HEALTHY CHICAGO

CHICAGO DEPARTMENT OF PUBLIC HEALTH

Annual Opioid Surveillance Report – Chicago, 2017

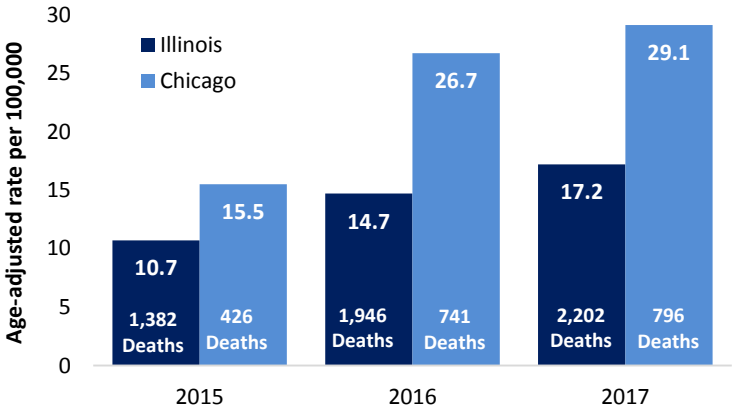
Office of Epidemiology and Research

October 2018

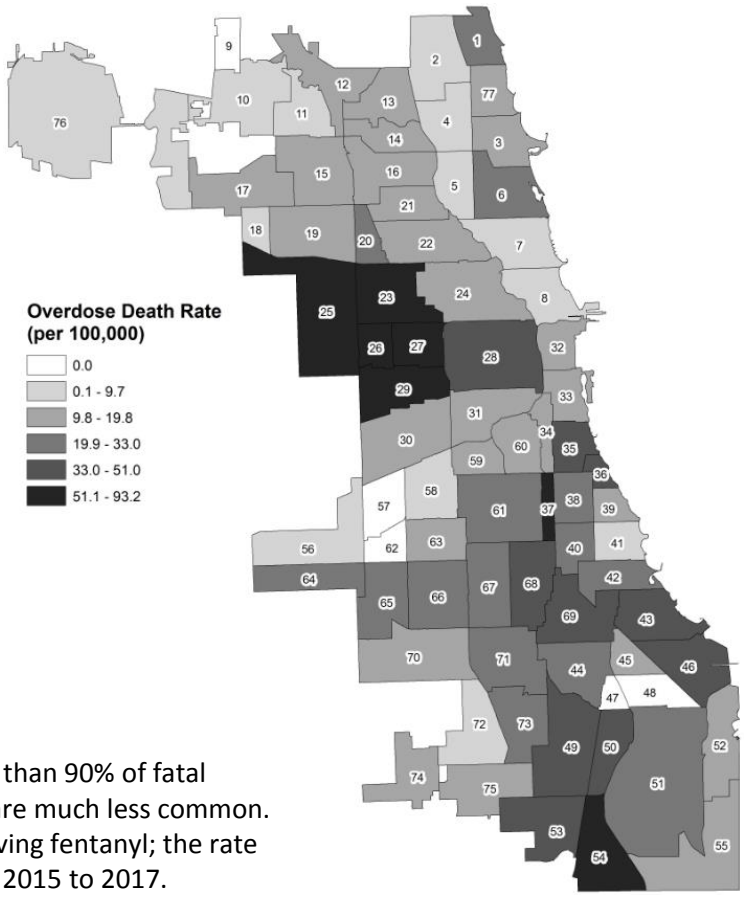
OVERVIEW

- In 2017 in Chicago, 796 people died from an opioid-related overdose. For context, this is more than the number of people who died from either gun-related homicide or traffic crashes in Chicago in the same year.
- Most overdoses are not fatal; every overdose is an opportunity to connect a patient to substance use treatment. The Chicago Fire Department's emergency medical services team responded to 7,526 opioid-related overdoses in Chicago in 2017 – an average of 21 responses per day.
- From 2016 to 2017, the opioid-related overdose death rate continued to increase in Chicago (increase of 9%). However, the rate of increase has slowed, compared to the prior year (rate increase of 74%.)
- Rates in Chicago remain higher than in the rest of Illinois. The rate of increase from 2016 to 2017 in Chicago (9%) was less than the increase in Illinois (17%).

Overdose deaths involving opioids - Chicago, 2015-2017



Rate of overdose deaths involving opioids by community area* – Chicago, 2017



Demographics

- In 2017 in Chicago, opioid-related overdose death rates remained highest among men; non-Hispanic blacks/African Americans; middle aged adults (45-64 years); and persons living in communities experiencing high economic hardship.
- Decreases in the opioid-related overdose death rate from 2016 to 2017 were seen among Latinx individuals and younger age groups; increases were seen in other groups.

Geography

- Chicago residents who died from an opioid-related overdose in 2017 lived across the city. Ninety-four percent of Chicago's community areas (72) were home to at least one resident with a fatal opioid-related overdose.
- Residents who died from an opioid overdose were more likely to live in communities experiencing high economic hardship (48%) than in communities experiencing medium (25%) or low (27%) economic hardship.

Opioid Type

- In Chicago, illicit opioid use (heroin, fentanyl) is linked to more than 90% of fatal overdoses; deaths linked to prescription opioid pain relievers are much less common.
- Chicago has seen a dramatic increase in overdose deaths involving fentanyl; the rate of overdose deaths involving fentanyl increased by 533% from 2015 to 2017.

Opioid Use and Misuse

- Fewer than 3% of Chicago adults reported prescription opioid pain reliever misuse (2.8% in 2017).
- However, 15% of high school students in Chicago in 2017 reported prescription opioid pain reliever misuse, consistent with the national rate of 14% among high school students.
- In contrast, high school students in Chicago in 2017 were significantly more likely to report heroin use than high school students nationally (4.9% compared to 1.7%).

**Community area numbers and corresponding names are listed on page 6.*

OPIOID-RELATED OVERDOSE MORTALITY: CHICAGO OCCURRENCE

- Opioid-related overdose deaths occurring in Chicago continued to increase in 2017.
- From 2016 to 2017 the rate of opioid-related overdose death increased by 9%.
- Death rates increased for all types of opioids. However, death rates among certain demographic subgroups decreased.

