



# Epi Data Brief

New York City Department of Health and Mental Hygiene

September 2016, No. 75

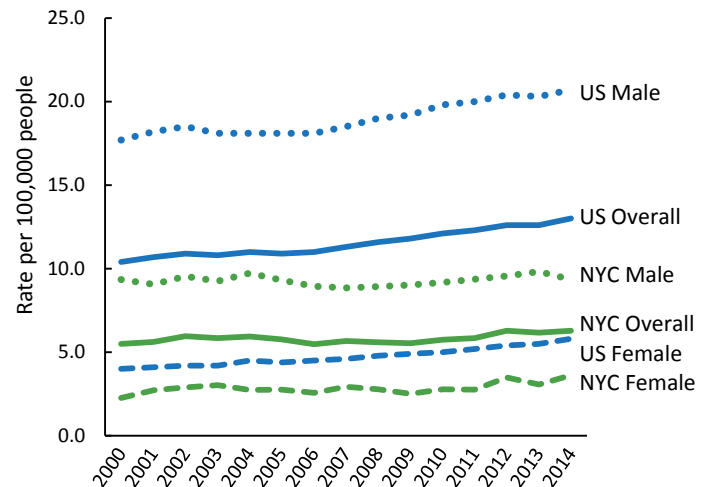
## Suicides in New York City, 2000 to 2014

Suicide rates in New York City (NYC) declined in the 1990s, but have steadily increased in the last decade. While crude homicide rates in NYC declined 41.7% between 2005 and 2014, crude suicide rates rose 11.7%, exceeding the rate of homicides.<sup>1</sup> In 2014, 565 suicides were reported in NYC. This report describes trends in suicides, and examines demographic characteristics of persons who commit suicide and methods of suicide.

### New York City suicide rates are rising

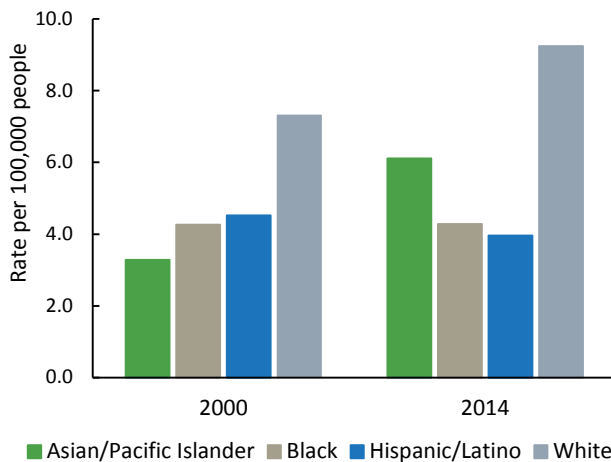
- The rate of suicide in NYC increased from 5.5 in 2000 to 6.3 per 100,000 people in 2014, with an average annual increase of 2.3% per year between 2008 and 2014. This mirrors the increase nationwide (10.4 in 2000, and 13.0 in 2014), however, rates in NYC remain about half of the national rate.<sup>2</sup>
- Between 2008 and 2014, suicides in NYC have generally peaked in the spring (April, May, June), consistent with national seasonal patterns.<sup>3</sup>
- Males continue to represent the majority of suicides, with 393 suicides by NYC males in 2014, compared with 172 suicides by females.
- Since 2000, rates among females have increased 56%, with an average annual increase of 1.7% per year between 2000 and 2014. Rates among NYC males have remained steady. Nationally, rates among both males and females have steadily increased.<sup>2</sup>

### Suicide rate, by sex, New York City and US, 2000-2014



Sources: NYC DOHMH Bureau of Vital Statistics, 2000-2014; Curtin SC, Warner M, Hedegaard H. Increase in suicide in the United States, 1999–2014. NCHS data brief, no 241. Hyattsville, MD: National Center for Health Statistics. 2016

### Suicide rate by race/ethnicity, New York City, 2000 and 2014



Asian/Pacific Islander, Black, and White races exclude Hispanic/Latino ethnicity.

