

Opioid Overdose Surveillance Report

Chicago, 2018



**HEALTHY
CHICAGO**

CHICAGO DEPARTMENT OF PUBLIC HEALTH



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Executive Summary

- In 2018 in Chicago, 793 people died from an opioid-related overdose. For context, this is more than the combined number of people who died from either homicides (n=565) or all traffic crashes (n=132) in Chicago in the same year.
- From 2017 to 2018, the overall opioid-related overdose death rate decreased by 1.4%. Although this rate remains higher than in the rest of Illinois, this change marks the first time since 2015 this rate has declined in Chicago.
- For the first time, in 2018, the number of fentanyl-involved deaths surpassed heroin-involved deaths. About 80% of opioid-related overdose deaths involved fentanyl and another opioid. More than 25% of deaths involved fentanyl only.
- The Chicago Fire Department’s emergency medical services team responded to 8,359 opioid-related overdoses in Chicago in 2018 – an average of 23 responses per day, and an 11% increase from 2017. Most overdoses are not fatal; every overdose is an opportunity to connect a patient to substance use treatment.
- With the number of EMS overdose responses increasing, and the rate of death decreasing from 2017 to 2018, this could suggest more awareness about calling for help during an overdose.

Who is affected by opioid-related overdose deaths?

- In 2018 in Chicago, opioid-related overdose death rates were highest among men; non-Hispanic (NH) Blacks/ African Americans; adults age 55–64; and persons living in communities experiencing high economic hardship. All four groups have experienced an increase in the opioid-related overdose death rate from 2017 to 2018.
- Decreases in the opioid-related overdose death rates from 2017 to 2018 were seen among NH White individuals, women, adults age 35–54, and people in low or medium economic hardship communities.

Where do opioid-related overdose deaths occur?

- Chicago residents who died from an opioid-related overdose in 2018 lived across the city. Seventy-four of Chicago’s 77 community areas were home to at least one resident with a fatal opioid-related overdose.
- Among Chicago residents, the community areas with the most opioid-related overdose deaths in 2018 were Austin (n=65), Humboldt Park (n=40), and North Lawndale (n=31). Only three community areas had zero deaths: Edison Park, Forest Glen and Avalon Park.
- In 2018, EMS responded to opioid overdoses in all 77 community areas, most frequently in Austin (n=1,010), Humboldt Park (n=864), and West Garfield Park (n=745). These three communities accounted for over 30% of all EMS overdose responses.

What types of opioids are involved in opioid-related deaths?

- According to the 2018 Healthy Chicago Survey, 3.2% (about 67,000 adults) of Chicago adults reported prescription opioid pain reliever misuse. Also in 2018, less than 10% of all opioid-related overdose deaths involved prescription opioid pain relievers, most commonly combined with illicit (heroin, fentanyl) opioids. Only 15 deaths involved opioid pain relievers alone (less than 2% of all deaths).
- Deaths involving fentanyl increased by 733% from 71 deaths in 2015 to 620 deaths in 2018. The presence of fentanyl in the Chicago opioid supply continues to add complexity to addressing the opioid epidemic. Further investigation is needed to better understand fentanyl’s role in the market and its introduction into non-opioid illicit substances, like cocaine.
- From 2017 to 2018 the rate of fentanyl-only overdose deaths almost doubled among adults age 55–64.

Opioid-Related Use and Misuse: Opioid Pain Reliever Use and Misuse

- According to the CDPH Healthy Chicago Survey¹ in 2018, 12% (about 254,000 adults) of Chicago adults reported any opioid pain reliever (OPR) use in the past year. Of those, just over one-quarter (26.3%; about 67,000 adults) reported OPR misuse (Table 1).
- OPR misuse can be categorized by using **more** than was prescribed to them by a physician (20.1% of adults who misused) and/or using **without** a prescription (85.9% of adults who misused) (Table 2).
- Both the percentage of adults in Chicago who report using OPRs as well as those who report misuse has remained steady from 2015 to 2018 (Table 2).
- The percentage of Chicago adults who reported OPR misuse was higher among who identified as gay, lesbian or bisexual (7.1%) than those who identified as heterosexual (2.9%). Higher OPR misuse was also reported among non-Hispanic (NH) Blacks (4.9%) than among Latinx (2.2%) and NH Whites (2.7%). There were no significant differences by age, gender, and poverty (Table 2).

TABLE 1 Reported opioid pain reliever use and misuse in the past 12 months among adults—Chicago, 2015-2018

	2015		2016		2017		2018	
	%	95% CI	%	95% CI	%	95% CI	%	95% CI
Used opioid pain relievers (of the total population)	12.8	11.1 - 14.6	12.3	10.5 - 14.1	13.5	12.2 - 14.9	12.0	10.6 - 13.4
Used as directed by physician (of those who used opioid pain relievers)	76.0	69.7 - 83.0	83.0	77.1 - 89.0	79.2	74.6 - 83.8	73.7	67.8 - 79.6
Misused (of those who used opioid pain relievers)	24.0	17.0 - 30.3	17.0	11.0 - 22.9	20.8	16.1 - 25.4	26.3	20.4 - 32.2
Used more than was prescribed (of those who misused)¹	29.0	16.1 - 42.3	39.2	20.4 - 58.1	42.8	30.2 - 55.3	20.1	10.5 - 29.6
Used without a prescription (of those who misused)¹	79.0	68.6 - 90.4	73.9	56.5 - 91.3	70.8	59.0 - 82.6	85.9	77.5 - 94.2

¹Data Source: CDPH Healthy Chicago Survey
¹Individuals may be categorized into both misuse categories

TABLE 2 Reported opioid pain reliever misuse in the past 12 months among adults—Chicago, 2015-2018

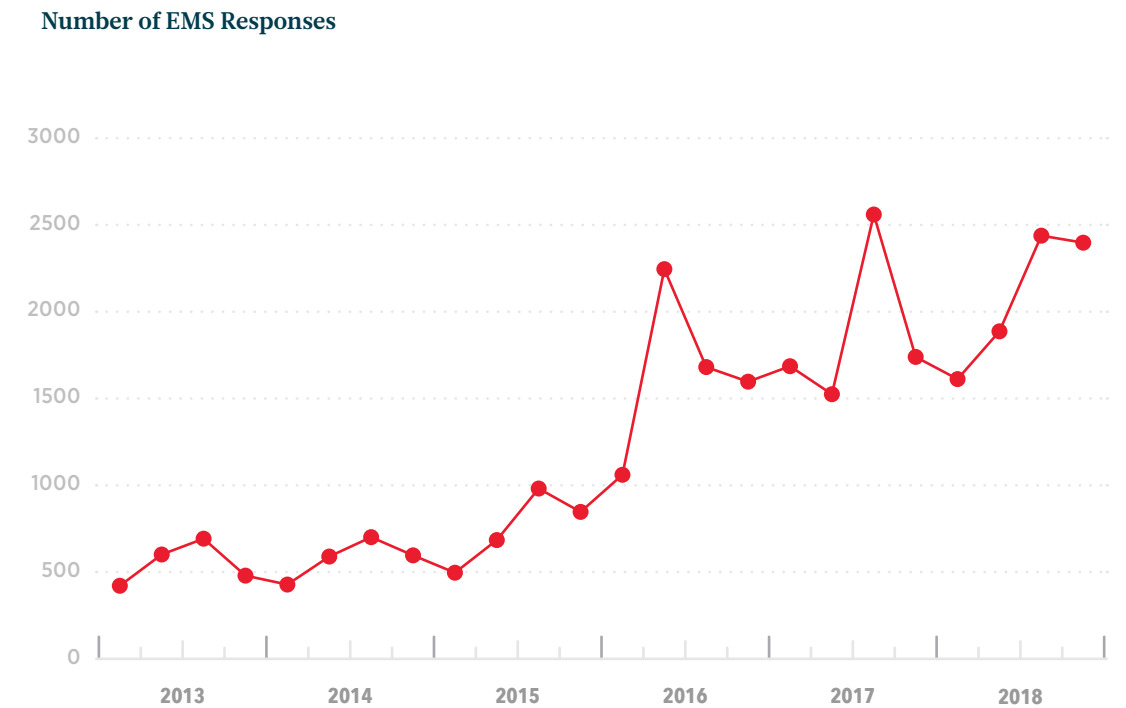
	2015		2016		2017		2018	
	%	95% CI	%	95% CI	%	95% CI	%	95% CI
Chicago	3.0	2.0 - 4.0	2.1	1.3 - 2.9	2.8	2.1 - 3.5	3.2	2.3 - 4.0
Race-Ethnicity								
NH Black or African American	3.9	2.0 - 5.7	2.5*	0.9 - 4.1*	2.6	1.5 - 3.7	4.9	3.2 - 6.7
NH White	3.0	1.3 - 4.8	2.0*	0.8 - 3.3*	2.7	1.6 - 3.9	2.7	1.4 - 3.9
Latinx	2.5*	0.6 - 4.3*	2.6*	0.0 - 6.6*	0.7	0.0 - 1.8	2.2	0.78 - 3.6
NH Asian or Pacific Islander	**	**	**	**	**	**	**	**
Age (years)								
18-29	3.1*	0.8 - 5.3*	3.0*	1.0 - 5.0*	4.6	2.6 - 6.6	3.9	1.9 - 5.9
30-44	4.7	2.4 - 7.0	2.2*	0.7 - 3.6*	2.7	1.5 - 3.9	3.8	2.2 - 5.4
45-64	2.1	1.0 - 3.2	1.5*	0.6 - 2.5*	1.6	0.8 - 2.4	3.0	1.6 - 4.4
65+	1.1*	0.1 - 2.2*	**	**	2.5	1.1 - 4.0	1.0*	0.6 - 2.0*
Gender								
Male	3.3	1.7 - 4.8	2.3	1.1 - 3.5	3.5	2.3 - 4.6	3.8	2.5 - 5.1
Female	2.8	1.5 - 4.1	2.0	0.9 - 3.0	2.2	1.4 - 3.1	2.5	1.5 - 3.6
Poverty Level								
<100%	4.0*	1.6 - 6.4*	3.1*	1.1 - 5.2*	2.2	1.0 - 3.4	3.3*	1.3 - 5.3*
100-199%	2.8*	0.9 - 4.7*	**	**	3.3	1.5 - 5.1	3.0*	1.1 - 4.9*
200-399%	5.7*	1.8 - 9.5*	3.5*	0.3 - 6.7*	4.3*	1.7 - 7.0*	3.3*	0.9 - 5.6*
400%+	2.2*	0.6 - 3.8*	1.1	0.5 - 1.7	2.4	1.3 - 3.5	3.1*	1.7 - 4.5*
Sexual Identity								
Heterosexual	3.0	2.0 - 4.1	1.9	1.1 - 2.7	2.6	1.9 - 3.3	2.9	2.1 - 3.7
Gay, Lesbian or Bisexual	5.5*	0.4 - 10.7*	2.3*	0.5 - 4.1*	6.5*	2.5 - 10.5*	7.1*	2.2 - 12.0*

Data Source: CDPH Healthy Chicago Survey. NH = Non Hispanic.
 * Rates should be interpreted with caution due to small counts or small population denominators which might make the rate unstable when comparing across years
 **Data are suppressed when sample size are extremely small or when parameter estimates such as relative standard error or 95% confidence intervals are deemed to be unfit for display.