Table 1. Overdose deaths involving opioids – Chicago, 2015-2017

	2015			2016			2017			2016 to 2017	
	n	%	Rate[ii]	n	%	Rate[ii]	n	%	Rate[ii]	Absolute rate change	% change in rate
Chicago	426	100.0	15.5	741	100.0	26.7	796	100%	29.1	2.4	9.0
Drug Type[i]											
Heroin-involved	345	81.0	12.4	487	65.7	17.7	575	71.9	21.0	3.3	18.6
Fentanyl-involved	71*	16.7	2.7	420	56.7	15.1	470	58.7	17.1	2.0	13.2
Opioid pain reliever-involved[iii]	32**	7.5	1.1	40**	5.4	1.4	86	10.8	3.2	1.8	128.6
Methadone-involved	28	6.6	1.0	48	6.5	1.8	68	8.5	2.6	0.8	44.4
Gender											
Male	322	75.6	23.8	556	75.0	40.8	615	77.3	46.2	5.4	13.2
Female	104	24.4	7.5	185	25.0	13.3	179	22.5	13.0	-0.3	-2.3
Race-Ethnicity[iv]											
NH Black or African American	--	--	--	357	48.4	39.3	403	50.7	43.6	4.3	10.9
NH White	--	--	--	251	34.1	25.1	293	36.8	29.7	4.6	18.3
Latinx	--	--	--	123	16.7	16.5	96	12.0	13.3	-3.2	-19.4
NH Asian or Pacific Islander	--	--	--	6	0.8	3.2^	0	0.0	0.0^	-3.2	--
Age (years)[v]											
0-14	1	0.2	0.02	0	0.0	0.0	0	0.0	0.0	0.0	0.0
15-24	27	6.3	6.7	43	5.8	10.6	34	4.3	8.4	-2.2	-20.8
25-34	78	18.3	15.1	151	20.4	29.3	132	16.6	25.6	-3.7	-12.6
35-44	89	20.9	23.5	150	20.3	39.7	155	19.5	41.0	1.3	3.3
45-54	121	28.4	35.7	229	31.0	67.6	249	31.4	73.5	5.9	8.7
55-64	96	22.5	36.5	147	19.9	55.9	186	23.4	70.8	14.9	26.7
65-74	14	3.3	9.3^	18	2.4	11.9^	35	4.4	23.2	11.3	95.0
75+	0	0.0	0.0	1	0.1	0.1	3	0.4	0.2	0.1	100.0
Community Economic Hardship[vi]											
Low	140	33.8	12	191	26.3	16.4	210	26.6	18.4	2	12.2
Medium	89	21.5	11.5	164	22.6	21	197	25.0	25.2	4.2	20.0
High	185	44.7	21.8	372	51.2	44.1	381	48.4	45.6	1.5	3.4

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 both 2016 and 2017 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.

OPIOID-RELATED OVERDOSE MORTALITY: DEMOGRAPHICS

Gender

- Consistent with 2015 and 2016, in 2017, the opioid-related overdose death rate was higher among men than among women in Chicago.
- From 2016 to 2017, the opioid-related overdose death rate increased for men, but remained level for women.

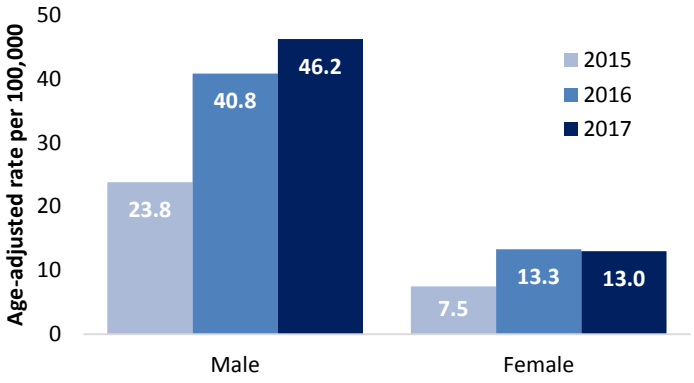
Race-Ethnicity

- In 2017, the highest rate of opioid-related overdose death was among NH Black or African American individuals, followed by NH White, Latinx, and NH Asian or Pacific Islander individuals in Chicago.
- From 2016 to 2017, the rate of opioid-related overdose death increased by 18% for NH White individuals and by 11% for NH Black or African American individuals, but decreased by 19% for Latinx individuals.

Age

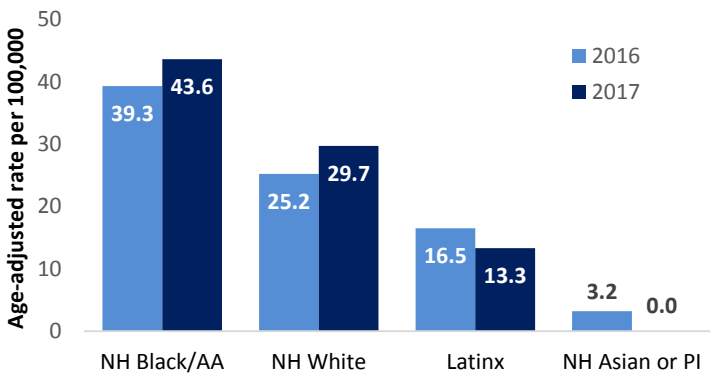
- In 2017, the highest rate of opioid-related overdose death remained among middle-aged adults (age 45-54 and 55-64 years) in Chicago.
- From 2016 to 2017 the rate of opioid-related overdose death increased among middle-aged and older adults (age 45-54, 55-64 and 65-74 years), and decreased among younger individuals (age 15-24 and 25-34 years).

Figure 1. Rate of opioid-related overdose deaths by gender and year – Chicago, 2015-2017



