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To the Honorable JB Pritzker Governor
And Members of the General Assembly:

This report provides details on opioid overdoses in the state of Illinois for the year 2018. Overdose data are also provided from the previous years to allow for comparisons. The Opioid Overdose Semiannual Report consolidates the overdose reporting requirements under the Hospital Licensing Act (210 ILCS 85/6.14g) and the Counties Code (55 ILCS 5/3-3013).

This report includes information on overdose deaths, including heroin and opioid analgesics, by county, sex, age, race, and ethnicity. The 2018 fatal overdose data is final. Additionally, it includes non-fatal overdose information reported by hospitals to the Illinois Department of Public Health (IDPH) as required in the Hospital Licensing Act (210 ILCS 85/6.14g(b)). This semiannual report updates the December 2018 semiannual report, adding more recent data and trends, and provides updates on IDPH activity relating to opioids, including updates to the publicly-available opioid data dashboard.

In 2018, opioid overdose deaths among Illinois residents decreased for the first time in five years with a 1.6% drop from 2,202 in 2017 to 2,167 in 2018. However, this decrease was driven primarily by a decline in deaths among non-Hispanic whites. Deaths among non-Hispanic black and Hispanic residents continued to increase between 2017 and 2018, illustrating a persistent disparity. For Illinois residents across all races/ethnicities, Emergency Medical Services (EMS) data show an increase in the number of non-fatal overdoses requiring multiple administrations of naloxone between 2017 and 2018. Emergency department (ED) visits for opioid overdose also increased, whereas hospitalizations related to opioid overdose decreased slightly.

Continuing reporting, updates, and information may be found on the IDPH website, at <http://dph.illinois.gov/opioids/home> and <http://www.dph.illinois.gov/data-statistics/vital-statistics/death-statistics/more-statistics>. Among many materials on the IDPH web site are the Illinois Opioid Action Plan and the Illinois Opioid Action Plan Implementation Report (dated May 31, 2018), which are located under "Publications".

I hope you find this report informative and useful as we continue working together to address the opioid crisis facing the State of Illinois.

Sincerely,


Ngozi Ezike, MD
Director,

Illinois Department of Public Health

Opioid Overdose Deaths

Background

Opioid overdose deaths are reported to the Illinois Department of Public Health (IDPH) through the submission of death certificates from coroners, medical examiners, or attending physicians. After the death certificates are submitted to IDPH, they are submitted to the National Center for Health Statistics (NCHS) to assign *International Classification of Disease, Tenth Revision* (ICD-10) codes using NCHS's SuperMICAR software.

In reporting opioid overdose deaths, IDPH identifies those death records of Illinois residents where drug overdose was reported as the underlying cause of death (ICD-10 codes X40-X44, X60-X64, X85, Y10-Y14). Opioid overdose deaths are considered a subset of drug overdose deaths in which any opioid drug was reported as a contributing cause of death (ICD-10 codes T40.0, T40.1, T40.2, T40.3, T40.4, and T40.6). IDPH reports opioid overdose deaths in three categories: any opioid, heroin, and opioid analgesics. The opioid analgesic category includes drug overdose deaths in which any opioid analgesic was reported as a contributing cause of death (ICD-10 codes T40.2, T40.3, and T40.4). Opioid analgesics include natural (e.g. morphine and codeine) and semi-synthetic opioid analgesics (e.g. oxycodone, hydrocodone, hydromorphone, Oxymorphone), methadone, and synthetic opioid analgesics other than methadone (e.g. fentanyl and tramadol). IDPH does not collect data related to the legality of manufacturing or obtaining the opioids used in any given opioid analgesic overdose death.

Status of reporting

IDPH began posting monthly drug overdose reports in January 2016. This report can be found on the Vital Statistics section of the IDPH website (<http://www.dph.illinois.gov/data-statistics/vital-statistics/death-statistics/more-statistics>).

IDPH continues to refine the monthly report to provide the most accurate and useful information for various stakeholders, including law enforcement, local health departments, and the general public. The report breaks down overdose deaths from all drugs, opioids, heroin, and opioid analgesics.

There have been some challenges in the creation of this report. Overdose deaths are a subset of deaths classified as injuries, which include suicides, homicides, and accidental deaths. Due to the nature of these death investigations, including the determination of intent and the cause of death, reporting can be delayed. Reliable data are not available until a cause of death has been determined by the coroner or medical examiner and the finalized death certificate is coded by the National Center for Health Statistics, which may take months. While real-time data would be ideal, the submission of complete and accurate death data necessarily takes time.

Another challenge in reporting opioid overdose deaths is the limitation in testing for specific drugs. Some tests, such as the test for heroin (6-MAM), are only effective for a short period. Often, when an individual has died of a heroin overdose, the toxicology tests come back positive for morphine rather than heroin. This may result in some heroin deaths being misclassified as morphine deaths.

