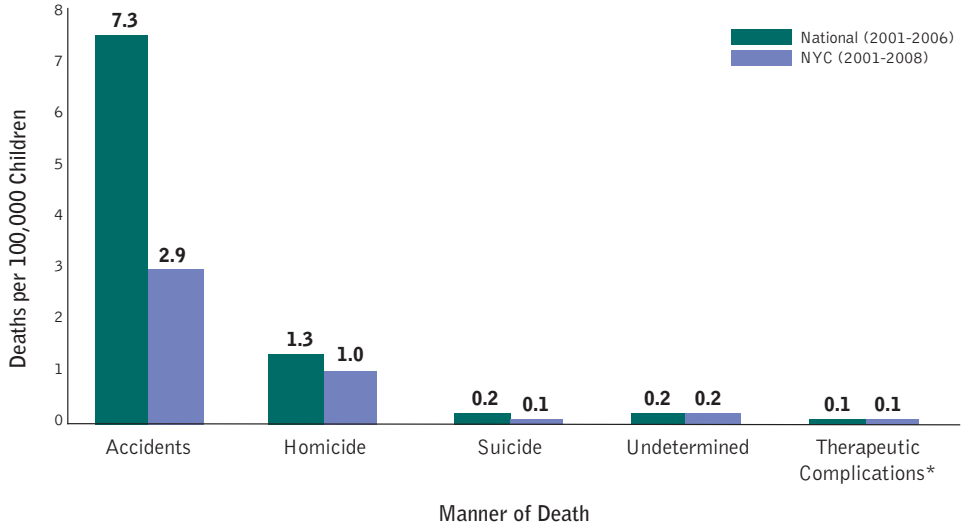

Source: Bureau of Vital Statistics, NYC DOHMH and WISQARS, Centers for Disease Control and Prevention

## Child Injury Deaths

Nationally, most (82%) injury-related child deaths among children aged one to 12 years are certified as accidents (7.3 deaths per 100,000 children), while 15% are homicide (1.3 deaths per 100,000 children). Compared with national statistics, NYC children experience less than half as many accidental deaths (2.9 deaths per 100,000 children) as well as fewer child homicides (1 death per 100,000 children). This is mostly due to the difference in traffic fatalities (3.7 per 100,000 children in the US compared with 1.2 deaths per 100,000 children in NYC). The national and NYC patterns of other fatal injuries such as suicide are otherwise similar.

While lower than the national average, injuries are still the leading cause of death for children in NYC. From 2001 to 2008, a total of 439 injury deaths occurred among NYC children aged one to 12 years, accounting for 29% of all child deaths in NYC (n=1,535). Most injury-related deaths (69%) were unintentional, including both non-transportation and transportation accidents. Twenty-five percent of injury deaths were due to

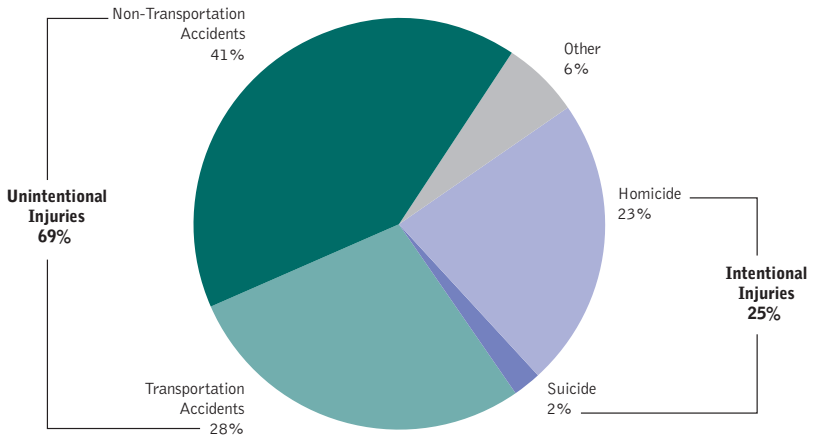
**Injury Deaths Among Children (1–12 years) by Manner of Death, National vs. NYC**




Source: Bureau of Vital Statistics, NYC DOHMH and WISQARS, Centers for Disease Control and Prevention

* Therapeutic Complication deaths are the result of complications from medical and surgical care; also referred to as adverse effects of medical care.

**Injury Deaths Among NYC Children (1–12 years) by Intent**
**NYC, 2001–2008, n=439**



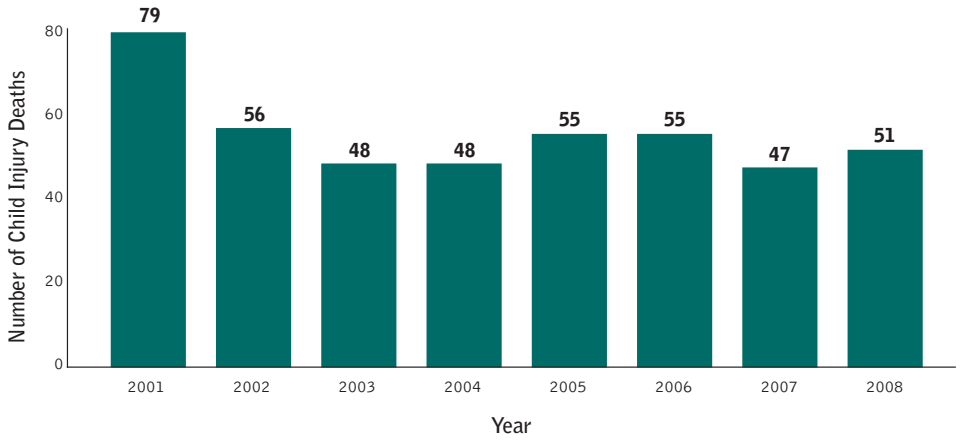

Source: Bureau of Vital Statistics, NYC DOHMH, OCME

intentional injuries including cases of homicide and suicide. Other injury deaths (6%) included undetermined deaths and cases of therapeutic complications. Among all unintentional injury deaths, 59% were due to non-transportation accidents and 41% due to transportation accidents. Among intentional injury deaths, 93% were due to homicide and 7% were due to suicide.

## Trends in Child Injury Deaths

The total number of child injury deaths in NYC remained relatively stable between 2001 and 2008. With the exception of 2001, when 18 deaths occurred as a result of a plane crash in Queens, the total number of injury deaths ranged from 47 to 56 deaths per year.

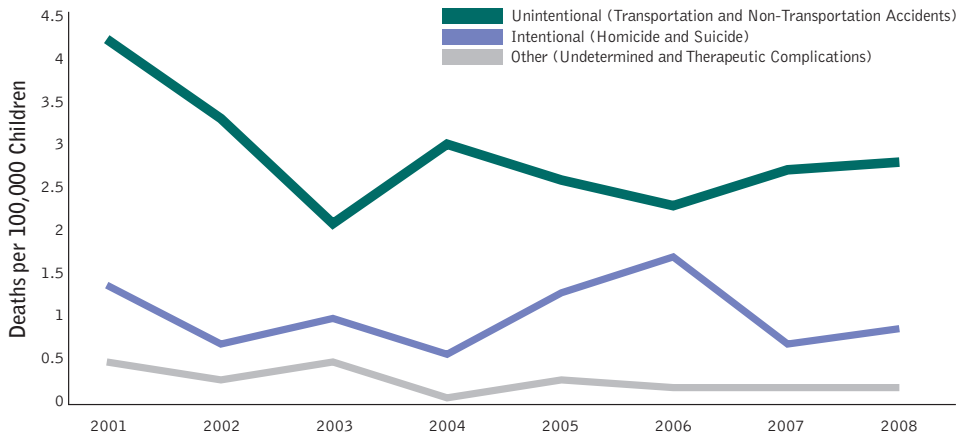
**Trend in Injury Deaths Among Children (1–12 years) by Year**
**NYC, 2001–2008, n=439**




Source: Bureau of Vital Statistics, NYC DOHMH, OCME

The graph below shows trends in child injury death rates by intent from 2001 to 2008. In the eight years reviewed, unintentional injuries from a wide range of causes were the highest contributor to injury deaths among children. Intentional injury fatalities, the majority of which were homicides, peaked in 2006 but were lower in 2007 and 2008.

**Trend in Injury Deaths Rates Among Children (1–12 years) by Year**
**NYC, 2001–2008, n=439**



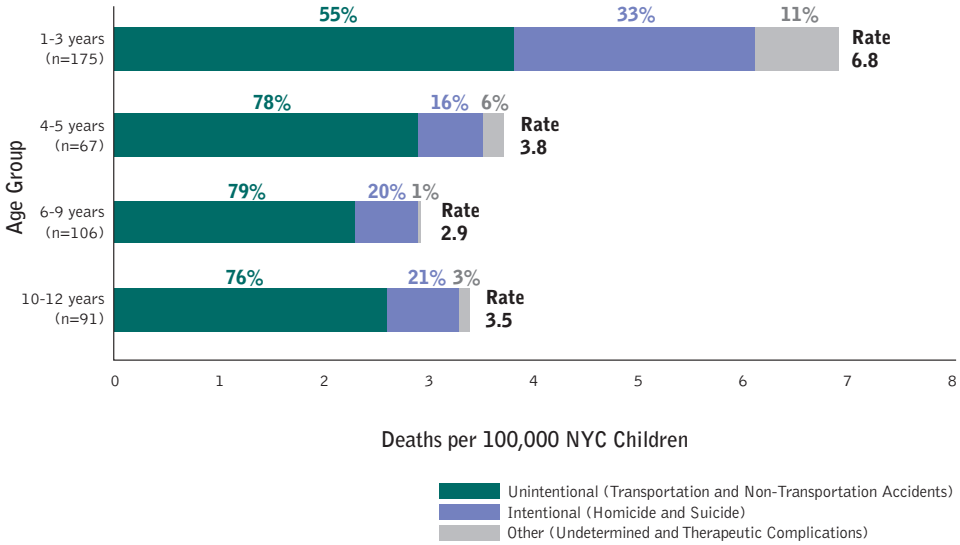

Source: Bureau of Vital Statistics, NYC DOHMH, OCME

## Individual-Level Factors and Child Injury Deaths

### Age

In general, younger children had the highest injury death rates. Children aged one to three years had a higher burden of injury deaths, with a rate of nearly seven deaths per 100,000 NYC children. In contrast, children aged four to 12 years had approximately half the death rate of younger aged children, with a range of 2.9 to 3.8 deaths per 100,000 children. Unintentional injuries were the most common type of injury-related fatalities observed, ranging from 55% to 79% in all age groups. In contrast, the distribution of intentional injury varied by age group. One third (33%) of younger children died from intentional injury compared with approximately 20% of older children. Intentional injuries among younger aged children (one to three years) were solely due to homicide, whereas among children aged 10 to 12 years, 72% of intentional injuries were due to homicide and 28% from suicide.

**Injury Death Rates Among Children (1–12 years) by Age Group**
**NYC, 2001–2008, n=439**




Source: Bureau of Vital Statistics, NYC DOHMH, OCME

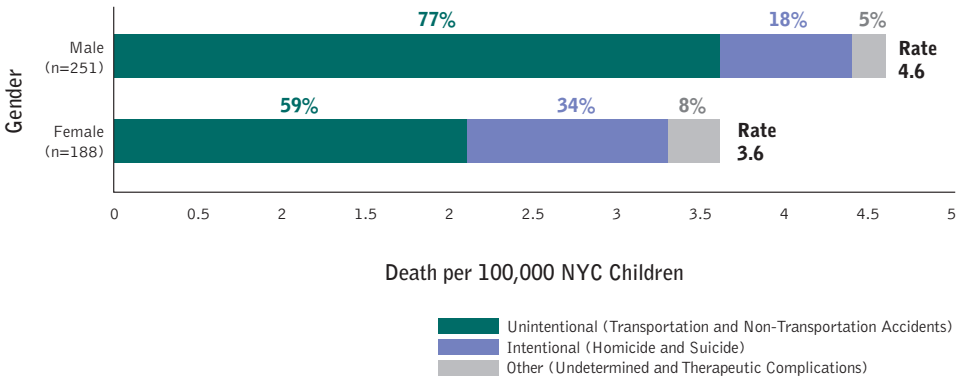
### Gender

Between 2001 and 2008, 251 boys and 188 girls died from a fatal injury. Deaths among NYC boys occurred at a rate of 4.6 per 100,000, approximately 28% higher than the rate among girls (3.6 deaths per 100,000). However, differences in the type of child injury deaths varied by gender. While 77% of fatal injuries among boys were due to unintentional injury, only 59% of fatal injuries among girls were due to unintentional injury. In contrast, girls experienced a higher proportion of intentional injury deaths (for both homicide and suicide) than boys (30% vs. 17.5% homicide deaths and 4% vs. 0.4% suicide deaths respectively).

