

State of Illinois Comprehensive Opioid Data Report



December 4, 2017

Contents

- Executive Summary 3
- Introduction..... 4
- Opioid-Related Overdose Deaths..... 5
 - Demographic Analysis of Opioid Overdose Deaths*..... 7
 - Drugs involved in fatal opioid overdose*..... 10
- Opioid-Related Emergency Department Visits and Inpatient Hospitalizations..... 11
 - Statewide* 11
 - County Level Patterns* 12
- Naloxone Administration by EMS Providers 19
- Neonatal Abstinence Syndrome 20
- Opioid Prescribing..... 22
 - Patients Under 18* 25
 - “3-3-1” Prescriptions*..... 25
 - Benzodiazepines and Opioids*..... 26
 - Electronic Health Record Integration* 29
- Infectious Diseases..... 30
 - HIV*..... 30
 - Hepatitis C*..... 33
 - Harm Reduction Sites*..... 37
- Conclusion..... 38

Executive Summary

Illinois is in the midst of an unprecedented opioid epidemic. In 2016, opioid-related overdoses claimed the lives of 1,946 Illinoisans, more than one and half times the number of homicides and nearly twice the number of fatal car accidents. In response, state agencies began meeting to develop a comprehensive plan to address the crisis. On September 6, 2017, the State of Illinois Opioid Action Plan (SOAP) was released pursuant to Executive Order 2017-05.

The SOAP sets an overall goal of reducing projected opioid-related deaths by one-third in three years. To help understand the complex dynamics of this crisis, we are releasing this Comprehensive Opioid Data Report. It is a compilation of existing state epidemiological data regarding the causes and consequences of this crisis. The purpose of this report is to present a landscape analysis of the Illinois opioid epidemic that will serve to inform statewide efforts to implement the SOAP.

This report contains a variety of opioid-related epidemiological data from multiple state agencies. Below is a summary of four key trends in the data:

- 1. Opioid overdoses have been increasing in recent years.** As noted above, there were 1,946 opioid overdose fatalities in 2016, an 82% increase since 2013. Nonfatal opioid overdoses, as tracked by emergency department visits and hospitalizations, have likewise been rising dramatically statewide (Figures 4-5).
- 2. Synthetic opioids such as fentanyl and its analogues are disproportionately contributing to the rise in both fatal and nonfatal overdoses.** Over the past three years, deaths due to synthetic opioids have increased tenfold, from 87 in 2013 to nearly 900 in 2016. The growing problem of synthetic opioids is also reflected in emergency medical service (EMS) data. These data reported a significant increase in multiple administrations of the opioid overdose reversal drug naloxone - an indicator of a synthetic opioid overdose (Figure 12).
- 3. Opioid overdoses are an urban, suburban, and rural problem.** While the highest absolute number of opioid overdoses are in Cook County and the collar counties, many of the highest per population overdose rates are seen in pockets of rural counties statewide (Figures 6-11).
- 4. Opioid prescribing activity has been decreasing.** Since 2013, the total number of opioid prescriptions reported to the Illinois Prescription Monitoring Program has decreased by 9.8%. This is consistent with an overall national trend toward reduced opioid prescribing in recent years as compared to peak prescribing in the late 2000s and early 2010s. Nevertheless, opioid prescribing activity remains significantly higher today as compared to the late 1990s (Figures 16-17).

The data presented in this report are a snapshot of the impact of opioids on our state today. As statewide efforts to combat the opioid epidemic and implementation of the SOAP progress in the upcoming months and years, it will be critical to continue collecting and analyzing all data available to identify and respond to emerging trends and inform our work.

Introduction

Opioids are a class of drugs that include heroin, common prescription pain relievers such as oxycodone and hydrocodone (*i.e.*, Vicodin®, Percocet®, Oxycontin®), and synthetically manufactured analogues such as fentanyl. Prescription opioids are important pain medications that can provide much-needed relief for patients with acute and chronic pain. However, physical tolerance to opioids can develop in as few as two to three days of continuous use,¹ increasing an individual's risk of developing opioid use disorder (OUD) and suffering an overdose. Opioids affect respiratory regulation in the brain, and an overdose can cause someone to stop breathing, resulting in death.

The opioid epidemic currently gripping the nation represents the deadliest drug crisis in United States history. The Centers for Disease Control and Prevention (CDC) estimates that nearly half a million people in the U.S. died of an opioid-related drug overdose between 2000-2014.² In Illinois, opioid overdoses have led to more than 11,000 fatalities since 2008. Dangerously potent and poisonous synthetic opioids such as fentanyl are increasingly making their way into the illicit drug supply, and opioid-related deaths have been rising exponentially in recent years. Beyond the number of deaths is the broader impact of the opioid crisis on individuals, families, and communities. An estimated one in three Illinoisans have been affected by the crisis,³ either suffering from OUD themselves or knowing someone with OUD or who has overdosed.