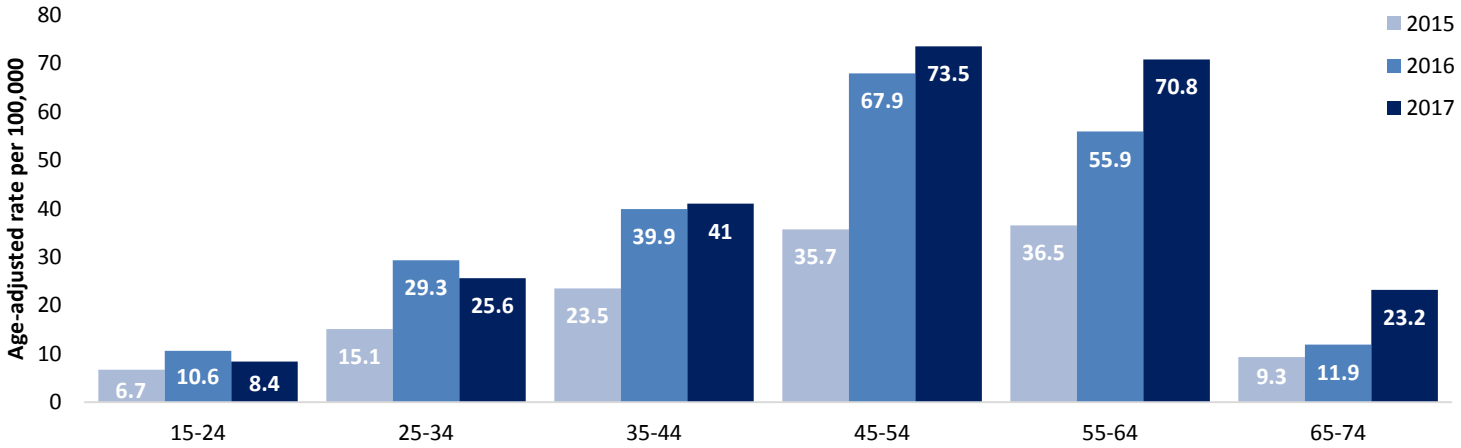
Data Source: *Cook County Medical Examiner's Office, US Census Bureau.*
Note*: Numbers include all opioid-related overdose deaths that occurred in Chicago, regardless of decedent's address of residence.*

Figure 2. Rate of opioid-related overdose deaths by race-ethnicity and year – Chicago, 2016-2017



Data Source: *Cook County Medical Examiner's Office, US Census Bureau.*
Note*: NH = Non Hispanic, AA = African American and PI = Pacific Islander. 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, 2015-2017

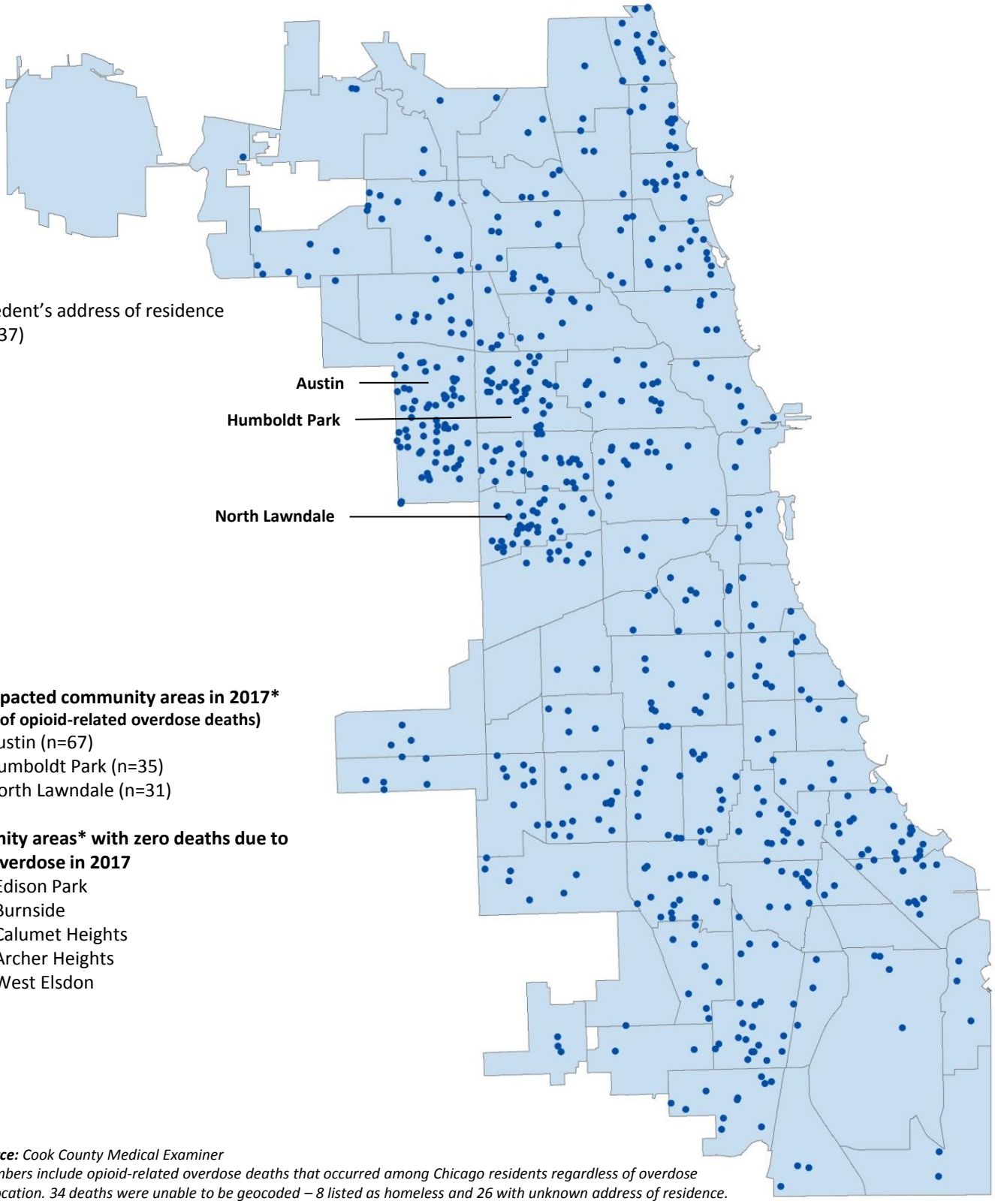


Data Source: *Cook County Medical Examiner's Office, US Census Bureau.*
Note*: Numbers include all opioid-related overdose deaths that occurred in Chicago, regardless of decedent's address of residence.*

OPIOID-RELATED OVERDOSE MORTALITY: GEOGRAPHY

- In 2017, residents from 72 of 77 (94%) community areas in Chicago died of an opioid-related overdose.
- Three community areas accounted for over 20% of all opioid-related overdose deaths in Chicago in 2017.

