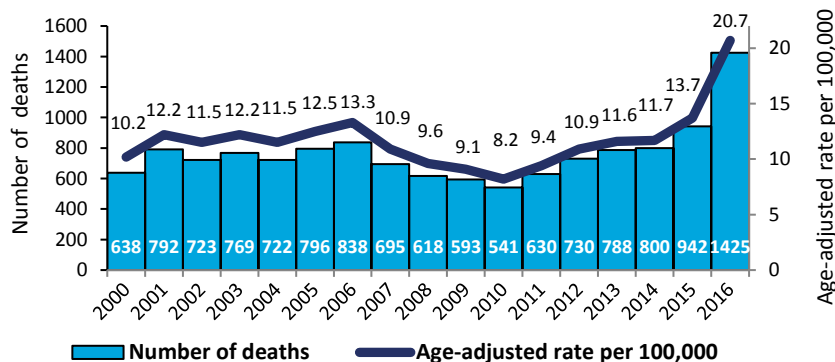


## Unintentional Drug Poisoning (Overdose) Deaths in New York City, 2000 to 2016

- In 2016, there were 1,425 unintentional drug overdose deaths in New York City (NYC) compared with 942 unintentional drug overdose deaths in 2015, an increase of 488.
- On average, there were nearly four drug overdose deaths each day in New York City in 2016.
- The rate of unintentional drug overdose death increased for the sixth consecutive year, from 8.2 per 100,000 residents in 2010 to 20.7 per 100,000 residents in 2016, a 152% increase.

### Unintentional overdose deaths, New York City, 2000 to 2016



Sources: NYC Office of the Chief Medical Examiner and NYC DOHMH Bureau of Vital Statistics, 2000-2016

- In 2016, the rate of overdose deaths involving any substance was highest among Staten Island residents, increasing 71% from 2015 (32.5 per 100,000 in 2016, 19.0 per 100,000 residents in 2015).
- The Bronx had the second highest rate (29.3 per 100,000, up from 22.6 per 100,000 in 2015, a 30% increase) but had the largest number (324) of overdose deaths.
- Black New Yorkers had the largest increase (86%) compared with all other races/ethnicities. The rate increased from 10.9 per 100,000 residents in 2015 to 20.3 per 100,000 residents in 2016.
- In 2016, nearly all (97%) overdose deaths involved more than one substance. More than eight in ten (82%) overdose deaths involved an opioid.
- Heroin was involved in 771 (54%) of all overdose deaths in NYC in 2016, making it the most common substance involved in overdose deaths. Opioid analgesics, excluding fentanyl, were involved in 279 (20%) of overdose deaths in 2016.

#### Data Source:

NYC Office of the Chief Medical Examiner and NYC DOHMH Bureau of Vital

**Statistics:** Mortality data for 2000-2016 were collected through an in-depth review of data and charts from DOHMH Bureau of Vital Statistics and NYC Office of the Chief Medical Examiner.

**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.

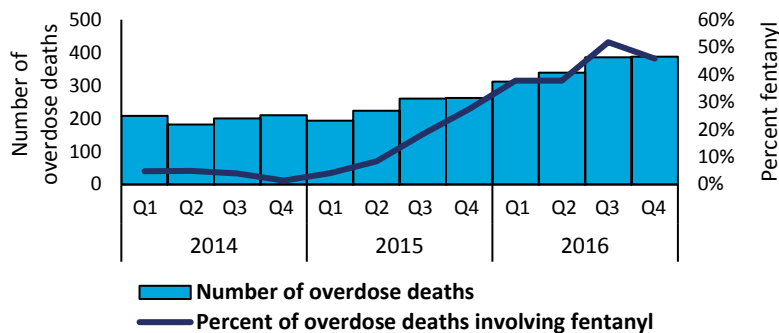
**Race/ethnicity:** For the purpose of this publication, Latino includes persons of Hispanic origin based on ancestry reported on the death certificate, regardless of reported race; Latino excludes reported ancestry from non-Spanish speaking Central/South American countries, and non-Spanish speaking 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).

