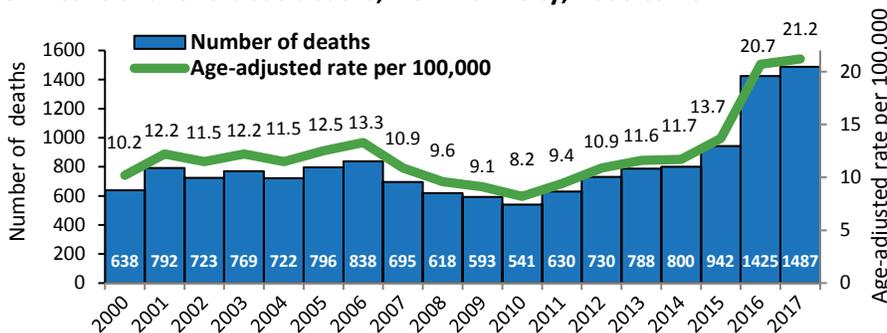


Unintentional Drug Poisoning (Overdose) Deaths in New York City, 2000 to 2017

- In 2017, there were 1,487 unintentional drug overdose deaths in New York City (NYC) compared with 1,425 in 2016, an increase of 62 deaths. Rates of drug overdose death were similar in 2016 (20.7 per 100,000) and 2017 (21.2 per 100,000).
- On average, in 2017, there were nearly four drug overdose deaths each day in NYC, or one overdose death every six hours.
- The rate of unintentional drug overdose death increased for the seventh consecutive year, from 8.2 per 100,000 residents in 2010 to 21.2 per 100,000 residents in 2017.
- For the first time, fentanyl was the most common substance, involved in 842 (57%) overdose deaths in 2017.

Unintentional overdose deaths, New York City, 2000 to 2017



Sources: NYC Office of the Chief Medical Examiner and NYC DOHMH Bureau of Vital Statistics, 2000-2017; 2017 data are provisional and subject to change.

- In 2017, more than eight in ten (82%) overdose deaths involved an opioid.
- Heroin was the second most common substance, involved in 771 (52%) overdose deaths. Cocaine was involved in 49% of overdose deaths in 2017, up from 46% in 2016.
- Opioid analgesics, excluding fentanyl, were involved in 214 (14%) overdose deaths; the rate of opioid analgesic-involved overdose deaths decreased 23%, from 4.0 in 2016 to 3.1 in 2017 per 100,000 residents.
- Over half (53%) of all overdose deaths involved multiple central nervous system depressants, such as alcohol, benzodiazepines, and opioids.
- In 2017, rates of overdose death were highest among Bronx residents, compared with other NYC boroughs. The rate increased 9%, from 29.3 per 100,000 residents in 2016 to 31.9 per 100,000 residents in 2017. Bronx residents also had the largest number of overdose deaths, 363 in 2017.
- Staten Island residents had the second highest rate of overdose death. The rate decreased 16%, from 32.5 per 100,000 in 2016 to 27.3 per 100,000 in 2017. In 2017, 101 Staten Island residents died of a drug overdose.
- In 2017, Black New Yorkers had a higher rate of overdose death (25.5 per 100,000) compared with White and Latino New Yorkers (24.9 and 23.9 per 100,000, respectively).

Data Source:

NYC Office of the Chief Medical Examiner and NYC DOHMH Bureau of Vital Statistics: Mortality data for 2000-2017 were collected through an in-depth review of data from DOHMH Bureau of Vital Statistics and NYC Office of the Chief Medical Examiner. Data were limited to individuals age 15 to 84 years. Data for 2017 are provisional and subject to change.

Rate calculation: DOHMH population estimates, modified from US Census Bureau intercensal population estimates 2000-2016, updated September, 2017. These rates will differ from previously reported rates based on Census counts or previous versions of population estimates. Rates are age-adjusted to Census 2000 US standard population, except those for specific age groups.

Definitions:

Unintentional drug poisoning deaths (overdose): exclude poisonings where the manner of death was intentional (suicide), undetermined, or homicide.

Opioids cover the entire family of opiates and opioids. Opiates are derived from “natural” opium, such as morphine or heroin. **Opioids** are synthetic drugs, such as methadone or fentanyl. **Opioid analgesics** are commonly known as prescription pain relievers, such as oxycodone (Percocet®) and hydrocodone (Vicodin®). †For this analysis, opioid analgesics exclude fentanyl.

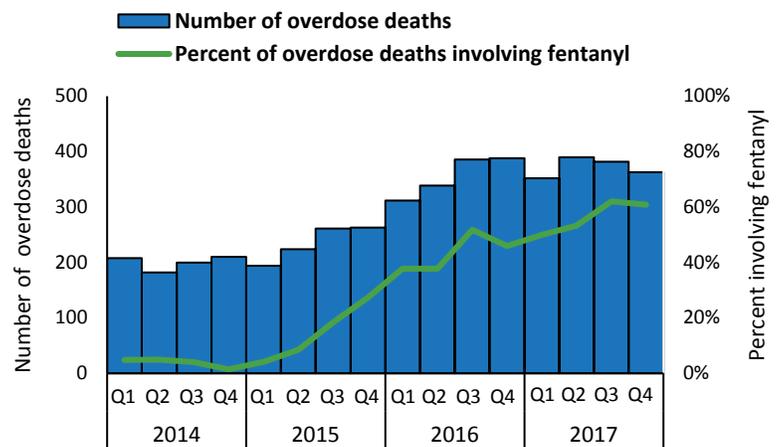
Fentanyl includes fentanyl and fentanyl analogues. Fentanyl analogues, such as acetylfentanyl and furanylfentanyl, are similar in chemical structure to fentanyl. Fentanyl can be one of two types: synthetic opioid analgesics manufactured pharmaceutically to manage severe pain, or non-pharmaceutically manufactured, and sold illicitly.

Drugs involved in overdose deaths, not mutually exclusive; percent will not equal 100%.