### Race/Ethnicity

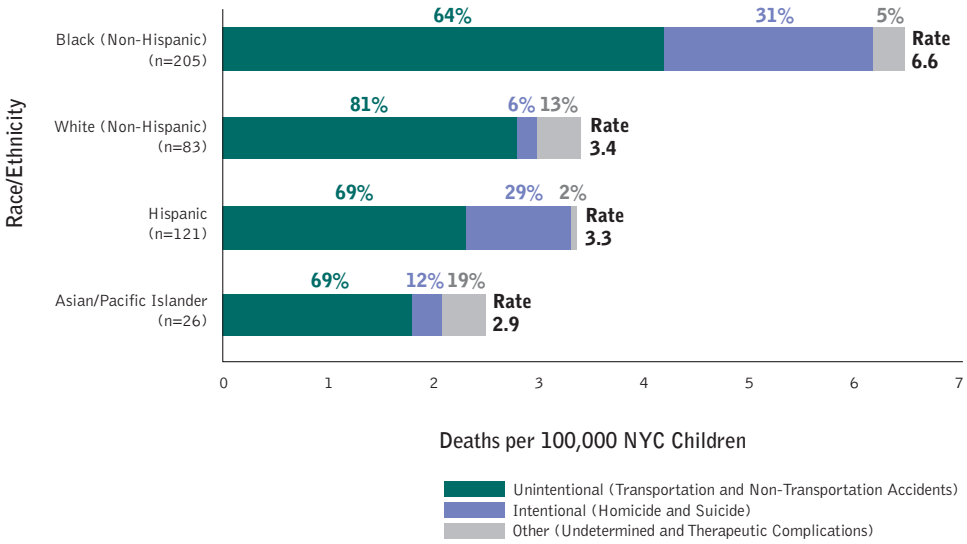
Between 2001 and 2008, black, non-Hispanic children experienced a disproportionately large burden of injury deaths (6.6 deaths per 100,000 children; 47% of all NYC child injury deaths). The rate among black, non-Hispanic children was almost twice the rate among white, non-Hispanic children (3.4 deaths per 100,000) and two times the rate of Hispanic children (3.3 deaths per 100,000). Deaths from injury were lowest among Asian and Pacific Islander children (2.9 deaths per 100,000). The distribution of injury by intent varied across racial/ethnic groups. Black, non-Hispanic children and Hispanic children had the highest proportions of deaths caused by intentional injuries (31% and 29%, respectively), most of which were homicide deaths, whereas white, non-Hispanic children had the highest proportion of deaths caused by unintentional injury (81%) compared with other racial/ethnic groups in NYC.

**Injury Death Rates Among Children (1–12 years) by Gender**
**NYC, 2001-2008, n=439**




Source: Bureau of Vital Statistics, NYC DOHMH, OCME

**Injury Death Rates Among Children (1–12 years) by Race/Ethnicity**
**NYC, 2001–2008, n=439***



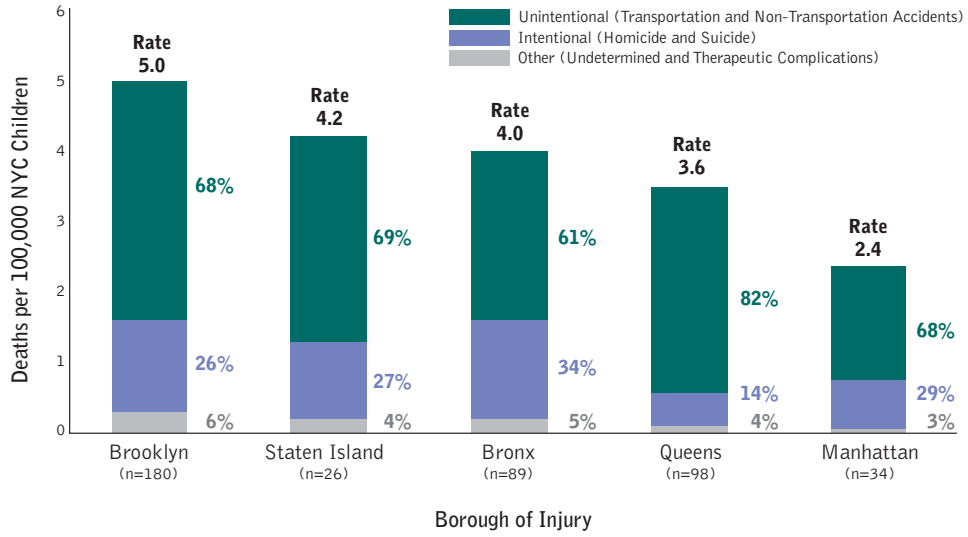

Source: Bureau of Vital Statistics, NYC DOHMH, OCME
* Excluded were 4 children identified as "other" race/ethnicity.

## Borough Where Fatal Injury Occurred

When the borough where fatal injuries occurred was examined, it was determined that the location of fatal injuries was sometimes a place other than the child's primary residence. The highest rate of fatal injuries took place in Brooklyn (5.0 deaths per 100,000 children). Of all boroughs, Queens had the highest percentage of unintentional injuries (82%), and the Bronx had the highest percent of intentional injuries (34%).

Though not shown, when looking at borough of residence, children who lived in Brooklyn, the Bronx, and Staten Island were also the most vulnerable to injury-related fatalities between 2001 and 2008 (5.4, 4.7, and 4.2 deaths per 100,000 child residents, respectively). Fatality rates in Queens and Manhattan were 2.8 and 2.6 per 100,000 child residents, respectively.

**Injury Death Rates Among Children (1–12 years) by Borough of Injury**
**NYC, 2001–2008, n=439**

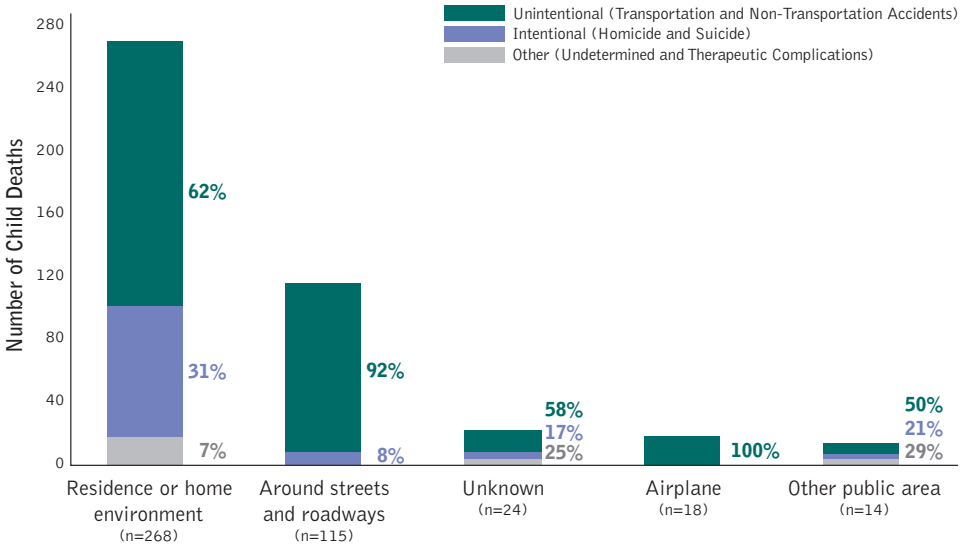



Source: Bureau of Vital Statistics, NYC DOHMH, OCME

## Location of Fatal Injury

The majority (61%) of injuries resulting in child deaths occurred within a residence or home environment (e.g., inside a house, in an apartment or apartment building, in a caregiver's residence, on a building roof, courtyard or in a backyard). More than one quarter (26%) of all fatal injuries occurred on or around streets, intersections, roadways or sidewalks. Four percent (4%) occurred as the result of an airplane crash, and 3% were in other public areas, such as hospitals, parks, public pools, schools or parking lots. Specific location of

**Injury Deaths Among Children (1–12 years) by Location of Injury**
**NYC, 2001–2007, n=439**




Source: Bureau of Vital Statistics, NYC DOHMH, OCME

injury was unknown for 5% of deaths. Across all sites, unintentional injuries were the most common; however, nearly one third (31%) of home-based fatal injuries were intentional.

The CFRT also reviewed characteristics of the homes where fatal injuries occurred and found that both unintentional and intentional injuries occurred more frequently in multi-family residences (63% of unintentional injuries and 52% of intentional injuries).

## Specific Causes of Fatal Unintentional Injuries

Deaths that resulted from unintentional injuries comprised 69% (n=302) of the 439 injury-related child deaths between 2001 and 2008. Injuries resulting from blunt impact contributed to more than half (53%, n=160) of all unintentional injury deaths, including injuries sustained from a transportation accident (n=124), from a fall (n=27), or being struck by a falling object (n=9). The remaining unintentional injury deaths were caused by thermal injuries (28%, n=86) including fire (83) scald (2) and electrocution (1) related injuries, suffocation or asphyxia (10%, n=30), drowning (4%, n=12) or other causes (2%, n=6).

**Causes of Unintentional Injury Deaths Among Children (1–12 years), NYC, 2001-2008, n=302**

| | n | % |
|---|---|---|
| Blunt Impact | 160 | 53% |
| - Transportation (MV and other transport) | 124 | 41% |
| - Fall | 27 | 9% |
| - Struck by falling object | 9 | 3% |
| Fire or burn | 86 | 28% |
| Suffocation/asphyxia | 30 | 10% |
| Drowning | 12 | 4% |
| Poisoning | 5 | 2% |
| Weapon | 3 | 1% |
| Other | 6 | 2% |
| **Total** | **302** | **100%** |

Source: Bureau of Vital Statistics, NYC DOHMH, OCME

### Transportation Accidents

While the rate of child fatalities from transportation accidents in NYC is only one third of the US rate, these fatalities are still the leading causes of injury-related death among NYC children. Among the 124 fatalities due to transportation accidents, 85% were motor vehicle-related (n=106). Fifteen percent (15%, n=18) were due to a single airplane crash that occurred in Queens in 2001.

Of the motor vehicle-related accidents, the majority (77%, n=81) involved child pedestrians, including two children in strollers. Child bicyclists hit by a motor vehicle accounted for 10% (n=11) of fatal transportation accidents including two children on non-motorized scooters, and the remaining 13% (n=14) were among child passengers in motor vehicles. Sixty-seven percent (67%, n=71) of all transportation-related deaths were among boys and nearly half (46%, n=49) were among black children (See the first CFRT annual report for in-depth review of motor vehicle deaths for years 2001 to 2005: www.nyc.gov/html/doh/downloads/pdf/episrv/episrv-childfatality-book.pdf).

**Causes of Motor Vehicle-Related Deaths Among Children (1–12 years), NYC, 2001–2008, n=106**

| | n | % |
|---|---|---|
| Pedestrian (including stroller deaths) | 81 | 77% |
| MV passenger | 14 | 13% |
| Pedal cyclist (including non-motorized scooter deaths) | 11 | 10% |
| **Total** | **106** | **100%** |

Source: Bureau of Vital Statistics, NYC DOHMH, OCME

## Specific Causes of Fatal Intentional Injuries

Deaths that resulted from intentional injuries comprised 25% (n=109) of the 439 injury-related child deaths between 2001 and 2008. Most (93%) of these deaths were from homicide.

### Homicides

Between 2001 and 2008 there were 101 child homicide cases, accounting for approximately one quarter (23%) of all injury deaths during the eight-year study period. There were more homicides among girls than boys during this period; 56% (n=57) of child homicide deaths were among girls and 44% (n=44) were among boys.

Blunt impact or blunt force trauma was the most common cause of child homicides (25%, n=25). There were 15 homicides (15%) due to gunshot wounds, one third of which occurred in 2006 alone. There were 12 homicides (12%) caused by smoke inhalation, with or without burns, from residential fires. There were 13 deaths (13%) due to fatal child abuse syndrome, meaning that the child showed evidence of being battered over time. There were nine stab-wound deaths, five drownings, and five deaths due to a combination of shaking, whiplash, and blunt impact. Another five deaths were caused by smothering, and four from ingestion of a toxic substance (methadone, heroin, pain medication). Two homicide deaths occurred due to scald burns. Two children died as a result of parental neglect, one from dehydration, and one from sepsis. One child homicide occurred due to hanging, and one child died from environmental hyperthermia as a result of being left unattended in a car.