### Unintentional overdose deaths involving any fentanyl

- Fentanyl, a potent opioid that is 50 to 100 times stronger than morphine, drove the increase in overdose deaths from 2015 to 2016.
- In 2016, fentanyl was involved in 44% of all overdose deaths.
- Since 2015, the percent of overdose deaths involving fentanyl has increased nearly every quarter.
- Between 2015 and 2016, the total number of overdoses increased in proportion to the increase in the percentage of overdose deaths involving fentanyl.

**Number of drug overdose deaths and percent of overdose deaths involving fentanyl, New York City, by quarter, 2014-2016**

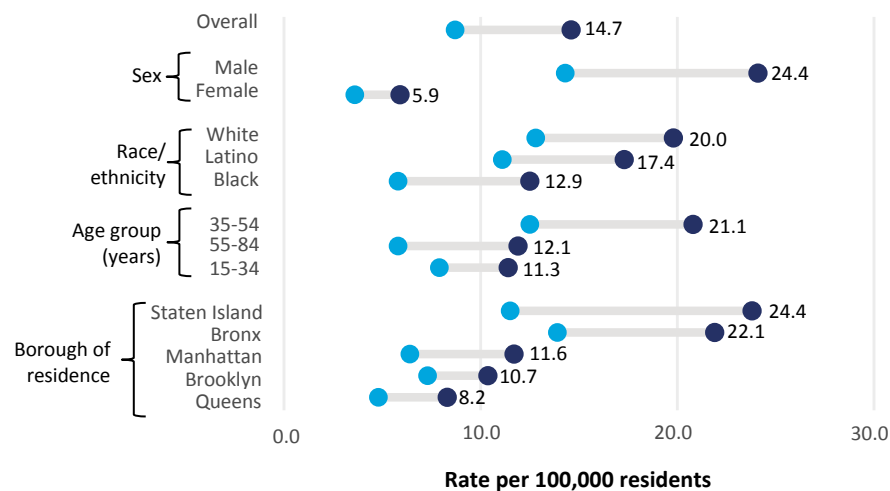


Source: NYC Office of the Chief Medical Examiner and NYC DOHMH Bureau of Vital Statistics, 2000-2016

### Unintentional overdose deaths involving heroin and/or fentanyl

- Nearly three quarters (71%) of all overdose deaths involved heroin and/or fentanyl (14.7 per 100,000 residents) in 2016.
- In 2016, fentanyl was involved in half of overdoses involving heroin (50%).
- From 2015 to 2016, rates of overdoses involving heroin and/or fentanyl increased among all demographic groups.
- Groups that had the highest rates of death involving heroin and/or fentanyl in 2015 experienced the greatest increase in 2016 (e.g., males, New Yorkers aged 35 to 54, residents of the Bronx and Staten Island).
- In 2016, the rate was highest among White New Yorkers compared with Latino and Black New Yorkers (20.0 vs. 17.4 and 12.9 per 100,000 respectively).
- In 2016, residents of very high poverty neighborhoods had a higher rate of overdose death involving heroin and/or fentanyl (19.6 per 100,000) than residents of low poverty (10.6 per 100,000) and medium poverty (9.7 per 100,000) neighborhoods.

**Increase in rates of overdose deaths involving heroin and/or fentanyl from 2015 to 2016, New York City**



● 2015 rate ● 2016 rate  
 White and Black race categories exclude Latino ethnicity. Latino includes Hispanic or Latino of any race.  
 Source: NYC Office of the Chief Medical Examiner and NYC DOHMH Bureau of Vital Statistics, 2015-2016

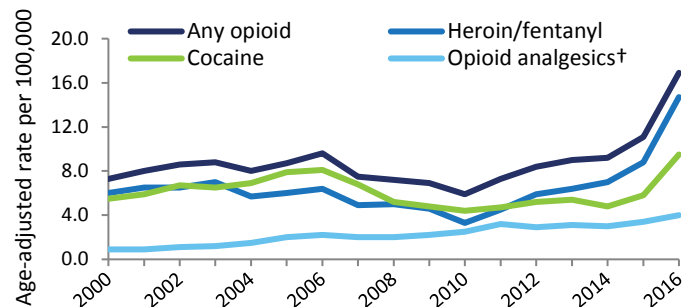
**Authors:** Denise Paone, Michelle L. Nolan, Ellenie Tuazon, Jaclyn Blachman-Forshay

**Suggested citation:** Paone D, Nolan ML, Tuazon E, Blachman-Forshay J. Unintentional Drug Poisoning (Overdose) Deaths in New York City, 2000–2016. New York City Department of Health and Mental Hygiene: Epi Data Brief (89); June 2017.