Unintentional overdose deaths involving fentanyl

- Fentanyl, a potent opioid that is 50 to 100 times stronger than morphine, drove the increase in overdose deaths for the third consecutive year.
- Fentanyl is increasingly present in overdose deaths. Nearly six in ten (57%) overdose deaths in 2017 involved fentanyl, up from 44% of deaths in 2016.
- The rate of fentanyl-involved overdose death increased 33%, from 9.1 per 100,000 in 2016 to 12.1 per 100,000 in 2017.
- In 2017, 146 overdose deaths involved cocaine and fentanyl, without heroin, an increase from 122 overdose deaths in 2016.
- In 2017, 39% of overdose deaths involving cocaine without heroin also involved fentanyl.

Number and percent of overdose deaths involving fentanyl, New York City, by quarter, 2014 to 2017



Source: NYC Office of the Chief Medical Examiner and NYC DOHMH Bureau of Vital Statistics, 2000-2017; 2017 data are provisional and subject to change.

Shifting demographics of unintentional overdose: race, age, and neighborhood poverty

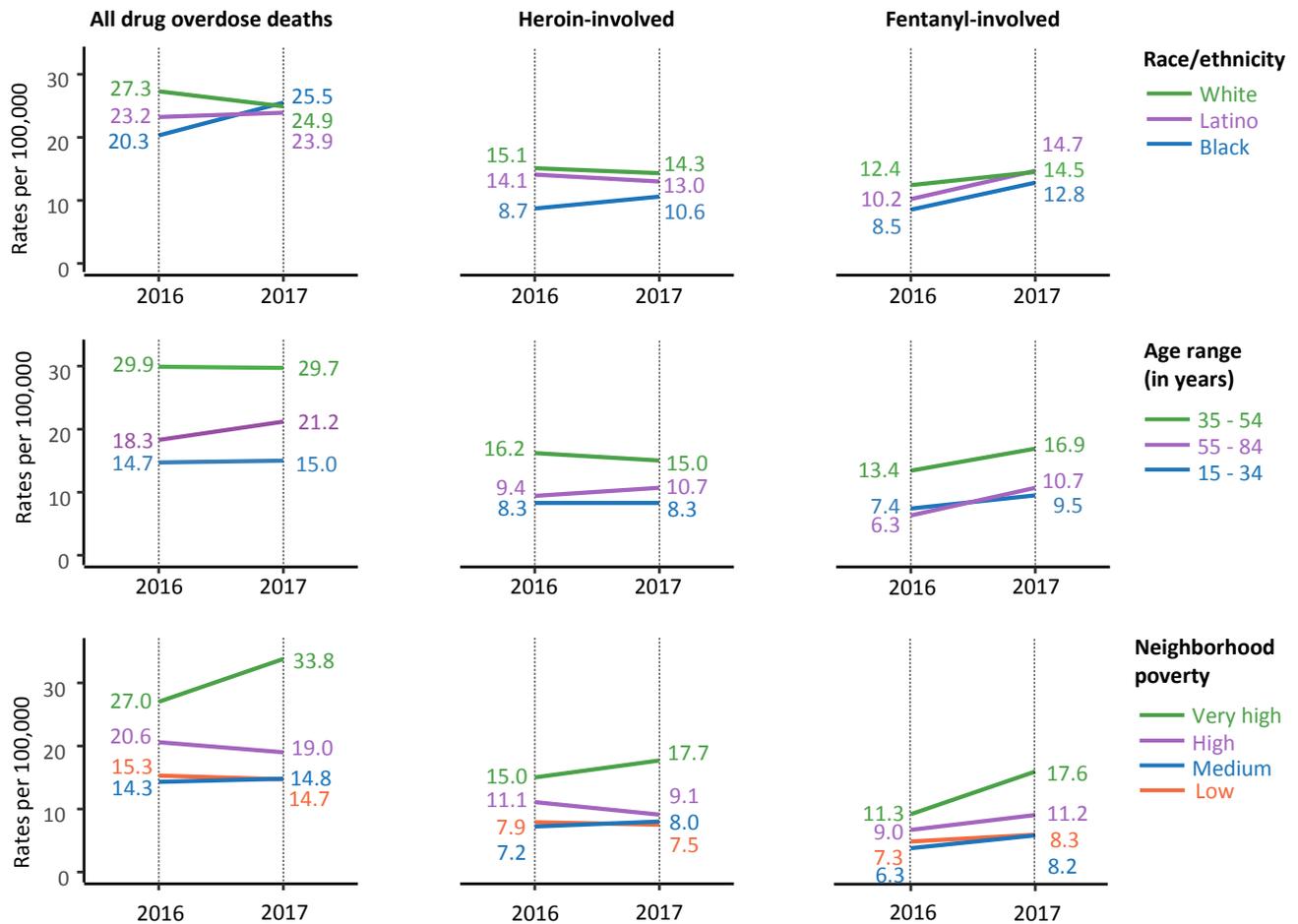
- Although rates of drug overdose death were similar in 2016 and 2017, there were some dramatic shifts in the demographics of individuals dying of drug overdose.
- For the first time in 11 years, rates of overdose death were highest among Black New Yorkers compared with White New Yorkers and Latino New Yorkers.
- Black New Yorkers also had the largest increase in the rate of overdose death from 2016 to 2017. Rates of overdose increased 26% among Black New Yorkers from 20.3 per 100,000 in 2016 to 25.5 per 100,000 in 2017.
- After increasing steadily for six years, overdose rates among White New Yorkers decreased 9% from 27.3 per 100,000 in 2016 to 24.9 per 100,000 in 2017.
- Overdose rates remained the highest among New Yorkers ages 35 to 54 (29.7 per 100,000 residents).
- By age group, the largest increase in the rate of overdose death was among New Yorkers 55 to 84. The rate of overdose death among New Yorkers ages 55 to 84 increased 16%, from 18.3 per 100,000 in 2016 to 21.2 per 100,000 in 2017.
- Residents of very high poverty neighborhoods had a higher rate of overdose death (33.8 per 100,000) than residents of high, medium, and low poverty neighborhoods (19.0, 14.8, and 14.7 per 100,000 respectively).
- Residents of very high poverty neighborhoods also had the largest increase in overdose rates, compared with residents of wealthier neighborhoods. Overdose rates increased 25% from 27.0 per 100,000 in 2016 to 33.8 per 100,000 in 2017 in very high poverty neighborhoods.
- In 2017, the rate of overdose death among residents of very high poverty neighborhood was more than double rates among residents of medium and low poverty neighborhoods.