Opioid-Related Use and Misuse: EMS Responses For Opioid-Related Overdoses

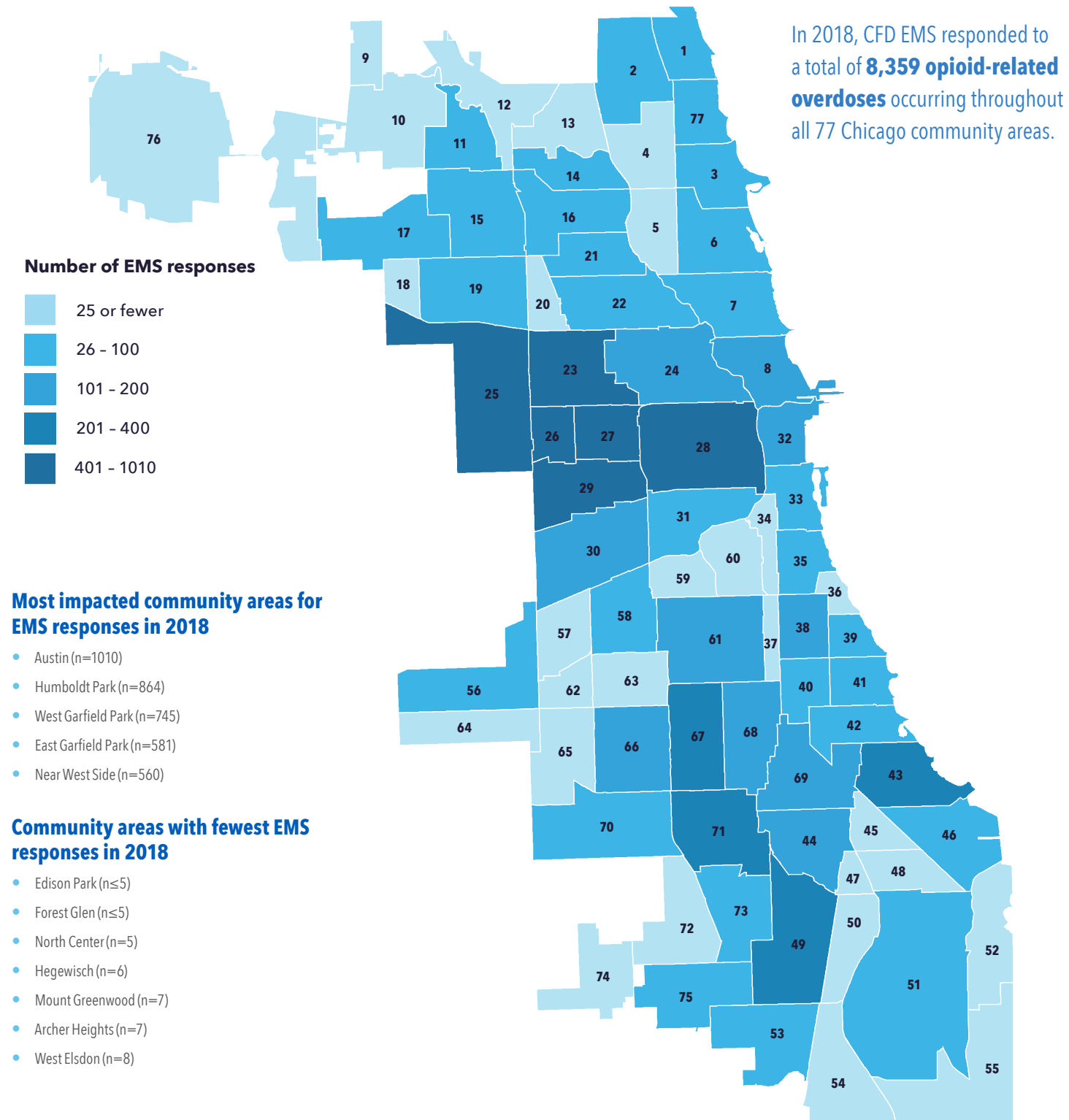
- Chicago Fire Department (CFD) Emergency Medical Services (EMS) responses to opioid-related overdoses² occurring in Chicago increased from 7,526 in 2017 to 8,359 in 2018. There were a total of 385,827 EMS responses (for any reason) in 2018 (Figure 1).
- This was an average of 23 EMS responses for opioid-related overdoses per day in Chicago in 2018.
- CFD had a rate of 2,167 opioid-related overdose responses per 100,000 EMS responses in 2018, which is three times the 2013 rate in Chicago (610.9) and over four times the reported national rate in 2016 (505.2).³
- In 2018, EMS responded to opioid-related overdoses at over 700 different addresses, and there were 30 addresses with 10 or more opioid-related EMS responses. Of these 30 locations, 29 were public street locations and 25 were in East or West Garfield Park (Map 1).

Figure 1 NUMBER OF EMS RESPONSES FOR SUSPECTED OPIOID OVERDOSE BY QUARTER—CHICAGO, 2013-2018



Map 1

CFD EMS RESPONSES FOR OPIOID-RELATED OVERDOSE BY COMMUNITY AREA OF INCIDENT—CHICAGO, 2018



Data Source: Chicago Fire Department
Note: Addresses and community areas are geocoded to location of incident regardless of address of residence.
 *Community area numbers and corresponding names are listed on page 13.

Opioid-Related Overdose Deaths:

Opioid-Related Overdose Deaths in Chicago

- From 2017 to 2018 the overall rate of opioid-related overdose death decreased by 1.4% (Table 3).
- From 2017 to 2018 the rate of fentanyl-involved overdose death increased by 31.6% and fentanyl-only overdoses by 46.2%, while rates decreased for heroin-involved overdoses by 10.0% and opioid pain-reliever involved overdoses by 21.9% (Table 3).
- From 2017 to 2018 the rate of opioid-related overdose death increased among Latinx, NH Blacks, adults 55 and older, and high economic hardship communities, while rates decreased among NH Whites, adults age 35-54, and low or medium economic hardship communities (Table 3).
- At least one opioid was the primary cause of death for all opioid-related overdose deaths. However, polydrug use is common, and it is possible that additional substances could have been involved in the death (e.g. cocaine, alcohol, marijuana).

Gender

- Consistent with previous years, in 2018 the opioid-related overdose death rate was higher among men than among women in Chicago (Figure 1).

Race-Ethnicity

- In 2018, the highest rate of opioid-related overdose death was among NH Black individuals, followed by NH White, Latinx, and NH Asian or Pacific Islander individuals in Chicago (Figure 2).
- From 2017 to 2018, the rate of opioid-related overdose death increased by 4% for NH Black individuals and by 19% for Latinx individuals but decreased by 17% for NH White individuals (Figure 2).

Age

- In 2018, the rate of opioid-related overdose death was highest among adults age 55-64 in Chicago. In previous years, the rate has been consistently highest among adults age 45-54 (Figure 3).
- Since 2015, the rate of opioid-related overdose deaths among adults age 55-64 has doubled (Figure 3).
- From 2017 to 2018, the rate of opioid-related overdose death increased among people age 15-24 and 55-74, and decreased among adults age 35-54 (Figure 3).

Geography

- In 2018, fatal opioid overdoses occurred in 74 of 77 community areas in Chicago (Map 2).
- Three community areas (Austin, Humboldt Park, and North Lawndale) accounted for over 20% of all opioid-related overdose deaths in Chicago in 2018, but only 7% of the Chicago population (Map 2).

TABLE 3 Overdose deaths involving opioids—Chicago, 2015-2018

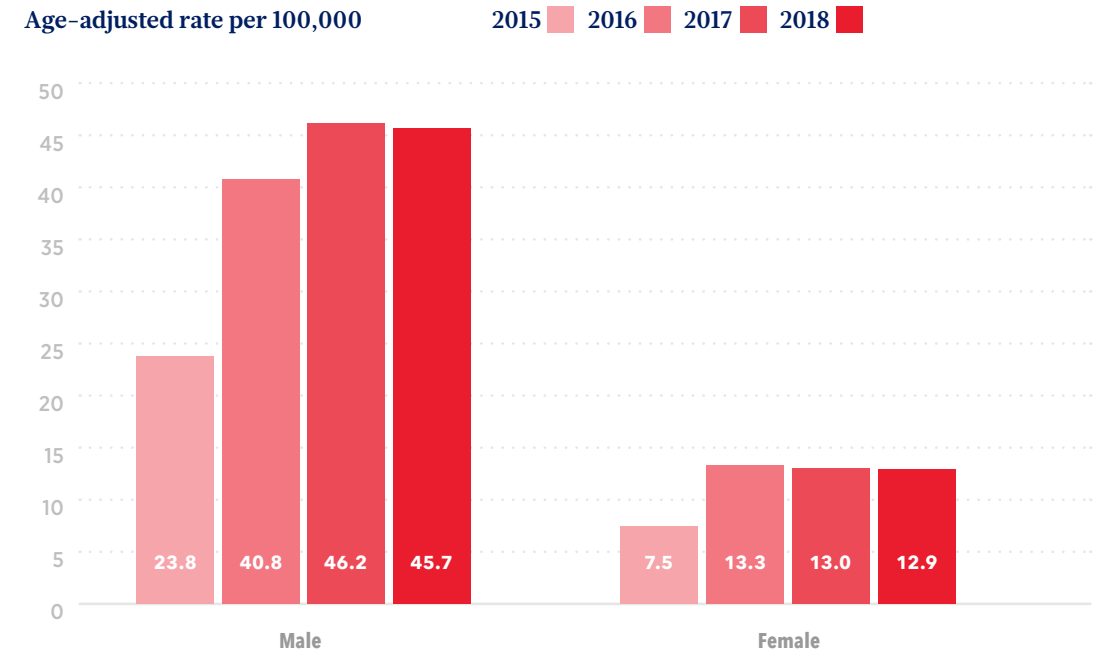
	2015			2016			2017			2018			2017 to 2018	
	n	%	Rate ⁱⁱ	n	%	Rate ⁱⁱ	n	%	Rate ⁱⁱ	n	%	Rate ⁱⁱ	Absolute rate change	% change in rate
Chicago	426	100	15.5	741	100	26.7	796	100	29.1	793	100	28.7	-0.4	-1.4
Drug Typeⁱ														
Heroin-involved	345	81.0	12.4	487	65.7	17.7	575	71.9	21.0	520	65.6	18.9	-2.1	-10
Fentanyl-involved	71*	16.7	2.7	420	56.7	15.1	470	58.7	17.1	620	78.2	22.5	5.4	31.6
Fentanyl - Only	28*	6.57	1.1	196	26.5	7.0	145	18.2	5.2	212	26.7	7.6	2.4	46.2
Opioid pain reliever-involved ⁱⁱⁱ	32**	7.5	1.1	40**	5.4	1.4	86	10.8	3.2	67	8.4	2.5	-0.7	-21.9
Methadone-involved	28	6.6	1.0	48	6.5	1.8	68	8.5	2.6	69	8.7	2.6	0	0
Gender														
Male	322	75.6	23.8	556	75.0	40.8	615	77.3	46.2	612	77.2	46.6	0.4	0.9
Female	104	24.4	7.5	185	25.0	13.3	179	22.5	13.0	181	22.8	12.9	-0.1	-0.8
Race-Ethnicity^{iv}														
NH Black or African American	--	--	--	357	48.4	39.3	403	50.7	43.6	425	53.6	45.5	1.9	4.4
NH White	--	--	--	251	34.1	25.1	293	36.8	29.7	244	30.8	24.6	-5.1	-17.2
Latinx	--	--	--	123	16.7	16.5	96	12.0	13.3	121	15.3	15.8	2.5	18.8
NH Asian or Pacific Islander	--	--	--	6	0.8	3.2 [^]	0	0	0	3	0.38	1.9 [^]	1.9	--
Age (years)^v														
0-14	1	0.2	0.02 [^]	0	0	0	0	0	0	1	0.1	0.02 [^]	0.02	--
15-24	27	6.3	6.7	43	5.8	10.6	34	4.3	8.4	38	4.8	9.4	1.0	11.9
25-34	78	18.3	15.1	151	20.4	29.3	132	16.6	25.6	135	17.0	26.2	0.6	2.3
35-44	89	20.9	23.5	150	20.3	39.7	155	19.5	41.0	152	19.1	40.2	-0.8	-2.0
45-54	121	28.4	35.7	229	31.0	67.6	249	31.4	73.5	224	28.2	66.1	-7.4	-10.1
55-64	96	22.5	36.5	147	19.9	55.9	186	23.4	70.8	202	25.4	76.9	6.1	8.6
65-74	14	3.3	9.3 [^]	18	2.4	11.9 [^]	35	4.4	23.2	39	4.9	25.8	2.6	11.2
75+	0	0	0	1	0.1	0.1 [^]	3	0.4	0.2 [^]	0	0	0	-0.2	--
Economic Hardship in Community Area of Occurrence^{vi}														
Low	140	33.8	12.0	191	26.3	16.4	210	26.6	18.4	204	25.7	17.9	-0.5	-2.7
Medium	89	21.5	11.5	164	22.6	21	197	25.0	25.2	143	18.0	18.0	-7.2	-28.6
High	185	44.7	21.8	372	51.2	44.1	381	48.4	45.6	431	54.2	51.2	5.6	12.3

Data Source: Cook County Medical Examiner's Office, US Census Bureau. Note: NH = Non-Hispanic. Numbers include all opioid-related overdose deaths that occurred in Chicago, regardless of decedent's address of residence.