On September 6, 2017, Governor Bruce Rauner signed Executive Order 2017-05, directing state agencies to develop a comprehensive plan to address the opioid crisis in Illinois, as well as accomplish a number of action items within 90 days. The State of Illinois Opioid Action Plan, developed in collaboration with 10 state agencies, was released that day, and is available here: <http://dph.illinois.gov/sites/default/files/publications/Illinois-Opioid-Action-Plan-Sept-6-2017-FINAL.pdf>.

Pursuant to Executive Order 2017-05, the Illinois Department of Public Health (IDPH) is releasing this State of Illinois Comprehensive Opioid Data Report. In this report, IDPH has compiled data from a variety of sources across state agencies to provide a comprehensive epidemiological view of the impact of opioids on our state.

¹ Shah, A., Hayes, C., Martin, B., (2017). Characteristics of initial prescription episodes and likelihood of long-term opioid use – United States, 2006-2015. *MMWR Morbidity and Mortality Weekly Report*, 66, 265-269.

² Rudd, Rose A., et al. *Increases in Drug and Opioid Overdose Deaths — United States, 2000–2014*. Centers for Disease Control and Prevention. 2016. pp. 1378-82, *Morbidity and Mortality Weekly Report*.

³ National Safety Council. (2017). *Prescription Opioid Painkiller Public Opinion Poll*.

Opioid-Related Overdose Deaths

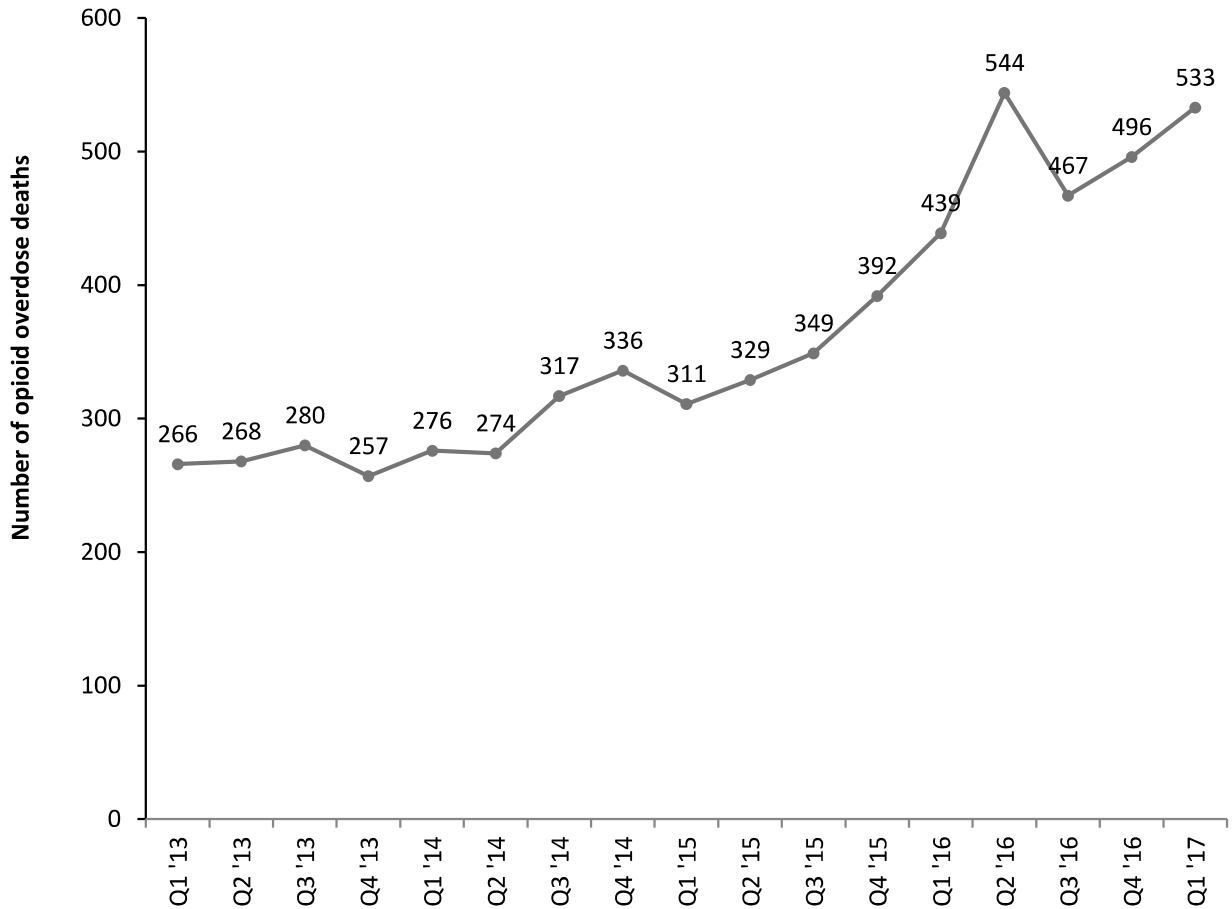
IDPH used death records of Illinois residents where drug overdose was reported as the underlying cause of death (International Classification of Disease, Tenth Revision (ICD-10) codes X40-X44 (unintentional), X60-X64 (suicide), X85 (homicide), and Y10-Y14 (undetermined intent)) to identify opioid overdose deaths. Among these death records, the type of opioid involved is indicated by the following ICD-10 multiple cause-of-death codes: T40.0 (opium), T40.1 (heroin), T40.2 (natural (e.g., morphine and codeine) and semisynthetic opioids (e.g., oxycodone, hydrocodone, hydromorphone, oxymorphone), T40.3 (methadone), T40.4 (synthetic opioids other than methadone (e.g., fentanyl and tramadol)), and T40.6 (other and unspecified narcotics).