**Causes of Homicide Deaths Among Children (1–12 years), NYC, 2001–2008, n=101**

| | n | % |
|---|---|---|
| Blunt impact | 25 | 25% |
| Gunshot | 15 | 15% |
| Fatal child abuse syndrome | 13 | 13% |
| Smoke inhalation (with or without burns, including carbon monoxide) | 12 | 12% |
| Stab wound | 9 | 9% |
| Smothering | 5 | 5% |
| Drowning | 5 | 5% |
| Shaking, whiplash, and blunt impact | 5 | 5% |
| Poisoning (ingestion of toxic substance) | 4 | 4% |
| Scald burn | 2 | 2% |
| Hanging | 1 | 1% |
| Other (dehydration, hyperthermia, sepsis, sequelae of assault, unknown cause) | 5 | 5% |
| **Total** | **101** | **100%** |

Source: Bureau of Vital Statistics, NYC DOHMH, OCME

Between 2001 and 2008, the NYC Domestic Violence Fatality Review Team (DVFRC) reviewed 67% of the 2001 to 2008 child homicide cases (67 of 101 cases) included in the CFRT report; these cases were considered family-related homicides. Data from the DVFRC indicates that 90% (n=60) of the family-related homicides among children aged one to 12 were perpetrated by a parent (including mother, father

or stepfather). In 6% (n=4) of cases another family member was the perpetrator, and the perpetrator was unknown in 4% (n=3) of cases.

### Suicides

Eight child deaths – seven girls (aged 11 and 12) and one boy (age 12) – were certified as suicides (2% of all injury-related deaths). Of these, six died by intentional hanging; the remaining two resulted from intentional overdose of medication.

**Causes of Suicide Deaths Among Children (1–12 years), NYC, 2001–2008, n=101**

| | n | % |
|---|---|---|
| Hanging | 6 | 75% |
| Overdose (medication) | 2 | 25% |
| **Total** | **8** | **100%** |

Source: Bureau of Vital Statistics, NYC DOHMH, OCME

## Other Injury Deaths

Between 2001 and 2008, there were 23 deaths (5% of all injury deaths) certified as undetermined. The causes of these deaths included blunt impact injuries of the head, drowning, scald burns, and medication overdose. In these cases, circumstances remained ambiguous or unexplained following post-mortem examination and death scene investigation. In addition, five children experienced complications associated with medical treatment. These therapeutic complications included self-extubation of tracheotomy tubing, entanglement in intravenous tubing, and adverse effects of medication and treatment. These children had pre-existing natural diseases.

## Neighborhood-Level Factors and Child Injury Deaths

Neighborhoods are not simply groups of people; they are complex environments in which economic, social, and physical factors combine to influence health. Despite widespread improvements in the overall health and safety of New Yorkers, residents of some neighborhoods, including children, are at increased risk for poor health outcomes and injuries. To better understand disparities in fatal child injuries, the relationship between neighborhood-level social, economic, and physical factors and child injury deaths was assessed.

NYC's 59 Community Districts (CD) were the geographical areas used to assess neighborhood-level factors and the occurrence of fatal child injuries. CDs were grouped into quartiles according to four neighborhood characteristics found in the 2000 Census:

- Education: Percent of adults 25 years and older with high school diploma
- Employment: Rate of employment for persons 16 years and older
- Income: Median family income
- Race: Percent of residents who are black, non-Hispanic

Within CDs, fatal unintentional and intentional child injuries with a known address location were next identified (n=387) and their distribution was compared to the distribution of all children aged one to 12 years living in NYC by community district quartiles. *Maps displaying these distributions are available in Appendix C of this report.* The four neighborhood-level factors (education, employment, income, and race) were also combined to create a composite measure of neighborhood-level socioeconomic status (SES). Fatal child injuries were placed on a map where quartiles of the SES measure (i.e., very low SES to high SES) were displayed. Another map was created to examine fatal child injuries with respect to neighborhood-level housing conditions, defined by a Healthy Housing Index.

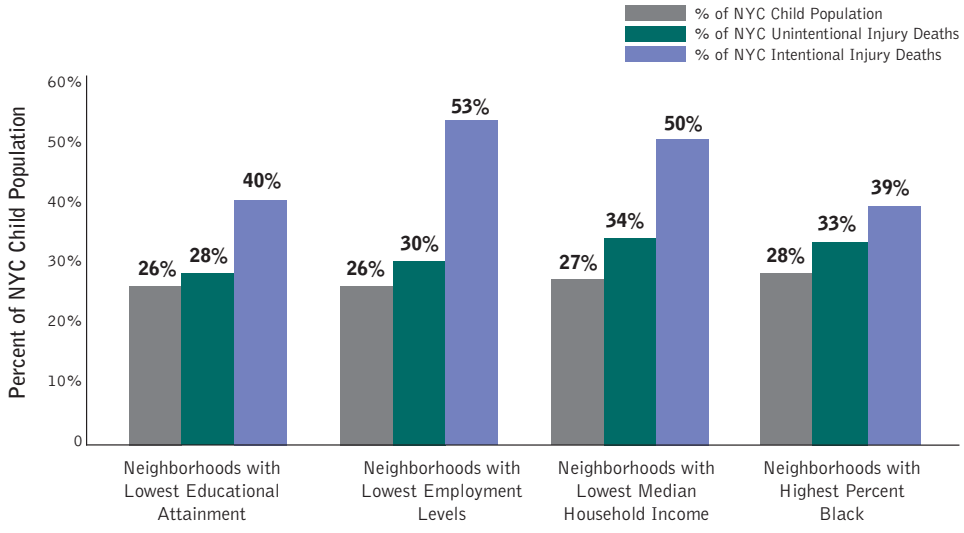
## Education, Employment, Income, and Race

**Education.** From 2001 to 2008, the risk of fatal injury among NYC children was found to be associated with neighborhood-level education attainment. A map displaying the distribution of fatal injuries and education is located in Appendix C. A disproportionate number of fatal child injuries occurred in CDs with a very low percentage of high school graduates. Though fatal injuries were dispersed throughout NYC, 31% (121 of 387 deaths) occurred in CDs with the lowest percentage of high school graduates, even though only 26% of NYC children live in these very low education areas. Only 12% (46 out of 387 deaths) occurred in CDs with the highest percentage of high school graduates. Intentional injury accounted for most of this disparity: 40% of all intentional fatal injuries took place in CDs with very low education (44 of 109 deaths citywide) compared with 28% of unintentional fatal injuries (77 out of 278 deaths citywide). Most (91%) intentional injuries that occurred in CDs with very low percent of high school graduates were homicide-related. The chart below shows this disparity in low education income areas.

**Employment.** The risk of injury deaths among children was found to be associated with living in areas with the lowest rates of employment. A map displaying the distribution of fatal injuries and employment is located in Appendix C. More than one third of injuries (36%, 141 of 387 deaths) occurred in CDs with very low levels of employment (i.e., high unemployment), even though only 26% of NYC children lived in these areas. In contrast, only 13% (50 of 387 deaths) occurred in CDs with the highest rates of employment. The chart below shows that the concentration of fatal injuries in neighborhoods with very low levels of employment is mostly due to intentional injuries: 53% of all fatal intentional injuries occurred in areas with very low employment (58 out of 109 citywide) compared with 30% of fatal unintentional injuries (83 out of 278 deaths citywide). Most (91%) intentional injuries that occurred in CDs with very low levels of employment were homicide-related.

**Income.** The risk of fatal child injuries was also shown to be associated with neighborhood-level median family income: 39% (149 of 387 deaths) occurred in the CDs classified as having very low income levels, even though only 27% of NYC children lived in these areas. Only 14% (53 out of 387 deaths) occurred in CDs with the highest income levels. The chart below shows that intentional injuries contribute to this disparity. While half of fatal intentional injuries (50%, 55 of 109 deaths citywide) occurred in these very low income CDs, one third of unintentional injuries (34%, 94 out of 278 deaths citywide) also occurred in areas of very low income.

**Percent of Injury Deaths Among Children (1–12 years) in NYC Vulnerable Neighborhoods, 2001–2008, n=387**




Source: Bureau of Vital Statistics, NYC DOHMH and NYC Department of City Planning.

Most (91%) intentional injuries that occurred in CDs having very low income levels were homicide-related. A map displaying the distribution of fatal injuries and income is located in Appendix C.

**Race.** The CFRT also examined whether an association existed between child injury deaths and racial composition at the neighborhood level. Analysis of the data show that the highest risk of fatal injury among children occurred in CDs with the highest percentage of black, non-Hispanic residents. A map displaying the distribution of fatal injuries and the percent of residents who are black, non-Hispanic is located in Appendix C. While 28% of NYC children lived in these areas with a high concentration of black, non-Hispanic residents, 35% (135 of 387 deaths) of deaths occurred in these neighborhoods. This disproportionate burden of fatal injuries was observed in both unintentional injuries (33%, 92 of 278 deaths citywide) and intentional injuries (39%, 43 of 109 deaths citywide), though the contribution of intentional injury is slightly higher as indicated by the chart on the previous page. Most (91%) intentional injuries were homicide-related.

## Socioeconomic Status

Socioeconomic status (SES) is a measure of the combination of economic and social indicators, such as income, education, employment, and race that measure neighborhood-level positions in society. Increasing attention has been given to the effects of SES as a determinant of health. However, little is known about the influence of socioeconomic status and fatal child injury. For this investigation of disparities in fatal child injuries, a SES index was created by combining the four aforementioned neighborhood-level indicators of education, employment, income, and race. As depicted in the map on page 17, findings show a disproportionate number of fatal child injuries occurred in CDs with very low SES, thereby identifying very low neighborhood SES as a risk factor for fatal childhood injury. Nearly half (47%, 182 out of 387 deaths) of all fatal child injuries occurred in these CDs even though only one third (33%) of NYC's children lived in these CDs. By intent, 63% of intentional injury deaths (69 out of 109 deaths) and 41% of unintentional injury deaths (113 out of 278 deaths) occurred as a result of fatal injuries in these very low SES areas.

The CDs with the highest number of fatal child injuries were all among the lowest SES neighborhoods in the City: Brooklyn CD 5 (East New York/New Lots/City Line/Starrett City), and CD 3 (Bedford Stuyvesant/Tompkins Park North/Stuyvesant Heights), Bronx CD 4 (Highbridge/Concourse), and Brooklyn CD 16 (Ocean Hill/Brownsville). For cases in which the location of fatal injury is known, Brooklyn CD 5 had 29 fatal injuries (16 unintentional and 13 intentional), corresponding to 7% of deaths although only 3% of the City's children lived there. Brooklyn CD 3 had 18 fatal injuries (11 unintentional and 7 intentional), corresponding to 5% of deaths and only 2% of the City's child population. Bronx CD 4 also had 18 fatal injuries (14 unintentional and 4 intentional), although less than 3% of the City's children lived there. Lastly, Brooklyn CD 16 had 17 fatal injuries (10 unintentional and 7 intentional), corresponding to 4% of deaths and only 2% of the City's child population.