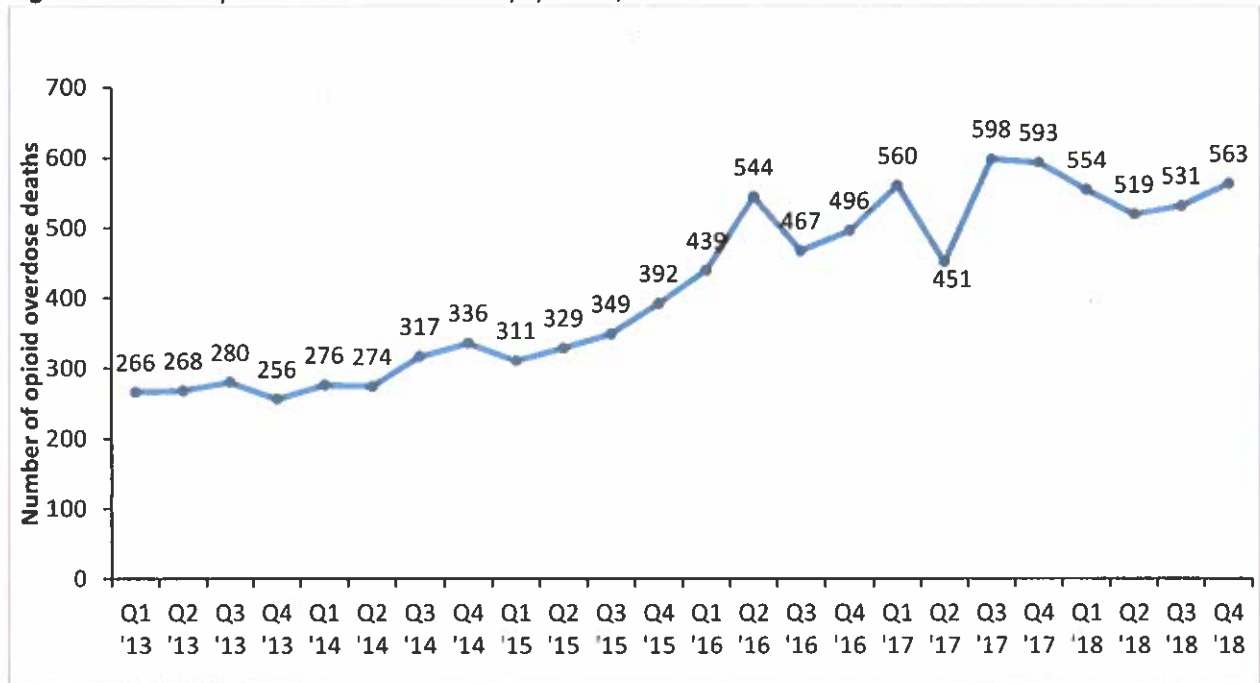
Overall trends

In Illinois, opioid overdose deaths have been rising dramatically, but recent data show a promising change. In 2018, opioid overdose deaths among Illinois residents decreased for the first time in five years, with a 1.6 % drop from 2,202 deaths in 2017 to 2,167 in 2018. Previously, the number of deaths had more than doubled between 2013 to 2017 (Figure 1). However, racial disparities exist. While opioid overdose deaths among non-Hispanic white residents decreased by 6.5% between 2017 and 2018, deaths among non-Hispanic black residents increased by 9.1% and deaths among Hispanic residents increased by 4.3%. In 2018, the overall death rate per 100,000 Illinois residents was 17.0. Rates were highest among non-Hispanic black residents (32.8), followed by non-Hispanic white (16.8) and Hispanics (9.9). (Figure 2)

Between 2017 and 2018, overdose deaths involving heroin decreased by 11.5%, whereas deaths involving opioid analgesics increased by 13.1%. Of those deaths involving opioid analgesics, those involving natural and semisynthetic opioids decreased 17.6%, while those involving synthetic opioids increased 25.3%.

Between 2017 and 2018, opioid overdose deaths decreased among residents in Cook County (3.5%), collar counties (5.3%) and rural counties (2.8%), whereas urban county residents experienced an increase of 6.8%. The 2018 opioid overdose death rate per 100,000 was highest among urban county residents (20.7), followed by Cook County (19.3), collar counties (13.4) and rural counties (12.2). (Figure 3)