IDPH classifies opioid overdose deaths into three categories:

- Overdose deaths involving heroin
- “Opioid analgesics,” which 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)
 - *Death certificates do not include information regarding whether opioid analgesics were obtained legally (i.e., prescribed by a physician) or illicitly, and thus, it is not possible to definitively categorize a death involving an opioid analgesic as caused by a “legitimate” prescription.*
- “Any opioid,” which includes deaths due to heroin, opioid analgesics, and other and unspecified narcotics.

As seen in Figure 1, opioid overdose deaths have been rising dramatically in Illinois. According to 2016 provisional data (as of November 2017), there were 1,946 opioid deaths among Illinois residents, a continuous and substantial increase over 1,072 deaths in 2013. Furthermore, there were 1,203 deaths in 2014 and 1,382 deaths in 2015. Much of this increase is due to deaths from synthetic opioids such as fentanyl and other analogues, as well as opioid analgesics, which include prescription drugs such as oxycodone and hydrocodone.

Figure 1. Number of Opioid Overdose Deaths by Quarter, Illinois, 2013–2017



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

Notes: Age-adjusted death rates are calculated in order to compare rates across different populations that may have different age distributions, such as geographical areas (within the state or comparing to other states) or racial or ethnic groups. Age-adjusted death rates were calculated only when there are ≥ 20 deaths in any given group. Of the 15 counties with ≥ 20 deaths in either 2015 or 2016, 11 had ≥ 20 deaths in both 2015 and 2016, allowing for reliable rate comparisons.

Demographic Analysis of Opioid Overdose Deaths

From 2015 to 2016, the overall statewide age-adjusted opioid overdose death rate in Illinois increased by 38% from 10.7 deaths per 100,000 population to 14.7 deaths per 100,000 population. The largest rate increase from 2015 to 2016 was seen in Kendall County where the opioid overdose rate more than tripled. Note that it is important to interpret these results with caution because of the low numbers reported. In 2016, the City of Chicago and Madison County had the highest rates of opioid overdose deaths rates in Illinois.

Table 1. Age-adjusted opioid overdose death rates per 100,000 population, Illinois residents, 2015-2016

Resident County	2015	*2016	Percent change
ILLINOIS	10.7	14.7	37.4
Champaign	12.5	**9.4	** -24.8
Cook	9.9	17.4	75.8
<i>Chicago</i>	11.8	21.7	83.9
<i>Suburban Cook</i>	8.7	13.8	58.6
Du Page	8.8	12.3	39.8
Kane	4.9	9.1	85.7
Kendall	**5.7	18.17	**218.8
Lake	10.6	11.2	5.7
La Salle	20.8	**13.7	** -34.1
McHenry	14.1	17.5	24.1
Madison	25.9	20.1	-22.4
Peoria	14.3	14.5	1.4
St. Clair	10.9	9.9	-9.2
Sangamon	18.7	11.6	-38
Tazewell	**15.5	17.9	**15.5
Will	12.1	15.4	27.3
Winnebago	23.9	28.9	20.9

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

Notes: Age-adjusted death rates were calculated by applying age-specific death rates to the 2000 U.S. standard population age distribution. 2016 rates are based on 2015 U.S. Census Bureau population estimates.

* Provisional data as of 6/15/2017

** Rate based on <20 deaths

The age-adjusted opioid overdose death rates for all racial/ethnic groups increased between 2015 and 2016, but the greatest increase was among the non-Hispanic (NH) black population (12.5 to 24.0 per 100,000 population). NH blacks had the highest rate of opioid overdose deaths in 2016 in Illinois. The Hispanic population also saw a large increase, from 5.1 to 9.4 opioid overdose deaths per 100,000 population.