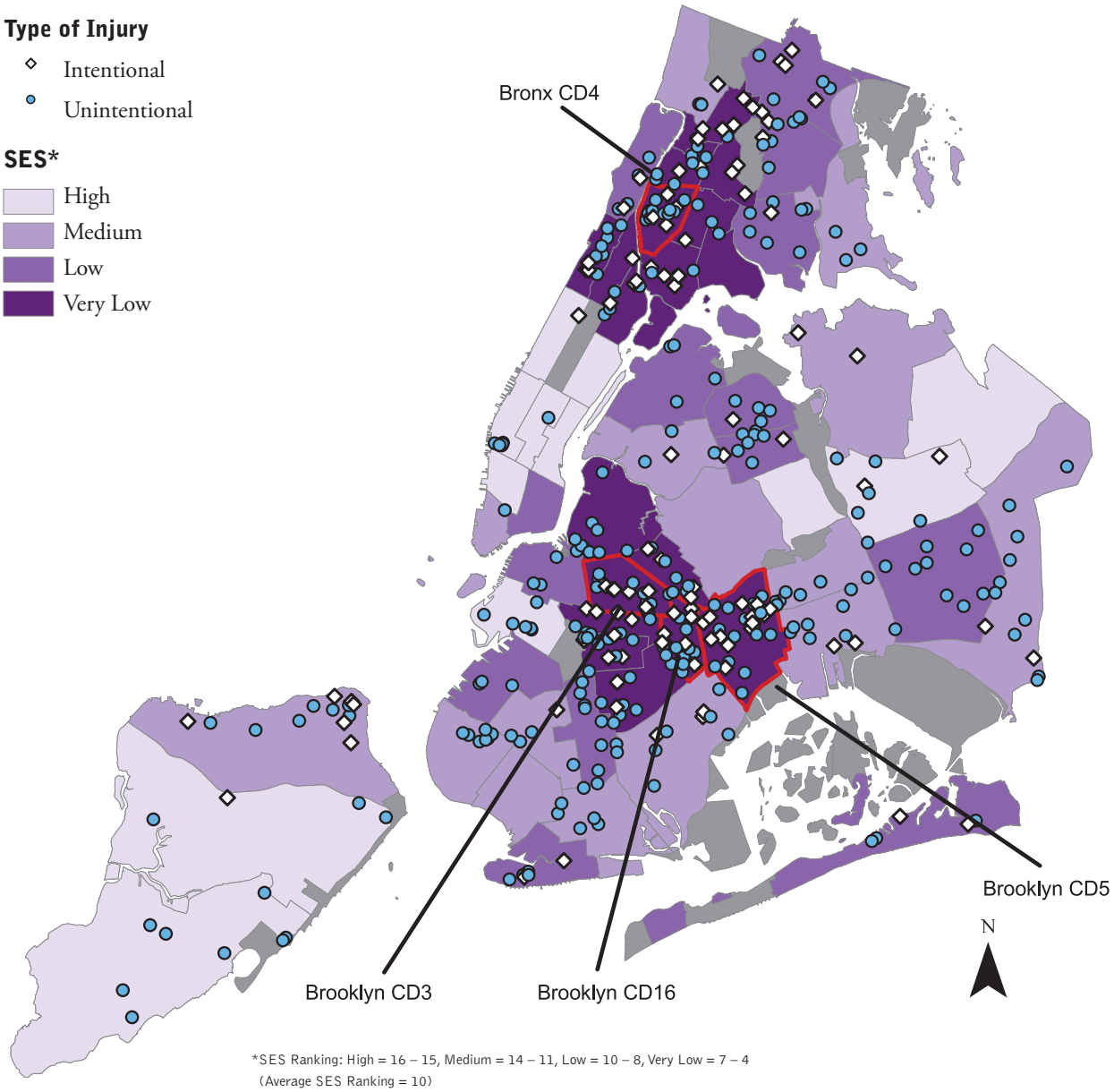
Taking population into account, the rate of fatal child injuries was also highest in neighborhoods with very low SES. The table below compares the distribution and rates of fatal injuries in neighborhoods with the highest and lowest levels of SES. The rate of fatal child injuries was more than two times greater in NYC's lowest SES neighborhoods as compared with high SES neighborhoods (5.2 fatal injuries per 100,000 children in NYC's lowest SES neighborhoods compared with 2.3 per 100,000 children in high SES neighborhoods).

**Injury Deaths Among Children (1–12 years) by Neighborhood-level SES, NYC, 2001–2008**

| | Very Low SES Neighborhoods | | High SES Neighborhoods | | |
|---|---|---|---|---|---|
| | # of child injury deaths | Rate* | # of child injury deaths | Rate* | Death rate* in lowest SES neighborhoods is higher by... |
| **Total** | **182** | **5.2** | **31** | **2.3** | **2.2 times** |
| Unintentional | 113 | 3.2 | 27 | 2.0 | 1.6 times |
| Intentional | 69 | 2.0 | 4 | 0.3 | 6.7 times |

* Age specific rate = deaths per 100,000 children 1–12 years old.

## Socioeconomic Status (Index of education, employment, income, and race)




Source: Bureau of Vital Statistics, NYC DOHMH and NYC Department of City Planning

Fatal intentional injuries showed the greatest disparity by neighborhood. The rate of fatal intentional injuries was nearly seven times (6.7) higher in NYC's very low SES neighborhoods as compared with high SES neighborhoods. The majority of these intentional injuries were homicides: 64 homicides occurred in very low SES neighborhoods compared with only 3 in high SES neighborhoods.

Less evident, but important still, was the nearly twofold difference in fatal unintentional injuries, particularly among fatal accidents in the home and among pedestrian injuries. Thirty-one (31) fatal injuries among child pedestrians and 72 home-based injuries among children occurred in low SES neighborhoods compared with 8 and 17 deaths, respectively, in high SES neighborhoods.

## Healthy Housing

Analyses of neighborhood-level factors indicate that the risk of fatal child injuries is greater in neighborhoods with low SES. Housing quality can also reflect conditions of a neighborhood; as such housing can also be interpreted as another indicator of SES and can be viewed as a determinant of injury. The Healthy Housing Index, described in the box below, is a measure of the housing environment of NYC residents. The map on the next page illustrates the distribution of healthy housing and the location where fatal unintentional and intentional child injuries occurred between 2001 and 2008. Overall, a disproportionate number of fatal injuries occurred in neighborhoods with very low levels of healthy housing. One third (33%, 126 of 387 deaths) of fatal injuries occurred in these neighborhoods while only 26% of NYC's children lived there. Intentional injuries account for most of this disparity: 40% of intentional injuries (44 out of 109 deaths) and 29% of unintentional injuries (82 out of 278 deaths) occurred in neighborhoods with very low levels of healthy housing.

As with SES, four neighborhoods with the highest number of fatal child injuries were also among those with very low levels of healthy housing: the Bronx sub-borough[2] (SB) 4 (Highbridge/Concourse, n=18), Brooklyn SB 3 (Bedford Stuyvesant, n=18), and Brooklyn SB 16 (Ocean Hill/Brownsville, n=17). Brooklyn SB 5 (East New York/Starret City) had the highest number of fatal injuries (n=29), though it ranked medium in terms of healthy housing. A map depicting these areas is presented on the next page.

The rates of fatal child injuries were highest in neighborhoods with very low levels of healthy housing. The table on page 20 compares the distribution and rates of fatal injuries in neighborhoods with the highest and lowest levels of healthy housing. The number of fatal injuries was 50% higher in NYC's lowest healthy housing neighborhoods compared with neighborhoods with the healthiest housing. Specifically, fatal injuries sustained in neighborhoods with very low healthy housing corresponded with 4.6 injury deaths per 100,000 children. This is in contrast to 3.1 deaths per 100,000 children from injuries sustained in neighborhoods with a high level of healthy housing.

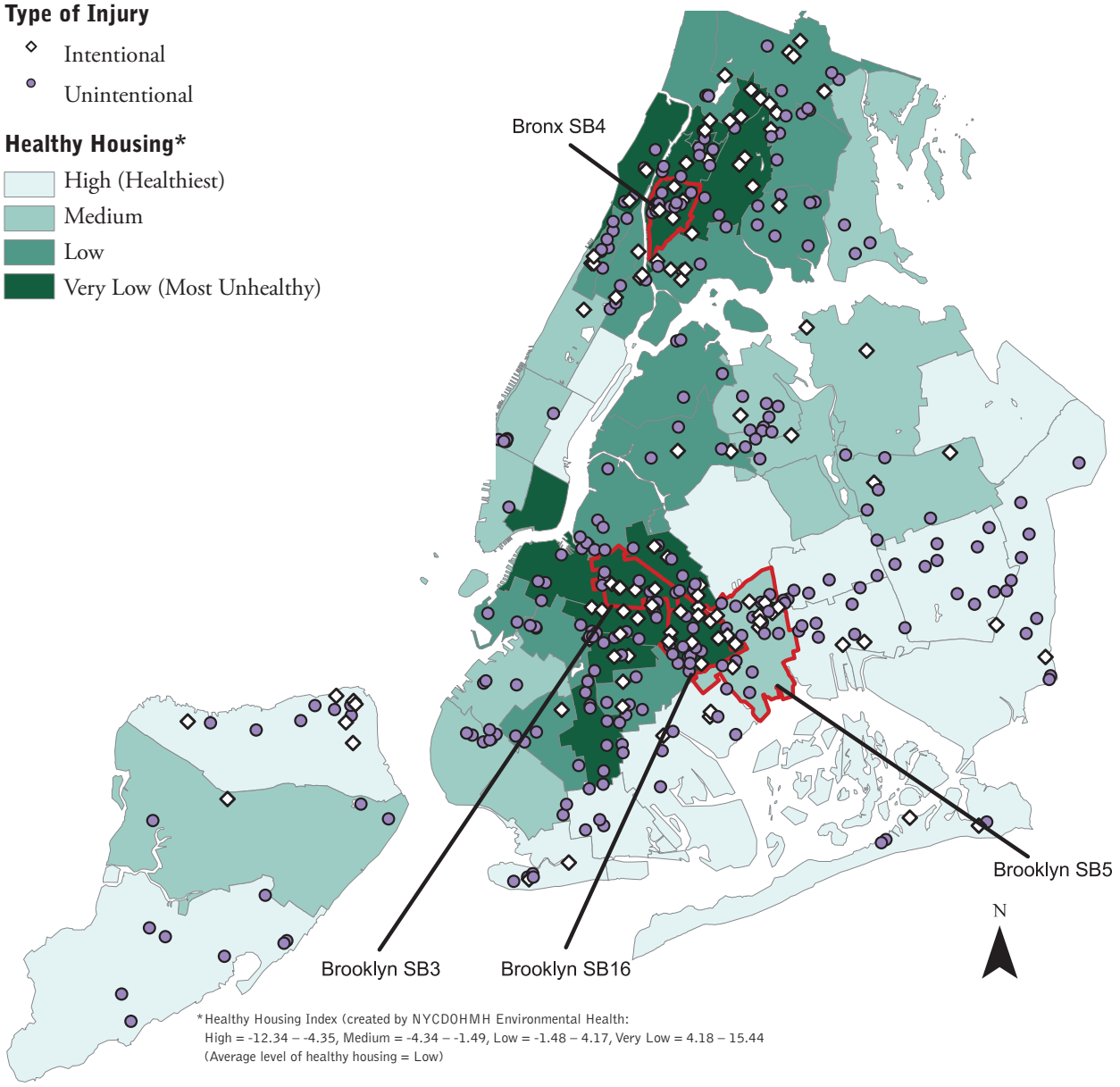
### Healthy Housing Index

Economic, social, and physical factors characteristics of neighborhoods combine in complex ways to influence residents' health. Characteristics such as homes in disrepair, infestation of rodents and cockroaches, and inadequate access to healthy foods and resources are disproportionately concentrated in certain neighborhoods. These conditions are often related to racial segregation and poverty, and contribute to an environment that profoundly affects health.

Healthy housing is a term used in this report to describe the conditions which provide a safe and healthy housing environment. A healthy housing index was created using data from the 2008 NYC Housing and Vacancy Survey, a survey of 10,000 households in NYC conducted by the U.S. Census Bureau. Indicators used in the index include percent of households seeing cockroaches daily, mice/rats in building, cracks/holes, leaks from outside unit, three or more maintenance deficiencies, and the percent of pre-1950 construction buildings or peeling paint in pre-1960 buildings.

[2]Sub-borough (SB) boundaries approximate those of community districts (CD), but meet the Census Bureau requirement that no sub-borough area has less than 100,000 people. There are 55 sub-boroughs areas in New York City. Bronx CD 1 and 2 are combined into a single sub-borough area, as are Bronx CD 3 and 6, Manhattan CD 1 and 2, and Manhattan CD 4 and 5.

## Healthy Housing




Source: Bureau of Vital Statistics, NYC DOHMH and NYC Department of City Planning

**Injury Deaths Among Children (1–12 years) by Level of Healthy-Housing, NYC, 2001–2008**

| | Neighborhoods with very low "Healthy Housing" | | Neighborhoods with highest "Healthy Housing" | | Death rate* in neighborhoods with very low "Healthy Housing" is higher by... |
|---|---|---|---|---|---|
| | # of child injury deaths | Rate* | # of child injury deaths | Rate* | |
| **Total** | **126** | **4.6** | **85** | **3.1** | **1.5 times** |
| Unintentional only | 82 | 3.0 | 68 | 2.5 | 1.2 times |
| Intentional only | 44 | 1.6 | 17 | 0.6 | 2.7 times |

* Age specific rate = deaths per 100,000 children 1-12 years old.

The rate of intentional injuries was more than two and a half times higher in NYC's neighborhoods with very low healthy housing compared with neighborhoods with high healthy housing. The vast majority of intentional injuries were due to homicide: 41 homicides occurred in neighborhoods with very low healthy housing compared with 17 in neighborhoods with high healthy housing.

There were 20% more fatal unintentional child injuries (particularly with regard to fatal accidents in the home and among child pedestrians) in neighborhoods with very low healthy housing compared with neighborhoods with high healthy housing. Twenty-seven (27) fatal pedestrian injuries and 51 home-based injuries occurred in neighborhoods with very low healthy housing compared with 16 and 37 respective deaths in high healthy housing neighborhoods.

# Summary

This 2010 report of the New York City Child Fatality Review Team (CFRT) presents an aggregate review of the 439 injury deaths that occurred among NYC children aged one to 12 years from 2001 to 2008. Although substantially lower than the national average, the child injury death rate in NYC has been stable over the past eight years and is still a significant problem. This suggests a lack of success in reducing fatal injuries among those at greatest risk.