ⁱ Categories are not mutually exclusive as some deaths involved more than one type of opioid.
ⁱⁱ Rates are expressed as number of overdoses per 100,000 people in the population. Denominators are based on the 2010 census. Rates are age-adjusted to the 2000 US standard population.
ⁱⁱⁱ Opioid pain reliever: buprenorphine, codeine, hydrocodone, hydromorphone, meperidine, morphine, oxycodone, oxymorphone, or tramadol. Opioid pain reliever-involved deaths may also have involved other substances including heroin, fentanyl, or cocaine.
^{iv} Race-ethnicity data is reported by the Cook County Medical Examiner, and was not available to CDPH in 2015. The Cook County Medical Examiner's office assigns race and ethnicity classifications based on information from the funeral home as well as clarification and communication with the decedent's family (when possible).
^v In 2016, 2017, 2018 two deaths were missing data for age.
^{vi} Montiel L, et al. An Update on Urban Hardship. Rockefeller Institute of Govt. August 2004. 2014 5-Year ACS data was used to calculate Neighborhood Economic Hardship at the community area level.
* The Cook County Medical Examiner began routinely testing for fentanyl in June 2015. Therefore, the actual number of fentanyl-involved overdose deaths in 2015 may be greater than reported.
** Expanded toxicology screening was implemented universally by the Cook County Medical Examiner in March 2017. Previously, opioid pain relievers were not tested for universally. Therefore, the number of opioid pain reliever-involved overdose deaths prior to 2017 may be greater than reported.
[^] For counts less than 20, rates may be unstable and should be interpreted with caution.

Figure 1

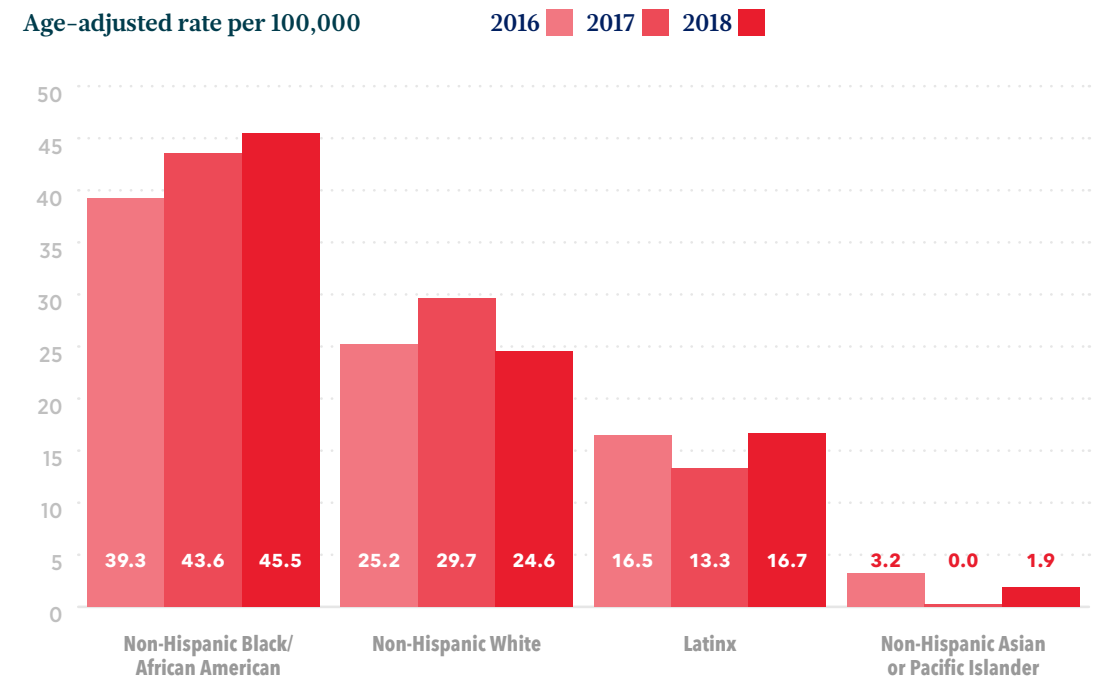
RATE OF OPIOID-RELATED OVERDOSE DEATHS BY GENDER AND YEAR—CHICAGO, 2015 -2018



Data Source: Cook County Medical Examiner's Office, US Census Bureau.
Note: Numbers include all opioid-related overdose deaths that occurred in Chicago, regardless of decedent's address of residence.

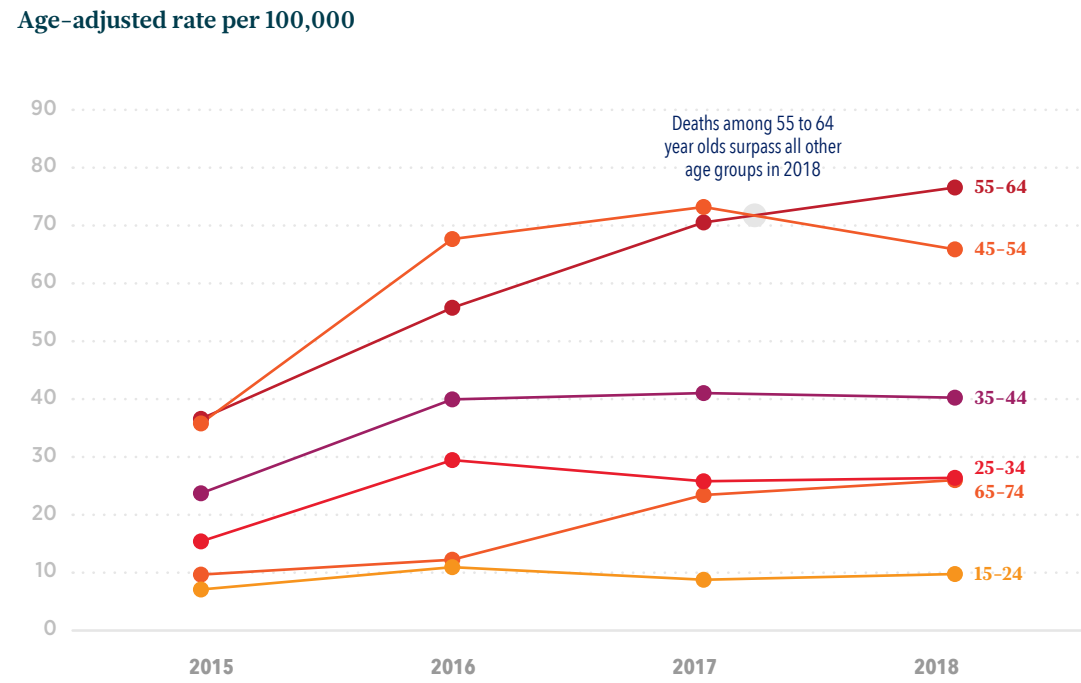
Figure 2

RATE OF OPIOID-RELATED OVERDOSE DEATHS BY RACE-ETHNICITY AND YEAR—CHICAGO, 2016-2018



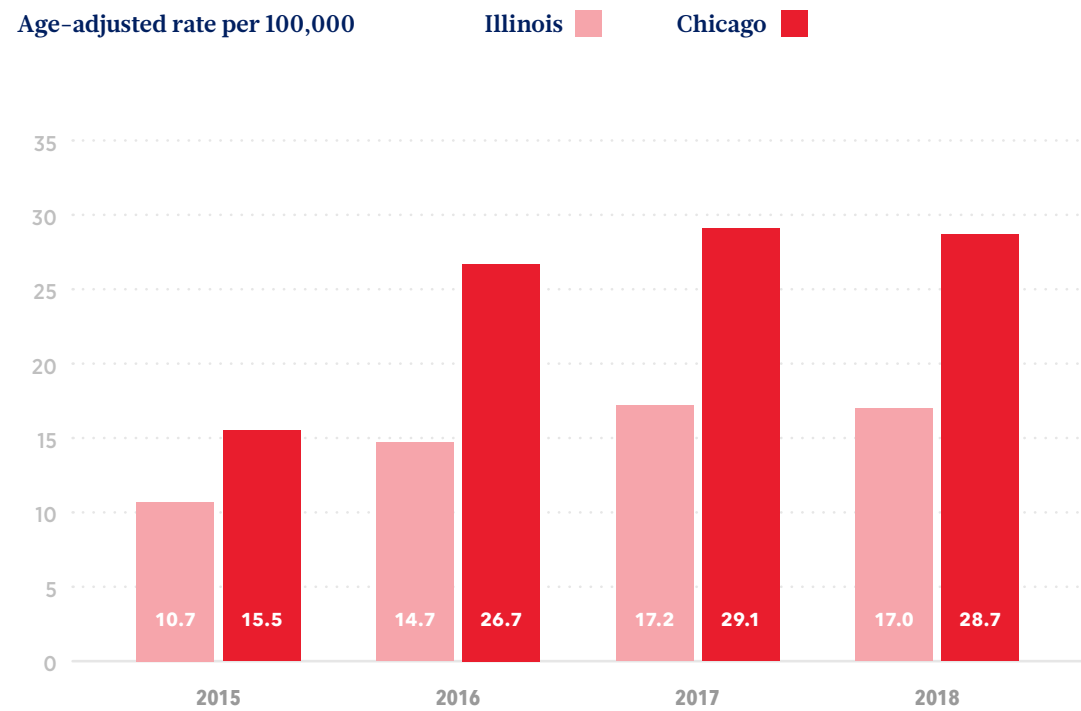
Data Source: Cook County Medical Examiner's Office, US Census Bureau.
Note: Numbers include all opioid-related overdose deaths that occurred in Chicago, regardless of decedent's address of residence.