Map 1. Overdose deaths involving opioids among Chicago residents – Chicago, 2017



Most impacted community areas in 2017*
(number of opioid-related overdose deaths)

- Austin (n=67)
- Humboldt Park (n=35)
- North Lawndale (n=31)

Community areas* with zero deaths due to opioid overdose in 2017

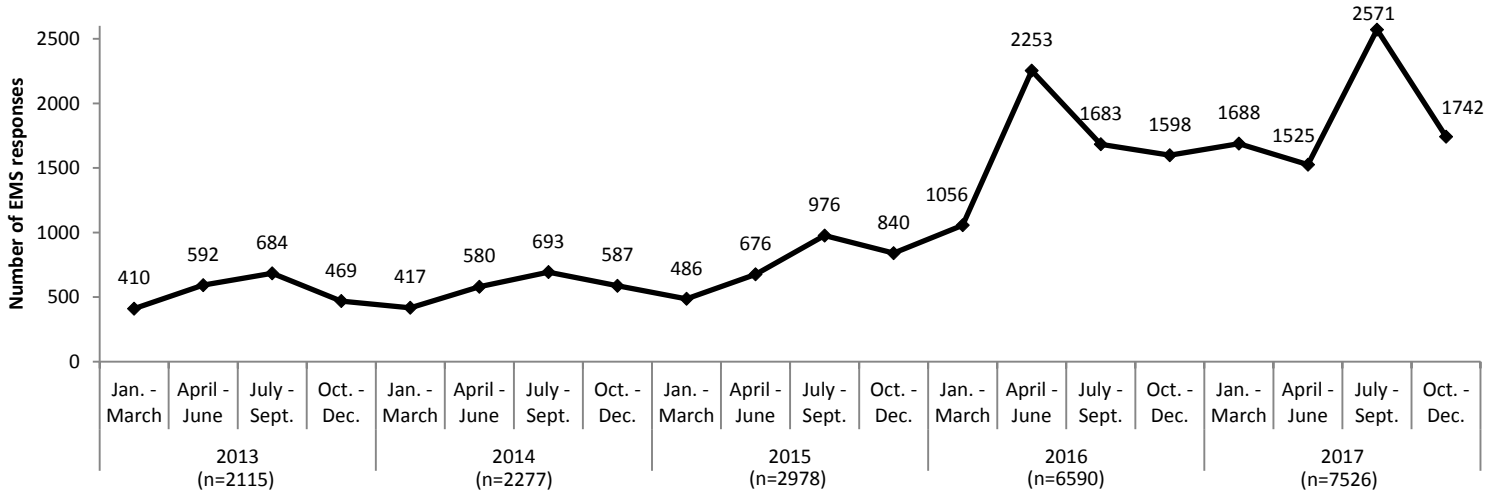
- Edison Park
- Burnside
- Calumet Heights
- Archer Heights
- West Elsdon

Data Source: *Cook County Medical Examiner*
Note: *Numbers include opioid-related overdose deaths that occurred among Chicago residents regardless of overdose incident location. 34 deaths were unable to be geocoded – 8 listed as homeless and 26 with unknown address of residence.*
**Community area numbers and corresponding names are listed on page 6*

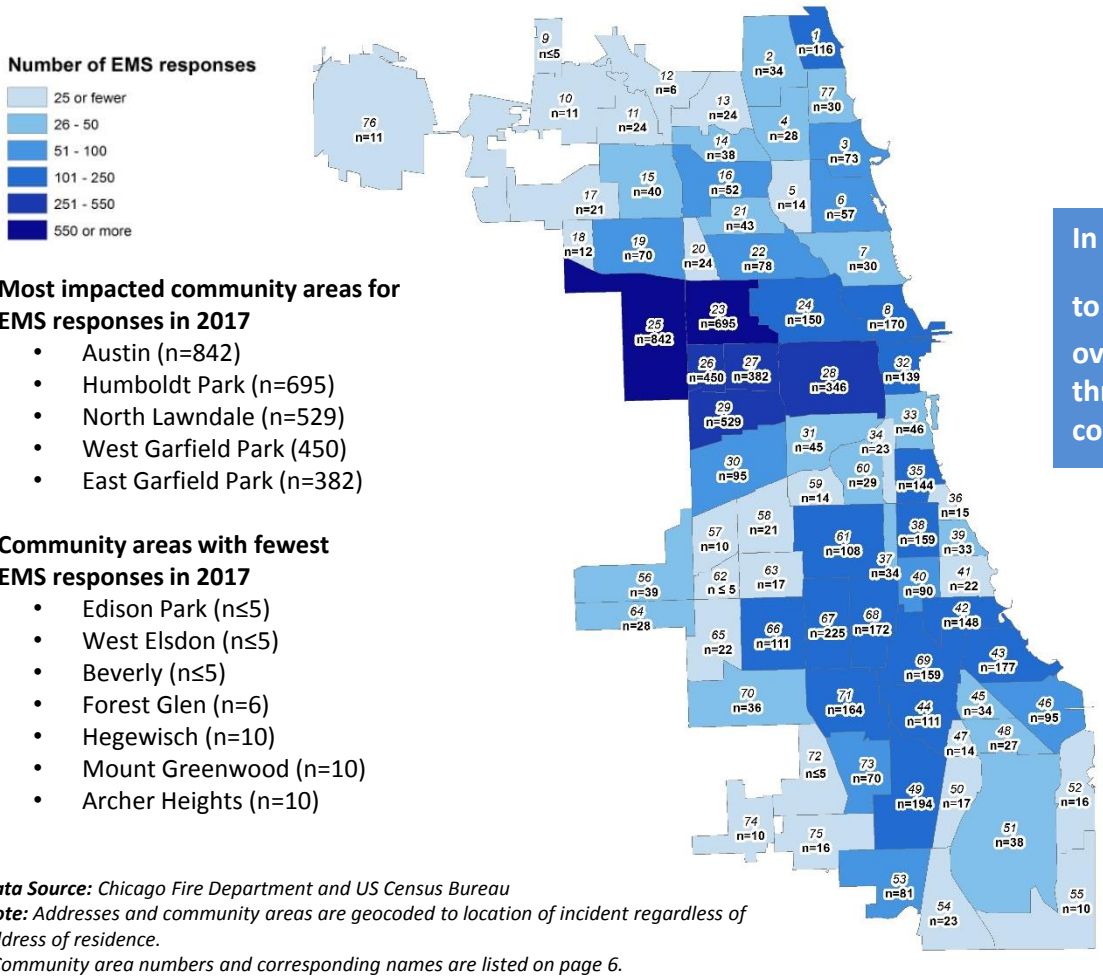
OPIOID-RELATED OVERDOSE MORBIDITY: EMERGENCY MEDICAL SERVICES (EMS) RESPONSES FOR OPIOID-RELATED OVERDOSES