Definitions:

Race/ethnicity: For the purpose of this publication, Latino includes persons of Hispanic origin based on ancestry reported on the death certificate, regardless of reported race; Latino excludes reported ancestry from non-Spanish speaking Central/South American countries, and non-Spanish speaking Caribbean islands. Black and White race categories do not include persons of Latino origin.

Neighborhood poverty: Based on ZIP code and defined as the percentage of residents with incomes below 100% of the federal poverty level (FPL), per American Community Survey 2007-2011, in four groups: low (<10% FPL), medium (10 %-< 20% FPL), high (20 %-< 30% FPL), and very high (>=30% FPL).

Changes in rates of overdose death from 2016 to 2017, by drug type and demographics, New York City



White and Black race categories exclude Latino ethnicity. Latino includes Hispanic or Latino of any race. Neighborhood poverty (ZIP code) is defined as the percentage of residents with incomes below 100% of the federal poverty level (FPL), per American Community Survey 2007-2011, in four groups: low (<10% FPL), medium (10 %-< 20% FPL), high (20 %-< 30% FPL), and very high poverty (>=30% FPL). Source: NYC Office of the Chief Medical Examiner and NYC DOHMH Bureau of Vital Statistics, 2016-2017; 2017 data are provisional and subject to change.

Unintentional overdose by neighborhood of residence

- In 2017, 14 neighborhoods had overdose mortality rates higher than the city average of 21.2 per 100,000.
- Two neighborhoods in the South Bronx had rates more than double the city average; Highbridge-Morrisania (44.0 per 100,000 and Hunts Point-Mott Haven (46.2 per 100,000). Rates in all three South Bronx neighborhoods increased from 2016 to 2017.
- Three of the four neighborhoods in Staten Island had rates that exceeded the city average. Rates in Port Richmond increased from 2016 to 2017.

14 neighborhoods had drug overdose mortality rates higher than New York City overall in 2017



Neighborhoods: the United Hospital Fund classifies New York City into 42 neighborhoods, comprised of contiguous ZIP codes. See www1.nyc.gov/assets/doh/downloads/pdf/ah/zipcodetable.pdf. Source: NYC Office of the Chief Medical Examiner and NYC DOHMH Bureau of Vital Statistics, 2017; 2017 data are provisional and subject to change. Neighborhood refers to residence of decedent.

COMMENT

- Fentanyl, a synthetic and short-acting opioid analgesic, is 50 to 100 times more potent than morphine and approved for managing acute or chronic pain associated with advanced cancer.¹
- While fentanyl-involved overdoses can be reversed with naloxone, patients may require a higher dose or multiple doses due to fentanyl's high potency.¹
- Most cases of fentanyl-related morbidity and mortality have been linked to non-pharmaceutical fentanyl and fentanyl analogues, not to pharmaceutical fentanyl diverted for misuse.²
- Before 2015, 3% or less of postmortem toxicology on overdose deaths in NYC tested positive for fentanyl; since July 2016, the proportion of overdose deaths involving fentanyl has increased to more than half. This increase in the presence of fentanyl has driven the increase in overdose deaths from 2014 to 2017.
- Nationally, data from public health and law enforcement indicates fentanyl is increasingly mixed with non-opioid drugs, particularly cocaine.³ The presence of fentanyl in cocaine substantially increases risk of overdose for those who are not regular opioid users, but use cocaine.
- People who use drugs may not be aware they are using fentanyl:
 - Survey data collected from syringe exchange program participants in NYC found that most people buying heroin were not intentionally seeking fentanyl, thus were not aware if they had used it.^{4,5}
 - Street-level sellers may not know their drug products contain fentanyl.⁴
 - Thus, individuals who are not aware that they are using fentanyl are at increased risk of overdose. This suggests the need to educate users on risk reduction practices, such as not using alone, taking turns when using, avoiding mixing drugs, and having naloxone on hand.

References:

1. Centers for Disease Control and Prevention. Increases in Fentanyl Drug Confiscations and Fentanyl-related Overdose Fatalities. HAN Health Advisory. October 26, 2015.
2. National Heroin Threat Assessment Summary. DEA Intelligence Report. April 2015.
3. Centers for Disease Control and Prevention. Rising Numbers of Deaths Involving Fentanyl and Fentanyl Analogs, Including Carfentanil, and Increased Usage and Mixing with Non-opioids. HAN Health Advisory. July 11, 2018.
4. An Open Letter to United States Public Health Agencies. Johns Hopkins University and Brown University. May 4, 2016.
5. NYC Department of Health and Mental Hygiene. Unpublished data. May 2016.

Authors: Michelle L. Nolan, Ellenie Tuazon, Jaclyn Blachman-Forshay, Denise Paone

Suggested citation: Nolan ML, Tuazon E, Blachman-Forshay J, Paone D. Unintentional Drug Poisoning (Overdose) Deaths in New York City, 2000 to 2017. New York City Department of Health and Mental Hygiene: Epi Data Brief (104); September 2018.

MORE New York City Health Data and Publications at nyc.gov/health/data

Visit EpiQuery – the Health Department's interactive health data system at nyc.gov/health/EpiQuery

New York City Department of Health and Mental Hygiene





Epi Data Tables

September 2018, No. 104

Unintentional Drug Poisoning (Overdose) Deaths in New York City, 2014 to 2017

Data Tables

Table 1.	Number and rate of unintentional drug poisoning (overdose) deaths, New York City, 2014-2017
Map 1.	Top five New York City neighborhoods: Rates of unintentional drug poisoning (overdose) deaths by neighborhood of residence, 2017
Table 2.	Number and rate of unintentional drug poisoning (overdose) deaths involving opioids New York City, 2014-2017
Map 2.	Top five New York City neighborhoods: Rates of unintentional drug poisoning (overdose) deaths involving opioids by neighborhood of residence, 2017
Table 3.	Number and rate of unintentional drug poisoning (overdose) deaths involving heroin, New York City, 2014-2017
Table 4.	Number and rate of unintentional drug poisoning (overdose) deaths involving opioid analgesics, New York City, 2014-2017
Table 5.	Number and rate of unintentional drug poisoning (overdose) deaths involving fentanyl, New York City, 2017

Data Sources

NYC Office of the Chief Medical Examiner and NYC DOHMH Bureau of Vital Statistics: Mortality data were collected through an in-depth review of data and charts from the Health Department's Bureau of Vital Statistics and the Office of the Chief Medical Examiner for 2000-2017. Data for 2017 are provisional and subject to change.