Source: NYC DOHMH Bureau of Vital Statistics, 2000-2014

- In NYC, suicide rates remained highest and continued to increase among White males from 2000 to 2014 (11.7 vs. 13.4 per 100,000 males). Rates also increased among White females (from 3.2 in 2000 to 5.3 per 100,000 females in 2014), and Asian/Pacific Islanders overall (3.3 in 2000 to 6.1 per 100,000 in 2014).

#### Definitions:

**Suicide** is defined as death caused by self-directed injurious behavior with an intent to die.

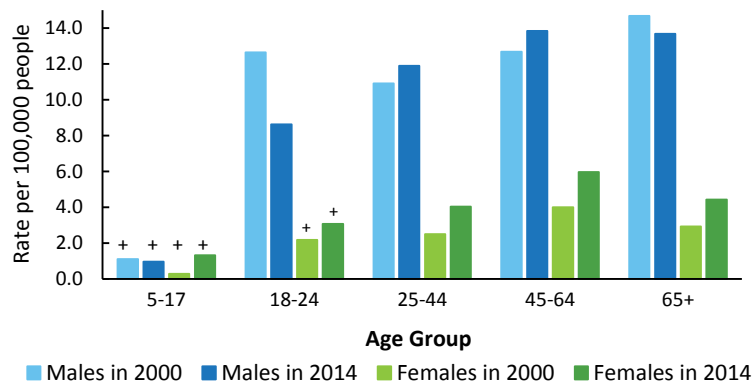
**Race/ethnicity:** White, Black, and Asian/Pacific Islander race categories exclude Hispanic/Latino ethnicity.

**United Hospital Fund (UHF) neighborhood:** UHF classifies New York City into 42 neighborhoods, comprised of contiguous zip codes.

**Neighborhood poverty:** Based on ZIP code and defined as percentage of residents with incomes below 100% of the federal poverty level (FPL), per American Community Survey 2009-2013, in four groups: low (<10% FPL), medium (10 %-< 20% FPL), high (20 %-< 30% FPL), and very high (≥30% FPL).

- Suicide rates among women remained the highest for ages 45 to 64, consistent with national data.<sup>2</sup> The rate among this group increased, from 4.0 to 6.0 per 100,000 women from 2000 to 2014.
- Historically, NYC men ages 65 and over have had the highest suicide rate, but in 2014 this was surpassed by men ages 45-64, which increased to 13.9 from 12.7 per 100,000 men in 2000.
- Rates among NYC men ages 18 to 24 decreased, from 12.6 to 8.6 per 100,000 men from 2000 to 2014.
- Although based on small numbers, suicides increased among NYC girls ages, 5 to 17, from two in 2000 to eight in 2014. Hispanic/Latina girls completed zero suicides in 2000, and three suicides in 2014. Suicides among boys ages 5 to 17 remained steady, from eight in 2000 to six in 2014.<sup>+</sup>
- Men and women ages 85 and over accounted for a small number of suicides in NYC. However, suicides increased among both groups, from four to ten among men between 2000 and 2014, and from three to eight among women.<sup>+</sup>