- Chicago Fire Department (CFD) EMS[2] responses to opioid-related overdoses occurring in Chicago increased from 6,590 in 2016 to 7,526 in 2017.
- This is an average of 20.6 EMS responses per day in Chicago in 2017.
- CFD had a rate of 1,980 opioid-related overdose responses per 100,000 EMS responses in 2017, which is three times the rate in Chicago in 2013 (610.9) and almost four times a reported national rate in 2016 (505.2).[3]

Figure 4. Number of EMS runs for suspected opioid overdose by quarter – Chicago, 2013-2017



Map 2. CFD EMS responses for opioid-related overdose by community area of incident – Chicago, 2017



Most impacted community areas for EMS responses in 2017

- Austin (n=842)
- Humboldt Park (n=695)
- North Lawndale (n=529)
- West Garfield Park (450)
- East Garfield Park (n=382)

Community areas with fewest EMS responses in 2017

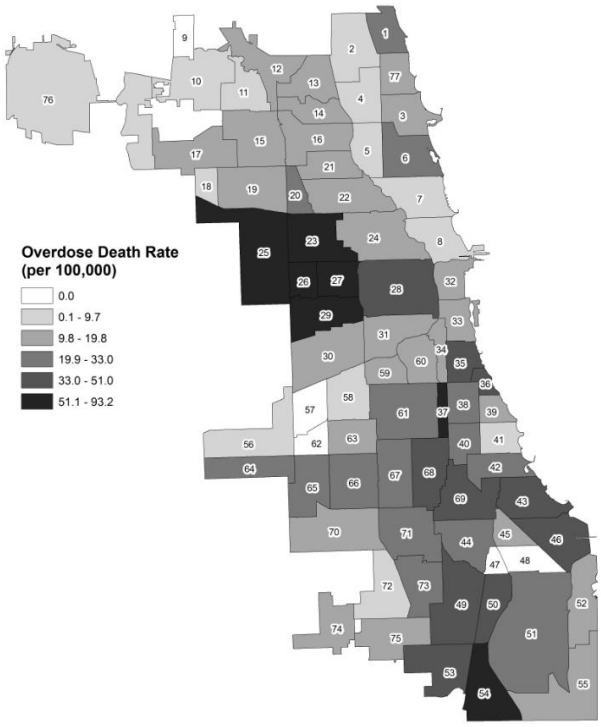
- Edison Park (n≤5)
- West Elsdon (n≤5)
- Beverly (n≤5)
- Forest Glen (n=6)
- Hegewisch (n=10)
- Mount Greenwood (n=10)
- Archer Heights (n=10)

In 2017, CFD EMS responded to 7,526 opioid-related overdoses occurring throughout all 77 Chicago community areas.

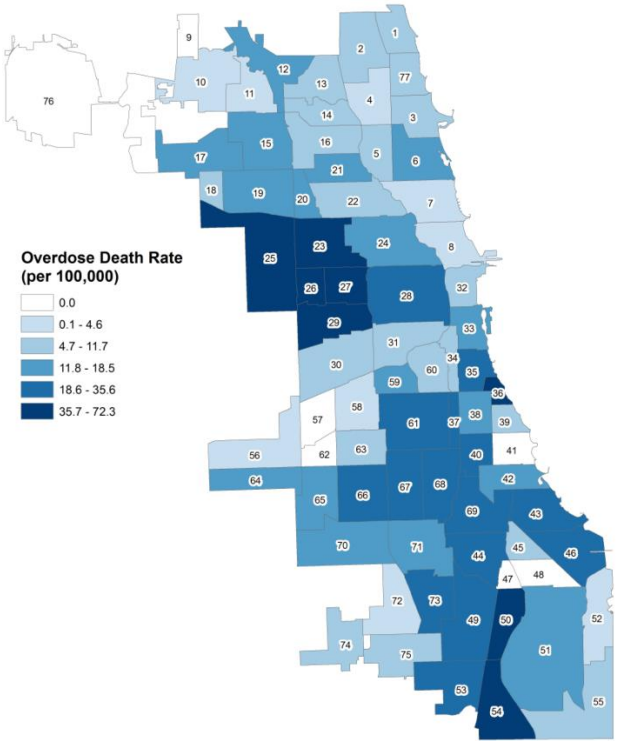
Data Source: *Chicago Fire Department and US Census Bureau*
Note: *Addresses and community areas are geocoded to location of incident regardless of address of residence.*
**Community area numbers and corresponding names are listed on page 6.*

Map 3. Opioid-related overdose death rate by opioid type[i] and community area of residence[ii] – Chicago, 2017

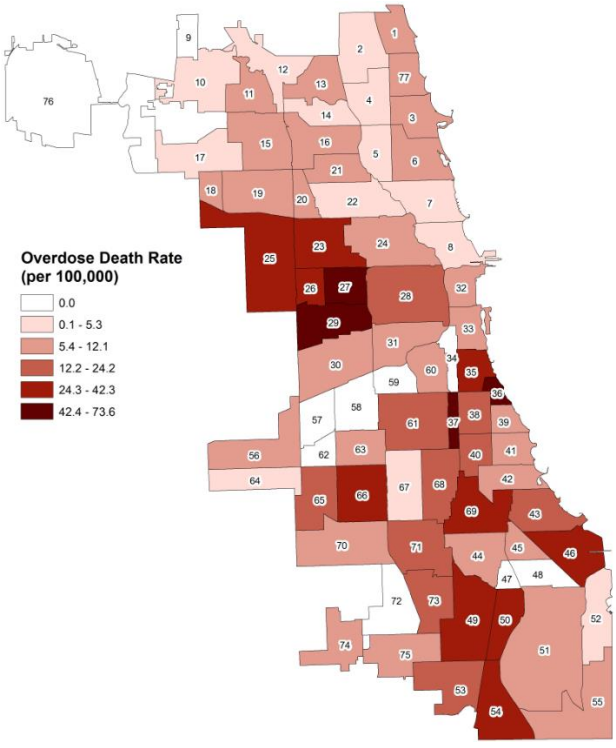
3A. All Opioids (n=637)