## Unintentional overdose deaths involving fentanyl and cocaine

- In 2016, 655 (46%) overdose deaths involved cocaine (9.5 per 100,000 residents), a 64% increase from 2015 (5.8 per 100,000 residents).
- In 2015, 10% (n=17) of cocaine-involved overdose deaths that did not involve heroin involved fentanyl. Fentanyl was increasingly present in cocaine-involved overdose deaths that did not involve heroin, increasing to 38% (n=122) in 2016.

### Unintentional overdose deaths by select substances involved, New York City, 2000–2016



†For this analysis, opioid analgesics exclude fentanyl

Sources: NYC Office of the Chief Medical Examiner and NYC DOHMH Bureau of Vital Statistics, 2000-2016

### 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.<sup>1</sup>
- While fentanyl-involved overdoses can be reversed with naloxone, patients may require a higher dose or multiple doses due to fentanyl's high potency.<sup>1</sup>
- While pharmaceutical fentanyl can be diverted for misuse, most cases of fentanyl-related morbidity and mortality have been linked to non-pharmaceutical fentanyl and fentanyl analogues.<sup>2</sup>
- Before 2015, 3% or less of overdose deaths in NYC tested positive for fentanyl on postmortem toxicology; since July 2016, the proportion of overdose deaths involving fentanyl increased to more than half. This increase in the presence of fentanyl has driven the increase in overdose deaths from 2014 to 2016.
- Drug users may not be aware they are using fentanyl:
  - Survey data collected from syringe exchange program participants in NYC found that most drug users buying heroin were not intentionally seeking fentanyl, thus were not aware if they had used it.<sup>3,4</sup>
  - More recently, fentanyl has been found mixed in cocaine products, increasing risk for overdose for those who are not regular opioid users and might be recreational cocaine users.
  - Street-level sellers may not know their drug products contain fentanyl.<sup>3</sup>
  - Thus, drug users that 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.

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. An Open Letter to United States Public Health Agencies. Johns Hopkins University and Brown University. May 4, 2016.

4. NYC Department of Health and Mental Hygiene. Unpublished data. May 2016.

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New York City Department of Health and Mental Hygiene





# Epi Data Tables



June 2017, No. 89

## Unintentional Drug Poisoning (Overdose) Deaths in New York City, 2013 to 2016

### Data Tables

- Table 1.** Number and rate of unintentional drug poisoning (overdose) deaths, New York City, 2013-2016
- Map 1.** Top five New York City neighborhoods: Rates of unintentional drug poisoning (overdose) deaths by neighborhood of residence, 2015 and 2016
- Table 2.** Number and rate of unintentional drug poisoning (overdose) deaths involving heroin, New York City, 2013-2016
- Table 3.** Number and rate of unintentional drug poisoning (overdose) deaths involving fentanyl, New York City, 2016
- Map 2.** Top five New York City neighborhoods: Rates of unintentional drug poisoning (overdose) deaths involving heroin and/or fentanyl by neighborhood of residence, 2015 and 2016

### 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 2000-2016.

**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 (>=30%).

**Table 1. Number and rate of unintentional drug poisoning (overdose) deaths, New York City, 2013-2016**

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.