Overall from 2001 to 2008, NYC's children were more likely to die from unintentional injuries than from intentional injuries (69% vs. 25%, respectively). A deeper understanding of child injury deaths requires an examination of specific causes of death. Traffic accidents contributed the most to child injury deaths in NYC overall (28% of all deaths), with child pedestrians accounting for more than three quarters of traffic victims. Fires or burns contributed to 18% of all child deaths in NYC. The vast majority of intentional injury deaths were due to homicide (92%). These accounted for 23% of all child injury deaths in NYC.

## Disparities in Child Injury Death

Differences in mortality that reflect inequality among NYC's children were described in this year's report. Such disparities in child injury death were observed at the individual-level (e.g., age, gender, and race/ethnicity) and neighborhood-level (e.g., socioeconomic status and housing quality). On an individual level, younger children aged one to three years had a higher risk for injuries than older children; black, non-Hispanic children had a higher risk for injuries than children from other racial/ethnic groups; and boys had a higher risk for unintentional injuries, whereas girls overall had a higher risk of intentional injuries.

An examination of neighborhood-level disparities revealed that the social and economic (e.g., SES), and physical environment (e.g, housing quality) in which children live can influence their well-being and safety. For example, neighborhoods with a high percentage of the population with less than a high school diploma,

a high percentage of unemployment in a neighborhood, neighborhoods with a high percentage of people living below the median family income, and neighborhoods with a high concentration of black, non-Hispanic residents were found to be associated with fatal child injuries. These areas correspond to areas of populations with lower levels of SES. The maps in Appendix C clearly document the problem as well as identify where to target solutions. Much of this burden visible in these maps was related to differences in homicide.

Analyses of injuries illustrate that they are not random occurrences. Individual and socioeconomic factors that increase an individual's risk for injury have been identified. Reducing disparities in fatal child injuries can begin with collaboration among government policy makers, health professionals, researchers, and community groups to create multifaceted prevention strategies that target both the individual and neighborhood context in which child injuries occur. Specific data-driven detailed and achievable goals must be set across a range of disciplines, including health, housing, education, and criminal justice. As evidenced from this report, programs, legislation, and policies for injury prevention should target areas of lower socioeconomic status. Stakeholders in NYC should consider allocating resources to those neighborhoods that are disproportionately affected by child injury.

# Limitations

This retrospective review of child deaths has some important limitations. The limited number of injury-related deaths in children aged one to 12 years, while encouraging and lower than the national average, reduced our ability to examine their commonalities and trends in detail. Another limitation was the frequency of missing information and lack of descriptive detail in report files. Substantial effort was made to improve the quality and completeness of data by collecting and reviewing original records from multiple sources, including the NYC DOHMH's Office of Vital Statistics, Office of Chief Medical Examiner, Department of Buildings, and Department of City Planning. In addition, some individual-level characteristics that may have been related to risk for an injury were not formally captured, such as level of parental or guardian supervision and other family conditions or stressors. These factors may play a critical role in mitigating dangerous circumstances.

Interpretation of findings on neighborhood-level disparities is subject to caution because group-level data (e.g., neighborhood's percentage of high school graduates) was linked to counts of individual child deaths. The methodology used is subject to ecological fallacy, wherein conclusions are based upon the assumption that individual members of a group (i.e., child decedents in a particular neighborhood) are direct representations of the average characteristics of the neighborhood at large. Associations between neighborhood-level social and economic indicators and child injury deaths are also subject to scrutiny because they could be due to another factor or intermediate variable that was not used in this year's analyses.

# Recommendations

The causes of child unintentional and intentional child injury are multifaceted and, therefore, can be prevented in a number of different ways. **In this section of the report, committee members highlight strategies to reduce the burden of injuries in those neighborhoods most affected, city initiatives that help to improve overall child safety, and key messages and resources for child injury prevention.** Recommendations are based on findings from this year's report and from previous CFRT annual reports (For previous reports visit: http://www.nyc.gov/html/doh/html/ip/ip-index.shtml).

## Strategies for Preventing Child Injury

The findings in this report, and previous CFRT reports demonstrate the continued burden of unintentional injuries contributing to child death across the city and a disproportionate burden of child homicides in certain neighborhoods. To reduce both types of fatal child injuries, City agencies and community partners should consider taking the following inter-related actions:

### 1. COLLABORATE

Community and agency partnerships can strengthen injury prevention efforts.

- The Mayor's Interagency Task Force on Child Welfare and Safety, formed in 2006, monitors efforts to strengthen protocols and partnerships among child welfare, the school system, and law enforcement in targeted areas. The CFRT will share its findings with the Task Force to identify specific priorities for collaborative action.
- Identify other organizations to share information on child injuries and support injury prevention activities.

### 2. LEARN

Efficient and effective program delivery requires an understanding of community members' needs and resources. CFRT and other data collectors should:

- Continue to collect data on the characteristics of injury and associated risk factors as well as information to evaluate factors that can protect against injury in the neighborhoods most affected.
- Assess the needs and resources of both individual residents and community-based programs in neighborhoods at high risk for child injury.

### 3. ENHANCE

Numerous community-based programs exist to support families in neighborhoods where fatal injuries among children are concentrated. The challenge lies in matching client needs with available services. To meet this challenge:

- Publicize safe haven and crisis nurseries in areas with the highest concentration of child homicide.
- Promote innovative culturally appropriate approaches to unintentional and intentional injury prevention.

### 4. ENFORCE

Existing policies can be powerful tools for injury prevention, provided they are enforced effectively.

- Assess and improve enforcement policies and procedures aimed at reducing mortality risk, for example, penalties for traffic violations, lack or improper installation of smoke detectors and window guards, and child abuse reporting requirements.

### 5. EDUCATE

School teachers, daycare, and health care providers stand on the front lines in the identification of child abuse. Early identification helps prevent fatal outcomes. The City should support frontline workers in their role as mandatory reporters.

- Increase training on child abuse for providers and reinforcements for early identification and reporting.
- Expand the pool of pediatric health care providers with a child abuse specialty.

### 6. LEGISLATE

Advocacy should also work toward the adoption of legislation. Regulations at the federal, state, and local level can benefit vulnerable NYC residents. Policies that improve housing conditions, education, employment, and neighborhood safety will help reduce economic and social disadvantage linked to both unintentional and intentional injury risk. Specific legislation can include:

*Home Safety*

- Require safe temperatures for tap water, a maximum of 120 degrees Fahrenheit, for all dwelling units to prevent scald burns.
- Prohibit the sale of novelty lighters, which have lights and are shaped like toys and other items that are attractive to children.
- Require that mattresses and upholstered furniture be fire retardant pursuant to regulation to be adopted by the NY Office of Fire Prevention and Control.
- Require manufacturers of certain products such as bookcases, dressers, televisions, armoires, and other products to provide stabilizers and place tipping warnings on such products to prevent instability and tip-over injuries.
- Make the death of any person drowning in a pool from failure to secure the pool properly an offense punishable by criminal law.

*Firearm safety:*

- Require the safe storage of all guns (with a locking device), provide penalties for violations, and require notices to be furnished upon transfer of guns and issuance/renewal of licenses as currently provided in NYC law.
- Make deaths due to failure to store a weapon safely specific offenses punishable by law to prevent serious injuries or death from negligently stored firearms.
- Prohibit sale of ammunition to anyone who does not possess a license or permit for the type of weapon the ammunition is used for, as currently provided in NYC law.

*Traffic safety:*

- Require convex mirrors on certain trucks, tractors, and tractor-trailers or semitrailers.
- Allow for the use of speed cameras along dangerous streets to reduce serious injuries and fatalities caused by speeding vehicles.
- Require labeling information on child safety seats regarding compatibility with different types of automobiles.

### 7. FUND

Effective action is predicated on having resources. Private and public funders (e.g., Foundations, City Council, Mayor's Office, NYS Office of Children and Family Services) should allocate funding to support high-quality unintentional and intentional injury prevention initiatives

## City Initiatives to Improve Child Safety

The implementation of policies and regulations at the local, state, and federal level have been shown to be an effective method of reducing fatal child injuries. In New York City, several agencies have adopted policies and launched initiatives that reduce the risk of injury and support injury prevention. Below, are select City agency

activities that target injuries that impose burden (e.g., unintentional injuries) and create disparities among the City's children (e.g., homicides).

### Administration for Children's Services (ACS)

- Implements the Take Good Care of Your Baby public service campaign in collaboration with the DOHMH to educate all New York City parents about how to prevent injuries and deaths among babies and young children. Information on shaken baby syndrome, the importance of carefully choosing a caregiver, and getting help for drug and alcohol abuse have appeared citywide in subways, buses, and billboards, and featured in radio ads.
- Maintains child protective caseloads of fewer than 12 through ongoing recruitment and hiring of frontline caseworkers.
- Maintains the performance management system, Childstat, to improve investigative practice through weekly review of open cases by top managers. This initiative is designed to improve decision-making in child protective investigations and to keep close watch on performance indicators.
- Hires experienced law enforcement professionals as investigative consultants. These consultants provide a key function of obtaining critical law enforcement background information on families and other adults who are part of investigations to thoroughly assess the safety of children in the home.
- Operates the ACS Office of Safety First to take calls from mandated reporters to ensure follow-through on open cases.
- Uses data to inform goals of reducing incidents of repeat abuse of children, strengthening investigative procedures, increasing quality supervision, and improving recruitment and retention of caseworkers.
- Operates a Leadership Academy to provide child protective managers with the skills to improve child protective practice.
- Maintains the oversight system for contracted foster care and preventive service agencies. The new system improves oversight of children in care by giving contract agencies more responsibility and flexibility for overseeing cases with the key goals of safety, permanency, fewer moves for children in foster care, and fewer step-ups to more restrictive care.
- Conducts performance evaluations of contractual preventive service and foster care provider agencies, to ensure that private providers are closely monitoring the health, safety, and well-being of children.
- Operates the Community Partnership Initiative to build coalitions between ACS and community groups and improve coordination and provision of services that keep children safe, including child care, stable foster homes, and community participation in the child safety decision-making process.

### Department of Buildings (DOB)

- Enforces local law requiring landlords to install smoke detectors in multiple dwelling apartment buildings and a law requiring carbon monoxide detectors to be installed in all multiple and private dwellings institutional and educational settings.
- Requires checks for hardwire smoke detectors for all newly constructed buildings and buildings undergoing major construction.
- Requires permits and an approved licensed electrical contractor for electrical work in apartments and buildings. Violations are issued for non-compliance.
- Enforces local law requiring the installation of a four foot high fence around pools with a self-closing childproof gate. Pools must be at least three to five feet away from any lot or yard line, and no overhead electrical conductors should be installed within 15 feet of the pool.
- Operates the Elevator Enforcement Program to crack down on buildings with chronic elevator problems.

- Runs an ongoing citywide Campaign to Combat Illegal Conversions by educating New Yorkers about the dangers of illegally converted living spaces. (For more information visit: www.nyc.gov/html/dob/html/news/Illegal_Conversions.shtml)

**Department of Education (DOE)**

- Supports external agencies that provide parents and children with workshops on child safety and child abuse prevention education.
- Provides the New York State course in the Identification and Reporting of Suspected Child and Maltreatment as required by state law for school officials.
- Requires all schools to develop and implement every year a Child Abuse Prevention and Intervention Plan.
- Requires all schools to appoint a designated liaison to serve as the point person to ACS on child protective issues.
- Provides training to the school-based designated liaisons in order to provide them the most current updates on their roles, the mandates, changes to the law, best practices, and interagency agreements.
- In collaboration with ACS, conducts workshops and trainings for key school officials and administrators on child protective matters.
- Developed and maintains a DOE Child Abuse Prevention internet and intranet page to provide school officials with resources on child abuse prevention and their mandated responsibilities (For more information visit: http://schools.nyc.gov/StudentSupport/NonAcademicSupport/ChildAbuse/default.htm).
- Requires all school personnel to be trained and reminded of their responsibilities as mandated reporters on an annual basis.
- Requires all school officials to be provided with a copy of the *blue card* outlining the reporting protocol as well as behavioral and physical indicators that may be observable and reportable to the State Central Register.
- Requires the *blue card* with the reporting protocol and indicators of abuse or maltreatment to be prominently posted in every school.