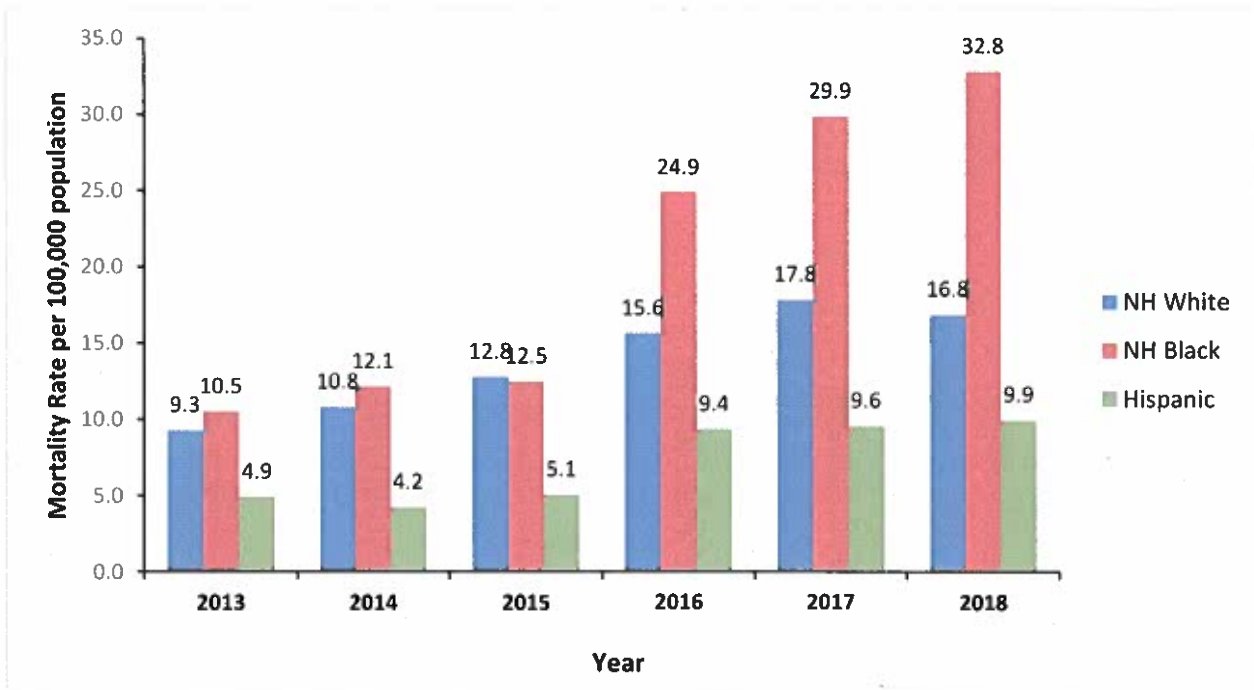
Figure 1. Illinois opioid overdose deaths by quarter, 2013-2018



Source: Illinois Vital Records System, Illinois Department of Public Health

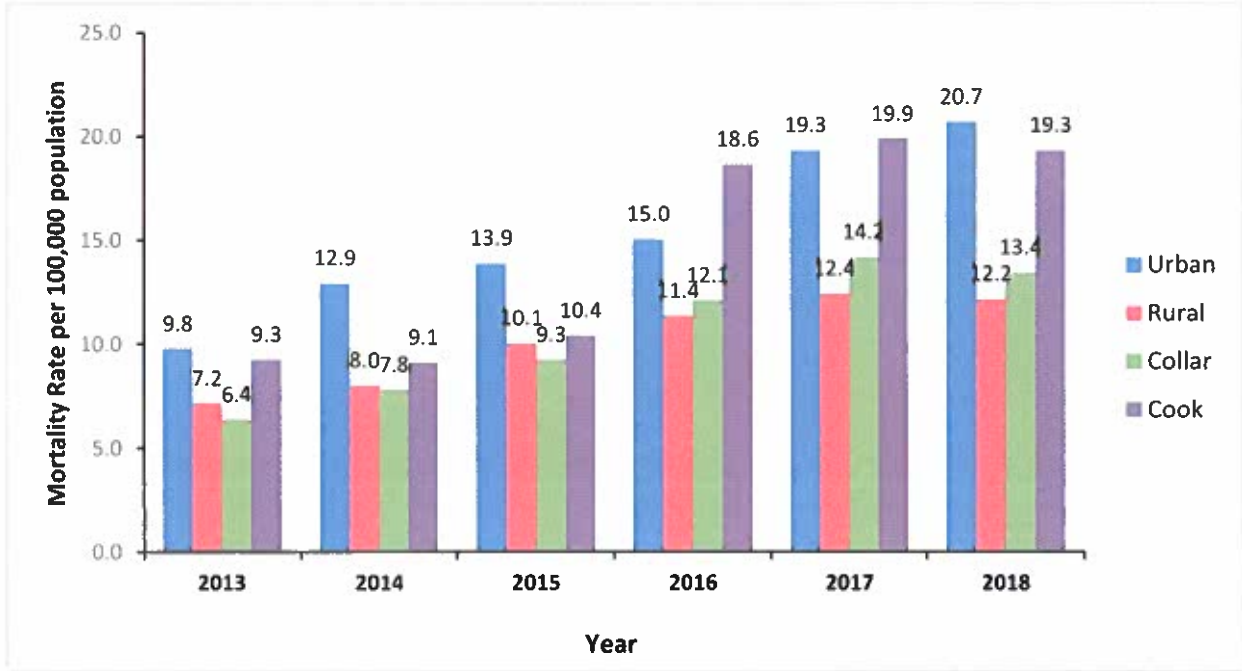
Figure 1 illustrates the growing epidemic of opioid overdoses in Illinois. Generally, due to the time it takes to finalize and code death records, the numbers for any quarter may change substantially until approximately six months after the end of the quarter. Because determining if and when the numbers will change is difficult until the entire year's data are finalized, the data are subject to change and may be difficult to interpret.

Figure 2. Opioid overdose mortality rates per 100,000 population by race, Illinois, 2013-2018



Source: Illinois Vital Records System, Illinois Department of Public Health

Figure 3. Opioid overdose mortality rates per 100,000 population by resident county classification, Illinois, 2013-2018



Source: Illinois Vital Records System, Illinois Department of Public Health

Notes: Collar Counties include DuPage, Kane, Lake, McHenry, and Will Counties.

Rural is defined as a county not part of a metropolitan statistical area (MSA), as defined by the U.S. Census Bureau, or a county that is part of an MSA but has a population less than 60,000.