	2013			2014			2015			2016		
	Number	Percent	Rate	Number	Percent	Rate	Number	Percent	Rate	Number	Percent	Rate
<b>Total Unintentional Drug Poisoning Deaths</b>	<b>788</b>	<b>100%</b>	<b>11.6</b>	<b>800</b>	<b>100%</b>	<b>11.7</b>	<b>942</b>	<b>100%</b>	<b>13.7</b>	<b>1425</b>	<b>100%</b>	<b>20.7</b>
<b>Gender</b>												
Male	570	72%	17.7	589	74%	18.2	710	75%	21.6	1095	77%	33.3
Female	218	28%	6.1	211	26%	5.8	232	25%	6.5	330	23%	9.2
<b>Race/ethnicity<sup>†</sup></b>												
Black (non-Latino)	172	23%	10.6	170	22%	10.5	178	20%	10.9	337	25%	20.3
Latino	222	30%	12.0	208	27%	11.3	311	34%	16.3	442	32%	23.2
White (non-Latino)	358	48%	16.4	387	51%	17.5	418	46%	19.4	595	43%	27.3
<b>Age group (years)</b>												
15-24	45	6%	4.0	51	6%	4.6	71	8%	6.6	100	7%	9.5
25-34	137	17%	9.3	166	21%	11.0	196	21%	12.9	280	20%	18.3
35-44	159	20%	13.6	165	21%	14.0	182	19%	15.4	282	20%	24.0
45-54	251	32%	22.5	232	29%	20.9	278	30%	25.0	400	28%	36.1
55-64	163	21%	17.1	151	19%	15.6	179	19%	18.2	298	21%	29.9
65-84	33	4%	3.6	35	4%	3.7	36	4%	3.7	65	5%	6.5
<b>Age group (years)</b>												
15-34	182	23%	7.0	217	27%	8.3	267	28%	10.3	380	27%	14.7
35-54	410	52%	17.9	397	50%	17.3	460	49%	20.1	682	48%	29.9
55-84	196	25%	10.5	186	23%	9.7	215	23%	11.0	363	25%	18.3
<b>Borough of residence<sup>†</sup></b>												
Bronx	162	24%	14.9	170	24%	15.5	254	30%	22.6	324	26%	29.3
Brooklyn	165	25%	8.2	195	27%	9.7	224	27%	10.9	314	25%	14.9
Manhattan	136	20%	9.7	141	20%	10.4	149	18%	11.1	248	20%	18.1
Queens	145	22%	7.6	131	18%	6.8	143	17%	7.4	245	20%	12.8
Staten Island	64	10%	17.6	74	10%	20.7	68	8%	19.0	119	10%	32.5
<b>Borough of death</b>												
Bronx	184	23%	17.1	182	23%	16.6	274	29%	24.3	358	25%	32.4
Brooklyn	197	25%	9.9	220	28%	10.8	259	27%	12.5	368	26%	17.5
Manhattan	191	24%	13.8	184	23%	13.4	189	20%	14.1	340	24%	25.0
Queens	152	19%	8.0	141	18%	7.3	151	16%	7.9	247	17%	12.9
Staten Island	64	8%	17.5	73	9%	20.2	69	7%	19.3	112	8%	30.8
<b>Neighborhood poverty<sup>†0</sup></b>												
Low (wealthiest)	147	22%	10.6	143	20%	10.4	135	16%	9.7	216	17%	15.3
Medium	183	27%	7.1	208	29%	8.1	247	30%	9.5	375	30%	14.3
High	160	24%	10.0	169	24%	10.6	211	25%	13.3	332	27%	20.6
Very high	181	27%	15.8	189	27%	16.3	236	28%	19.6	318	26%	27.0
<b>Drug type<sup>**</sup></b>												
Alcohol	342	43%	5.0	359	45%	5.3	373	40%	5.5	551	39%	8.0
Benzodiazepines	298	38%	4.4	301	38%	4.4	374	40%	5.4	470	33%	6.9
Cocaine	364	46%	5.4	326	41%	4.8	403	43%	5.8	655	46%	9.5
Heroin	424	54%	6.2	460	58%	6.7	561	60%	8.1	771	54%	11.1
Methadone	169	21%	2.5	127	16%	1.8	154	16%	2.3	205	14%	2.9
Opioid Analgesics <sup>††</sup>	213	27%	3.1	200	25%	3.0	232	25%	3.4	279	20%	4.0
<b>Top 5 NYC neighborhoods<sup>^^</sup></b>				<b>2015 rate</b>			<b>2016 rate</b>					
				Hunts Point-Mott Haven			Hunts Point-Mott Haven			43.0		
				Crotona-Tremont			East Harlem			38.0		
				Willowbrook			Stapleton-St George			37.8		
				Fordham-Bronx Pk			Highbridge-Morrisania			36.0		
				Highbridge-Morrisania			South Beach-Tottenville			35.7		

<sup>†</sup>Percentage of deaths within subgroup are calculated among categories presented.

<sup>†</sup>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.