**Department of Health and Mental Hygiene (DOHMH)**

- Operates the Injury Epidemiology Unit that monitors intentional and unintentional injuries in New York City and identifies populations at risk. The Unit's surveillance systems bring together mortality data, hospitalization data, and treated and released emergency department data. Findings from surveillance activities are provided to governmental and non-governmental organizations for use in planning, needs assessments, trainings, and publications.
- Runs the New York City Poison Control Center 24-hours a day, 365 days a year, with registered pharmacists and nurses certified in poison information to provide free information about exposures to poisonous or unknown substances.
- Operates the Window Fall Prevention Program (WFPP), which investigates referrals and complaints from the public related to window guards. The window guard law requires building owners to install approved window guards in the home of any family with a child age 10 years or younger. (For more information call 311 or visit http://www.nyc.gov/html/doh/html/win/winfaq.shtml)
- Offers free vouchers through the Cribs for Kids program to mothers who don't have a crib for their infant, gives demonstrations on how to assemble the crib, and delivers messages about safe sleep. (For more information call 311 or visit www.nyc.gov/html/doh/pregnancy/html/after/safety_sleep.shtml)
- Distributes safe sleep educational materials for parents to reduce the risk of SIDS and prevent unintentional injuries.

- Provides regular trainings to social service and City agencies on infant injury prevention.
- Runs the Lead Poisoning Prevention Program (LPPP), which inspects homes for hazards, responds to complaints about unsafe work practices within the home, and provides community outreach and education to families and medical providers. (Call 311 for more information)
- Through the Newborn Home Visiting Program, sends health workers into low income areas to provide new mothers with information on key topics, such as: SIDS, safe sleep, bonding and attachment, health insurance, and the need for a primary care provider. Health workers also screen for violence in the home and environmental hazards and arrange for a free crib. (For more information, call: North and Central Brooklyn (646-253-5700), South Bronx (718-579-2878), and East and Central Harlem (212-360-5942).
- Through the Nurse Family Partnership, sends nurses into homes of low-income, first-time mothers every one or two weeks during pregnancy and until the baby is two years old. (For more information call 311 or visit: www.nyc.gov/html/doh/html/ms/ms-nfp.shtml.)
- Established District Public Health Offices (DPHOs) in the South Bronx, North and Central Brooklyn, and East and Central Harlem. The DPHOs work to ensure that conditions for good health flourish in these neighborhoods. (For more information, visit: www.nyc.gov/html/doh/html/dpho/dpho.shtml)
- Participates in the Mayor's Office to Combat Domestic Violence Fatality Review Committee.
- Created and distributes the Identifying and Reporting Child Abuse and Neglect Detailing Kit that contains tools, resources, and patient education materials to promote best-practices for patient care.

### Department of Transportation (DOT)

- Conducts the Safe Routes to School initiative that has focused traffic safety improvements near City elementary and middle schools in neighborhoods with the highest traffic accident rates. In addition, the Office of School Safety Engineering has ensured that all school intersections have school crossing signs, clearly marked cross walks and school crossing messages on streets. The office also has created Traffic Safety Maps to help students plan their safest routes to school.
- Prioritizes safety for all street users, particularly more vulnerable groups, through the implementation and evaluation of street calming initiatives throughout NYC. For example, DOT recently completed the goal of building 200 bike-lane miles in all five boroughs.
- Operates the Car Seat Education Program which provides six car seat fitting stations where a technician checks the installation and teaches parents how to install car seats. Conducts child passenger safety technician certification trainings for nurses, law enforcement, health educators, and others.
- Implements Safety City, a traffic safety program for school children that uses a simulated New York City street to teach children about traffic safety through hands-on experience. The program also conducts in-school traffic safety programs for elementary, middle, and high school students. (For more information visit: http://www.nyc.gov/html/dot/html/safety/safecity.shtml)
- Conducts bicycle helmet fittings to distribute and fit free bicycle helmets.
- Provides targeted safety education interventions at nearly 300 elementary and middle schools with the highest accident rates and provides short and long-term recommendations for infrastructure improvements.
- Conducts traffic safety awareness workshops for pregnant mothers and mothers of toddlers and pre-school children at clinics, hospitals, daycare, and Headstart centers.
- Conducts professional train-the-trainer traffic safety courses for nurses, day care providers, family workers, and DOE Substance Abuse Prevention Intervention Specialist (SAPIS) counselors.

### Fire Department of New York City (FDNY)

- Operates the FDNY Fire Zone, a state of the art fire-safety learning center located in Rockefeller Center, which educates more than 100,000 people annually, including more than 25,000 school age children.

- Conducts nearly 10,000 public fire safety presentations each year, focusing on high fire risk neighborhoods. The "Fire Zone on the Road" program features active and retired firefighters who deliver fire safety presentations at schools, community centers, health fairs, and other venues.
- Conducts hundreds of "Operation Sidewalk" programs, in which teams of fire safety educators respond immediately to communities where serious fires occur, presenting information on fire safety and prevention.

### Housing Preservation and Development (HPD)

- Receives referrals both internally and from DOHMH for repair or placement of window guards.
- Dispatches HPD housing inspectors to homes where housing hazards are reported by the DOHMH Newborn Home Visiting program.
- Works with the DOHMH to address conditions cited by DOHMH as a Commissioner's Order to Abate, which is issued as a result of a finding of an elevated blood lead level. HPD issues appropriate violations and abates lead-based paint conditions if a landlord fails to do so.

### New York City Police Department (NYPD)

- Ensures that the Instant Response Team protocol is initiated for the investigation of allegations of severe physical abuse, sexual offenses, maltreatment, and fatalities.
- Facilitates the joint response between the NYPD and ACS on cases deemed Instant Response.
- Conducts safety awareness and prevention lectures to the public, community, civic groups, and schools.
- Conducts an annual sex crimes and child abuse course for members of the NYPD, ACS, and Safe Horizon. The course is also open to officers assigned to Domestic Violence positions citywide.
- Maintains active partnership in Child Advocacy Centers.
- Participates in the Mayor's Office to Combat Domestic Violence Fatality Review Committee and in annual domestic violence awareness month (October) activities.
- Maintains membership in the Mayor's Task Force on Child Welfare and Safety.
- Participates in National and NYC Child Abuse Prevention Month activities.

## Key Safety Messages for Parents, Caretakers, and Health Care Providers

### Parents and Caretakers

*Unintentional Injury Prevention*

- Be sure your child is safe at home. Safeguard your home with devices like window guards, safety gates to keep children away from stairs and other dangerous places, safety latches for drawers and cabinets, electrical outlet covers, and smoke and carbon monoxide detectors.
- Talk to your children about fire safety (For resources for parents and children go to: www.nyc.gov/html/fdny/html/safety/firesafety.shtml or http://www.fdnyfirezone.org/).
- Make sure TV sets and other large household objects are on stable surfaces and are secured to avoid tipping over.
- Keep your home free of small objects a child can choke on (e.g., buttons, coins, jewelry, and small toys).
- Lock up potential poisons out of children's reach.
- Post the phone number for Poison Control near the phone (800-222-1222).
- If you have a pool in your backyard, install fencing on all sides and a self-closing gate with a lock that is out of a child's reach.

- When you're outside, watch your children closely.
- Teach your children about safety while at play; be sure they wear helmets and other protective gear whenever they are on wheels (bicycles, skates, skateboards, scooters).
- Supervise your children while crossing the street. Children under age 10 should only cross the street with a responsible adult.
- Children should buckle up in the car and sit in a car seat or booster seat (depending on the age and weight of the child).
- Never leave a child alone in the house, in a car, in a bathtub or near water.
- Learn how to swim and provide your child with swimming lessons.
- Learn CPR (cardiopulmonary resuscitation). In the time it might take for paramedics to arrive, your CPR skills could make a difference in someone's life (Resource: American Red Cross www.nyredcross.org/takeaclass.php).
- Learn how to provide early treatment for children who are choking; know the right technique to help a choking child (Resource: American Red Cross www.nyredcross.org/takeaclass.php).
- Do not keep firearms in the home. If there must be any kind of weapon in your home, put it where children cannot touch it. Keep guns unloaded with the trigger locked inside a lockbox.
- Make safety paramount when choosing caregivers and discuss all safety considerations thoroughly with them.

*Child Abuse and Homicide Prevention*

- Get help when the stresses of parenting are overwhelming. Maintain positive parent-child interactions. For support, call the 24-Hour Prevention and Parent Helpline (800-342-7472).
- Get help when you feel that stresses in your relationship compromise your parenting. In particular, call the 24 hour Domestic Violence Hotline (800-621-HOPE). Assistance is confidential and available in multiple languages.
- Never shake or handle your child roughly; abuse is not discipline. Hitting doesn't teach children to behave, hitting teaches violence.
- Never withhold food or water to punish a child and never deny a child shelter, clothing, medical care or education.
- Use words that help, not words that hurt or insult a child.
- Clearly and calmly tell your child what to do.
- Practice discipline techniques with your child instead of punishment. Discipline is more nurturing when parents know how to set and enforce limits and encourage appropriate behaviors based on their age and level of development.
- Don't get trapped in a cycle of arguing. If your child argues with you, simply repeat your calm, firm statement.
- Expressing disapproval is necessary, but be careful not to attack with words. Tell your child how you feel about their behavior and why you feel that way. Make sure they understand that it is the behavior that you don't like and not him or her. Try to be consistent in your approach, use it in public and in your home.
- Realize that everyone makes mistakes. If you realize that you have mistreated your child, don't be afraid to tell him or her you are sorry and that their feelings are important to you. Doing so sets a good example for them.

- Do not keep firearms in the home. If there must be any kind of weapon in your home, put it where children cannot touch it. Keep guns unloaded with the trigger locked inside a lockbox.
- Make safety paramount when choosing caregivers. Choose your caregiver carefully. Not all adults are suitable caregivers or can handle the stresses of caring for a baby or a child.

**Health Care Providers**

*Unintentional Injury Prevention*

- At each well-child visit, counsel parents about:
  - Safeguarding their homes to prevent child injuries, including assessment and safe storage of firearms in the home.
  - Using the appropriate restraint in the car (safety seat, booster seat or safety belt) on every trip.
- Counsel parents about the need for appropriate supervision, based on child's age, development, and exposure to possible hazards. Children need close supervision when at play indoors and outdoors, while crossing streets, and in and around motor vehicles.

*Child Abuse and Homicide Prevention*

- Provide parents with information and training on childrearing and behavioral management strategies, and promote parental involvement and positive parent-child interactions to reduce child abuse and neglect.
- Help parents cope with the stresses of parenting young children by discussing stress management techniques.
- Discuss appropriate disciplinary practices with parents.
- Provide parents with information about choosing appropriate caregivers.
- Discuss problems that may compromise positive parenting, such as substance abuse and intimate partner violence. Assist parents in getting the help they need to deal with these problems. Assistance can begin with a call to the Domestic Violence Hotline (800-621-HOPE) or the 24-Hour Prevention and Parent Helpline (800-342-7472).
- Physicians who treat children should receive a refresher course in child abuse identification and prevention every two to three years.
- Look for early signs of abuse and report all suspected child abuse and neglect to the State Central Register (1-800-342-3720). It is your direct and legal responsibility to report any reasonable suspicion of child abuse or neglect. Never assume someone else is going to report it for you.

## Resources for Violence-Free Neighborhoods

While unintentional injuries are the main contributors of unnatural child death in New York City, homicide is the leading cause of neighborhood-level disparities identified in this report. Reporting suspected cases of child abuse and neglect is the first step in helping a child and his/her family. If a child is in immediate danger for any reason, call 911. If you suspect child abuse or neglect, call the State Central Register Mandated Reporter Hotline (800-635-1522). Below are additional prevention resources that will support residents of neighborhoods where this type of fatal injury was concentrated.

## Citywide Resources

### *Administration for Children's Services (ACS)*

Provides family support, youth support, legal services, and resources for adoption and foster care.
www.nyc.gov/html/acs/html/home/home.shtml

### *Crisis Nurseries*

Provides parents and caregivers in crisis a safe non-threatening place for their child while they get the help they need.

New York Foundling
24-Hour Parent Helpline
Phone: (888) 435-7553

or the

Prospect Family Crisis Nursery
Phone: (212) 222-5437

### *Healthy Families New York*

Provides a comprehensive prevention program that focuses on the safety of children while supporting their families. The program offers home-based services to expectant families and new parents, beginning prenatally or shortly after the birth of the child.

www.healthyfamiliesnewyork.org/programsites_nyc.cfm.