Figure 3 **RATE OF OPIOID-RELATED OVERDOSE DEATHS BY AGE AND YEAR—CHICAGO, 2015-2018**

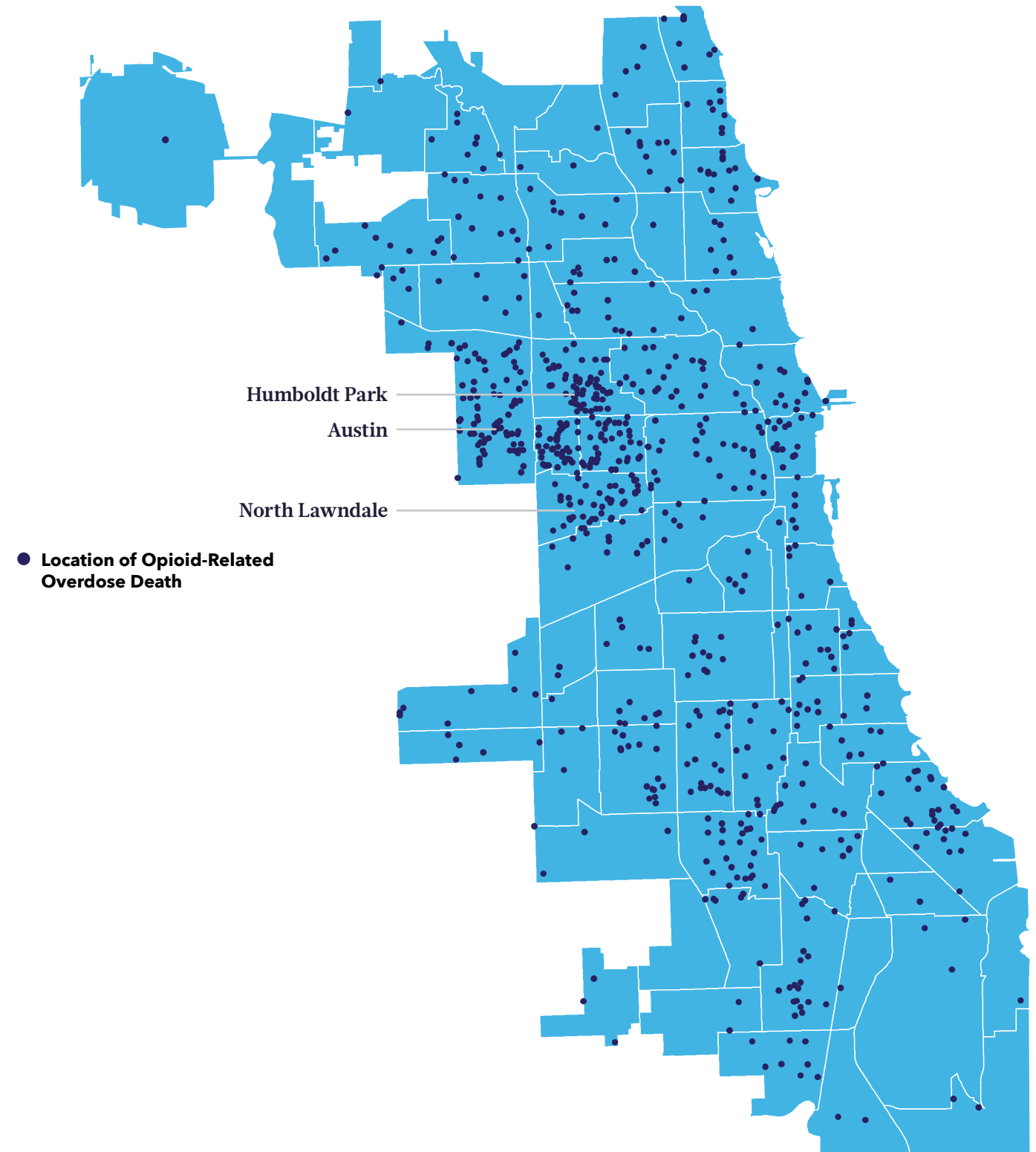


Data Source: Cook County Medical Examiner's Office, US Census Bureau.
 Note: Numbers include all opioid-related overdose deaths that occurred in Chicago, regardless of decedent's address of residence.

Figure 4 **OVERDOSE DEATHS INVOLVING OPIOIDS—CHICAGO COMPARED TO ILLINOIS, 2015-2018**



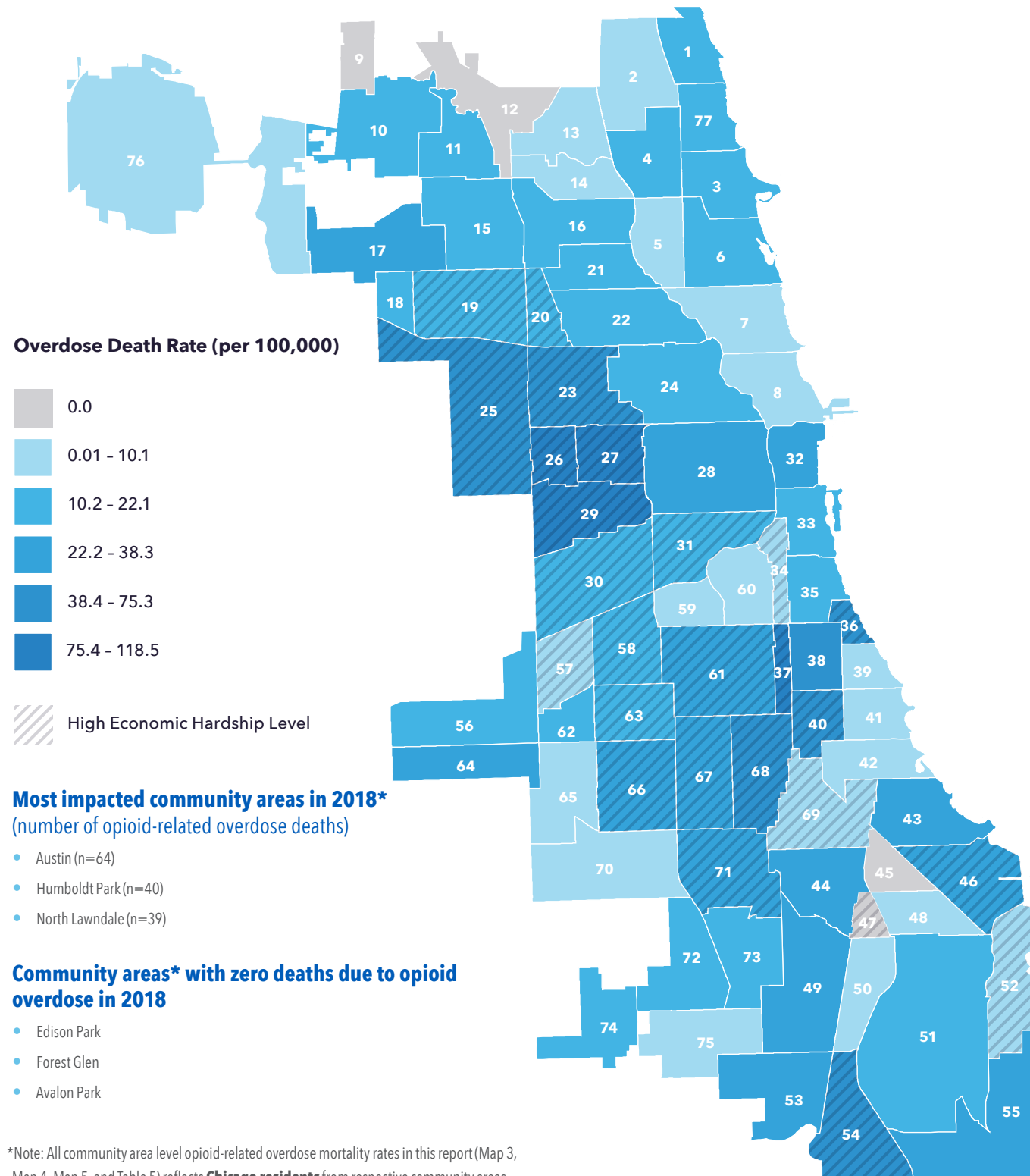
Map 2 **OPIOID-RELATED OVERDOSE DEATHS THAT OCCURRED IN CHICAGO, 2018 (N=793)**



Data Source: Cook County Medical Examiner
 Note: Numbers include opioid-related overdose deaths that occurred. 23 deaths were unable to be geocoded - 7 listed as homeless and 16 with unknown address of residence.
 *Community area numbers and corresponding names are listed on page 16

Map 3

RATE OF OPIOID-RELATED OVERDOSE DEATHS AMONG CHICAGO COMMUNITY AREA OF RESIDENCE*—CHICAGO, 2018 (N=634 CHICAGO RESIDENTS)



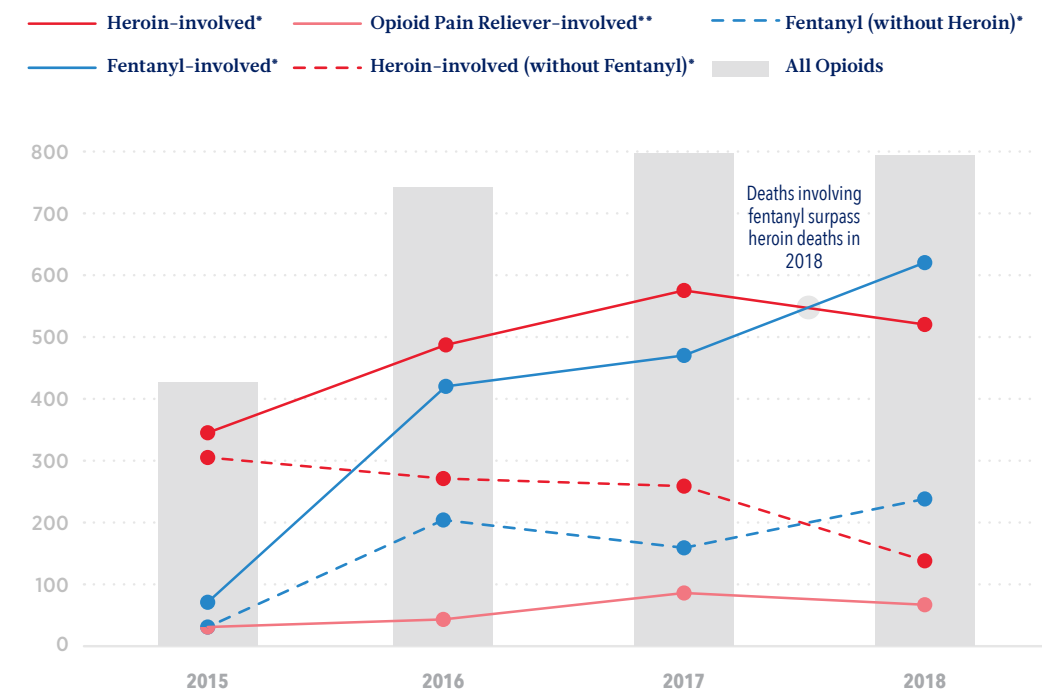
*Note: All community area level opioid-related overdose mortality rates in this report (Map 3, Map 4, Map 5, and Table 5) reflects **Chicago residents** from respective community areas, regardless of where the incident occurred. This is standard practice for reporting health surveillance data and allows for more accurate comparisons between community areas.

*Community area numbers and corresponding names are listed on page 16.

Opioid-Related Overdose Deaths: Opioid-Related Overdose Deaths by Opioid Type

- Fentanyl and heroin continue to drive the epidemic of overdose deaths in Chicago and were involved in over 90% of all opioid-related overdose deaths. 2018 was the first-time fentanyl-involved deaths surpassed heroin-involved deaths (Figure 5).
- The majority (53.0%) of opioid-related overdose deaths involved more than one opioid (Figure 6).
- In 2018, 377 cocaine-involved overdose deaths occurred in Chicago. 73.7% of cocaine-involved deaths involved opioids, suggesting that concurrent use is common. The percentage varied by opioid type with 49.1% cocaine deaths involving heroin, 56.5% involving fentanyl, and 5.8% involving opioid pain reliever (OPR). Additionally, benzodiazepines were involved in 10% of all opioid-related overdose deaths (Figure 7).

Figure 5 **NUMBER OF OPIOID-RELATED OVERDOSE DEATHS BY OPIOID TYPE—CHICAGO, 2015-2018**



Data Source: Cook County Medical Examiner's Office

* Opioid types are not mutually exclusive. Deaths in each category may involve other opioids in addition to 'fentanyl', or 'heroin (without fentanyl)'.
** Opioid pain reliever: buprenorphine, codeine, hydrocodone, hydromorphone, meperidine, morphine, oxycodone, oxymorphone, or tramadol.