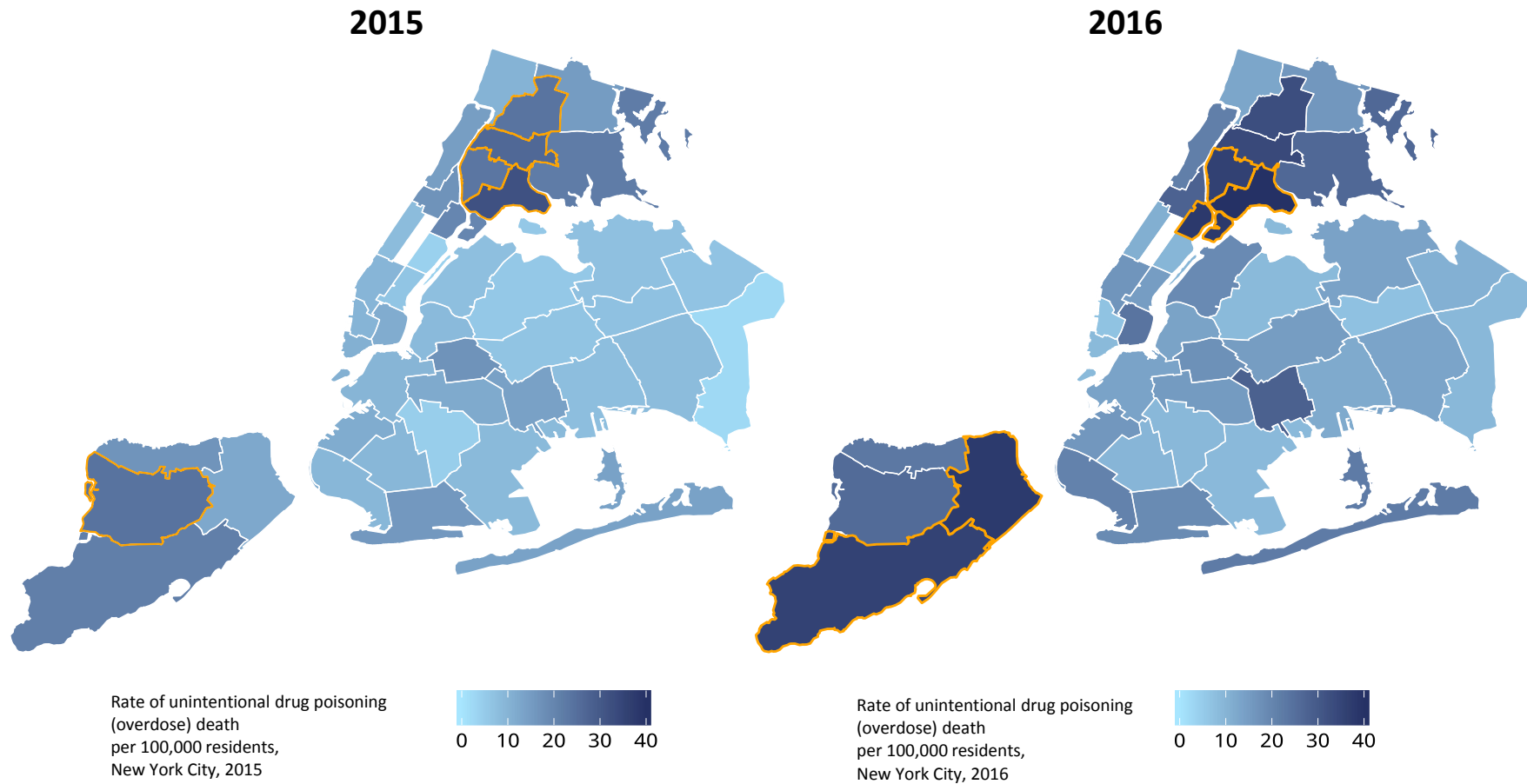
<sup>†0</sup>Neighborhood poverty (based on ZIP code) was defined as percent of residents with incomes below 100% of the federal poverty level (FPL) per American Community Survey 2007-2011, in four groups: low (<10%), medium (10 %-< 20%), high (20 %-< 30%), and very high (>=30%).

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

<sup>^^</sup>Top five of 42 NYC Neighborhoods

**Map 1. Top five New York City neighborhoods: Rates of unintentional drug poisoning (overdose) by neighborhood<sup>^</sup> of residence, 2015 and 2016**

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.