Phone: 24-Hour Prevention and Parent Helpline (800) 342-7472

## Bronx Resources

### *BronxWorks*

Helps individuals and families, from toddlers to seniors, improve their economic and social well-being to build a stronger community.
www.bronxworks.org

Phone: (718) 293-0727

### *Dominican Sisters Family Health Services - The Family Life Program*

Works intensively with families at risk for child abuse and neglect to prevent placement of children outside of their homes by strengthening families through counseling, parent training, home management, substance abuse services, and advocacy/referral.
www.dsfhs.org/thebronx.nxg

Phone: (718) 665-6557

### *Highbridge Community Life Center*

Provides counseling for families and children, adult basic education, job training, after school activities for youth, community organizing and improvement, and other services through a network of collaborative organizations across the Bronx.
www.highbridgelife.org/

Phone: (718) 681-2222

### *Steinway Child and Family Services*

Offers a full range of mental health and social services to children, families, and adults. These services include psychiatric evaluations, medications, counseling, case management, and substance abuse treatment.
www.steinway.org

Phone: (718) 389-5100

***Family Justice Center (FJC)***
Provides information and free services for victims of violence in the home, particularly those who are victims of intimate partner violence. Centers are located in Queens, Brooklyn, and the Bronx.
www.nyc.gov/html/ocdv/html/fjc/fjc.shtml NYC 24-hour Domestic Violence Hotline (800) 621-HOPE

## Brooklyn Resources

***The Brooklyn Bureau of Community Service***
Offers a diverse array of social services including child welfare and family support services such as foster care prevention, homemaker services, and group and family day care services.
www.bbcs.org/ Phone: (718) 310-5600

***United Families Preventive Program – Edwin Gould Services for Children and Families***
Empowers families by providing comprehensive preventive services including individual and family case management services, aftercare services, family support services, health support services, and adolescent services.
www.egscf.org/ Phone: (347) 227-4160

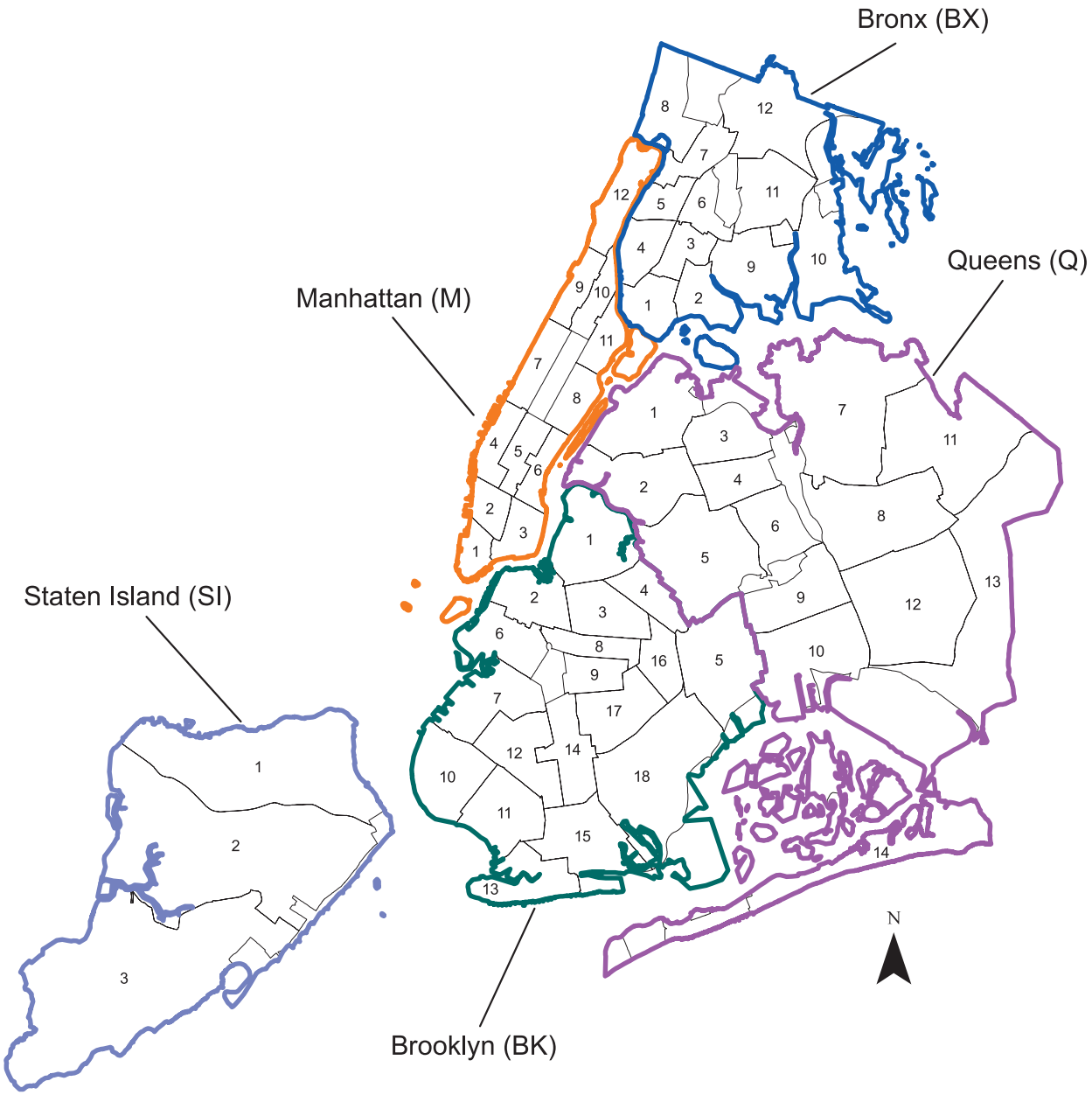
***SCO Family of Services – Family Dynamics***
Offering a continuum of care, works with those most vulnerable to overcome the devastating impact of poverty, neglect, abuse, and developmental and mental challenges.
www.sco.org Phone: (718) 919-1226

***Center for Family Life in Sunset Park***
Provides neighborhood-based family and social services including family counseling, foster care, school-based programs, and employment assistance.
www.cflsp.org/index.html Phone: (718) 788-3500

***Family Justice Center (FJC)***
Provides information and free services for victims of violence in the home, largely those who are victims of intimate partner violence. Centers are located in Queens, Brooklyn and the Bronx.
www.nyc.gov/html/ocdv/html/fjc/fjc.shtml NYC 24-hour Domestic Violence Hotline (800) 621-HOPE

# Appendix A

## New York City's 59 Community Districts



# Appendix B

## Injury Deaths Among Children (1-12 years) in NYC by Community District

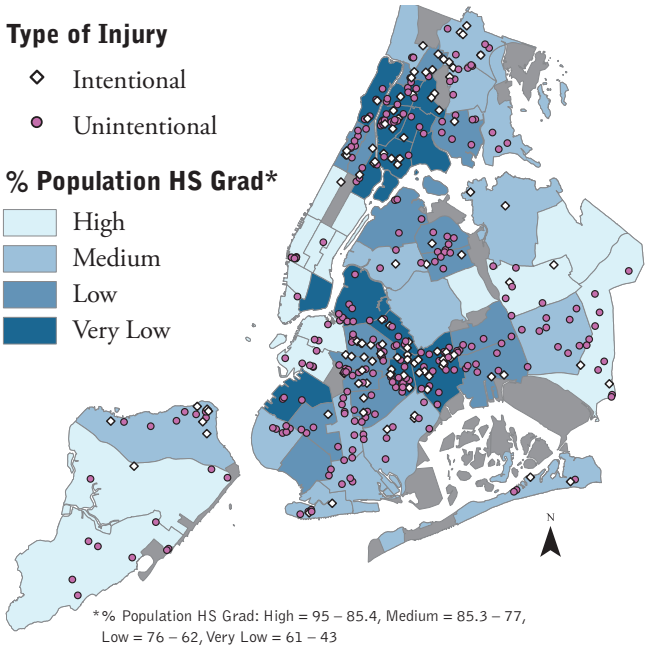
| Community District | Total* | Unintentional | | Intentional | | Indicator Rankings** | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Transport | Non-Transport | Homicide | Suicide | Education | Employ-ment | Income | % Black | SES Status (Composite) |
| **Bronx** | 83 | 14 | 39 | 28 | 2 | | | | | |
| 1 Mott Haven, Melrose, Port Morris | 7 | - | 2 | 5 | - | VL | VL | VL | M | VL |
| 2 Hunts Point, Longwood | 1 | 1 | - | - | - | VL | VL | VL | M | VL |
| 3 Melrose, Morrisania, Claremont, Crotona Park East | 3 | 1 | 1 | - | 1 | VL | VL | VL | H | VL |
| 4 Highbridge, Concourse | 18 | 4 | 10 | 4 | - | VL | VL | VL | M | VL |
| 5 Morris Heights, University Heights, Fordham, Mt. Hope | 8 | 2 | 4 | 2 | - | VL | VL | VL | M | VL |
| 6 East Tremont, Bathgate, Belmont, West Farms | 3 | - | | 2 | 1 | VL | VL | VL | M | VL |
| 7 Kingsbridge Heights, Bedford Park, Fordham, University Heights | 8 | - | 3 | 5 | - | L | VL | L | M | VL |
| 8 Kingsbridge, Riverdale, Marble Hill, Fieldston | 5 | - | 3 | 2 | - | M | L | M | L | M |
| 9 Soundview, Castle Hill, Union Port, Parkchester | 6 | 2 | 3 | 1 | - | L | L | L | M | L |
| 10 Throgs Neck, Pelham Bay, Co-op City, Westchester Square, City Island | 5 | 1 | 4 | - | - | M | H | M | M | M |
| 11 Morris Park, Pelham Parkway, Bronxdale, Van Nest, Laconia | 8 | 2 | 5 | 1 | - | M | M | L | M | L |
| 12 Williamsbridge, Baychester, Woodlawn, Wakefield, Eastchester | 11 | 1 | 4 | 6 | - | M | L | M | VL | L |
| **Brooklyn** | 171 | 50 | 73 | 45 | 3 | | | | | |
| 1 Greenpoint, Williamsburg | 10 | 3 | 7 | - | - | VL | L | VL | M | VL |
| 2 Downtown Brooklyn, Fort Greene, Brooklyn Heights, Boerum Hill | 3 | 1 | 2 | - | - | H | L | M | H | L |
| 3 Bedford Stuyvesant, Tompkins Park North, Stuyvesant Heights | 18 | 1 | 10 | 6 | 1 | L | VL | VL | H | VL |
| 4 Bushwick | 10 | 4 | 2 | 4 | - | VL | VL | VL | M | VL |
| 5 East New York, New Lots, City Line, Starrett City | 29 | 5 | 11 | 11 | 2 | VL | VL | VL | H | VL |
| 6 Red Hook, Park Slope, Gowanus, Carroll Gardens, Cobble Hill | 6 | 5 | 1 | - | - | H | H | H | L | H |
| 7 Sunset Park, Windsor Terrace | 3 | 3 | - | - | - | VL | M | L | VL | L |
| 8 Crown Heights, Prospect Heights, Weeksville | 8 | 1 | 2 | 5 | - | M | L | L | H | VL |
| 9 Crown Heights South, Prospect Lefferts Gardens, Wingate | 14 | 5 | 5 | 4 | - | M | L | L | H | VL |
| 10 Bay Ridge, Dyker Heights, Fort Hamilton | 7 | 1 | 6 | - | - | M | H | M | VL | M |
| 11 Bensonhurst, Mapleton, Bath Beach, Gravesend | 1 | 1 | - | - | - | L | M | L | VL | M |
| 12 Borough Park, Ocean Parkway, Kensington | 5 | 1 | 3 | 1 | - | L | M | L | VL | M |
| 13 Coney Island, Brighton Beach, Gravesend, Homecrest, Seagate | 6 | 1 | 3 | 2 | - | M | L | VL | L | L |
| 14 Flatbush, Ocean Parkway, Midwood | 10 | 6 | 4 | - | - | M | L | L | M | L |
| 15 Sheepshead Bay, Manhattan Beach, Kings Highway, Gravesend | 5 | 2 | 3 | - | - | M | H | M | VL | M |
| 16 Ocean Hill, Brownsville | 17 | 4 | 6 | 7 | - | VL | VL | VL | H | VL |
| 17 Flatbush, Rugby, Farragut, Northeast Flatbush | 9 | 4 | 3 | 2 | - | L | L | L | H | VL |
| 18 Canarsie, Flatlands, Marine Park, Mill Basin, Bergen Beach | 10 | 2 | 5 | 3 | - | M | M | H | H | M |
| **Manhattan** | 33 | 6 | 17 | 10 | 0 | | | | | |
| 1 Civic Center, Wall Street, Governor's Is., Liberty Is., Ellis Is. Tribeca | 1 | - | 1 | - | - | H | M | H | L | M |
| 2 Greenwich Village, Noho, Soho, Little Italy | - | - | - | - | - | H | H | H | VL | H |
| 3 Lower East Side, Chinatown, Two Bridges | - | - | - | - | - | VL | M | L | L | L |
| 4 Chelsea, Clinton | 5 | 1 | 4 | - | - | H | H | H | L | H |
| 5 Midtown, Times Square, Herald Square, Midtown South | 1 | - | 1 | - | - | H | M | H | VL | H |
| 6 Murray Hill, East Midtown, Stuyvesant Town | - | - | - | - | - | H | H | H | VL | H |
| 7 Lincoln Square, Upper West Side | 1 | - | - | 1 | - | H | H | H | L | H |
| 8 Upper East Side, Lennox Hill, Yorkville, Roosevelt Island | - | - | - | - | - | H | H | H | VL | H |
| 9 West Harlem, Morningside Heights, Manhattanville, Hamilton Heights | 11 | 2 | 6 | 3 | - | L | VL | VL | M | VL |
| 10 Central Harlem | 2 | - | 1 | 1 | - | L | VL | VL | H | VL |
| 11 East Harlem | 6 | 2 | 1 | 3 | - | VL | VL | VL | M | VL |
| 12 Washington Heights, Inwood | 6 | 1 | 3 | 2 | - | VL | L | L | L | L |
| **Queens** | 75 | 31 | 30 | 12 | 2 | | | | | |
| 1 Astoria & Long Island City | 4 | 2 | 2 | - | - | L | M | L | L | L |
| 2 Sunnyside & Woodside | 4 | 2 | 1 | 1 | - | M | M | M | VL | M |
| 3 Jackson Heights, East Elmhurst, North Corona | 5 | 3 | 1 | 2 | 1 | L | L | M | M | L |
| 4 Elmhurst & Corona | 9 | 2 | 5 | - | - | L | M | L | M | L |
| 5 Maspeth, Middle Village, Ridgewood, Glendale | - | - | - | - | - | M | M | M | VL | M |
| 6 Rego Park & Forest Hills | - | - | - | - | - | H | H | M | VL | H |
| 7 Flushing, Whitestone, College Point | 3 | - | 1 | 1 | 1 | M | H | M | VL | M |
| 8 Fresh Meadows, Kew Gardens Hills, Jamaica Hills | 6 | 2 | 2 | 2 | - | H | H | H | M | H |
| 9 Woodhaven, Richmond Hill, Kew Gardens | 8 | 5 | 3 | - | - | L | M | M | M | M |
| 10 Howard Beach, Ozone Park, South Ozone Park | 10 | 3 | 5 | 2 | - | L | M | M | M | M |
| 11 Bayside, Douglaston, Little Neck, Auburndale | - | - | - | - | - | H | H | H | VL | H |
| 12 Jamaica, South Jamaica, Hollis, St-Albans | 10 | 6 | 4 | - | - | M | L | M | H | L |
| 13 Laurelton, Cambria Heights, Queens Village, Glen Oaks | 11 | 5 | 4 | 2 | - | H | M | H | H | M |
| 14 The Rockaways, Broad Channel | 5 | 1 | 2 | 2 | | M | L | L | H | L |
| **Staten Island** | 25 | 4 | 14 | 6 | 1 | | | | | |
| 1 Port Richmond | 13 | 2 | 5 | 6 | - | M | M | M | M | M |
| 2 Willowbrook, South Beach | 5 | 1 | 3 | - | 1 | H | H | H | VL | H |
| 3 Tottenville | 7 | 1 | 6 | - | - | H | H | H | VL | H |