Rate Calculation: NYC DOHMH population estimates, modified from US Census Bureau intercensal population estimates 2000-2016, updated September 2017. These rates will differ from previously reported rates based on Census counts or previous versions of population estimates. Rates are age-adjusted to Census 2000, except those for specific age groups.

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 2007-2011, in four groups: low (<10%), medium (10 %-< 20%), high (20 %-< 30%), and very high poverty (>=30%).

Table 1. Number and rate of unintentional drug poisoning (overdose) deaths, New York City, 2014-2017*

Source: Bureau of Vital Statistics/Office of the Chief Medical Examiner, New York City; Rates calculated using NYC DOHMH population estimates, modified from US Census Bureau intercensal population estimates 2000-2016 updated September 2017. Analysis by Health Department's Bureau of Alcohol and Drug Use Prevention, Care and Treatment.

Rates per 100,000 New Yorkers are age adjusted, except those for specific age groups.

	2014			2015			2016			2017			
	Number	Percent	Rate	Number	Percent	Rate	Number	Percent	Rate	Number	Percent	Rate	
Total Unintentional Drug Poisoning Deaths	800	100%	11.7	942	100%	13.7	1425	100%	20.7	1487	100%	21.2	
Gender													
Male	589	74%	18.2	710	75%	21.6	1095	77%	33.3	1171	79%	35.3	
Female	211	26%	5.8	232	25%	6.5	330	23%	9.2	316	21%	8.5	
Race/ethnicity^{††}													
Black (non-Latino)	170	22%	10.5	178	20%	10.9	337	25%	20.3	421	29%	25.5	
Latino	208	27%	11.3	311	34%	16.3	442	32%	23.2	455	32%	23.9	
White (non-Latino)	387	51%	17.5	418	46%	19.4	595	43%	27.3	556	39%	24.9	
Age group (years)													
15-24	51	6%	4.6	71	8%	6.6	100	7%	9.5	73	5%	6.9	
25-34	166	21%	11.0	196	21%	12.9	280	20%	18.3	315	21%	20.5	
35-44	165	21%	14.0	182	19%	15.4	282	20%	24.0	282	19%	24.0	
45-54	232	29%	20.9	278	30%	25.0	400	28%	36.1	395	27%	35.7	
55-64	151	19%	15.6	179	19%	18.2	298	21%	29.9	339	23%	34.1	
65-84	35	4%	3.7	36	4%	3.7	65	5%	6.5	83	6%	8.4	
Age group (years)													
15-34	217	27%	8.3	267	28%	10.3	380	27%	14.7	388	26%	15.0	
35-54	397	50%	17.3	460	49%	20.1	682	48%	29.9	677	46%	29.7	
55-84	186	23%	9.7	215	23%	11.0	363	25%	18.3	422	28%	21.2	
Borough of residence[†]													
Bronx	170	24%	15.5	254	30%	22.6	324	26%	29.3	363	28%	31.9	
Brooklyn	195	27%	9.7	224	27%	10.9	314	25%	14.9	359	27%	17.0	
Manhattan	141	20%	10.4	149	18%	11.1	248	20%	18.1	225	17%	16.8	
Queens	131	18%	6.8	143	17%	7.4	245	20%	12.8	269	20%	13.9	
Staten Island	74	10%	20.7	68	8%	19.0	119	10%	32.5	101	8%	27.3	
Borough of death													
Bronx	182	23%	16.6	274	29%	24.3	358	25%	32.4	400	27%	35.4	
Brooklyn	220	28%	10.8	259	27%	12.5	368	26%	17.5	398	27%	18.9	
Manhattan	184	23%	13.4	189	20%	14.1	340	24%	25.0	318	21%	23.4	
Queens	141	18%	7.3	151	16%	7.9	247	17%	12.9	270	18%	13.9	
Staten Island	73	9%	20.2	69	7%	19.3	112	8%	30.8	101	7%	27.2	
Neighborhood poverty^{†0}													
Low (wealthiest)	143	20%	10.4	135	16%	9.7	216	17%	15.3	208	16%	14.7	
Medium	208	29%	8.1	247	30%	9.5	375	30%	14.3	399	30%	14.8	
High	169	24%	10.6	211	25%	13.3	332	27%	20.6	303	23%	19.0	
Very high	189	27%	16.3	236	28%	19.6	318	26%	27.0	405	31%	33.8	
Drug type^{**}													
Alcohol	359	45%	5.3	373	40%	5.5	551	39%	8.0	605	41%	8.7	
Benzodiazepines	301	38%	4.4	374	40%	5.4	470	33%	6.9	433	29%	6.2	
Cocaine	326	41%	4.8	403	43%	5.8	655	46%	9.5	732	49%	10.5	
Fentanyl	30	4%	0.4	147	16%	2.1	624	44%	9.1	842	57%	12.1	
Heroin	460	58%	6.7	561	60%	8.1	771	54%	11.1	771	52%	11.0	
Methadone	127	16%	1.8	154	16%	2.3	205	14%	2.9	197	13%	2.8	
Opioid Analgesics ^{††}	200	25%	3.0	232	25%	3.4	279	20%	4.0	214	14%	3.1	
Top 5 NYC neighborhoods^{^^}				2016 rate			2017 rate						
				Hunts Point-Mott Haven			Hunts Point-Mott Haven			46.2			
				East Harlem			Highbridge-Morrisania			44.0			
				Stapleton-St. George			East Harlem			39.6			
				Highbridge-Morrisania			Stapleton-St. George			37.4			
				South Beach-Tottenville			Fordham-Bronx Park			37.1			

*Data for 2017 are provisional and are subject to change.