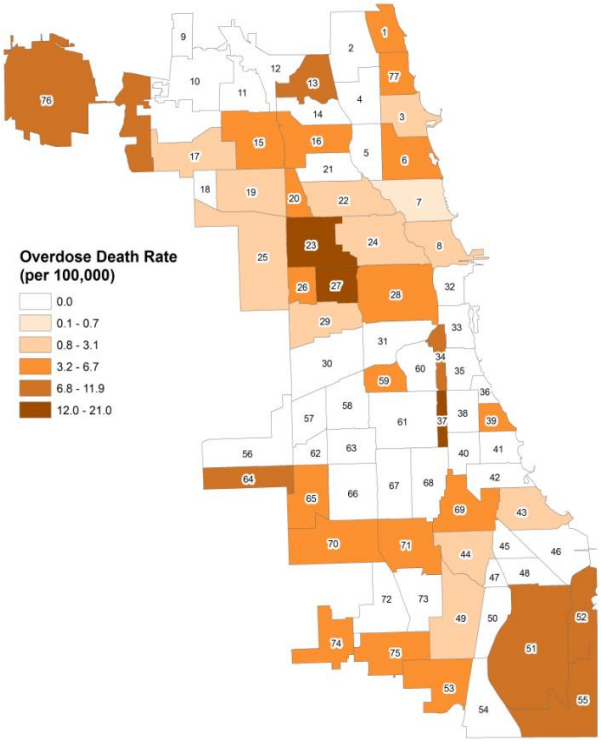
3B. Heroin (n=452)



3C. Fentanyl (n=361)



3D. Opioid Pain Relievers (n=73)



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 Armor 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.*

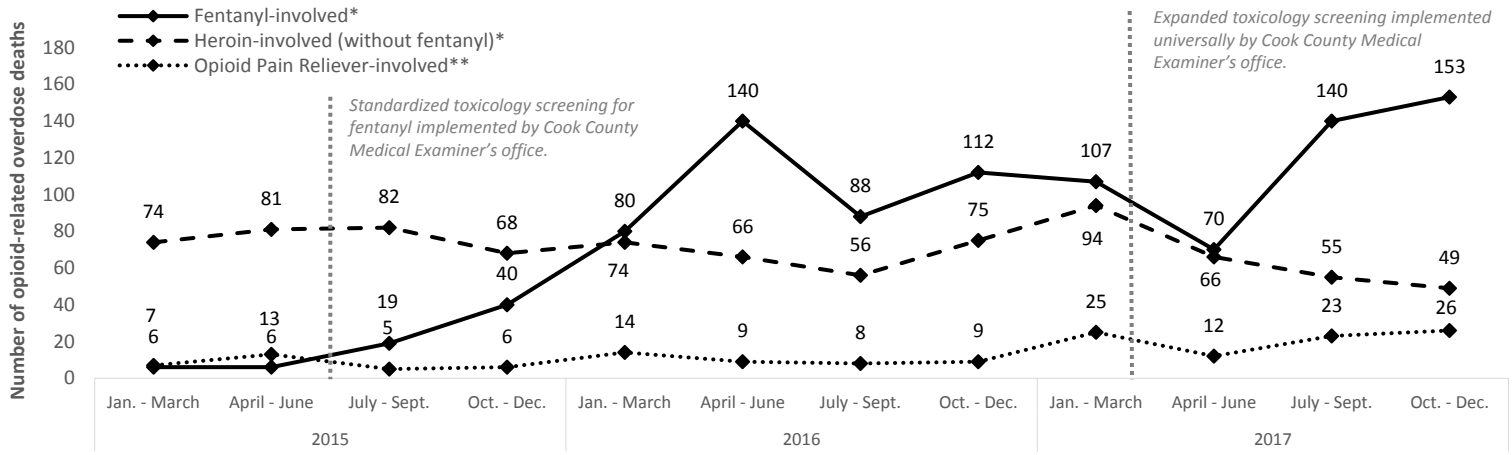
[i] *Categories are not mutually exclusive as some deaths involved more than one type of opioid.*

[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. 34 deaths that occurred in Cook County were unable to be geocoded – 8 listed as homeless, 26 with unknown address of residence.*

OPIOID-RELATED OVERDOSE MORTALITY: OPIOID TYPE

- Fentanyl and heroin continue to drive the epidemic in Chicago, and were involved in over 90% of all opioid-related overdose deaths. Similar to what was seen in 2016, fentanyl (alone or in combination with other opioids) was involved in over 50% of all opioid-related overdose deaths in Chicago in 2017.
- The majority (53%) of opioid-related overdose deaths involved more than one opioid. Benzodiazepines were involved in 12% of all opioid-related overdose deaths.
- Overall, 34% of all opioid-related deaths involved cocaine, suggesting concurrent use is common. The percentage varied by opioid type with 36% of heroin-, 31% of fentanyl- and 17% of opioid pain reliever (OPR)-involved overdose deaths also involving cocaine.

Figure 5. Number of opioid-related overdose deaths by quarter and opioid type – Chicago, 2015-2017



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.*

Figure 6. Combinations of Opioids* involved in Overdose Death – Chicago, 2017

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

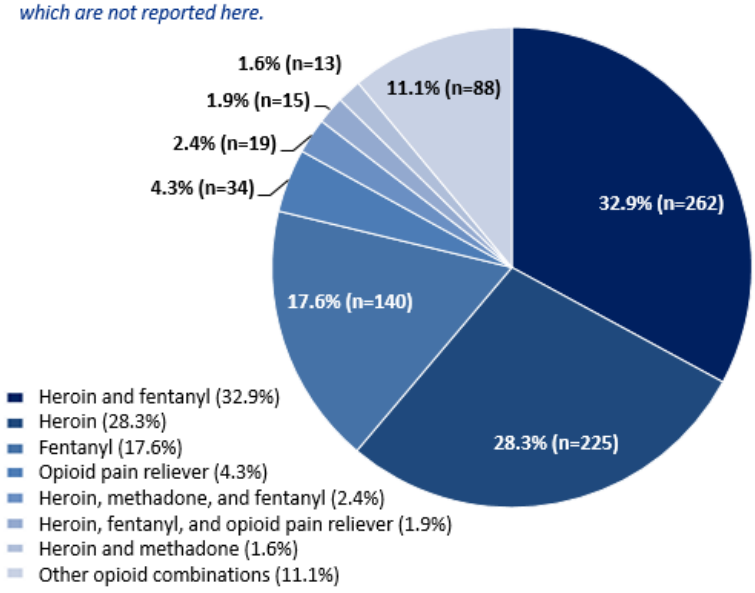
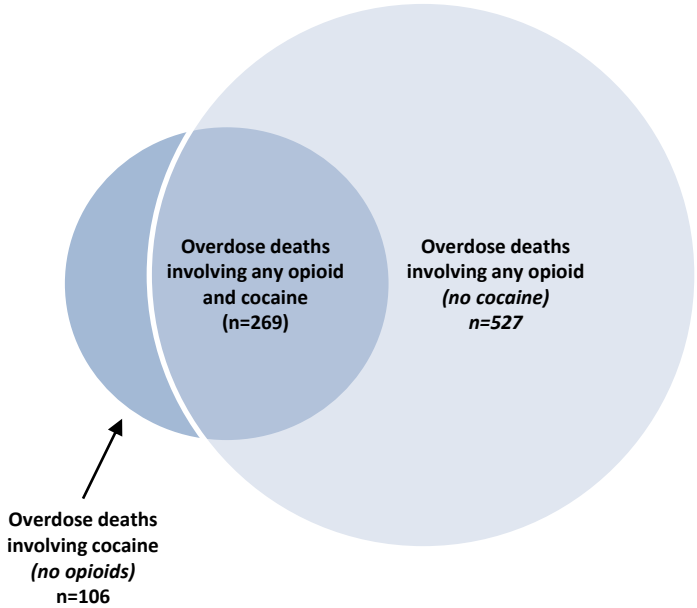