<sup>^</sup>The United Hospital Fund (UHF) classifies New York City into 42 neighborhoods, comprised of contiguous ZIP codes.

**Table 2. Number and rate of unintentional drug poisoning (overdose) deaths involving heroin, New York City, 2013-2016**

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.

	2013			2014			2015			2016		
	Number	Percent	Rate	Number	Percent	Rate	Number	Percent	Rate	Number	Percent	Rate
<b>Total Unintentional Drug Poisoning Deaths</b>	<b>788</b>	<b>100%</b>	<b>11.6</b>	<b>800</b>	<b>100%</b>	<b>11.7</b>	<b>942</b>	<b>100%</b>	<b>13.7</b>	<b>1425</b>	<b>100%</b>	<b>20.7</b>
<b>Total Unintentional Drug Poisoning Deaths Involving Heroin</b>	<b>424</b>	<b>54%</b>	<b>6.2</b>	<b>460</b>	<b>58%</b>	<b>6.7</b>	<b>561</b>	<b>60%</b>	<b>8.1</b>	<b>771</b>	<b>54%</b>	<b>11.1</b>
<b>Gender</b>												
Male	326	77%	10.1	350	76%	10.8	438	78%	13.3	619	80%	18.7
Female	98	23%	2.7	110	24%	3.0	123	22%	3.4	152	20%	4.2
<b>Race/ethnicity<sup>†^</sup></b>												
Black (non-Latino)	64	16%	3.9	81	19%	4.9	89	16%	5.4	149	20%	8.7
Latino	146	36%	7.8	126	29%	6.8	198	37%	10.3	267	36%	14.1
White (non-Latino)	195	48%	8.8	229	53%	10.5	255	47%	11.8	330	44%	15.1
<b>Age group (years)</b>												
15-24	32	8%	2.8	34	7%	3.1	44	8%	4.1	52	7%	4.9
25-34	92	22%	6.2	105	23%	7.0	148	26%	9.7	163	21%	10.6
35-44	84	20%	7.2	95	21%	8.1	111	20%	9.4	151	20%	12.8
45-54	125	29%	11.2	129	28%	11.6	156	28%	14.0	219	28%	19.8
55-64	78	18%	8.2	80	17%	8.3	90	16%	9.1	160	21%	16.1
65-84	13	3%	1.4	17	4%	1.8	12	2%	1.2	26	3%	2.6
<b>Age group (years)</b>												
15-34	124	29%	4.8	139	30%	5.3	192	34%	7.4	215	28%	8.3
35-54	209	49%	9.1	224	49%	9.8	267	48%	11.7	370	48%	16.2
55-84	91	21%	4.9	97	21%	5.1	102	18%	5.2	186	24%	9.4
<b>Borough of residence<sup>†</sup></b>												
Bronx	94	27%	8.7	103	26%	9.5	146	30%	12.9	181	27%	16.4
Brooklyn	84	24%	4.2	116	29%	5.7	137	28%	6.6	173	26%	8.2
Manhattan	61	17%	4.3	69	17%	4.9	80	16%	6.0	118	18%	8.6
Queens	81	23%	4.3	71	18%	3.7	84	17%	4.5	121	18%	6.3
Staten Island	32	9%	8.6	42	10%	11.6	39	8%	11.0	68	10%	19.1
<b>Borough of death</b>												
Bronx	109	26%	10.2	112	24%	10.4	165	29%	14.6	203	26%	18.4
Brooklyn	102	24%	5.1	138	30%	6.8	166	30%	8.0	204	26%	9.6
Manhattan	89	21%	6.3	90	20%	6.3	104	19%	7.7	172	22%	12.6
Queens	91	21%	4.8	79	17%	4.1	87	16%	4.6	127	16%	6.6
Staten Island	33	8%	9.1	41	9%	11.2	39	7%	10.9	65	8%	18.3
<b>Neighborhood poverty<sup>†0</sup></b>												
Low (wealthiest)	78	22%	5.7	67	17%	4.9	75	16%	5.5	112	17%	7.9
Medium	90	26%	3.5	120	30%	4.7	141	29%	5.4	187	29%	7.2
High	73	21%	4.5	91	23%	5.7	114	24%	7.2	180	27%	11.1
Very High	110	31%	9.7	121	30%	10.4	150	31%	12.3	176	27%	15.0
<b>Top 5 NYC neighborhoods<sup>^^</sup></b>												
				2015 rate			2016 rate					
				Hunts Point-Mott Haven			East Harlem			25.3		
				Crotona-Tremont			Hunts Point-Mott Haven			24.8		
				Fordham-Bronx Park			Stapleton-St George			22.6		
				South Beach-Tottenville			South Beach-Tottenville			21.8		
				Highbridge-Morrisania			Willowbrook			19.9		

<sup>†</sup>Percentage of deaths within subgroup are calculated among categories presented.