Table 2. Age-adjusted opioid overdose death rates by race/ethnicity, Illinois residents 2015–2016

Race/Ethnicity	2015	*2016	Percent change
Total	10.7	14.7	37.3
NH White	13.3	15.7	18
NH Black	12.5	24	92
NH Other	**	2.7	N/A
Hispanic	5.1	9.4	84.3

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

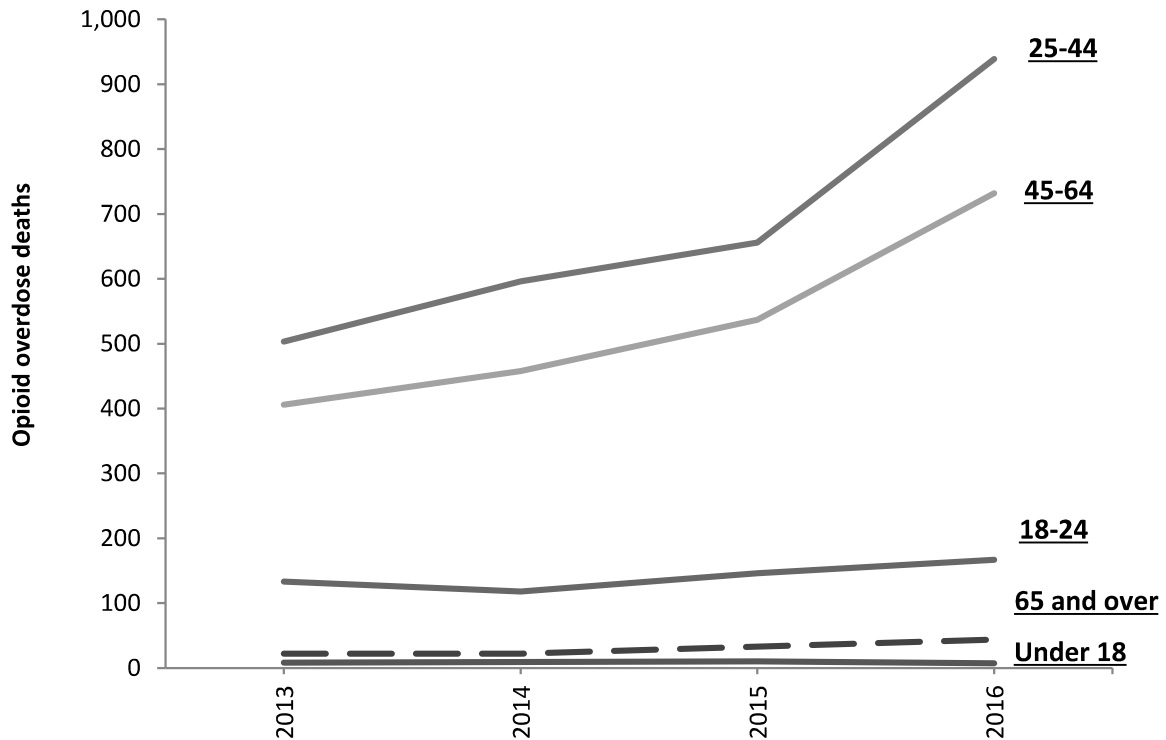
Notes: Age-adjusted death rates were calculated by applying age-specific death rates to the 2000 U.S. standard population age distribution. 2016 rates are based on 2015 U.S. Census Bureau population estimates

*Provisional data as of 7/25/2017

** Rate based on <20 deaths

The age groups most affected by fatal opioid overdose are the 25-44 and 45-64 groups. Fatal overdoses in the 65 and over age group have increased steadily but are much lower than other age groups. Fatal opioid overdoses in those 18 and younger are rare and decreased between 2015 and 2016.