### Rate of suicides by age and sex, New York City, 2000 and 2014



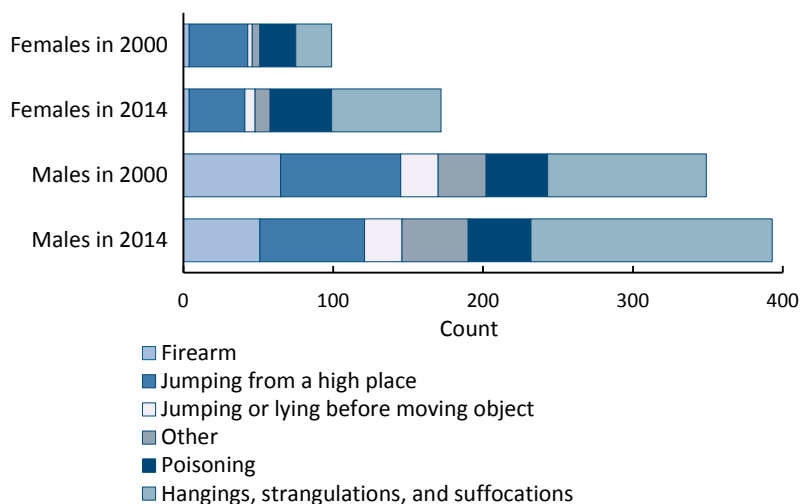
+ Interpret rates with caution due to the small number of events.

Source: NYC DOHMH Bureau of Vital Statistics, 2000-2014

### Hanging, strangulation and suffocation suicides are on the rise

- The two leading methods of suicide among all New Yorkers in 2014 were hanging, strangulation, and suffocation, and jumping from a high place.
- Suicides due to hangings, strangulations, and suffocations increased in number (from 130 to 234), making up an increasing proportion of total suicides (from 29% in 2000 to 41% in 2014). This increase was seen among both males and females in NYC and nationwide.<sup>2</sup>
- In 2014, hanging, strangulation, and suffocation suicides represented the majority of suicides among NYC girls and boys, ages 5 to 17.<sup>+</sup>
- In 2014, hanging, strangulation and suffocation suicides represented nearly 50% of suicides among Asian/Pacific Islander and Hispanic/Latino New Yorkers.
- Jumping from a high place represented the most prevalent method (39%) of suicide completion among NYC females in 2000 but has since decreased (22% in 2014). In 2014, the proportion of suicides attributable to jumping from a high place among both females and males in NYC was about eight times the proportion nationwide (females: 22% in NYC, 2.8% nationwide; males: 18% in NYC, 2.2% nationwide).<sup>2</sup>

### Suicides by method, New York City, 2000 and 2014



Other methods include: drowning and submersion; explosive material; smoke, fire, and flames; steam, hot vapors and hot objects; sharp object; blunt object; crashing of motor vehicle, other specified means, unspecified means, sequelae of intentional self-harm.

Source: NYC DOHMH Bureau of Vital Statistics, 2000-2014

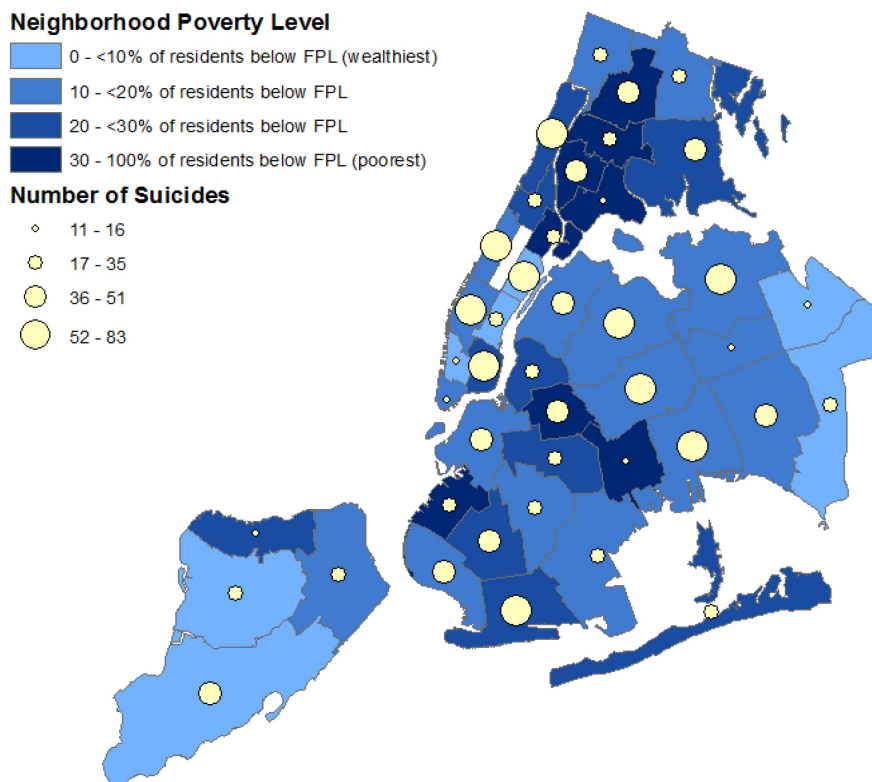
- The proportion of suicides due to firearms decreased in NYC between 2000 and 2014 (15% to 10%), consistent with a national decline. Firearms were less prevalent as a method of suicide in NYC, in contrast to the US overall<sup>2</sup> where suicide due to firearms represented half of all suicides in 2014.