Opioid Overdose Hospitalizations and Emergency Department Visits

Background

IDPH captures opioid overdose morbidity data from two sources: 1) syndromic surveillance, real-time data based on national standards for Meaningful Use and 2) hospital discharge dataset, which is submitted on a quarterly basis and has a five-month reporting delay due to ICD-10 coding and additional review procedures.

Under the Hospital Licensing Act (210 ILCS 85/6.14g(b)), emergency departments (EDs) are required to report cases to IDPH within 48 hours of providing treatment for a drug overdose or after a drug overdose is confirmed. IDPH has established an automated, real-time syndromic surveillance system with all acute care hospitals in Illinois with an ED. This dataset includes free text (unstructured text fields) of the diagnosis, chief complaint, and details of the reason for visit from patient self-report and provider notes. These data are available to local and state health departments to track daily trends,

review spatial distribution to the county or ZIP code, and for comparisons with national and Health and Human Service (HHS) regional data. Dashboards are available for hospital and health department staff to view real-time analysis, including detection alerts when cases exceed baseline levels. In collaboration with the Illinois Hospital Association, IDPH piloted a process in November 2016 to utilize syndromic surveillance to fulfill the 48-hour reporting requirement in the Hospital Licensing Act. Administrative rules to effectuate this reporting became effective on May 24, 2018; the rules were published in the Illinois Register on June 8, 2018 {77 IAC 250.1520 (g)}.

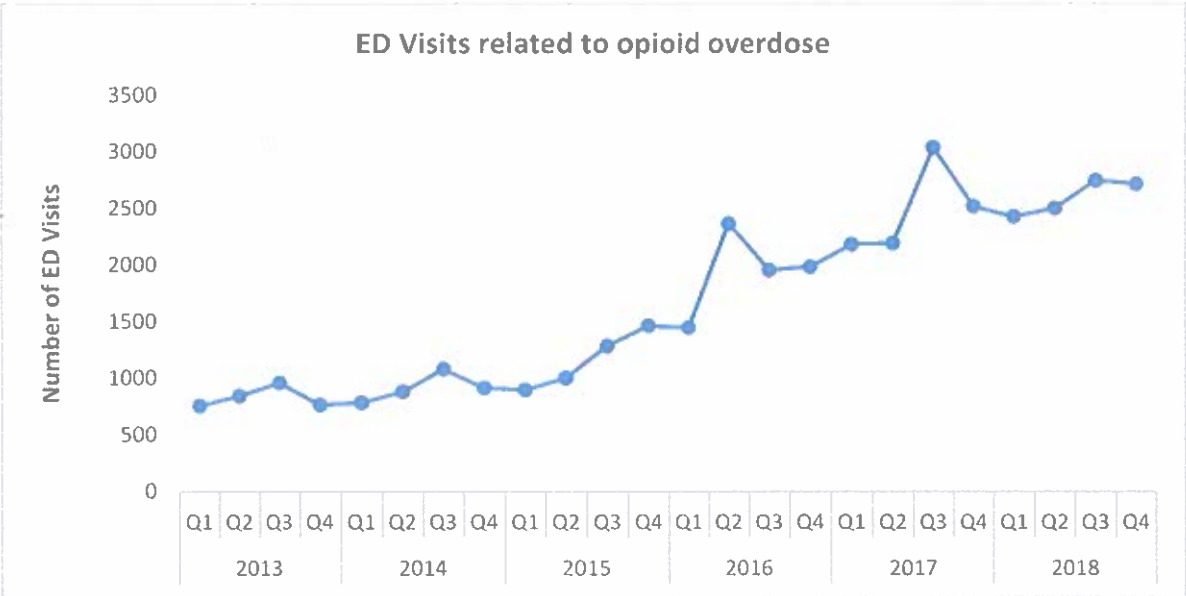
The hospital discharge dataset was used for the analysis in this report because historical data are available to analyze trends.

Overall trends

Below are six figures related to Illinois ED utilization and hospitalizations for all opioid overdoses, opioid overdoses excluding heroin, and heroin overdoses from 2013 to 2018. ED visits related to opioid overdose have continued to increase each year. Figure 4 shows a continued increase in ED visits from early 2013 through 2018. The most recent data show a 67% increase in ED visits due to opioid overdose from 2015 to 2016, 28% increase from 2016 to 2017, and 4% increase from 2017 to 2018 which represents a smaller increase than experienced in previous years. Hospitalizations due to all opioids increased by 24% from 2015 to 2016, stayed approximately the same from 2016 to 2017 (Figure 5), and decreased by 6 % in 2018. Hospitalizations due to heroin overdose after increase in 2017 stayed the same during 2018 (Figure 8) while hospitalizations due to overdoses involving opioids other than heroin decreased by 10% in 2018 (Figure 7). In the last 3 quarters of 2018, there was a significant increase in ED visits for overdoses involving opioids other than heroin (Figure 6).