Figure 2. Fatal opioid overdoses by age group, 2013-2016

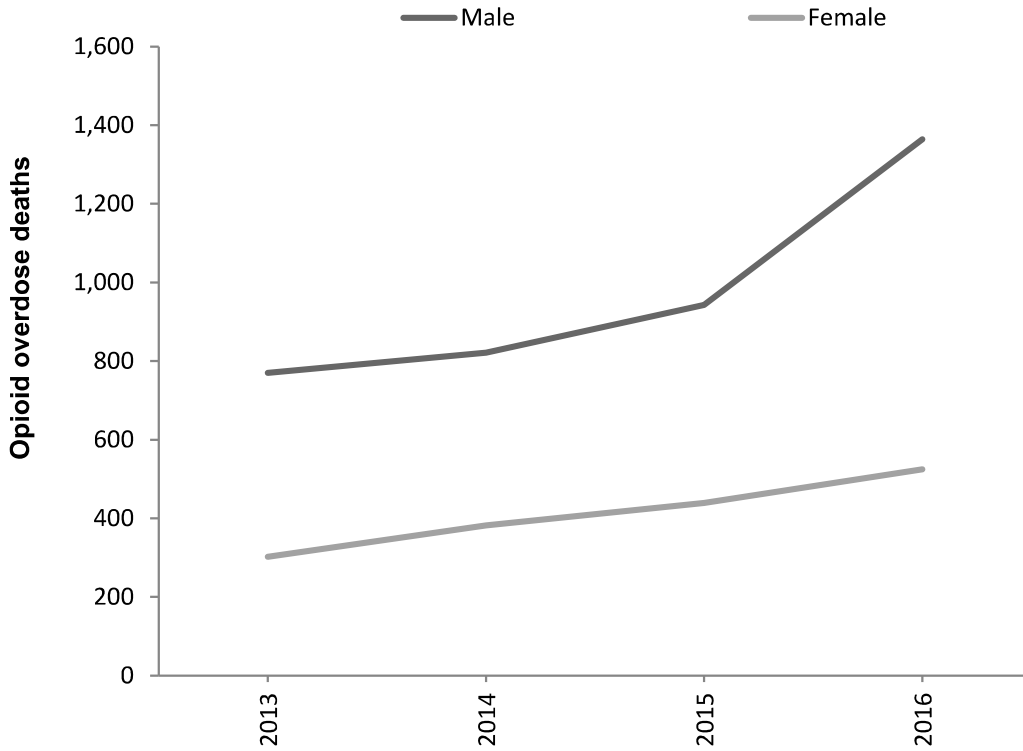


Source: Illinois Department of Public Health, Division of Vital Records

Notes: 2016 data are provisional

While fatal opioid overdoses have increased for both men and women between 2013 and 2016, significantly more men than women die of opioid overdose. In 2016, 2.6 men died of an opioid overdose for every woman.

Figure 3. Fatal opioid overdose by sex, 2013-2016



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

Notes: 2016 data are provisional

Drugs involved in fatal opioid overdose

Since 2013, Illinois has experienced a substantial increase in overdose deaths from all categories of opioids. Most striking has been the tenfold increase in deaths due to synthetic opioids, including fentanyl and fentanyl analogues. Deaths due to natural and semi-synthetic opioids, including prescription pain relievers such as hydrocodone, oxycodone, and oxymorphone, doubled, and deaths due to heroin increased by 73 percent.

Table 3. Substances involved in opioid overdose deaths

Substance	2013	2014	2015	2016
<i>Heroin (T40.1)</i>				
Heroin	583	711	844	1007
<i>Natural and Semi-synthetic (T40.2)</i>				
Any natural/semi-synthetic opioid	184	251	271	370
Buprenorphine	0	0	1	0
Hydrocodone	92	118	129	154
Hydromorphone	5	17	15	38
Morphine	54	74	84	104
Oxycodone	29	49	51	65
Oxymorphone	5	10	8	18
<i>Methadone (T40.3)</i>				
Methadone	92	106	99	121
<i>Synthetic (T40.4)</i>				
Any synthetic opioid	87	127	279	879
3-Methyl Fentanyl	0	0	0	1
4-ANPP	0	0	0	219
Acetyl Fentanyl	0	0	10	35
Acrylfentanyl	0	0	0	6
Carfentanil	0	0	0	3
Fentanyl	58	92	234	606
Furanyl Fentanyl	0	0	0	188
Norfentanyl	0	0	0	8
Tramadol	24	29	31	56
U-47700	0	0	0	8