†Percentage of deaths within subgroup are calculated among categories presented.

††For the purpose of this publication, Latino includes persons of Hispanic origin based on ancestry reported on the death certificate, regardless of reported race; Latino excludes reported ancestry from non-Spanish speaking Central/South American countries, and non-Spanish speaking Caribbean islands. Black and White race categories do not include persons of Latino origin.

†0Neighborhood poverty (based on ZIP code) was defined as percent of residents with incomes below 100% of the federal poverty level (FPL) per American Community Survey 2007-2011, in four groups: low (<10%), medium (10%<20%), high (20%<30%), and very high (>=30%).

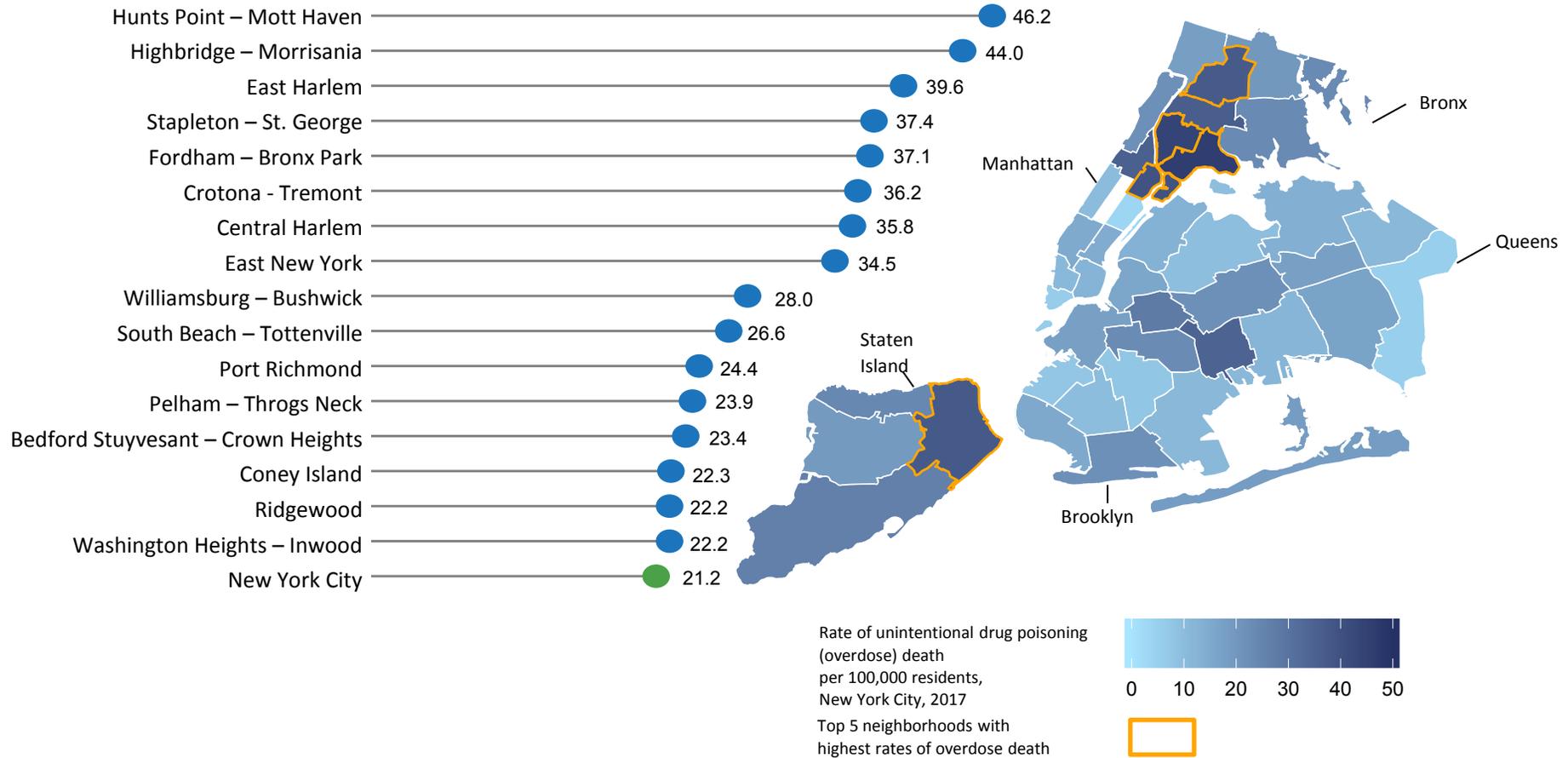
**Drug Type, not mutually exclusive.; percent will not equal 100%. ††For this analysis, opioid analgesics exclude fentanyl.

^^Top five of 42 NYC Neighborhoods. Neighborhood refers to residence of decedent.

Map 1. Top five New York City neighborhoods: Rates of unintentional drug poisoning (overdose) deaths by neighborhood of residence, 2017*

Source: Bureau of Vital Statistics/Office of the Chief Medical Examiner, New York City; Rates calculated using NYC DOHMH population estimates, modified from US Census Bureau intercensal population estimates 2000-2016 updated September 2017. Analysis by Health Department's Bureau of Alcohol and Drug Use Prevention, Care and Treatment.

Neighborhoods with rates of overdose death among residents exceeding the New York City average, 2017



*Data for 2017 are provisional and are subject to change.

^The United Hospital Fund (UHF) classifies New York City into 42 neighborhoods, comprised of contiguous ZIP codes. Neighborhood refers to residence of decedent.

Table 2. Number and rate of unintentional drug poisoning (overdose) deaths involving opioids, New York City, 2014-2017*

Source: Bureau of Vital Statistics/Office of the Chief Medical Examiner, New York City; Rates calculated using NYC DOHMH population estimates, modified from US Census Bureau intercensal population estimates 2000-2016 updated September 2017. Analysis by Health Department's Bureau of Alcohol and Drug Use Prevention, Care and Treatment.

Rates per 100,000 New Yorkers are age adjusted, except those for specific age groups.