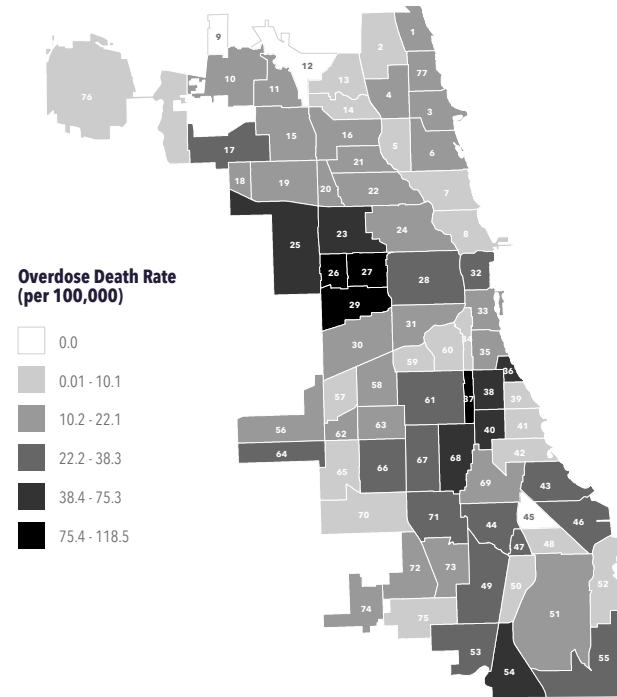
Note: Numbers include all opioid-related overdose deaths that occurred in Chicago, regardless of decedent's address of residence.

Map 4

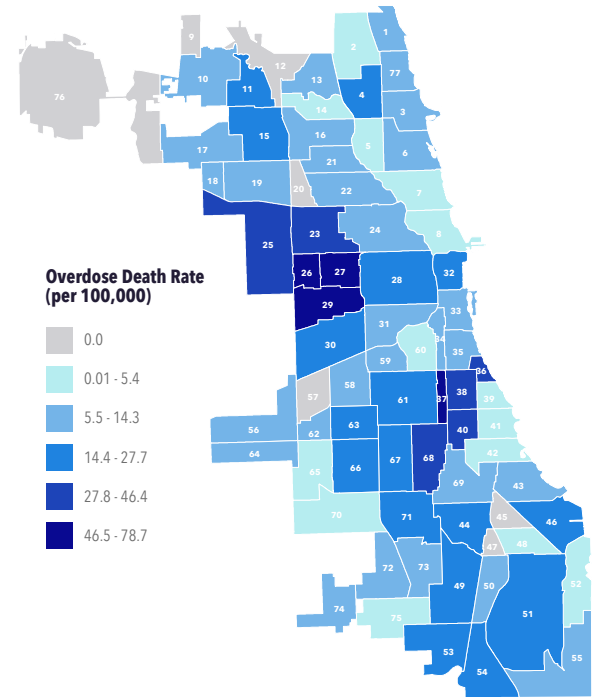
OPIOID-RELATED OVERDOSE DEATH RATE BY OPIOID TYPEⁱ AND COMMUNITY AREA OF RESIDENCEⁱⁱ—CHICAGO, 2018

Range of values differ for each map

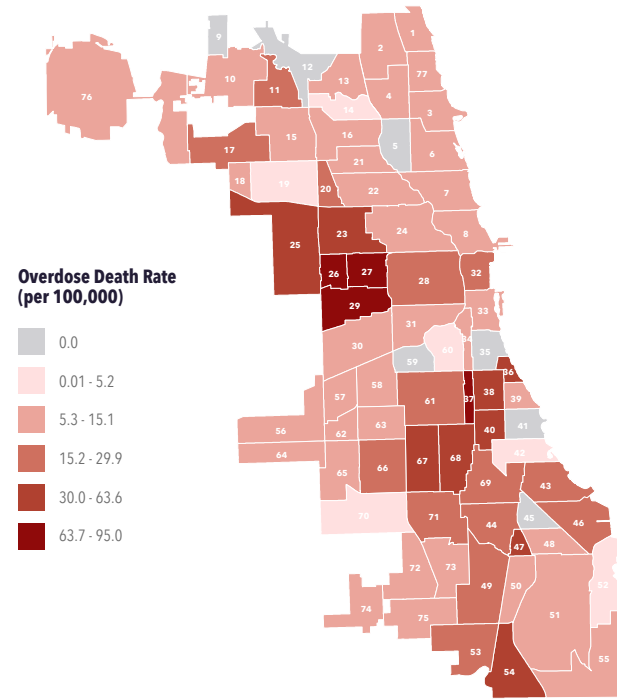
4a ALL OPIOIDS (n=634)



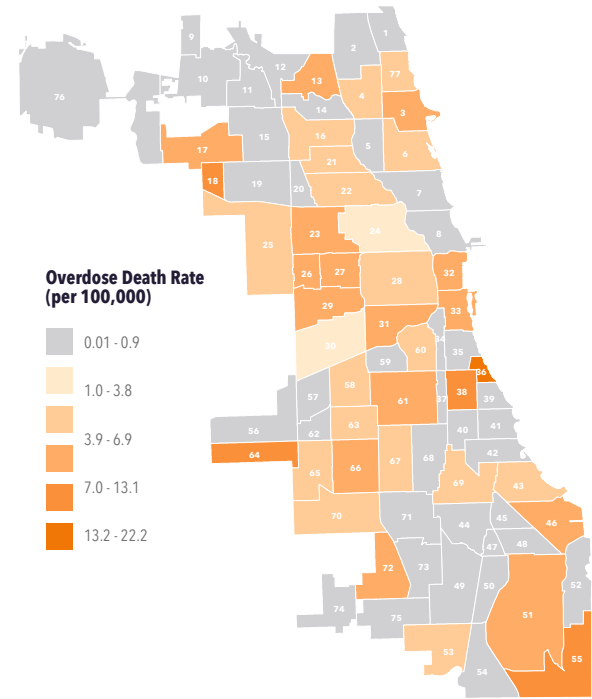
4b HEROIN-INVOLVED (n=413)



4c FENTANYL-INVOLVED (n=486)



4d OPIOID PAIN RELIEVER-INVOLVED (n=58)



- 1 Rogers Park
- 2 West Ridge
- 3 Uptown
- 4 Lincoln Square
- 5 North Center
- 6 Lakeview
- 7 Lincoln Park
- 8 Near North Side
- 9 Edison Park
- 10 Norwood Park
- 11 Jefferson Park
- 12 Forest Glen
- 13 North Park
- 14 Albany Park
- 15 Portage Park
- 16 Irving Park
- 17 Dunning
- 18 Montclare
- 19 Belmont Cragin
- 20 Hermosa
- 21 Avondale
- 22 Logan Square
- 23 Humboldt Park
- 24 West Town
- 25 Austin
- 26 West Garfield Park
- 27 East Garfield Park
- 28 Near West Side
- 29 North Lawndale
- 30 South Lawndale
- 31 Lower West Side
- 32 Loop
- 33 Near South Side
- 34 Armour Square
- 35 Douglas
- 36 Oakland
- 37 Fuller Park
- 38 Grand Blvd
- 39 Kenwood
- 40 Washington Park
- 41 Hyde Park
- 42 Woodlawn
- 43 South Shore
- 44 Chatham
- 45 Avalon Park
- 46 South Chicago
- 47 Burnside
- 48 Calumet Heights
- 49 Roseland
- 50 Pullman
- 51 South Deering
- 52 East Side
- 53 West Pullman
- 54 Riverdale
- 55 Hegewisch
- 56 Garfield Ridge
- 57 Archer Heights
- 58 Brighton Park
- 59 McKinley Park
- 60 Bridgeport
- 61 New City
- 62 West Elsdon
- 63 Gage park
- 64 Clearing
- 65 West Lawn
- 66 Chicago Lawn
- 67 West Englewood
- 68 Englewood
- 69 Greater Grand Crossing
- 70 Ashburn
- 71 Auburn Gresham
- 72 Beverly
- 73 Washington Heights
- 74 Mount Greenwood
- 75 Morgan Park
- 76 O'Hare
- 77 Edgewater

Data Source: Cook County Medical Examiner, US Census Bureau.

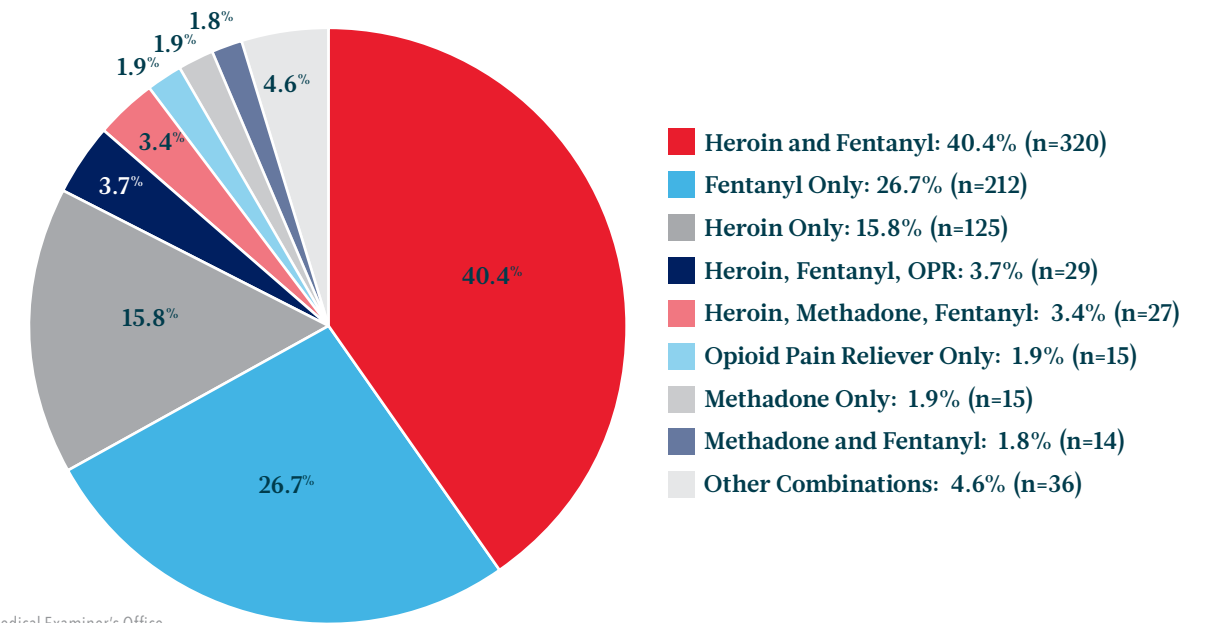
ⁱ Categories are not mutually exclusive as some deaths involved more than one type of opioid.

ⁱⁱ Deaths are geocoded to location of decedent's address of residence regardless of location of overdose incident, which is obtained from a variety of sources including hospital records, police records, family, and government ID by the Cook County Medical Examiner's Office. 23 deaths that occurred in Cook County were unable to be geocoded - 7 listed as homeless, 16 with unknown address of residence.

Figure 6

COMBINATIONS OF OPIOIDS* INVOLVED IN OVERDOSE DEATHS—CHICAGO 2018

*Opioid categories listed below are mutually exclusive. Each category does not involve any other opioids aside from those listed. However, deaths may involve substances other than opioids (e.g. cocaine, alcohol, marijuana), which are not reported here.