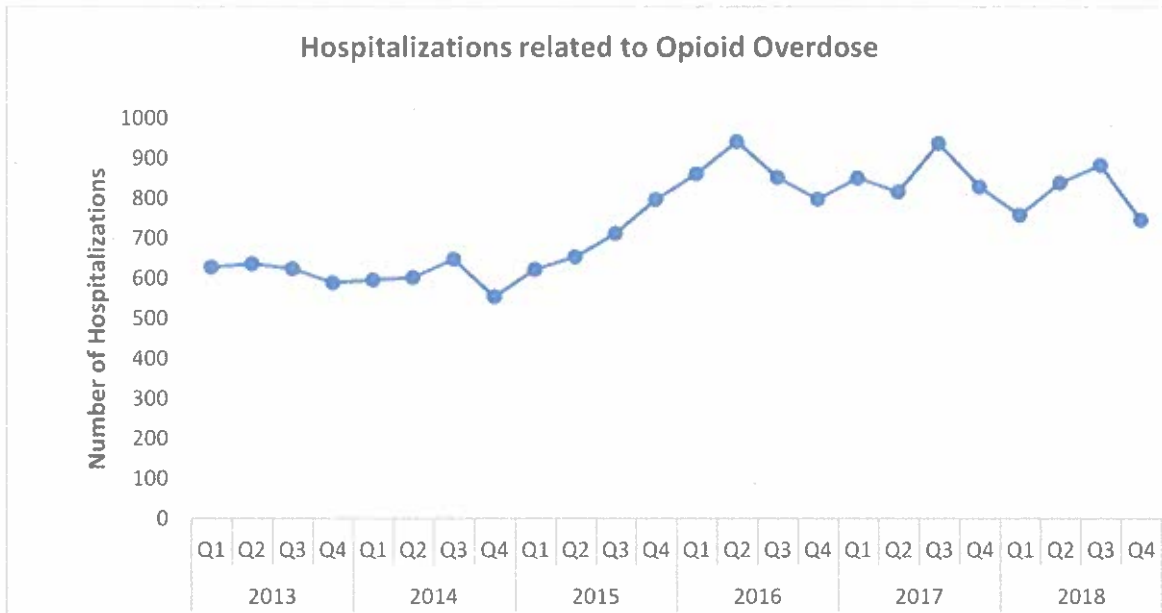
The increase in opioid overdose-related ED visits and hospitalizations due to heroin overdoses continued in 2018 (Figure 8 and Figure 9). These overdoses have increased steadily since early 2015 and that trend continues in 2018.

Figure 4. ED Visits related to opioid overdose by quarter, 2013-2018



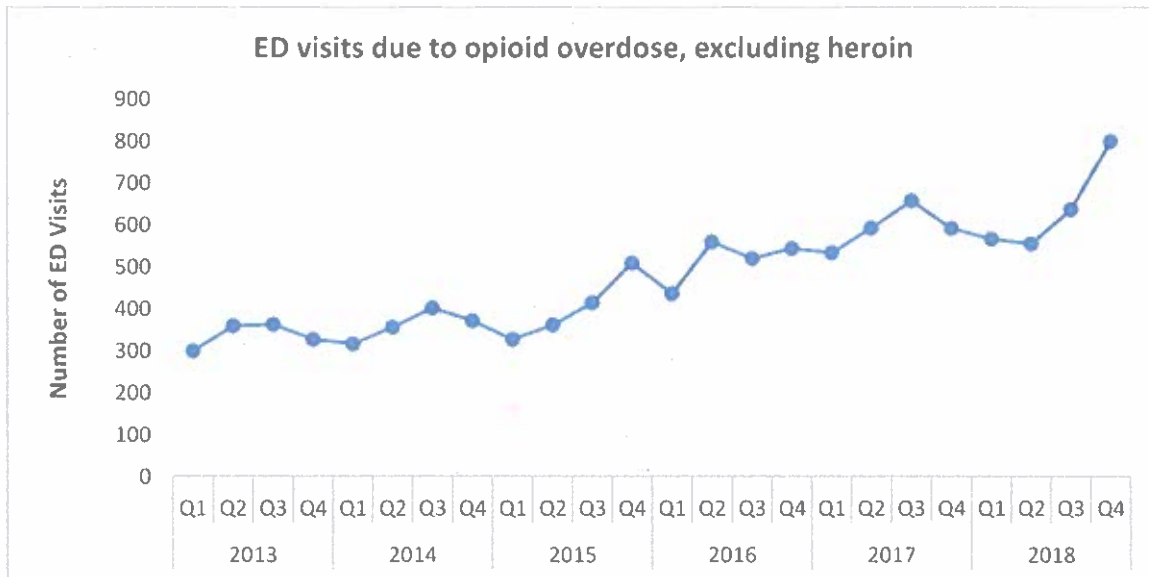
Source: ED Discharge Dataset, Illinois Department of Public Health
Notes: ED visits resulting in hospitalization are not included in these data

Figure 5. Inpatient hospitalizations due to opioid overdose by quarter, 2013-2018