+Interpret rates with caution due to the small number of events.

## The rate of suicide increased in Manhattan and Queens in 2014

- Within the five boroughs of NYC, suicide rates in Manhattan and Queens increased from 2000 to 2014 (in Manhattan, from 5.7 to 7.6 per 100,000; in Queens, from 4.3 to 5.7 per 100,000). In Manhattan and Queens, rates increased for both sexes, and among Asian/Pacific Islanders and Whites. Overall rates in other boroughs remained stable.
- In 2012 to 2014, neighborhoods where 10-20% of residents had an income below the Federal Poverty Level (FPL) had the highest rate of suicide, with 7.8 per 100,000 people. Neighborhoods where less than 10% of residents had an income below the FPL had the lowest rate of suicide, with 3.8 per 100,000 people.

### Count of suicides and area based poverty level by United Hospital Fund neighborhood, New York City, 2012-2014



The United Hospital Fund classifies NYC into 42 neighborhoods, comprised of contiguous ZIP codes. Neighborhood poverty level (based on ZIP code) defined as percent of residents with incomes below 100% of the Federal Poverty Level, per American Community Survey 2009-2013, in four groups: low/wealthiest (<10%), medium (10% - < 20%), high (20% - < 30%), and very high/poorest (>=30%).

Sources: NYC DOHMH Bureau of Vital Statistics, 2012-2014; American Community Survey, 2009-2013

#### Data Sources:

**NYC DOHMH Bureau of Vital Statistics 2000-2014:** Mortality data on cause of death are classified using ICD10 codes. Suicides are coded U03, X60-X84, and Y87.0. Method of suicide is categorized using the following codes: firearm (X72-X74), hanging, strangulation, and suffocation (X70), poisoning (X60-X69), jumping from a high place (X80), jumping or lying before moving object (X81), and other methods (X71, X75-X79, X82-X84, Y87, U03).

#### NYC Department of Health and Mental Hygiene Population

**Estimates** modified from US Census Bureau intercensal population estimates 2000-2014, updated October 2015, were used for denominators in rate calculations.

**Note:** All non age-specific rates are age-adjusted, and include the entire population in the denominator. Age-specific rates include only the relevant ages.

#### References:

<sup>1</sup>Li W, Huynh M, Lee E, Lasner-Frater L, Castro A, Kelley D, Kennedy J, Maduro G, Sebek K, Sun Y, Van Wye G. Summary of Vital Statistics, 2014. New York, NY: New York City Department of Health and Mental Hygiene, Office of Vital Statistics, 2016.

<sup>2</sup>Curtin SC, Warner M, Hedegaard H. Increase in suicide in the United States, 1999-2014. NCHS data brief, no 241. Hyattsville, MD: National Center for Health Statistics. 2016.

<sup>3</sup>Holiday Suicides: Fact or Myth?; Centers for Disease Control and Prevention, National Center for Injury Prevention and Control, Division of Violence Prevention <http://www.cdc.gov/violenceprevention/suicide/holiday.html> accessed August 19, 2016.