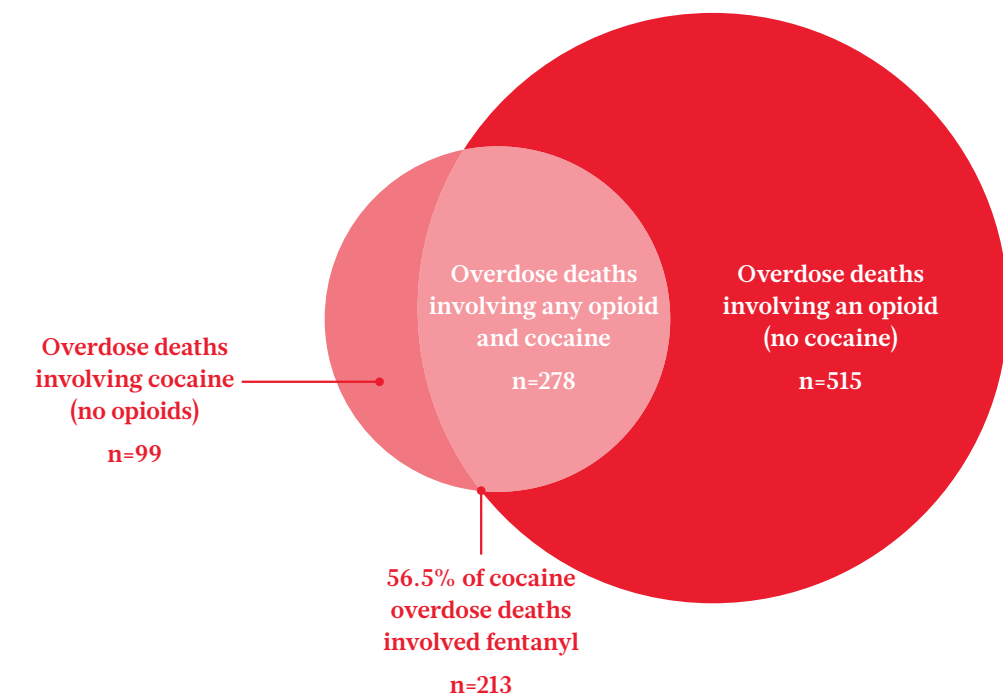
Data Source: Cook County Medical Examiner's Office

Note: Numbers include all opioid-related overdose deaths that occurred in Chicago, regardless of decedent's address of residence.

Figure 7

COCAINE INVOLVEMENT IN OPIOID-RELATED OVERDOSE DEATHS—CHICAGO, 2018

*Deaths may involve substances other than opioids or cocaine (e.g. alcohol, marijuana), which are not reported here



Data Source: Cook County Medical Examiner's Office

Note: Numbers include all opioid-related overdose deaths that occurred in Chicago, regardless of decedent's address of residence.

Opioid-Related Overdose Deaths by Opioid Type: Fentanyl

- The rate of deaths involving fentanyl increased by 733% from 71 deaths in 2015 to 620 deaths in 2018.
- In 2018, 26.7% (n=212) of all opioid-related overdose deaths involved only fentanyl. There were 25 community areas with no fentanyl-only overdose deaths (Map 5).
- The highest rates of fentanyl-only overdose deaths occurred in similar areas that had the highest rates of all opioid-related overdose deaths (Map 5).
- The increased presence of fentanyl in the Chicago opioid supply continues to add complexity to address in the opioid epidemic. Further investigation is needed to better understand the following:
 - To determine if people are intentionally seeking fentanyl, or unknowingly receiving it.
 - Are there barriers to accessing naloxone among people who snort or smoke their drugs, putting them at increase risk for overdose?
 - Fentanyl's role in the market and its introduction into non-opioid illicit substances, like cocaine.

Race-Ethnicity

- From 2016 to 2018, fentanyl-only overdose death rates were the highest among NH Black individuals (Figure 8).
- NH White fentanyl-only overdose death rates have remained steady from 2016 to 2018, but rates have increased for NH Black individuals (Figure 8).

Economic Hardship

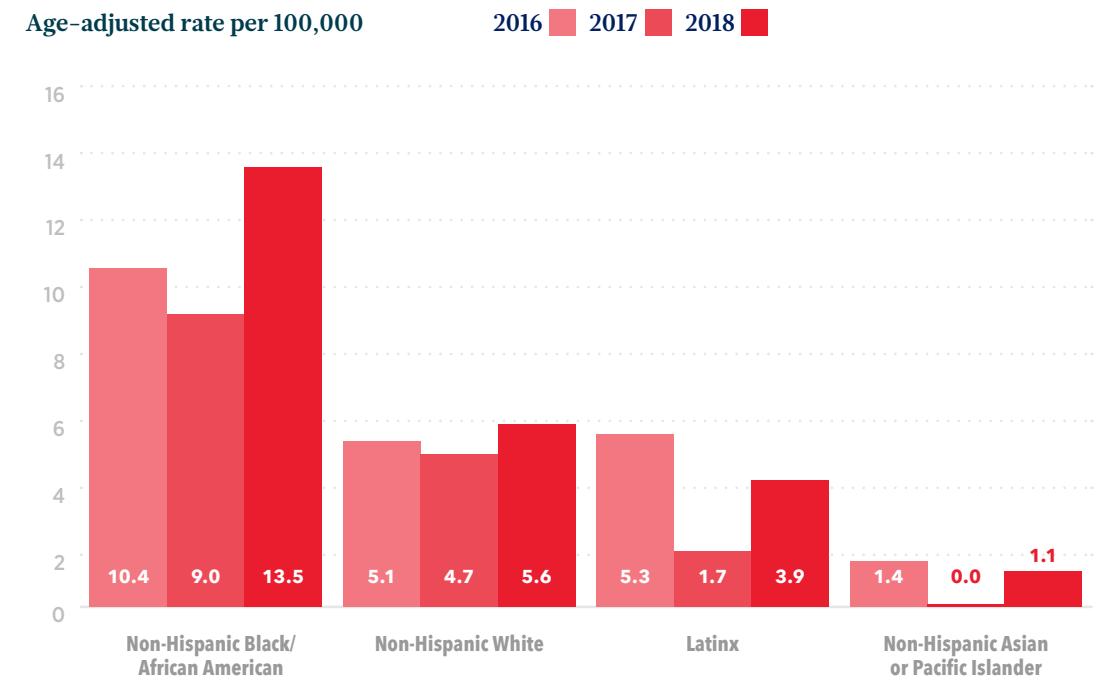
- Fentanyl-only overdose death rates are the highest in community areas experiencing high economic hardship (Figure 9).
- Since 2016 rates have decreased in low and medium economic hardship community areas but increased among high economic hardship community areas (Figure 9).

Age

- Fentanyl-only overdose death rates are the highest among adults age 45-64 (Figure 10).
- From 2017 to 2018 the rate of fentanyl-only overdose death almost doubled among adults age 55-64 and increased by over 80% among those 65-74 years old (Figure 10).

Figure 8

RATE OF FENTANYL-ONLY OVERDOSE DEATHS BY RACE-ETHNICITY AND YEAR—CHICAGO, 2015-2018

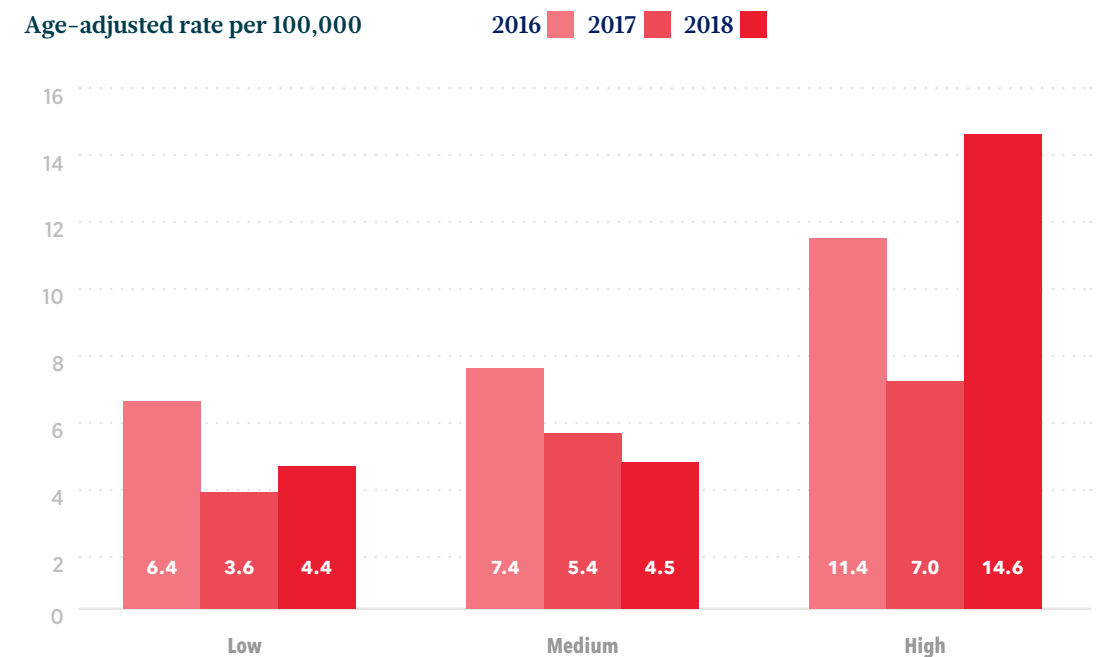


Data Source: Cook County Medical Examiner's Office, US Census Bureau.

Note: Numbers include all opioid-related overdose deaths that occurred in Chicago, regardless of decedent's address of residence.

Figure 9

RATE OF FENTANYL-ONLY OVERDOSE DEATHS BY ECONOMIC HARDSHIP OF COMMUNITY AREA AND YEAR—CHICAGO, 2015-2018

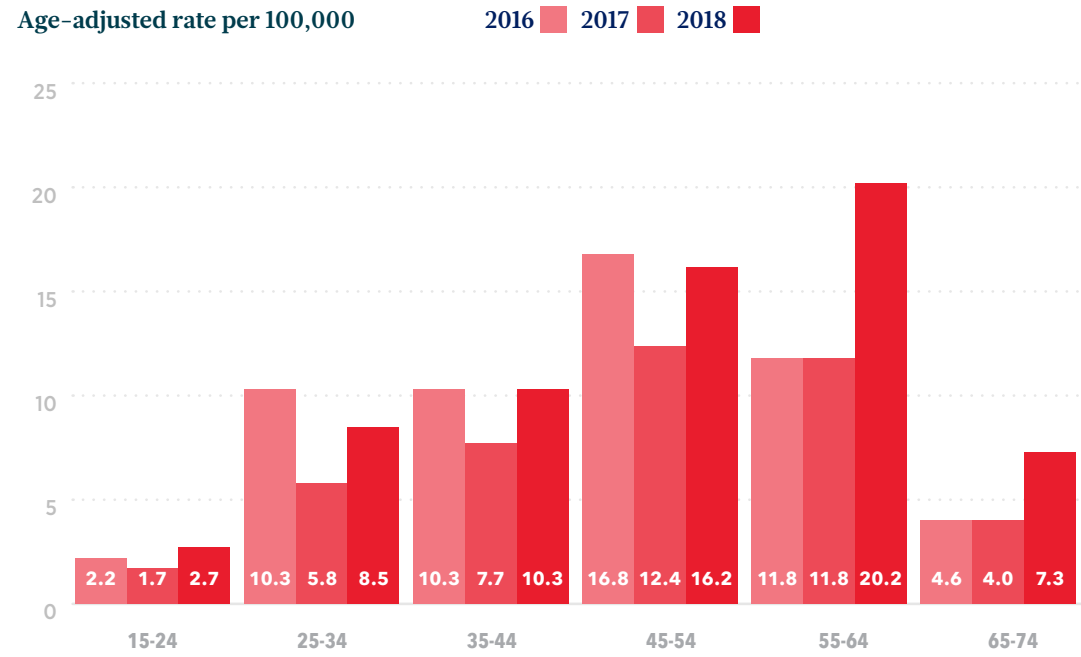


Data Source: Cook County Medical Examiner's Office, US Census Bureau. 2014 5-Year ACS data was used to calculate Neighborhood Economic Hardship at the community area level.