Source: Hospital Discharge Dataset, Illinois Department of Public Health

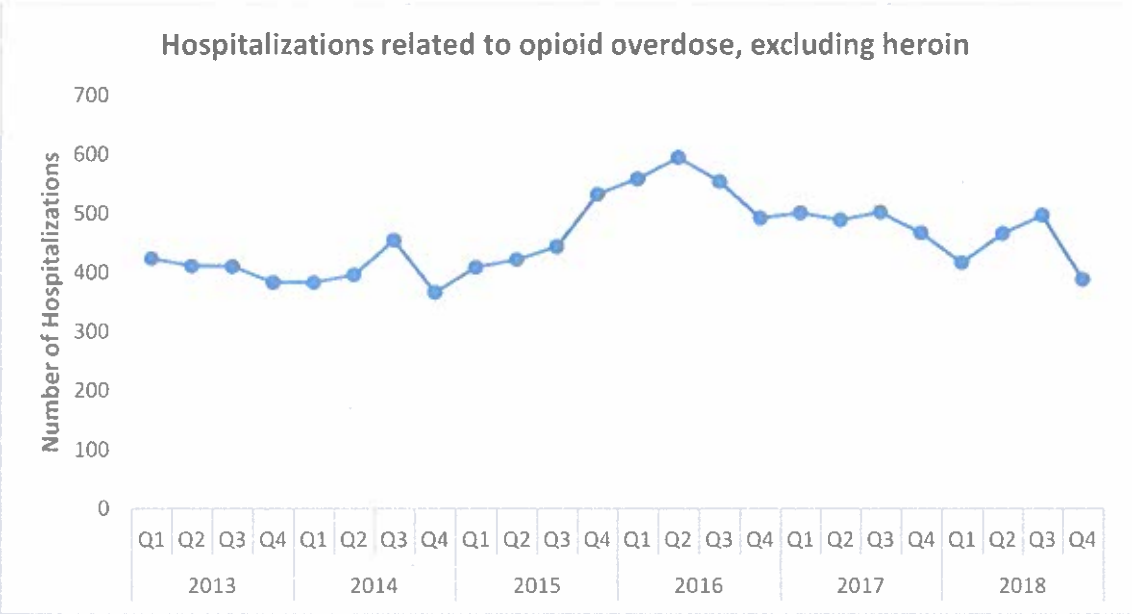
Figure 6. ED visits related to opioid overdose, excluding heroin by quarter, 2013-2018



Source: ED Discharge Dataset, Illinois Department of Public Health

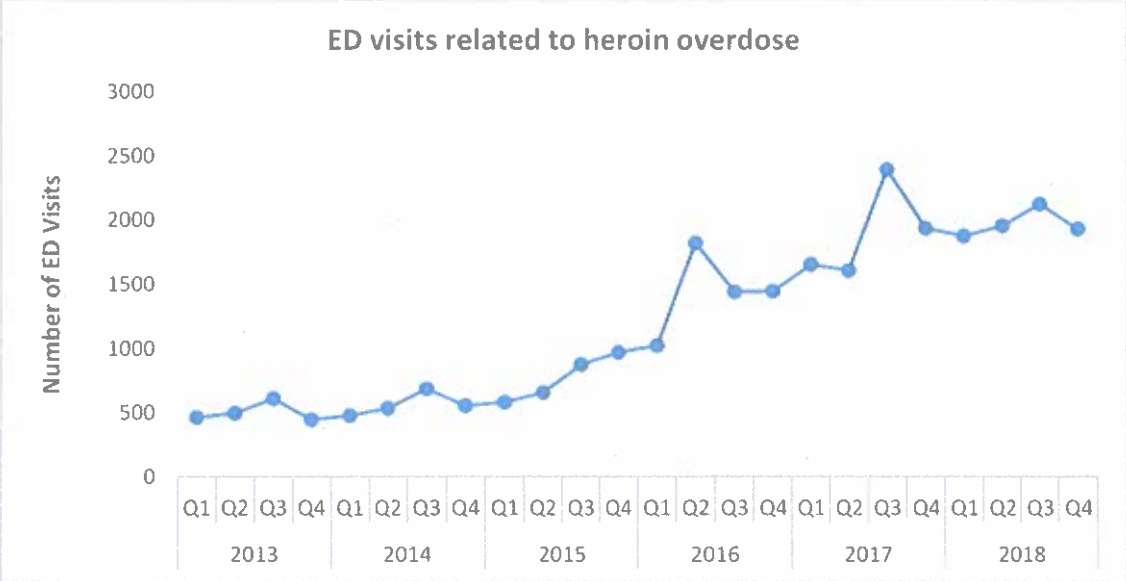
Notes: ED visits resulting in hospitalization are not included in these data

Figure 7. Inpatient hospitalizations due to opioid overdose, excluding heroin by quarter, 2013-2018