	2014			2015			2016			2017*		
	Number	Percent	Rate	Number	Percent	Rate	Number	Percent	Rate	Number	Percent	Rate
Total Unintentional Drug Poisoning Deaths	800	100%	11.7	942	100%	13.7	1425	100%	20.7	1487	100%	21.2
Total Unintentional Drug Poisoning Deaths Involving Opioids	629	79%	9.2	766	81%	11.1	1162	82%	16.9	1216	82%	17.4
Gender												
Male	456	72%	14.1	579	76%	17.6	901	78%	27.3	972	80%	29.3
Female	173	28%	4.7	187	24%	5.2	261	22%	7.3	244	20%	6.6
Race/ethnicity[†]												
Black (non-Latino)	109	18%	6.7	121	16%	7.4	237	21%	14.3	301	26%	18.3
Latino	164	27%	8.9	255	34%	13.3	371	33%	19.4	382	33%	20.1
White (non-Latino)	329	55%	15.0	364	49%	16.9	517	46%	23.9	492	42%	22.0
Age group (years)												
15-24	49	8%	4.4	65	8%	6.0	89	8%	8.4	65	5%	6.2
25-34	140	22%	9.3	176	23%	11.6	237	20%	15.5	278	23%	18.1
35-44	136	22%	11.6	153	20%	13.0	238	20%	20.2	241	20%	20.5
45-54	168	27%	15.1	211	28%	19.0	316	27%	28.6	315	26%	28.5
55-64	112	18%	11.6	133	17%	13.5	236	20%	23.7	259	21%	26.0
65-84	24	4%	2.5	28	4%	2.9	46	4%	4.6	58	5%	5.8
Age group (years)												
15-34	189	30%	7.3	241	31%	9.3	326	28%	12.6	343	28%	13.3
35-54	304	48%	13.3	364	48%	15.9	554	48%	24.3	556	46%	24.4
55-84	136	22%	7.1	161	21%	8.2	282	24%	14.2	317	26%	15.9
Borough of residence[†]												
Bronx	131	24%	12.0	203	30%	18.1	273	27%	24.8	293	27%	25.8
Brooklyn	159	29%	7.9	189	28%	9.1	264	26%	12.5	287	27%	13.7
Manhattan	96	17%	7.1	116	17%	8.7	185	18%	13.6	181	17%	13.5
Queens	105	19%	5.5	115	17%	6.1	183	18%	9.5	219	20%	11.3
Staten Island	66	12%	18.4	56	8%	15.5	103	10%	28.3	92	9%	25.1
Borough of death												
Bronx	140	22%	12.8	221	29%	19.6	299	26%	27.1	328	27%	29.1
Brooklyn	183	29%	9.0	225	29%	10.8	315	27%	14.9	315	26%	15.0
Manhattan	124	20%	8.9	143	19%	10.6	259	22%	19.2	258	21%	19.0
Queens	116	18%	6.0	121	16%	6.4	192	17%	10.1	224	18%	11.5
Staten Island	66	10%	18.2	56	7%	15.4	97	8%	26.8	91	7%	24.8
Neighborhood poverty^{†0}												
Low (wealthiest)	112	20%	8.3	113	17%	8.3	180	18%	12.8	177	17%	12.5
Medium	165	30%	6.4	200	30%	7.7	295	29%	11.2	338	32%	12.6
High	124	22%	7.8	164	24%	10.3	266	27%	16.5	244	23%	15.3
Very High	154	28%	13.3	195	29%	16.2	261	26%	22.2	313	29%	26.1
Top 5 NYC neighborhoods^{^^}												
				2016 rate			2017 rate					
				Hunts Point-Mott Haven			Stapleton-St. George			34.4		
				South Beach-Tottenville			Hunts Point-Mott Haven			34.2		
				Stapleton-St. George			East Harlem			32.9		
				East Harlem			Highbridge-Morrisania			32.6		
				Crotona-Tremont			Fordham-Bronx Park			31.2		

*Data for 2017 are provisional and are subject to change.

†Percentage of deaths within subgroup are calculated among categories presented.

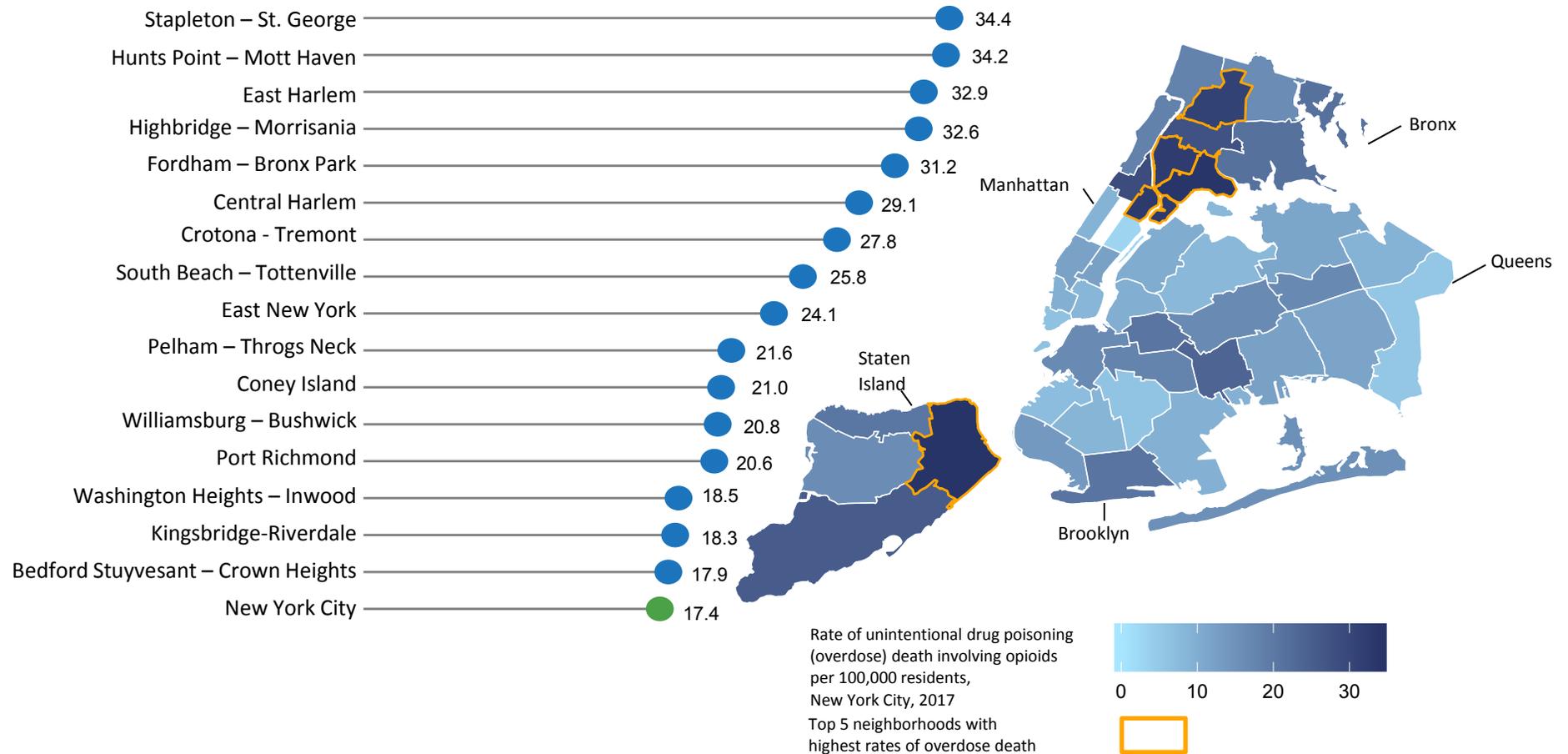
[^]For the purpose of this publication, Latino includes persons of Hispanic origin based on ancestry reported on the death certificate, regardless of reported race; Latino excludes reported ancestry from non-Spanish speaking Central/South American countries, and non-Spanish speaking Caribbean islands. Black and White race categories do not include persons of Latino origin.