Note: Numbers include all opioid-related overdose deaths that occurred in Chicago, regardless of decedent's address of residence.

Figure 10

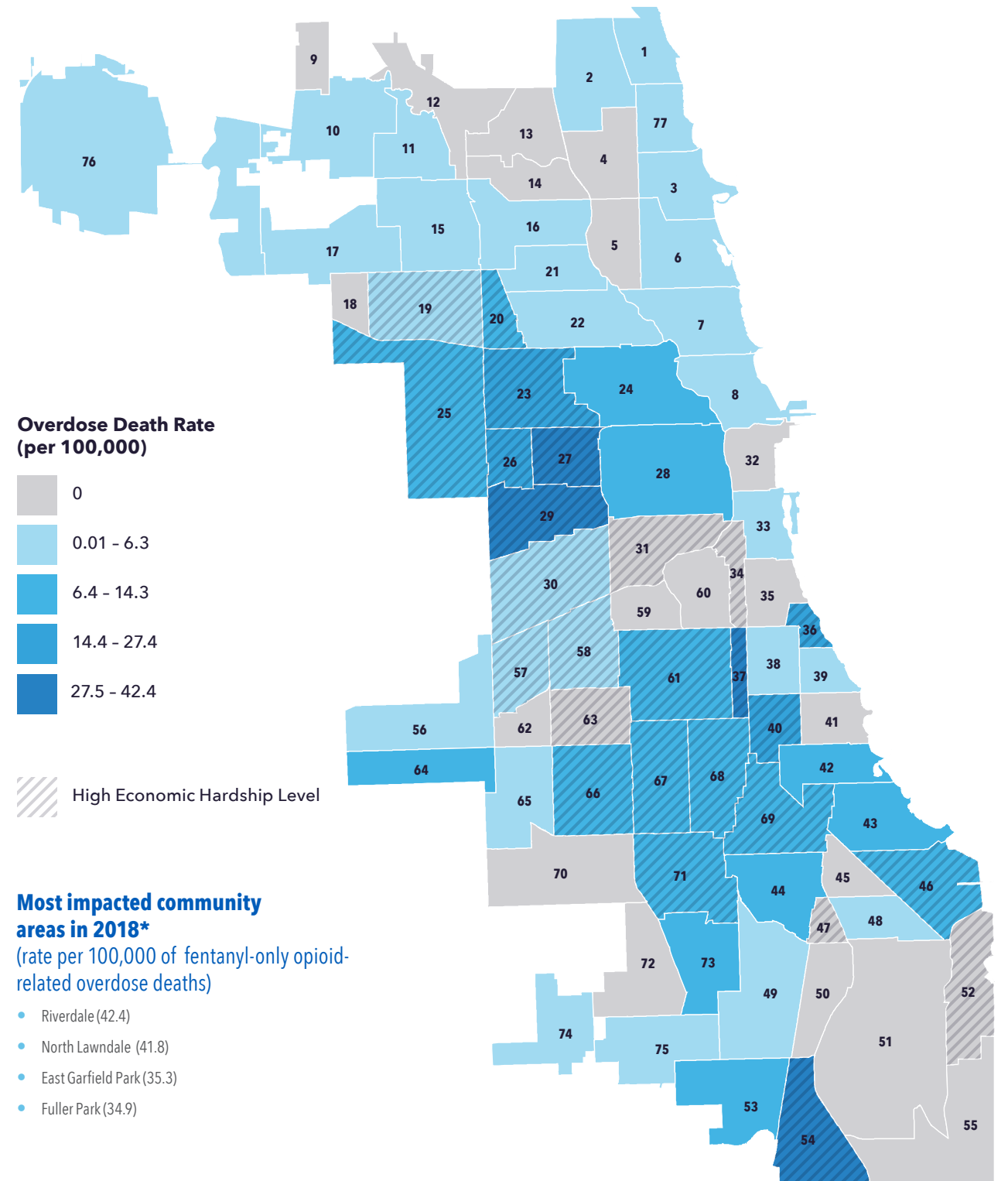
RATE OF FENTANYL-ONLY OVERDOSE DEATHS BY AGE AND YEAR—CHICAGO, 2015 -2018



Data Source: Cook County Medical Examiner's Office, US Census Bureau.
Note: Numbers include all opioid-related overdose deaths that occurred in Chicago, regardless of decedent's address of residence.

Map 5

FENTANYL-ONLY, OVERDOSE DEATH RATE BY AND COMMUNITY AREA OF RESIDENCEⁱ—CHICAGO, 2018 (N=169)

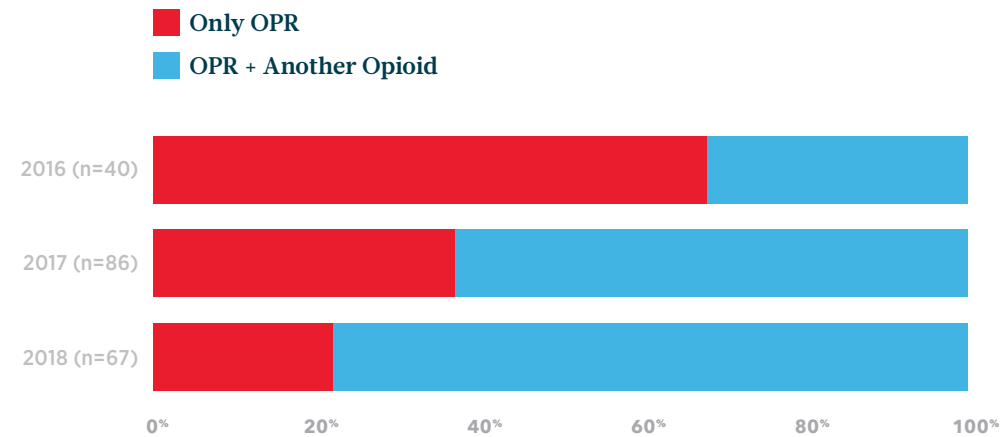


Data Source: Cook County Medical Examiner, US Census Bureau.
ⁱDeaths are geocoded to location of decedent's address of residence regardless of location of overdose incident, which is obtained from a variety of sources including hospital records, police records, family, and government ID by the Cook County Medical Examiner's Office. 23 deaths that occurred in Cook County were unable to be geocoded - 7 listed as homeless, 16 with unknown address of residence.

Opioid-Related Overdose Deaths by Opioid Type: Opioid Pain Relievers

- The rate of opioid pain reliever–related overdose death decreased from 3.2 per 100,000 population in 2017 to 2.5 per 100,000 population in 2018, a decrease of 21.9% (Table 4).
- The percent of deaths involving OPRs only continued to decrease since 2016. There were 15 OPR-only deaths in 2018 (22.3% of all OPR-involved deaths), compared to 27 in 2016 (67.5% of all OPR-involved deaths) (Figure 11).
- In 2018, 73.1% of opioid pain reliever-involved overdose deaths also involved heroin or fentanyl.

Figure 11 COMBINATIONS OF OPIOIDS* INVOLVED IN OPIOID PAIN RELIEVER-RELATED OVERDOSE DEATHS—CHICAGO, 2016-2018



Data Source: Cook County Medical Examiner’s Office
Note: Opioid types are mutually exclusive. Opioid pain reliever includes: buprenorphine, codeine, hydrocodone, hydromorphone, meperidine, morphine, oxycodone, oxymorphone, or tramadol. Deaths may involve substances other than opioids (e.g. alcohol, marijuana), which are not reported.

TABLE 4 Opioid-related overdose deaths involving opioid pain relievers—Chicago, 2016-2018

	2016				2017				2018				2017 to 2018
	OPR-related deaths		All opioid-related deaths	% involving OPR	OPR-related deaths		All opioid-related deaths	% involving OPR	OPR-related deaths		All opioid-related deaths	% involving OPR	% change in rate ⁱ
	n	Rate ⁱ	n	%	n	Rate ⁱ	n	%	n	Rate ⁱ	n	%	%
All	40	1.4	741	5.4	86	3.2	797	10.8	67	2.5	793	8.4	-21.9
Race-Ethnicity^{iv}													
NH Black or African American	12	1.3	358	3.4	25	2.8	404	6.2	27	3.0	426	6.3	7.1
NH White	19	1.9	253	7.5	51	5.2	293	17.4	26	2.6	243	10.7	-50.0
Latinx	9	1.2	123	7.3	9	1.3	96	0	14	2.0	121	11.6	53.8
NH Asian or Pacific Islander	0	0	6	0	0	0	0	0	0	0	3	0	0.0
Age (years)^v													
15-24	4	1.0	43	9.3	3	0.7	24	12.5	2	0.5	38	5.3	-28.6
25-34	7	1.4	151	4.6	14	2.7	132	10.6	12	2.3	135	8.9	-14.8
35-44	6	1.6	151	4.0	16	4.2	156	10.3	15	4.0	152	9.9	-4.8
45-54	10	3.0	229	4.4	23	6.8	249	9.2	17	5.0	224	7.6	-26.5
55-64	11	4.2	147	7.5	22	8.4	186	11.8	14	5.3	204	6.9	-36.9
65-74	1	0.7	18	5.6	8	5.3	35	22.9	7	4.6	39	17.9	-13.2
Gender													
Female	18	1.3	185	9.7	30	2.2	179	16.8	26	1.9	183	14.2	-13.6
Male	22	1.7	557	3.9	56	4.2	616	9.1	41	3.1	610	6.7	-26.2
Manner of Death													
Accidental	32	1.1	725	4.4	74	2.7	781	9.5	60	2.2	782	7.7	-18.5
Suicide	6	0.2	9	66.7	8	0.3	10	80.0	5	0.2	8	62.5	-33.3
Undetermined	2	0.1	7	28.6	4	0.1	5	80.0	2	0.01	3	66.7	-90.0
Economic Hardship in Community Area of Occurrenceⁱⁱ													
Low	19	1.7	191	9.9	32	2.7	210	15.2	27	2.2	204	13.2	-18.5
Medium	6	0.7	164	3.7	22	2.8	197	11.2	20	2.6	143	14.0	-7.1
High	15	1.7	372	4.1	31	3.9	381	8.1	19	2.4	431	4.4	-38.5

Data Source: Cook County Medical Examiner’s Office. NH = Non-Hispanic
ⁱ Rates expressed as number of overdoses per 100,000 population. Denominators based on 2010 census population. Rates age-adjusted to the 2000 US standard population.
ⁱⁱ Montiel L, et al. An Update on Urban Hardship. Rockefeller Institute of Govt. August 2004. 2014 5-Year ACS data was used to calculate Neighborhood Economic Hardship at the community area level.
Note: Numbers include all opioid-related overdose deaths that occurred in Chicago, regardless of decedent’s address of residence.