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# Epi Data Tables

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## Suicides in New York City, 2000 to 2014

### Data Tables

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- Table 2.** Seasonal counts of suicide in New York City 2008-2014
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- Table 7.** Suicide counts by United Hospital Fund neighborhood in New York City, 2012-2014

### Data Sources

**NYC DOHMH Bureau of Vital Statistics 2000-2014:** Mortality data on cause of death are classified using ICD10 codes. Suicide deaths are coded U03, X60-X84, and Y87.0. Method of suicide is categorized using the following codes: firearm (X72-X74), hanging, strangulation, and suffocation (X70), poisoning (X60-X69), jumping from a high place (X80), jumping or lying before moving object (X81), and other methods (X71, X75-X79, X82-X84, Y87).

**NYC Department of Health and Mental Hygiene Population Estimates,** modified from US Census Bureau intercensal population estimates 2000-2014, updated October 2015, were used for denominators in rate calculations.

**American Community Survey 2009-2013:** Neighborhood poverty is based on ZIP code and is defined as the percentage of residents with incomes below 100% of the Federal Poverty Level, per American Community Survey 2009-2013, in four groups: low/wealthiest (<10%), medium (10 %-< 20%), high (20 %-< 30%), and very high/poorest (>=30%).

**Table 1. Suicide counts and rates in New York City 2000-2014**

Source: NYC DOHMH Bureau of Vital Statistics, 2000-2014; NYC Department of Health and Mental Hygiene Population Estimates, August 2014.

Year	Count of suicides (Total)	Count of suicides (Females)	Count of suicides (Males)	Crude rate (Total)	Crude rate (Females)	Crude rate (Males)	Age-adjusted rate (Total)	Age-adjusted rate (Females)	Age-adjusted rate (Males)
2000	448	99	349	5.6	2.3	9.2	5.5	2.3	9.4
2001	462	120	342	5.7	2.8	8.9	5.6	2.7	9.1
2002	495	129	366	6.1	3.0	9.5	6.0	2.9	9.5
2003	483	136	347	6.0	3.2	9.0	5.9	3.0	9.3
2004	493	122	371	6.1	2.9	9.7	5.9	2.7	9.7
2005	481	123	358	6.0	2.9	9.4	5.8	2.8	9.3
2006	459	115	344	5.7	2.7	9.0	5.5	2.6	9.0
2007	477	133	344	5.9	3.1	9.0	5.7	2.9	8.9
2008	473	125	348	5.8	2.9	9.0	5.6	2.8	8.9
2009	475	115	360	5.8	2.7	9.3	5.5	2.5	9.0
2010	503	129	374	6.1	3.0	9.5	5.8	2.8	9.2
2011	509	128	381	6.1	2.9	9.7	5.8	2.8	9.4
2012	557	163	391	6.7	3.7	9.8	6.3	3.5	9.6
2013	550	146	404	6.5	3.3	10.0	6.2	3.1	9.8
2014	565	172	393	6.7	3.9	9.7	6.3	3.6	9.4

**Table 2. Seasonal counts of suicide in New York City 2008-2014***Source: NYC DOHMH Bureau of Vital Statistics, 2008-2014*

Year	Season			
	Winter	Spring	Summer	Fall
2008	117	143	114	99
2009	129	103	128	115
2010	109	147	141	106
2011	126	133	137	113
2012	126	162	136	133
2013	142	158	133	117
2014	121	167	160	117