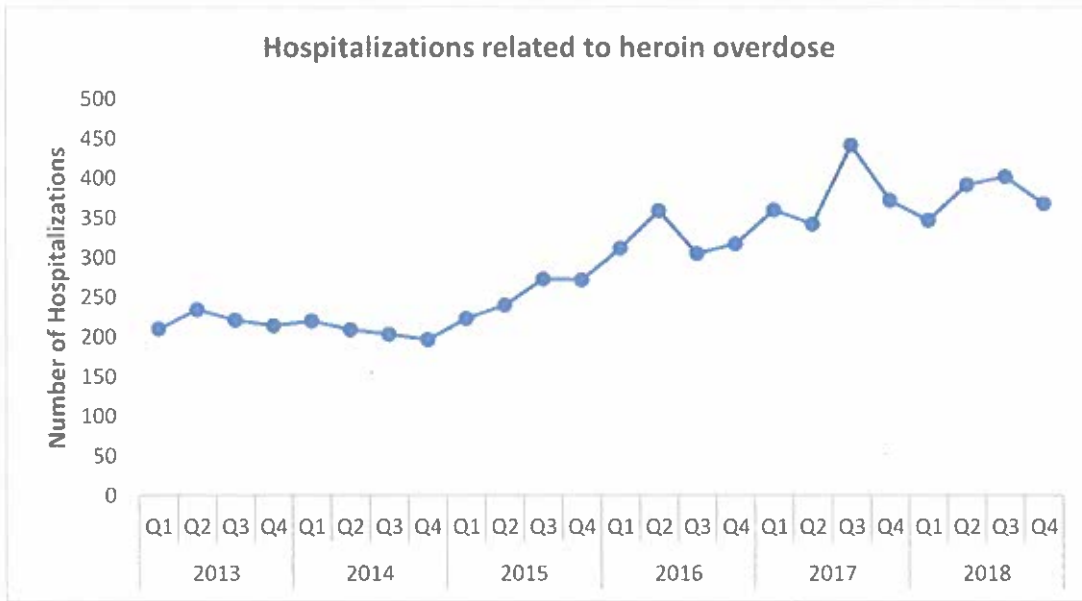
Source: Hospital Discharge Dataset, Illinois Department of Public Health

Figure 8. ED visits related to heroin overdose by quarter, 2013-2018.



Source: ED Discharge Dataset, Illinois Department of Public Health
 Notes: ED visits resulting in hospitalization are not included in these data

Figure 9. Hospitalizations related to heroin overdose by quarter, 2013-2018



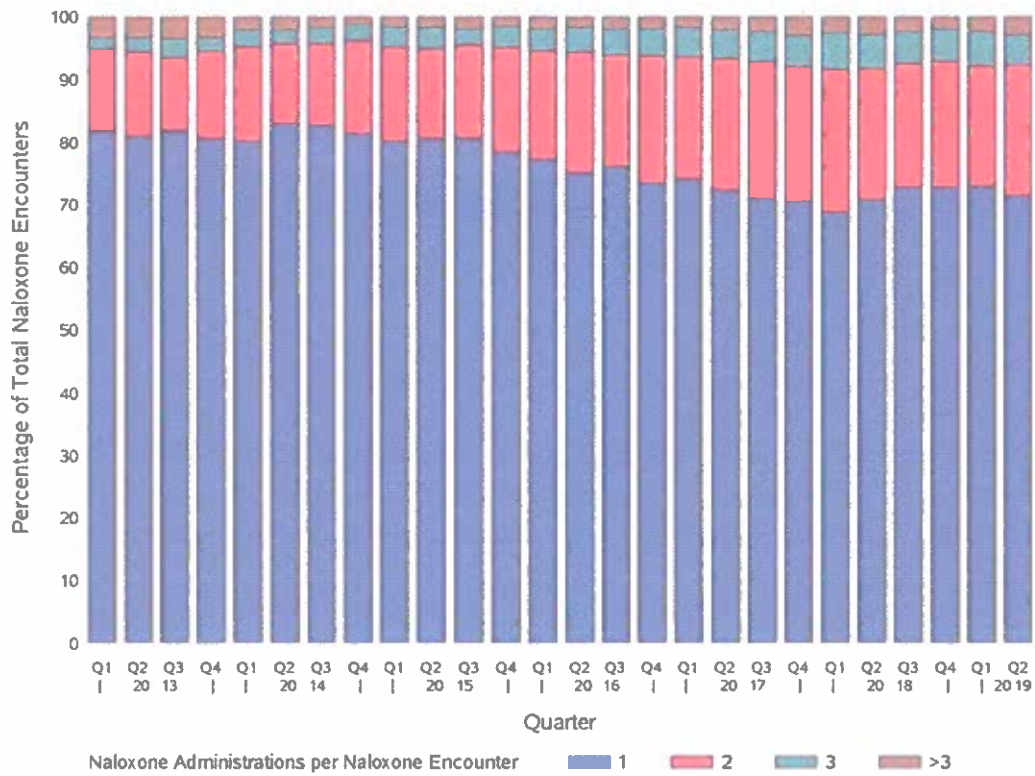
Source: Hospital Discharge Dataset, Illinois Department of Public Health

Emergency Medical Services Naloxone Administration

The Illinois Emergency Medical Services (EMS) dataset conforms to the current version of the national standard for EMS data known as NEMSIS (National Emergency Medical Services Information System Version 3.4).

Naloxone administration is an indication, not a confirmation, of opioid overdose. EMS data show that although the percentages of EMS-patient encounters with two and with three naloxone administrations per encounter have steadily increased from mid-2014 through the first quarter of 2018, the relative size of each of these two categories has leveled off over the past five quarters. The number of encounters with more than three administrations per encounter has increased only slightly over this time range (Figure 10). An increase in the proportion of incidents requiring multiple administrations of naloxone is seen as an indicator of the increasing poisonousness of the types of opioids involved.