⁰Neighborhood poverty (based on ZIP code) was defined as percent of residents with incomes below 100% of the federal poverty level (FPL) per American Community Survey 2007-2011, in four groups: low (<10%), medium (10 %-< 20%), high (20 %-< 30%), and very high (>=30%).

Map 2. Top five New York City neighborhoods: Rates of unintentional drug poisoning (overdose) deaths involving opioids by neighborhood of residence, 2017*

Source: Bureau of Vital Statistics/Office of the Chief Medical Examiner, New York City; Rates calculated using NYC DOHMH population estimates, modified from US Census Bureau intercensal population estimates 2000-2016 updated September 2017. Analysis by Health Department's Bureau of Alcohol and Drug Use Prevention, Care and Treatment.

Neighborhoods with rates of overdose death among residents exceeding the New York City average, 2017



*Data for 2017 are provisional and are subject to change.

^The United Hospital Fund (UHF) classifies New York City into 42 neighborhoods, comprised of contiguous ZIP codes. Neighborhood refers to residence of decedent.

Table 3. Number and rate of unintentional drug poisoning (overdose) deaths involving heroin, New York City, 2014-2017*

Source: Bureau of Vital Statistics/Office of the Chief Medical Examiner, New York City; Rates calculated using NYC DOHMH population estimates, modified from US Census Bureau intercensal population estimates 2000-2016 updated September 2017. Analysis by Health Department's Bureau of Alcohol and Drug Use Prevention, Care and Treatment.

Rates per 100,000 New Yorkers are age adjusted, except those for specific age groups.

	2014			2015			2016			2017*		
	Number	Percent	Rate	Number	Percent	Rate	Number	Percent	Rate	Number	Percent	Rate
Total Unintentional Drug Poisoning Deaths	800	100%	11.7	942	100%	13.7	1425	100%	20.7	1487	100%	21.2
Total Unintentional Drug Poisoning Deaths Involving Heroin	460	58%	6.7	561	60%	8.1	771	54%	11.1	771	52%	11.0
Gender												
Male	350	76%	10.8	438	78%	13.3	619	80%	18.7	630	82%	18.9
Female	110	24%	3.0	123	22%	3.4	152	20%	4.2	141	18%	3.7
Race/ethnicity^{††}												
Black (non-Latino)	81	19%	4.9	89	16%	5.4	149	20%	8.7	177	24%	10.6
Latino	126	29%	6.8	198	37%	10.3	267	36%	14.1	248	33%	13.0
White (non-Latino)	229	53%	10.5	255	47%	11.8	330	44%	15.1	322	43%	14.3
Age group (years)												
15-24	34	7%	3.1	44	8%	4.1	52	7%	4.9	34	4%	3.2
25-34	105	23%	7.0	148	26%	9.7	163	21%	10.6	181	23%	11.8
35-44	95	21%	8.1	111	20%	9.4	151	20%	12.8	158	20%	13.4
45-54	129	28%	11.6	156	28%	14.0	219	28%	19.8	185	24%	16.7
55-64	80	17%	8.3	90	16%	9.1	160	21%	16.1	176	23%	17.7
65-84	17	4%	1.8	12	2%	1.2	26	3%	2.6	37	5%	3.7
Age group (years)												
15-34	139	30%	5.3	192	34%	7.4	215	28%	8.3	215	28%	8.3
35-54	224	49%	9.8	267	48%	11.7	370	48%	16.2	343	44%	15.0
55-84	97	21%	5.1	102	18%	5.2	186	24%	9.4	213	28%	10.7
Borough of residence[†]												
Bronx	103	26%	9.5	146	30%	12.9	181	27%	16.4	201	30%	17.7
Brooklyn	116	29%	5.7	137	28%	6.6	173	26%	8.2	182	27%	8.6
Manhattan	69	17%	4.9	80	16%	6.0	118	18%	8.6	112	16%	8.1
Queens	71	18%	3.7	84	17%	4.5	121	18%	6.3	128	19%	6.6
Staten Island	42	10%	11.6	39	8%	11.0	68	10%	19.1	58	9%	16.0
Borough of death												
Bronx	112	24%	10.4	165	29%	14.6	203	26%	18.4	221	29%	19.6
Brooklyn	138	30%	6.8	166	30%	8.0	204	26%	9.6	203	26%	9.6
Manhattan	90	20%	6.3	104	19%	7.7	172	22%	12.6	160	21%	11.5
Queens	79	17%	4.1	87	16%	4.6	127	16%	6.6	132	17%	6.8
Staten Island	41	9%	11.2	39	7%	10.9	65	8%	18.3	55	7%	15.3
Neighborhood poverty^{†‡}												
Low (wealthiest)	67	17%	4.9	75	16%	5.5	112	17%	7.9	107	16%	7.5
Medium	120	30%	4.7	141	29%	5.4	187	29%	7.2	215	32%	8.0
High	91	23%	5.7	114	24%	7.2	180	27%	11.1	147	22%	9.1
Very High	121	30%	10.4	150	31%	12.3	176	27%	15.0	212	31%	17.7
Top 5 NYC neighborhoods^{†††}												
				2016 rate			2017 rate					
					25.3						26.4	
					24.8						20.7	
					22.6						20.5	
					21.8						20.1	
					19.9						19.8	