**Table 3. Suicide counts and percentages by method in New York City, 2000 and 2014**

Source: NYC DOHMH Bureau of Vital Statistics, 2000 and 2014

Method	2000						Method	2014					
	Count of total suicides	Count of suicides (Females)	Count of suicides (Males)	Percent of total suicides	Percent of total suicides (Females)	Percent of total suicides (Males)		Count of total suicides	Count of suicides (Females)	Count of suicides (Males)	Percent of total suicides	Percent of total suicides (Females)	Percent of total suicides (Males)
Hanging, Strangulation, Suffocation	130	24	106	29.0%	24.2%	30.4%	Hanging, Strangulation, Suffocation	234	73	161	41.4%	42.4%	41.0%
Jumping from a high place	119	39	80	26.6%	39.4%	22.9%	Jumping from a high place	107	37	70	18.9%	21.5%	17.8%
Poisoning	65	24	41	14.5%	24.2%	11.7%	Poisoning	83	41	42	14.7%	23.8%	10.7%
Firearm	69	4	65	15.4%	4.0%	18.6%	Firearm	55	4	51	9.7%	2.3%	13.0%
Other	37	5	32	8.3%	5.1%	9.2%	Other	54	10	44	9.6%	5.8%	11.2%
Jumping before moving object	28	3	25	6.3%	3.0%	7.2%	Jumping before moving object	32	7	25	5.7%	4.1%	6.4%

**Table 4. Suicide counts and rates by race in New York City, 2000 and 2014**

Source: NYC DOHMH Bureau of Vital Statistics, 2000 and 2014; NYC Department of Health and Mental Hygiene Population Estimates, August 2014.

Race	2000			2014		
	Count of suicides	Crude rate	Age-adjusted rate	Count of suicides	Crude rate	Age-adjusted rate
<b>Asian/Pacific-Islander</b>						
Overall	28	3.4	3.3	78	6.5	6.1
Female	8	1.9	1.7*	28	4.5	4.2
Male	20	4.8	5.1	50	8.7	8.3
<b>Non-Hispanic Black</b>						
Overall	86	4.2	4.3	84	4.4	4.3
Female	15	1.3	1.3*	22	2.1	2
Male	71	7.9	8.2	62	7.2	7.2
<b>Hispanic</b>						
Overall	86	3.9	4.5	98	4	4
Female	17	1.5	1.6	29	2.3	2.2
Male	69	6.6	8.4	69	5.8	6
<b>Non-Hispanic White</b>						
Overall	235	8.2	7.3	289	10.5	9.2
Female	57	3.8	3.2	85	6	5.3
Male	178	12.9	11.7	204	15.2	13.4

\*Gray-shaded cells: Interpret with caution. The rate's Relative Standard Error (a measure of precision) is between 25% and 50%, making the rate potentially unreliable.



**Table 5. Suicide counts and rates by age category in New York City, 2000 and 2014**

Source: NYC DOHMH Bureau of Vital Statistics, 2000 and 2014; NYC Department of Health and Mental Hygiene Population Estimates, August 2014.

Age Category	2000		2014	
	Count of suicides	Crude rate	Count of suicides	Crude rate
<b>Ages 5-17</b>				
Overall	10	0.5	14	0.8
Female	^	^	8	0.9
Male	8	0.8	6	0.7
<b>Ages 18-24</b>				
Overall	59	7.3	48	5.8
Female	9	2.2	13	3.1
Male	50	12.6	35	8.6
<b>Ages 25-44</b>				
Overall	173	6.6	211	7.9
Female	34	2.5	56	4
Male	139	10.9	155	11.9
<b>Ages 45-64</b>				
Overall	136	8	202	9.7
Female	37	4	66	6
Male	99	12.7	136	13.9
<b>Ages 65+</b>				
Overall	70	7.4	90	8.2
Female	17	2.9	29	4.4
Male	53	14.7	61	13.7

\*Gray-shaded cells: Interpret with caution. The rate's Relative Standard Error (a measure of precision) is between 25% and 50%, making the rate potentially unreliable.

^Rates with a relative standard error (a measure of precision) >50% are unreliable and counts and rates have been suppressed.

**Table 6. Suicide counts and rates by borough in New York City, 2000 and 2014**

Source: NYC DOHMH Bureau of Vital Statistics, 2000 and 2014; NYC Department of Health and Mental Hygiene Population Estimates, August 2014.