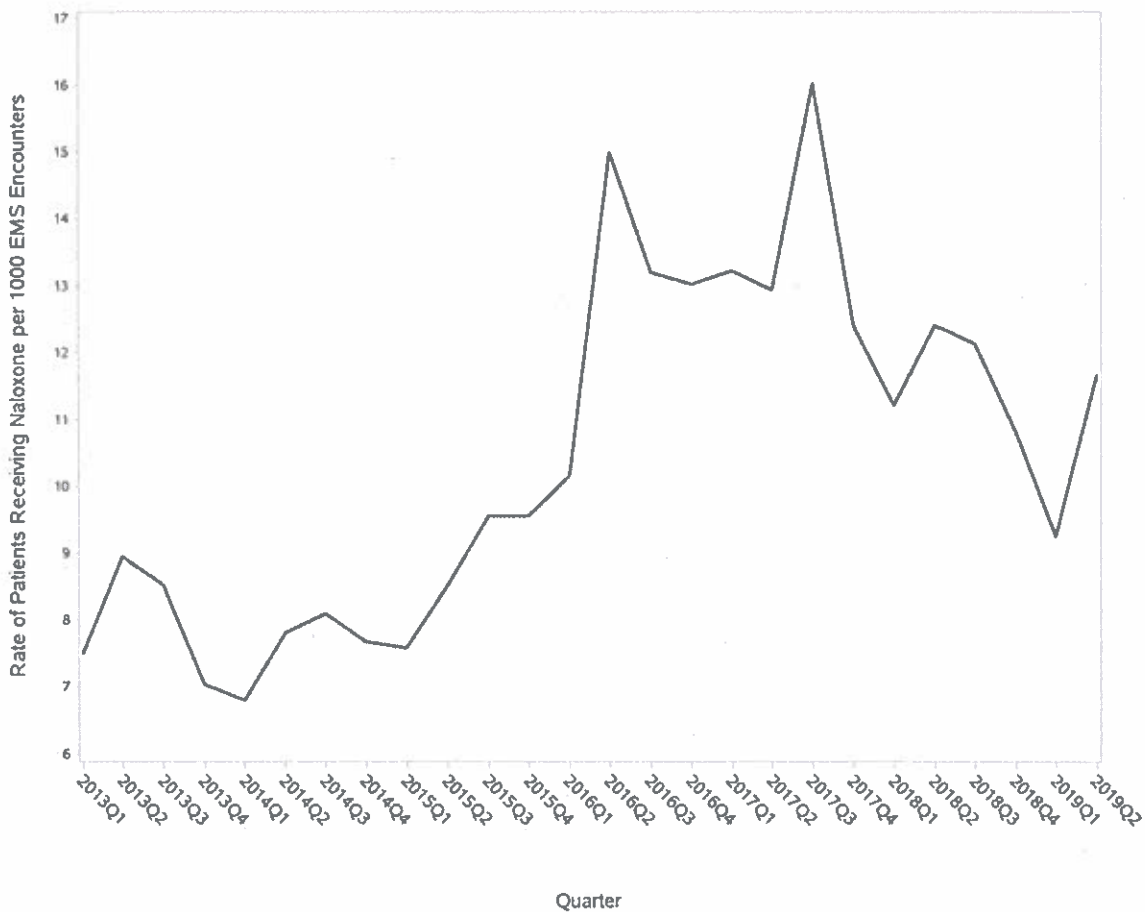
Figure 10. Naloxone administrations per EMS overdose response by quarter, 2013-Q2 2019



Source: IDPH Division of EMS and Highway Safety

Figure 11 shows the number of EMS-patient encounters involving naloxone per 1,000 EMS patient encounters of any kind, from the beginning of 2013 through mid-2019. This rate has fluctuated from fewer than 7-per-1,000 in early 2014 to more than 16-per-1,000 during the third quarter of 2017. The rate has dropped following the 2017 peak and has ranged from 9-12 per 1,000 over the past year.

Figure 11. EMS patient encounters involving naloxone per 1,000 EMS encounters by quarter, 2013-Q2 2019



Source: IDPH Division of EMS and Highway Safety

Updated Opioid Data Dashboard

IDPH updated the opioid data dashboard with 2018 death data and additional data sets. As of June 2019, the dashboard now includes the locations of Medication Assisted Treatment (MAT) providers as well as Illinois Department of Human Services Substance Use Prevention and Recovery (IDHS/SUPR) licensed treatment services. Medication Assisted Treatment (MAT) is the use of FDA-approved medication with counseling and behavioral health therapies to treat substance use disorders. MAT

includes Buprenorphine, Methadone, and Injectable Naltrexone. Treatment services provided by SUPR licensed facilities include Outpatient, Intensive Outpatient, and Residential Rehabilitation. The dashboard also includes fatal and nonfatal overdoses by county, overdoses by ZIP code where available, opioid prescribing information from the Prescription Monitoring Program by county, and a map of all locations where naloxone is distributed, whether from a pharmacy or an opioid overdose education and naloxone distribution (OEND) program. This data dashboard is continuously updated and may be found at <http://idph.illinois.gov/opioiddatadashboard>.

Summary

IDPH 2018 data shows a 1.6% decrease in fatal opioid overdoses, the first decrease in five years. As activities in the State Opioid Action Plan progress the tide has begun to turn and more lives are being saved. However, non-fatal opioid overdoses have not abated, and the racial and ethnic disparities continue to widen. For more information about the opioid crisis in Illinois, including the Illinois Opioid Action Plan and the Illinois Opioid Action Plan Implementation Report, please see <http://dph.illinois.gov/opioids/home>.