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

Notes: 2016 data provisional as of 5/23/2017

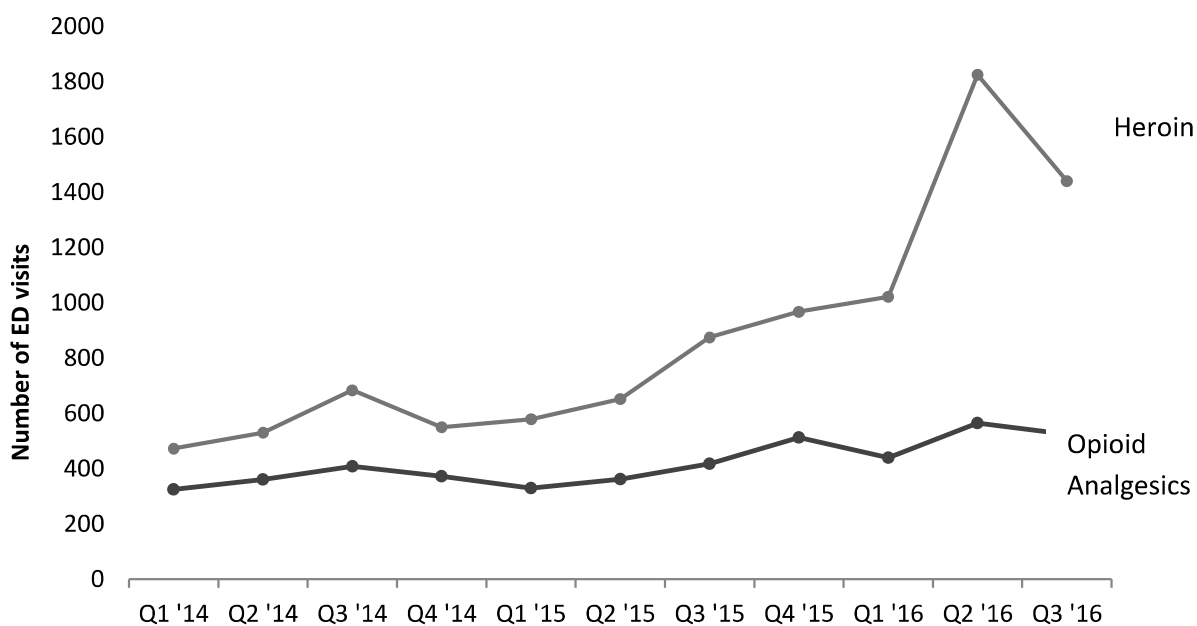
Opioid-Related Emergency Department Visits and Inpatient Hospitalizations

IDPH collects data on all emergency department (ED) visits and inpatient hospitalizations in Illinois. These data provide insight into trends in health care utilization for opioid overdose in Illinois. As with opioid deaths, ED visits and inpatient hospitalizations related to opioid overdose have increased significantly in recent years.

Statewide

From 2014 to 2015, the number of statewide inpatient ED visits related to opioid overdose increased by 24%. In the first three quarters of 2016, there was a 77% increase in ED visits as compared to the same period in 2015. The steepest increase was for ED visits related to heroin overdose. From Q1 2014 to Q3 2016, the number of ED visits related to heroin overdose almost tripled, with a surge in ED visits in Q2 2016 (Figure 4). A large increase in ED visits for opioid analgesics was also seen from 2014 to 2016; however, the overall increase was not as high as for heroin overdoses.

Figure 4. Number of ED visits for opioid analgesic and heroin overdose by quarter, Illinois, 2014–2016

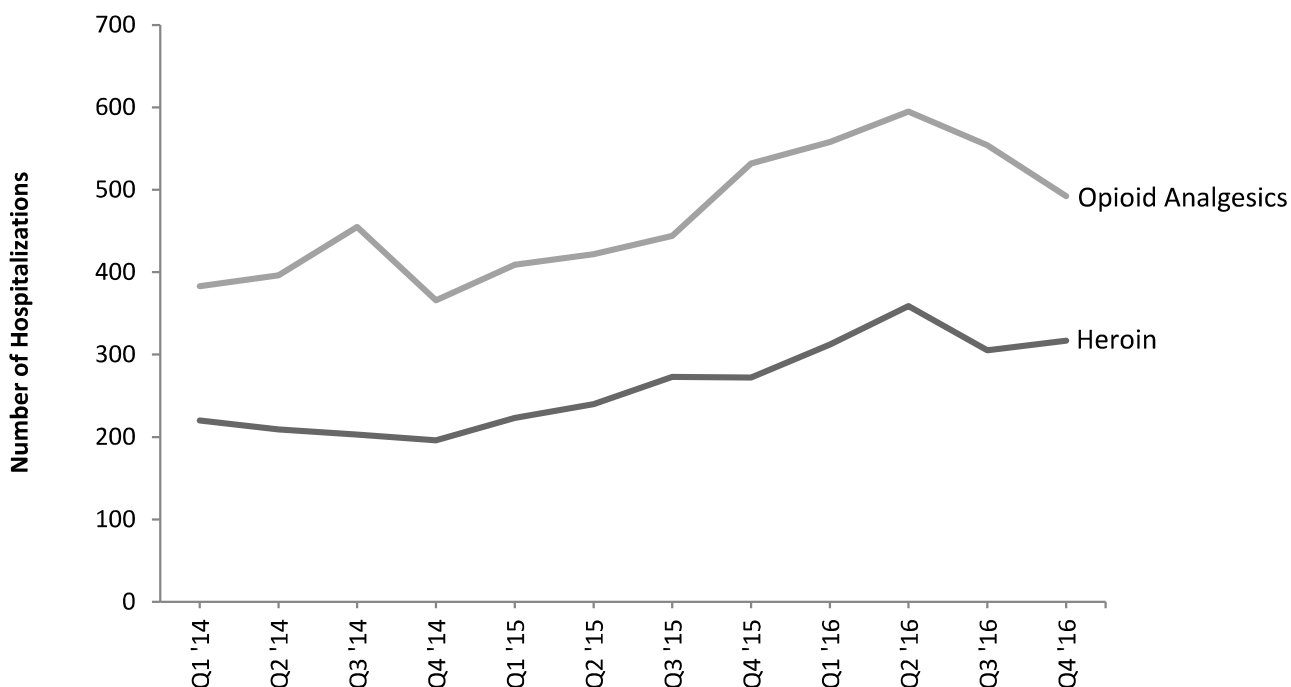


Source: Illinois Hospital Discharge Data

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

From Q1 2014 to Q3 2016, statewide hospitalization rates increased by 42% for all opioid overdoses, 45% for opioid analgesic overdoses, and 39% for heroin overdoses.