TABLE 5 Chicago EMS Response for Opioid-Related Overdose and Opioid-Related Overdose deaths among Chicago Residents by Community Area, Chicago 2018

	Community Area	EMS Responses for Opioid-Related Overdose		Opioid -Related Overdose Deaths among Chicago Residents ⁱⁱⁱ	
		# ⁱ	Rate ⁱⁱ	# ⁱ	Rate ⁱⁱ
1	Rogers Park	76	-	8	12.9
2	West Ridge	37	-	4	6.3
3	Uptown	72	-	11	17.4
4	Lincoln Square	23	-	7	17.4
5	North Center	7	-	1	1.4
6	Lakeview	57	-	9	10.8
7	Lincoln Park	37	-	5	7.5
8	Near North Side	165	-	8	9.1
9	Edison Park	< 5	-	0	0
10	Norwood Park	13	-	4	11.4
11	Jefferson Park	26	-	6	21.7
12	Forest Glen	< 5	-	0	0
13	North Park	20	-	2	10.1
14	Albany Park	31	-	3	7.3
15	Portage Park	55	-	13	19.6
16	Irving Park	49	-	8	14.7
17	Dunning	27	-	10	23.6
18	Montclare	10	-	3	22.1
19	Belmont Cragin	80	-	10	12.8
20	Hermosa	22	-	4	16.3
21	Avondale	36	-	6	16.5
22	Logan Square	72	-	10	16.6
23	Humboldt Park	864	-	40	75.3
24	West Town	167	-	13	15.9
25	Austin	1010	-	64	62.2
26	West Garfield Park	745	-	16	91.6
27	East Garfield Park	581	-	24	118.5
28	Near West Side	405	-	13	32.2
29	North Lawndale	560	-	39	114.9
30	South Lawndale	135	-	15	21.7
31	Lower West Side	52	-	4	11.6
32	Loop	183	-	7	25.2
33	Near South Side	34	-	3	12.4
34	Armour Square	12	-	1	6.8
35	Douglas	88	-	3	16.6
36	Oakland	11	-	3	56.7
37	Fuller Park	23	-	3	90.8

ⁱThe sum of the community area counts will not equal the Chicago total count. Some locations of EMS responses for opioid-related overdose fall on intersections. It is possible for an intersection to fall on the border of between 1 to 4 community areas. If the location of the EMS response was on the border of multiple community areas, each community area was attributed an equal fraction of the run. The total EMS runs for each community area were rounded to the nearest whole number.

ⁱⁱThe rate is not calculated because the residence of the individual is unknown.

ⁱⁱⁱNumbers include opioid-related overdose deaths that occurred among Chicago residents regardless of overdose incident location.

	Community Area	EMS Responses for Opioid-Related Overdose		Opioid -Related Overdose Deaths among Chicago Residents ⁱⁱⁱ	
		# ⁱ	Rate ⁱⁱ	# ⁱ	Rate ⁱⁱ
38	Grand Boulevard	142	-	13	57.8
39	Kenwood	28	-	2	9.6
40	Washington Park	79	-	6	62.8
41	Hyde Park	26	-	1	2.3
42	Woodlawn	88	-	4	16.1
43	South Shore	203	-	17	27.6
44	Chatham	122	-	11	28.7
45	Avalon Park	16	-	0	0
46	South Chicago	62	-	11	37.2
47	Burnside	10	-	1	36
48	Calumet Heights	12	-	2	9.4
49	Roseland	211	-	14	28.9
50	Pullman	17	-	1	9.9
51	South Deering	312	-	3	20.2
52	East Side	18	-	1	4.7
53	West Pullman	90	-	8	24.5
54	Riverdale	14	-	3	63.6
55	Hegewisch	6	-	3	27.8
56	Garfield Ridge	61	-	6	17
57	Archer Heights	7	-	1	6
58	Brighton Park	30	-	6	14.5
59	McKinley Park	21	-	1	6.7
60	Bridgeport	13	-	3	9
61	New City	116	-	12	32.1
62	West Elsdon	8	-	2	11.3
63	Gage Park	22	-	6	17
64	Clearing	22	-	7	31.3
65	West Lawn	17	-	2	6.6
66	Chicago Lawn	117	-	16	31.4
67	West Englewood	221	-	14	38.3
68	Englewood	126	-	13	45.9
69	Greater Grand Crossing	106	-	8	22.1
70	Ashburn	47	-	1	2
71	Auburn Gresham	243	-	19	32.9
72	Beverly	12	-	3	14.9
73	Washington Heights	73	-	4	15.1
74	Mount Greenwood	7	-	2	11.2
75	Morgan Park	29	-	2	6.9
76	O'Hare	23	-	1	5.9
77	Edgewater	29	-	9	13
	Unknown CA	51	-	15	
	Chicago Total	8359	-	634	22.9

Data Source: Chicago Fire Department, Cook County Medical Examiner's Office, US Census Bureau

Methodology

In 2018, data were received directly from the Cook County Medical Examiner's Office. All cases labeled "morphine," "opiate," or "opioid" were re-reviewed with the medical examiner. The medical examiner re-reviewed the toxicology report, the police review, and the case history to determine the specific opioids involved in the death. Ultimately, 59 cases of the opioid-related overdose deaths that occurred in Chicago in 2018 were re-reviewed and about 78% were re-categorized as heroin. The remaining were categorized as "unknown opioid", "morphine", "other", or deemed not an opioid-related overdose and removed.

Heroin-involved deaths

520 deaths were categorized as heroin-related deaths. 125 overdose deaths involved heroin alone, 320 involved heroin and fentanyl combined, 29 involved heroin, fentanyl, and opioid pain reliever, 27 involved heroin, methadone, and fentanyl, 6 involved heroin and methadone, 5 involved heroin and opioid pain reliever, 3 involved heroin, fentanyl, and U-47700, 2 involved heroin, methadone, fentanyl, and opioid pain reliever, 2 involved heroin, methadone, and opioid pain reliever, and 1 involved heroin, fentanyl, U-47700, and opioid pain reliever.

This category includes two types of deaths:

- Deaths labeled heroin on the death certificate
- Deaths originally labeled "opiate" or "morphine" (heroin metabolizes into morphine in the body) but determined to be likely due to heroin after re-reviewing the toxicology reports, circumstances of death, and history with the Cook County Medical Examiner.

Fentanyl-involved deaths

620 deaths were categorized as involving fentanyl or fentanyl analogs by the Cook County Medical Examiner. 212 overdose deaths involved only fentanyl, 320 involved fentanyl and heroin, 29 involved fentanyl, heroin, and

an opioid pain reliever, 27 involved fentanyl, heroin, and methadone, 15 involved fentanyl and methadone, 9 involved fentanyl and an opioid pain reliever, 3 involved fentanyl, heroin, and U47700, 2 involved fentanyl, heroin, methadone, and an opioid pain reliever, 1 involved fentanyl and an unknown opioid, 1 involved fentanyl and U47700, and 1 involved fentanyl, heroin, and U47700, and an opioid pain reliever.

Opioid pain reliever-involved deaths

67 deaths were categorized as involving an opioid pain reliever. The drugs found were: buprenorphine, codeine, hydrocodone, hydromorphone, meperidine, morphine, oxycodone, tramadol, and unknown prescription opiates. The morphine-related deaths included in this category were determined by the medical examiner's office to be more likely related to an actual morphine overdose rather than a heroin metabolite. 15 overdose deaths involved only opioid pain relievers, 29 involved heroin, fentanyl, and opioid pain relievers, 9 involved fentanyl and opioid pain relievers, 5 involved heroin and opioid pain relievers, 2 involved heroin, methadone, fentanyl, and opioid pain relievers, 2 involved heroin, methadone, and opioid pain relievers, 1 involved an unknown opioid and opioid pain relievers, 1 involved heroin, U47700, fentanyl, and opioid pain relievers, and 1 involved methadone, fentanyl, and opioid pain relievers.

Methadone-involved deaths

69 deaths were categorized as methadone-related overdose. 15 overdose deaths involved methadone only, 27 involved methadone, heroin, and fentanyl, 14 involved methadone and fentanyl, 6 involved methadone and heroin, 2 involved methadone, heroin, fentanyl, and opioid pain relievers, 2 involved methadone, heroin, and opioid pain relievers, 2 involved methadone and opioid pain relievers, and 1 involved methadone, fentanyl, and opioid pain relievers,

Unknown opioid-involved deaths

4 deaths were identified as "opiate" deaths where no further information was available. Typically, these were cases where the individual died in a hospital setting where opiates had been confirmed by hospital testing, but it was no longer possible for the medical examiner's office to send out confirmatory toxicology testing to determine the type of opiate that had been involved (because of the length of time between drug use and eventual death).

Definitions

Common terms

Opioid	Broad term that includes naturally occurring opiates, semi-synthetic and synthetic opioids.
Opiate	Naturally occurring substances that are derived from opium.

Classes of opioids

Natural opiates	Drugs that are fully derived from opium; examples include morphine and codeine.
Semi-synthetic opioids	Drugs that are derived from a combination of natural and synthetic opioids; examples include heroin, oxycodone, hydrocodone, hydromorphone, and oxymorphone.
Synthetic opioids	Drugs that are created to work in a similar way as naturally occurring opiates but are completely man-made; examples include fentanyl, tramadol and methadone.

Specific opioids

Heroin	A highly addictive and illegally produced drug derived from morphine.
Fentanyl	A highly potent synthetic opioid that is prescribed to treat severe pain. In the US, there has been an increase in the development and distribution of illegally produced fentanyl. Most of the fentanyl involved in overdose deaths is thought to be from an illicit source. Fentanyl is a common adulterant in heroin – often without the user's knowledge.
Methadone	A synthetic opioid that is FDA-approved to treat both pain and opioid use disorder
Opioid pain relievers	Often called prescription pain relievers or opioid analgesics, this class of drugs is prescribed to treat pain. Includes: buprenorphine, codeine, fentanyl, hydrocodone (e.g. Lorcet, Lortab, Norco, Vicodin), meperidine, methadone, morphine, oxycodone (e.g. OxyContin, Percocet) and tramadol. Buprenorphine and methadone are FDA-approved to treat pain, however are more commonly used for addiction treatment. While fentanyl is approved to treat pain, it is rarely prescribed.

References

1. Chicago Fire Department Emergency Medical Services. Data provided reflect all EMS responses where naloxone was administered and where there was indication of opioid involvement. Race and ethnicity data are recorded by the EMS staff on the scene.
2. Cash RE, Kinsman J, Crowe RP, Rivard MK, Faul M, Panchal AR. Naloxone Administration Frequency During Emergency Medical Service Events – United States, 2012–2016. MMWR Morb Mortal Wkly Rep 2018;67:850–853. DOI: <http://dx.doi.org/10.15585/mmwr.mm6731a2>
3. Healthy Chicago Survey (2018): HCS is a random digit dial telephone survey conducted annually by the Chicago Department of Public Health of non-institutionalized adults over age 18 in Chicago, IL. Data are weighted to represent the household population of adults 18 years of age and older who reside in the City of Chicago. https://www.chicago.gov/city/en/depts/cdph/supp_info/healthy-communities/healthy-chicago-survey.html
4. Lisa M. Montiel, Richard P. Nathan, and David J. Wright. An Update on Urban Hardship. The Nelson A Rockefeller Institute of Government. 2004. http://rockinst.org/pdf/cities_and_neighborhoods/2004-08-an_update_on_urban_hardship.pdf

General Resources

Opioids and Opioid Treatment

Illinois Helpline for Opioids and Other Substances

1-833-2FINDHELP (3463 4357)

Illinois Poison Center

1-800-222-1222

Substance Abuse and Mental Health Services Administration National Helpline

1-800-662-HELP (4357)

Information on Opioids in Chicago

<https://overcomeopioids.org>

Chicago's Behavioral Health Resource Locator

<http://www.chicagoconnects.org>

SAMHSA's Behavioral Health Treatment Services Locator

<https://findtreatment.samhsa.gov>

Information about Safe Disposal of Medications

<https://www.fda.gov/Drugs/ResourcesForYou/Consumers/BuyingUsingMedicineSafely/EnsuringSafeUseofMedicine/SafeDisposalofMedicines/ucm186187.htm>

Chicago Recovery Alliance

<https://anypositivechange.org/>

University of Illinois: Community Outreach Intervention Projects

<https://coip.uic.edu/>



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