*N=387 based on confirmed location of fatal injury ** H = High; M = Medium; L = Low; VL = Very Low

# Appendix C

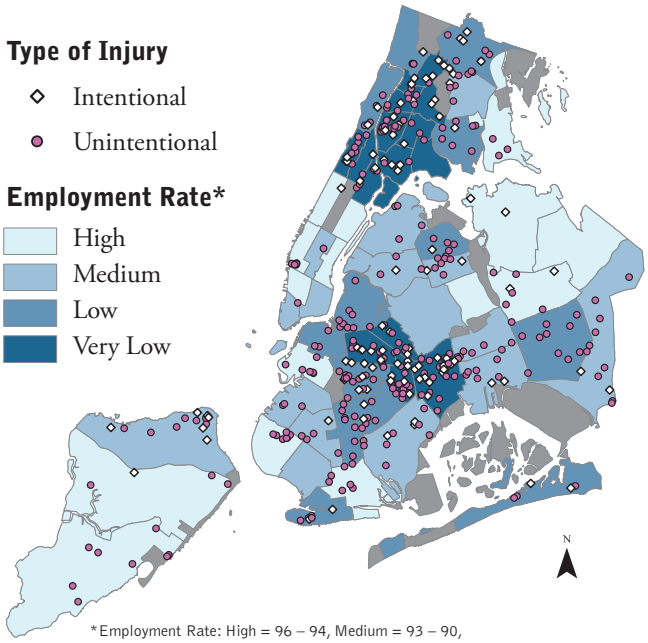
## Maps of Neighborhood-level Indicators and Fatal Child Injuries

### Education



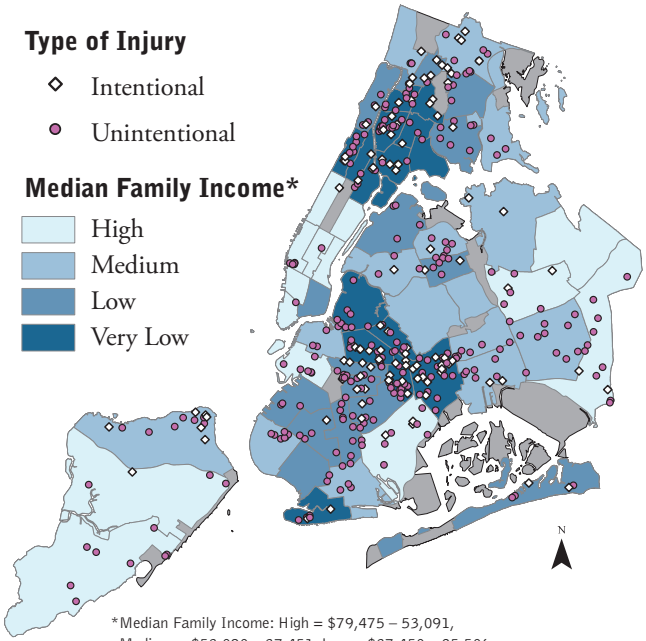

*% Population HS Grad: High = 95 – 85.4, Medium = 85.3 – 77, Low = 76 – 62, Very Low = 61 – 43
(Average population 25 years and older wih HS diploma/GED = 71%)

### Employment



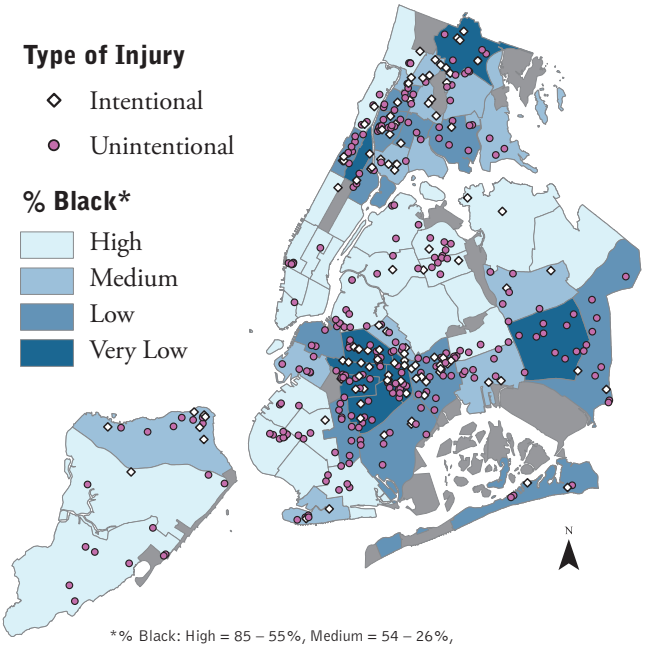

*Employment Rate: High = 96 – 94, Medium = 93 – 90, Low = 89 – 85, Very Low = 84 – 76
(Average employment rate = 89 per 100,000 for population 16 years and over)

### Income




*Median Family Income: High = $79,475 – 53,091, Medium = $53,090 – 37,451, Low = $37,450 – 25,506, Very Low = $25,505 – 16,000
(Average median family income = $38,714)

### Racial Composition




*% Black: High = 85 – 55%, Medium = 54 – 26%, Low = 25 – 13%, Very Low = 12 – 0%
(Average percent black = 25%)

# Technical Appendix

**Injury deaths:** Death certificates of all persons who die in NYC are collected and maintained by the DOHMH Bureau of Vital Statistics. For the years 2001 to 2008, injury deaths among children aged one to 12 years were identified by underlying cause of death with International Classification of Disease 10 Codes (ICD-10). Deaths due to injuries and other external causes, such as complications of medical and surgical care (also called therapeutic complications in this report) were identified using the following codes: V01–V99, W00–W99, X00–99, Y00–Y89. CFRT staff abstracted de-identified demographic and injury information from death certificates for the purpose of aggregate data analysis.

**Fatal unintentional injuries:** All fatal accidents among children are examined by the Office of Chief Medical Examiner (OCME). Unintentional injury deaths were identified using ICD-10 Codes (V01-X59). Based on the Medical Examiner number found on the death certificate, OCME files were reviewed and pertinent information abstracted. A data abstraction form was created using Microsoft Access. Documents examined in OCME records included autopsy, postmortem examination and toxicology reports; police reports (supplemental case information and precinct reports); investigation reports; hospital reports; and ambulance call reports.

**Fatal intentional injuries:** Deaths due to intentional injuries were identified using ICD 10 Codes (X60-X84,Y87.0, X85-Y09,Y87.1, Y35,Y89.0). Cases that were subjects of an investigation and/or criminal and/or family court proceeding were restricted for case review as per Local Law 115.

**Other fatal injuries:** Deaths categorized with an undetermined manner were identified using ICD 10 Codes (Y10-Y34, Y87.2, Y89.9). Therapeutic complication deaths were identified using ICD 10 Codes for Complications of Medical and Surgical Care (Y40-Y84, Y88).

**US comparison data:** National data on overall child injury deaths are available from the CDC's National Center for Injury Prevention and Control Web-based Injury Statistics Query and Reporting System (WISQARS). webappa.cdc.gov/sasweb/ncipc/mortrate.html. Data were accessed March 2010.

**Mapping Procedures:** Locations of fatal child injuries were geocoded using the NYC Department of City Planning's Geosupport Desktop Edition Software 9.6.9. Geocoded addresses were then mapped using ArcGIS 9.3. Department of City Planning (DCP) Census characteristics tables were used to map the distribution of education, employment, income, and percent of black, non-Hispanic residents according to NYC's 59 community districts. DCP data was accessed December 2009.

**Neighborhood analysis**
For neighborhood-level analyses of education, employment, income and racial concentration, the unit of analysis was the community district. (Source: NYC Department of City Planning).

**Socioeconomic index**
Each community district was assigned a rank using quartiles to create the socioeconomic index. Each set of the four indicators (education, employment, income, and race) were ranked from one to four based on the categories or quartiles (high to very low) from the individual maps. The lower numbers represented lower SES and the higher numbers represented higher SES. These rankings were added together to create a SES index of the four indicators.

**Housing analysis**
For healthy housing analyses, the unit of analysis was the sub-borough. Sub-borough areas are groups of census tracts in New York City containing at least 100,000 people. The tract composition of each area is designed so that their boundaries approximate those of community districts (CD). There are 55 sub-borough areas in New York City. Bronx CD 1 and CD 2 are combined into a single sub-borough area, as are Bronx CD 3 and CD 6, Manhattan CD 1 and CD 2, and Manhattan CD 4 and CD 5.

**Data points**
To protect confidentiality, all mapped data points for locations where fatal injuries occurred were offset so that the mapped points do not pinpoint the presumed address of the incident but rather the general area where the incident occurred. All data points were offset using ArcGIS 9.3 and NPS AlaskaPak 2.2. The distance between the new data points and the original data points were measured to ensure every point was offset.

**Data analysis:** Rate calculations conducted by the DOHMH Bureau of Vital Statistics were conducted using SAS 9.1. Analyses by dedicated CFRT staff were performed with SAS 9.1. 2000 Census information was used to compute rates.

**CRFT meetings:** CFRT meetings are closed to the public. All team members must sign a confidentiality statement before participating in the review process. The confidentiality statement specifically defines the conditions of participation and assures that members will not divulge information discussed in team meetings. To further maintain confidentiality, identifying information has been omitted from data and research reports.

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Michael R. Bloomberg
Mayor

**Department of Health & Mental Hygiene**

Thomas Farley, M.D., M.P.H.
Commissioner