<sup>^</sup>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.

<sup>0</sup>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 3. Number and rate of unintentional drug poisoning (overdose) deaths involving fentanyl, New York City, 2016**

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
<b>Total Unintentional Drug Poisoning Deaths</b>	<b>1425</b>	<b>100%</b>	<b>20.7</b>	<b>1425</b>	<b>100%</b>	<b>20.7</b>	<b>1425</b>	<b>100%</b>	<b>20.7</b>	<b>1425</b>	<b>100%</b>	<b>20.7</b>
<b>Total Unintentional Drug Poisoning Deaths by Drug Type</b>	<b>624</b>	<b>44%</b>	<b>9.1</b>	<b>242</b>	<b>17%</b>	<b>3.6</b>	<b>1013</b>	<b>71%</b>	<b>14.7</b>	<b>122</b>	<b>9%</b>	<b>1.8</b>
<b>Gender</b>												
Male	498	80%	15.2	186	77%	5.7	805	79%	24.4	92	75%	2.9
Female	126	20%	3.6	56	23%	1.6	208	21%	5.9	30	25%	0.9
<b>Race/ethnicity<sup>†</sup></b>												
Black (non-Latino)	137	23%	8.5	65	28%	4.1	214	22%	12.9	40	34%	2.6
Latino	196	33%	10.2	66	28%	3.4	333	34%	17.4	35	30%	1.8
White (non-Latino)	269	45%	12.4	102	44%	4.9	432	44%	20.0	42	36%	2.0
<b>Age group (years)</b>												
15-34	192	31%	7.4	77	32%	3.0	292	29%	11.3	30	25%	1.2
35-54	306	49%	13.4	111	46%	4.9	481	47%	21.1	66	54%	2.9
55-84	126	20%	6.3	54	22%	2.7	240	24%	12.1	26	21%	1.3
<b>Borough of residence<sup>†</sup></b>												
Bronx	148	27%	13.7	62	29%	5.6	243	28%	22.1	37	34%	3.4
Brooklyn	129	24%	6.1	52	25%	2.5	225	26%	10.7	23	21%	1.1
Manhattan	106	20%	7.7	42	20%	3.0	160	18%	11.6	25	23%	1.8
Queens	95	18%	5.1	35	17%	1.9	156	18%	8.2	14	13%	0.8
Staten Island	63	12%	17.2	20	9%	5.3	88	10%	24.4	9	8%	2.4
<b>Borough of death</b>												
Bronx	162	26%	14.9	67	28%	6.1	270	27%	24.5	36	30%	3.3
Brooklyn	165	26%	7.7	66	27%	3.2	270	27%	12.8	31	25%	1.5
Manhattan	136	22%	10.3	55	23%	4.1	227	22%	16.7	34	28%	2.5
Queens	100	16%	5.4	35	14%	1.9	162	16%	8.5	14	11%	0.8
Staten Island	61	10%	16.7	19	8%	5.0	84	8%	23.4	7	6%	1.8
<b>Neighborhood poverty<sup>*Ø</sup></b>												
Low (wealthiest)	101	19%	7.3	37	18%	2.7	149	17%	10.6	11	10%	0.9
Medium	164	30%	6.3	68	32%	2.5	255	29%	9.7	37	34%	1.4
High	143	26%	9.0	52	25%	3.2	232	27%	14.3	31	29%	2.0
Very High	132	24%	11.3	54	26%	4.6	230	27%	19.6	29	27%	2.5

<sup>†</sup>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.