Borough	2000			2014		
	Count of suicides	Crude rate	Age-adjusted rate	Count of suicides	Crude rate	Age-adjusted rate
<b>Bronx</b>						
Overall	59	4.4	4.7	66	4.6	4.5
Female	11	1.5	1.6*	18	2.4	2.3
Male	48	7.7	8.6	48	7.1	7.3
<b>Brooklyn</b>						
Overall	112	4.5	4.6	125	4.8	4.6
Female	22	1.7	1.7	36	2.6	2.5
Male	90	7.8	8.3	89	7.2	7.2
<b>Manhattan</b>						
Overall	95	6.2	5.7	138	8.4	7.6
Female	31	3.8	3.4	53	6.1	5.6
Male	64	8.8	8.4	85	11	9.8
<b>Queens</b>						
Overall	98	4.4	4.3	141	6.1	5.7
Female	22	1.9	1.8	36	3	2.8
Male	76	7.1	7	105	9.3	8.9
<b>Staten Island</b>						
Overall	25	5.6	5.6	29	6.1	5.7
Female	^	^	^	12	4.9	4.3*
Male	21	9.8	9.6	17	7.4	7.1

\*Gray-shaded cells: Interpret with caution. The rate's Relative Standard Error (a measure of precision) is between 25% and 50%, making the rate potentially unreliable.

^Rates with a relative standard error (a measure of precision) >50% are unreliable and counts and rates have been suppressed.

**Table 7. Suicide counts by United Hospital Fund neighborhood in New York City, 2012-2014**Source: NYC DOHMH Bureau of Vital Statistics, 2012-2014<sup>†</sup>

Borough	United Hospital Fund neighborhood number	United Hospital Fund neighborhood name	Count
<b>Bronx</b>			
	101	Kingsbridge - Riverdale	23
	102	Northeast Bronx	26
	103	Fordham - Bronx Park	37
	104	Pelham - Throgs Neck	51
	105	Crotona - Tremont	27
	106	High Bridge - Morrisania	38
	107	Hunts Point - Mott Haven	16
<b>Brooklyn</b>			
	201	Greenpoint	19
	202	Downtown - Heights - Slope	36
	203	Bedford Stuyvesant - Crown Heights	35
	204	East New York	16
	205	Sunset Park	18
	206	Borough Park	49
	207	East Flatbush - Flatbush	32
	208	Canarsie - Flatlands	23
	209	Bensonhurst - Bay Ridge	36
	210	Coney Island - Sheepshead Bay	57
	211	Williamsburg - Bushwick	40
<b>Manhattan</b>			
	301	Washington Heights - Inwood	66
	302	Central Harlem - Morningside Heights	22
	303	East Harlem	22
	304	Upper West Side	66
	305	Upper East Side	67
	306	Chelsea - Clinton	57
	307	Gramercy Park - Murray Hill	29
	308	Greenwich Village - Soho	12
	309	Union Square, Lower East Side	52
	310	Lower Manhattan	11
<b>Queens</b>			
	401	Long Island City - Astoria	36
	402	West Queens	83
	403	Flushing - Clearview	63
	404	Bayside - Littleneck	16
	405	Ridgewood - Forest Hills	73
	406	Fresh Meadows	14
	407	Southwest Queens	56
	408	Jamaica	37
	409	Southeast Queens	19
	410	Rockaway	21
<b>Staten Island</b>			
	501	Port Richmond	14
	502	Stapleton - St. George	17
	503	Willowbrook	20
	504	South Beach - Tottenville	40

\*Gray-shaded cells: Interpret with caution. The Relative Standard Error (a measure of precision) is between 25% and 50%, making the count potentially statistically unstable.

<sup>†</sup>Data from multiple years were collapsed to reduce statistic instability due to small samples.

The United Hospital Fund classifies NYC into 42 neighborhoods, comprised of contiguous ZIP codes.

<http://www1.nyc.gov/assets/doh/downloads/pdf/ah/zipcodetable.pdf>