*Data for 2017 are provisional and are subject to change.

†Percentage of deaths within subgroup are calculated among categories presented.

††For the purpose of this publication, Latino includes persons of Hispanic origin based on ancestry reported on the death certificate, regardless of reported race; Latino excludes reported ancestry from non-Spanish speaking Central/South American countries, and non-Spanish speaking Caribbean islands. Black and White race categories do not include persons of Latino origin.

†††Neighborhood poverty (based on ZIP code) was defined as percent of residents with incomes below 100% of the federal poverty level (FPL) per American Community Survey 2007-2011, in four groups: low (<10%), medium (10 %-< 20%), high (20 %-< 30%), and very high (>=30%).

Table 5. Number and rate of unintentional drug poisoning (overdose) deaths involving fentanyl, New York City, 2017*

Source: Bureau of Vital Statistics/Office of the Chief Medical Examiner, New York City; Rates calculated using NYC DOHMH population estimates, modified from US Census Bureau intercensal population estimates 2000-2016 updated September 2017. Analysis by Health Department's Bureau of Alcohol and Drug Use Prevention, Care and Treatment.

Rates per 100,000 New Yorkers are age adjusted, except those for specific age groups.

	Unintentional drug poisoning (overdose) deaths involving fentanyl			Unintentional drug poisoning (overdose) deaths involving fentanyl, no heroin			Unintentional drug poisoning (overdose) deaths involving fentanyl and/or heroin			Unintentional drug poisoning (overdose) deaths involving fentanyl, cocaine, no heroin		
	Number	Percent	Rate	Number	Percent	Rate	Number	Percent	Rate	Number	Percent	Rate
Total Unintentional Drug Poisoning Deaths	1487	100%	21.2	1487	100%	21.2	1487	100%	21.2	1487	100%	21.2
Total Unintentional Drug Poisoning Deaths by Drug Type	842	57%	12.1	311	21%	4.5	1082	73%	15.5	146	10%	2.2
Gender												
Male	697	83%	21.0	256	82%	7.8	886	82%	26.7	114	78%	3.5
Female	145	17%	3.9	55	18%	1.5	196	18%	5.2	32	22%	0.9
Race/ethnicity^{†^}												
Black (non-Latino)	210	26%	12.8	91	30%	5.6	268	26%	16.2	52	37%	3.3
Latino	279	34%	14.7	102	34%	5.4	350	33%	18.4	54	38%	2.9
White (non-Latino)	327	40%	14.5	107	36%	4.8	429	41%	19.1	35	25%	1.6
Age group (years)												
15-34	245	29%	9.5	89	29%	3.4	304	28%	11.7	35	24%	1.4
35-54	385	46%	16.9	154	50%	6.7	497	46%	21.8	79	54%	3.5
55-84	212	25%	10.7	68	22%	3.4	281	26%	14.1	32	22%	1.6
Borough of residence[†]												
Bronx	200	27%	17.6	63	24%	5.5	264	28%	23.2	30	24%	2.8
Brooklyn	193	26%	9.1	66	25%	3.1	248	26%	11.8	23	18%	1.1
Manhattan	130	18%	9.7	50	19%	3.9	162	17%	12.0	30	24%	2.3
Queens	146	20%	7.5	62	23%	3.3	190	20%	9.8	30	24%	1.6
Staten Island	62	8%	17.2	27	10%	7.2	85	9%	23.2	12	10%	3.2
Borough of death												
Bronx	230	27%	20.4	77	25%	6.9	298	28%	26.4	39	27%	3.7
Brooklyn	214	25%	10.2	73	23%	3.6	276	26%	13.2	25	17%	1.2
Manhattan	188	22%	13.8	72	23%	5.4	232	21%	16.9	40	27%	3.1
Queens	148	18%	7.5	61	20%	3.1	193	18%	9.9	29	20%	1.5
Staten Island	62	7%	17.2	28	9%	7.4	83	8%	22.7	13	9%	3.4
Neighborhood poverty^{*0}												
Low (wealthiest)	118	16%	8.3	53	20%	3.8	160	17%	11.3	24	19%	1.7
Medium	224	31%	8.2	72	27%	2.7	287	30%	10.7	34	27%	1.3
High	178	24%	11.2	73	27%	4.6	220	23%	13.8	41	33%	2.6
Very High	211	29%	17.6	70	26%	5.9	282	30%	23.6	26	21%	2.3

*Data for 2017 are provisional and are subject to change.

[^]For the purpose of this publication, Latino includes persons of Hispanic origin based on ancestry reported on the death certificate, regardless of reported race; Latino excludes reported ancestry from non-Spanish speaking Central/South American countries, and non-Spanish speaking Caribbean islands. Black and White race categories do not include persons of Latino origin.

[†]Percentage of deaths within subgroup are calculated among categories presented.

⁰Neighborhood poverty (based on ZIP code) was defined as percent of residents with incomes below 100% of the federal poverty level (FPL) per American Community Survey 2007-2011, in four groups: low (<10%), medium (10 %-< 20%), high (20 %-< 30%), and very high (>=30%).