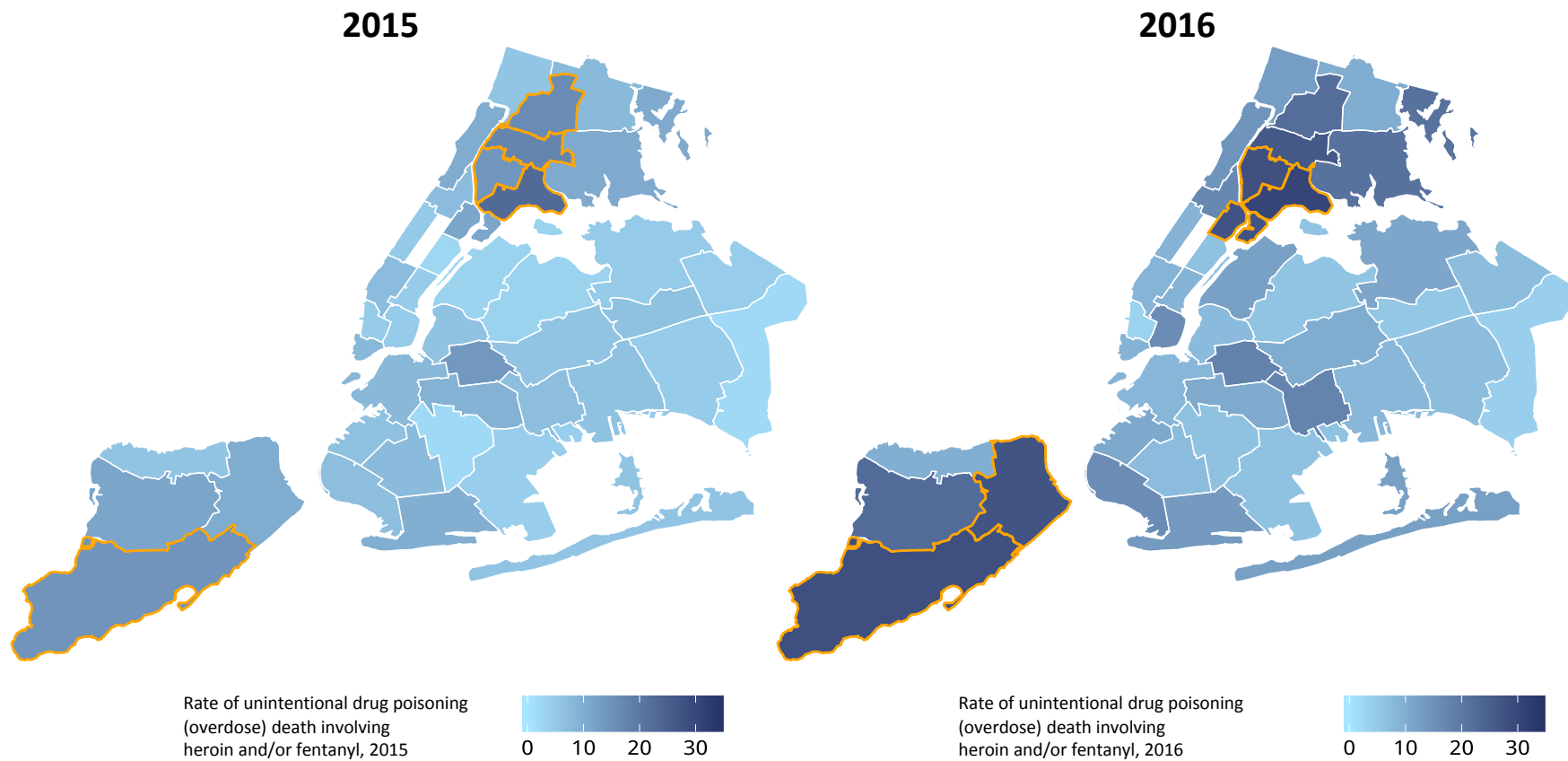
<sup>†</sup>Percentage of deaths within subgroup are calculated among categories presented.

<sup>Ø</sup>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%).



**Map 2. Top five New York City neighborhoods: Rates of unintentional drug poisoning (overdose) involving heroin and/or fentanyl by neighborhood<sup>^</sup> of residence, 2015 and 2016**

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.



<sup>^</sup>The United Hospital Fund (UHF) classifies New York City into 42 neighborhoods, comprised of contiguous ZIP codes.