Figure 7. Cocaine Involvement in Opioid-Related Overdose Death – Chicago, 2017

**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 MORTALITY: OPIOID PAIN RELIEVERS

- The rate of opioid pain reliever-related overdose death increased from 1.4 per 100,000 population in 2016 to 3.2 per 100,000 population in 2017, an increase of 128.6%.
- From 2016 to 2017, the percentage of OPR-related overdose deaths that also involved heroin or fentanyl increased from 30% to 54%. In contrast, the percentage of OPR-related overdose deaths involving only OPRs decreased from 68% to 37%.
- The increase in OPR-related overdose death from 2016 to 2017 was likely driven by concurrent use of illicit (i.e. heroin and illicitly obtained fentanyl) opioids.

Figure 8. Combinations of Opioids* involved in Opioid Pain Reliever-Related Overdose Deaths – Chicago, 2016-2017

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 2. Opioid-related overdose deaths involving opioid pain relievers – Chicago, 2016-2017

	2016				2017				2016 to 2017
	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	%	%
All	40	1.4	741	5.4	86	3.2	797	10.8	128.6
Race-Ethnicity									
NH Black or African American	12	1.3	358	3.4	25	2.8	404	6.2	115.4
NH White	19	1.9	253	7.5	51	5.2	293	17.4	173.7
Latinx	9	1.2	123	7.3	9	1.3	96	0.0	8.3
NH Asian or Pacific Islander	0	0.0	6	0.0	0	0			
Age (years)									
15-24	4	1.0	43	9.3	3	0.7	24	12.5	-30.0
25-34	7	1.4	151	4.6	14	2.7	132	10.6	92.9
35-44	6	1.6	151	4.0	16	4.2	156	10.3	162.5
45-54	10	3	229	4.4	23	6.8	249	9.2	126.7
55-64	11	4.2	147	7.5	22	8.4	186	11.8	100.0
65-74	1	0.7	18	5.6	8	5.3	35	22.9	657.1
Gender									
Female	18	1.3	185	9.7	30	2.2	179	16.8	69.2
Male	22	1.7	557	3.9	56	4.2	616	9.1	147.1
Manner of Death									
Accidental	32	1.1	725	4.4	74	2.7	781	9.5	145.5
Suicide	6	0.2	9	66.7	8	0.3	10	80	50.0
Undetermined	2	0.1	7	28.6	4	0.1	5	80	0.0
Community Economic Hardship[1]									
Low	19	1.8	191	9.9	*ND*		*ND*	*ND*	--
Medium	6	0.8	164	3.7	*ND*		*ND*	*ND*	--
High	15	1.7	372	4.1	*ND*		*ND*	*ND*	--

Data Source: *Cook County Medical Examiner's Office. NH = Non-Hispanic; ND = No 2017 economic hardship data available*
[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.*
Note*: Numbers include all opioid-related overdose deaths that occurred in Chicago, regardless of decedent's address of residence.*

ADULTS

- According to the CDPH telephone-based Healthy Chicago Survey[4] in 2017, 13.5% of Chicago adults reported OPR use.
- Of those, 20.8% reported misuse, by using more than was prescribed to them by a physician (42.8% of adults who misused) and/or using without a prescription (70.8% of adults who misused).
- Both the percentage of adults in Chicago who report using OPRs as well as those who report misuse has remained steady from 2015 to 2017.
- The percentage of Chicago adults who reported OPR misuse was higher among who identified as gay, lesbian or bisexual (6.5%) than those who identified as heterosexual (2.6%). Otherwise, OPR misuse did not differ significantly among demographic groups.

Table 3. Reported opioid pain reliever use and misuse in the past 12 months among adults – Chicago, 2015-2017

	2015		2016		2017	
	%	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
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
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
Used more than was prescribed *(of those who misused)*[i]	29.0	16.1 - 42.3	39.2	20.4 - 58.1	42.8	30.2 - 55.3
Used without a prescription *(of those who misused)*[i]	79.0	68.6 - 90.4	73.9	56.5 - 91.3	70.8	59.0 - 82.6

Data Source: *CDPH Healthy Chicago Survey*
[i] *Individuals may be categorized into both misuse categories*

Table 4. Reported opioid pain reliever misuse in the past 12 months among adults – Chicago, 2015-2017

	2015		2016		2017	
	%	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
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
NH White	3.0	1.3 - 4.8	2.0*	0.8 - 3.3*	2.7	1.6 - 3.9
Latinx	2.5*	0.6 - 4.3*	2.6*	0.0 -6.6*	0.7	0.0 - 1.8
NH Asian or Pacific Islander	**	**	**	**	**	**
Age (years)						
18-29	3.1*	0.8 - 5.3*	3*	1.0 - 5.0*	4.6	2.6 - 6.6
30-44	4.7	2.4 - 7.0	2.2*	0.7 - 3.6*	2.7	1.5 - 3.9
45-64	2.1	1.0 - 3.2	1.5*	0.6 - 2.5*	1.6	0.8 - 2.4
65+	1.1*	0.1 - 2.2*	**	**	2.5	1.1 - 4
Gender						
Male	3.3	1.7 - 4.8	2.3	1.1 - 3.5	3.5	2.3 - 4.6
Female	2.8	1.5 - 4.1	2	0.9 - 3	2.2	1.4 - 3.1
Poverty Level						
<100%	4*	1.6 - 6.4*	3.1*	1.1 - 5.2*	2.2	1.0 - 3.4
100-199%	2.8*	0.9 - 4.7*	**	**	3.3	1.5 - 5.1
200-399%	5.7*	1.8 - 9.5*	3.5*	0.3 - 6.7*	4.3*	1.7 - 7.0*
400%+	2.2*	0.6 - 3.8*	1.1	0.5 - 1.7	2.4	1.3 - 3.5
Sexual Identity						
Heterosexual	3.0	2.0 - 4.1	1.9	1.1 - 2.7	2.6	1.9 - 3.3
Gay, Lesbian or Bisexual	5.5*	0.4 - 10.7*	2.3*	0.5 - 4.1*	6.5*	2.5 - 10.5*

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.*

YOUTH

Prescription pain medicine (i.e. opioid pain reliever) misuse

- According to the Youth Risk Behavior Survey (YRBS)[5], in Chicago, 15% of high school students reported using prescription pain medicine to get high one or more times in their life, which was not significantly different than the 14% reported nationally.
- In Chicago, reported prescription pain medicine misuse was higher among high school students who identified as gay, lesbian or bisexual compared to those who identified as heterosexual. Otherwise, misuse did not statistically differ by demographic group in 2017.

Heroin use

- The percentage of Chicago high school students reporting using heroin at least one time in their life remained stable at 4.1% in 2013 and 4.9% in 2017. This percentage is higher than among students nationally in 2017 (1.7%).
- Reported heroin use was higher among male high school students compared to female, and higher among students who identified as gay, lesbian or bisexual compared to those who identified as heterosexual, but statistically similar across age, race and grade level in Chicago in 2017.

Table 5. Reported lifetime opioid (prescription pain medicine and heroin) use and misuse among high school students by age, race, gender and grade level – Chicago, 2017

	Prescription pain medicine misuse*		Heroin use**	
	%	95% CI	%	95%CI
Chicago	15.0	12.2 - 18.4	4.9	3.0 - 7.9
Illinois	14.1	12.0 - 16.6	3.4	2.5 - 4.6
United States	14.0	12.7 - 15.4	1.7	1.3 - 2.2
Gender				
Male	15.9	12.7 - 19.8	6.7	4.5 - 9.9
Female	13.5	10.2 - 17.6	2.3	0.8 - 6.4
Age Group				
15 or younger	16.8	11.8 - 23.3	5.9	2.9 - 11.8
16 or 17	13.4	10.5 - 17.1	3.7	2.1 - 6.6
18 or older	16.0	11.6 - 21.8	5.5	2.9 - 10.3
Race-Ethnicity				
NH Black or African American	17.5	12.6 - 23.8	4.8	2.2 - 9.9
Latinx	14.1	10.4 - 18.7	4.8	2.5 - 9.1
NH White	12.2	7.7 - 18.8	2.9	0.8 - 10.2
NH Asian	ND	ND	ND	ND
Grade				
9th	15.7	10.4 - 22.9	5.6	2.7 - 11.5
10th	16.6	11.4 - 23.6	5.6	2.6 - 11.5
11th	12.0	8.4 - 16.8	2.2	0.7 - 7.1
12th	14.6	11.3 - 18.7	4.7	2.4 - 9.2
Sexual Identity				
Heterosexual	12.9	10.6 - 15.5	2.5	1.4 - 4.5
Gay, Lesbian or Bisexual	21.9	15.4 - 30.2	11.7	6.3 - 20.8

Data Source: *CDPH Healthy Chicago Survey. NH = Non-Hispanic, ND = no data reported due to small numbers.*
**** YRBS Question 2017:*** *During your life, how many times have you taken prescription pain medicine without a doctor's prescription or differently than how a doctor told you to use it? (Count drugs such as codeine, Vicodin, OxyContin, Hydrocodone, and Percocet.)? Reported percentage is for students who answered one or more times.*
***** YRBS Question 2017:*** *During your life, how many times have you used heroin (also called smack, junk, or China White)? Reported percentage is for students who answered one or more times.*

ADDITIONAL INFORMATION ABOUT OVERDOSE DEATH DATA AND CATEGORIES OF OPIOIDS

In 2017, data were received directly from the 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, 42 cases of the opioid-related overdose deaths that occurred in Chicago in 2017 were re-reviewed and about 55% 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: 575 deaths were categorized as heroin-related deaths. 225 overdose deaths involved heroin alone, 262 involved heroin and fentanyl combined, 21 involved heroin and methadone, 23 involved heroin, methadone and fentanyl, 15 involved heroin and an opioid pain reliever, 18 involved heroin, fentanyl and an opioid pain reliever, three involved heroin, methadone, and an opioid pain reliever, one involved heroin, methadone, fentanyl, and an opioid pain reliever, and seven involved heroin, fentanyl and U-47700.

This category includes two types of deaths:

- Deaths labeled heroin on the death certificate
- Deaths originally labeled "opiate" or "morphine" (morphine is a breakdown product of heroin) 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: 470 deaths were categorized as involving fentanyl or fentanyl analogs by the Cook County Medical Examiner. 140 overdose deaths involved only fentanyl, 262 involved fentanyl and heroin, 23 involved fentanyl, methadone and heroin, nine involved fentanyl and an opioid pain reliever, five involved fentanyl and methadone, 18 involved fentanyl, heroin, and an opioid pain reliever, three involved fentanyl and U-47700, 7 involved heroin, fentanyl, and U-47700, two involved fentanyl and an unknown opioid, and one involved heroin, methadone, fentanyl and an opioid pain reliever.

Opioid pain reliever-involved deaths: 86 deaths were categorized an 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. 34 overdose deaths involved only opioid pain relievers, 15 involved heroin and opioid pain relievers, nine involved fentanyl and opioid pain relievers, five involved methadone and opioid pain relievers, three involved heroin, methadone and opioid pain relievers, 18 involved heroin, fentanyl, and opioid pain relievers, one involved opioid pain relievers and an unknown opioid, and one involved heroin, fentanyl, methadone, and an opioid pain reliever.

Methadone-involved deaths: 68 deaths were categorized as methadone-related overdose. 10 overdose deaths involved methadone only, 21 involved methadone and heroin, 23 involved methadone, heroin and fentanyl, five involved methadone and fentanyl, five involved methadone and an opioid pain reliever, three involved methadone, an opioid pain reliever and heroin, one involved methadone and an unknown opioid, and 1 involved methadone, heroin, fentanyl and an opioid pain reliever.

Unknown opioid-involved deaths: 13 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).

General Resources about 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

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.

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