Figure 5. Hospitalizations related to opioid analgesic and heroin overdose by quarter, Illinois, 2014-2016



Source: Illinois Hospital Discharge Data

County Level Patterns

Most counties across Illinois have been affected by the opioid epidemic, though some have been disproportionately affected. While Cook and the collar counties generally have the highest absolute number of opioid analgesic overdoses, many of the highest **rates** (per population) of opioid analgesic overdose are being seen in pockets of rural counties statewide (Figures 6 and 7). Heroin overdose rates tend to be higher primarily in counties encompassing and surrounding metropolitan areas, with clusters of counties in the northeast, central, and southwest parts of the state experiencing relatively higher heroin overdose rates as well (Figures 8 and 9).

Figure 6. Rate of emergency department visits due to opioid analgesic overdose (per 10,000 population), 2016

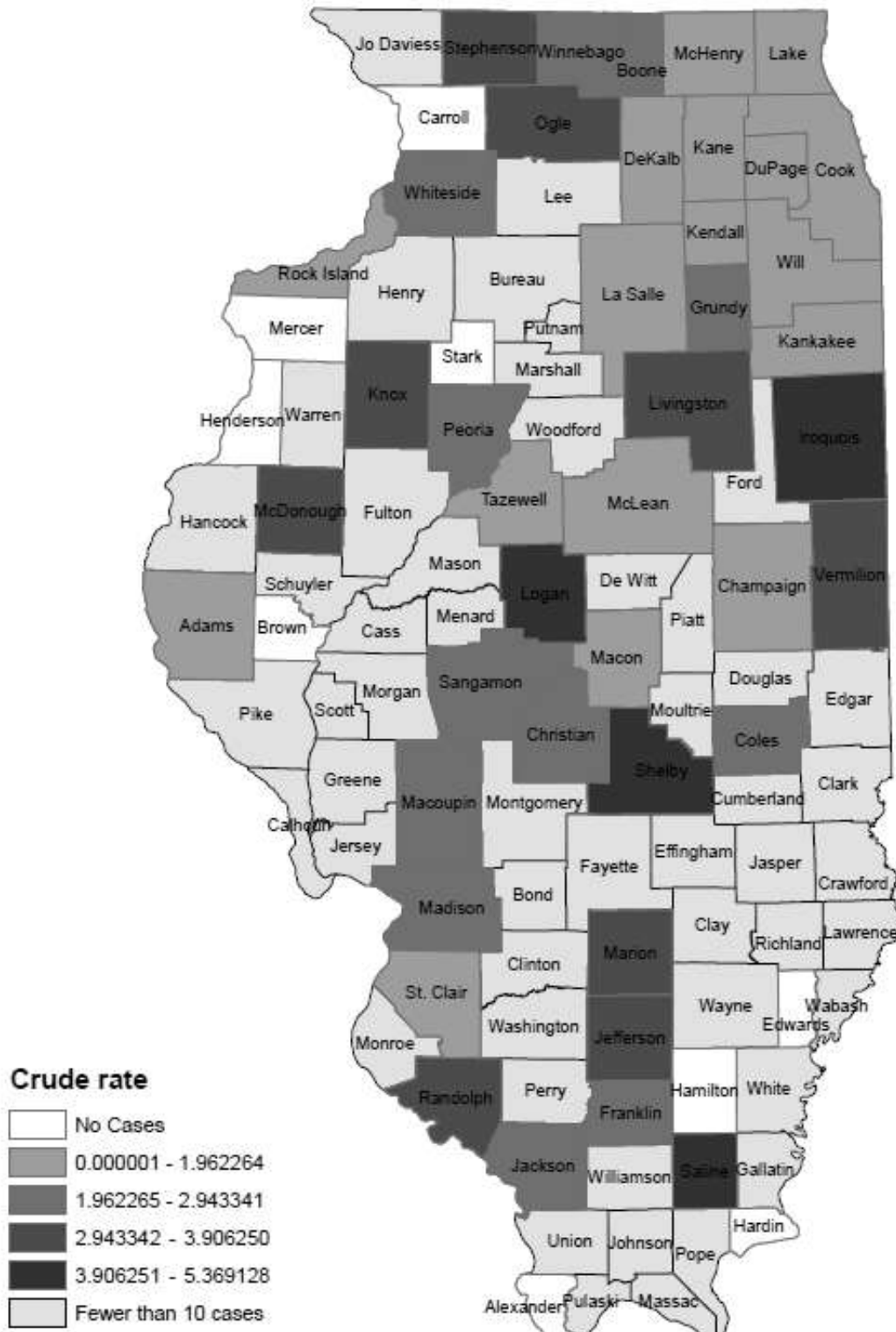


Figure 7. Rate of hospitalization due to opioid analgesic overdose per 10,000 population, Illinois, 2016

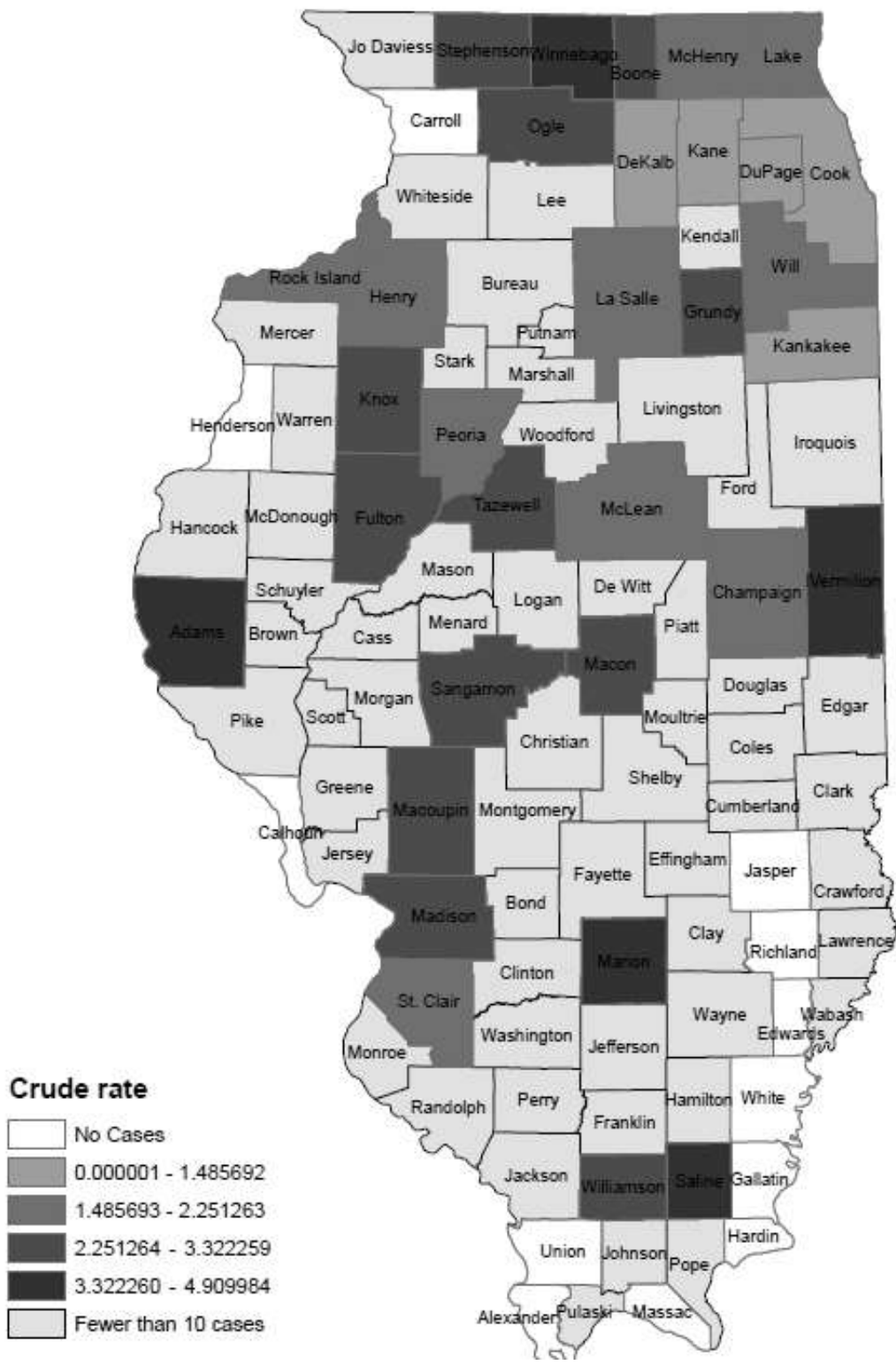


Figure 8. Rate of emergency department visits due to heroin overdose (per 10,000 population), 2016

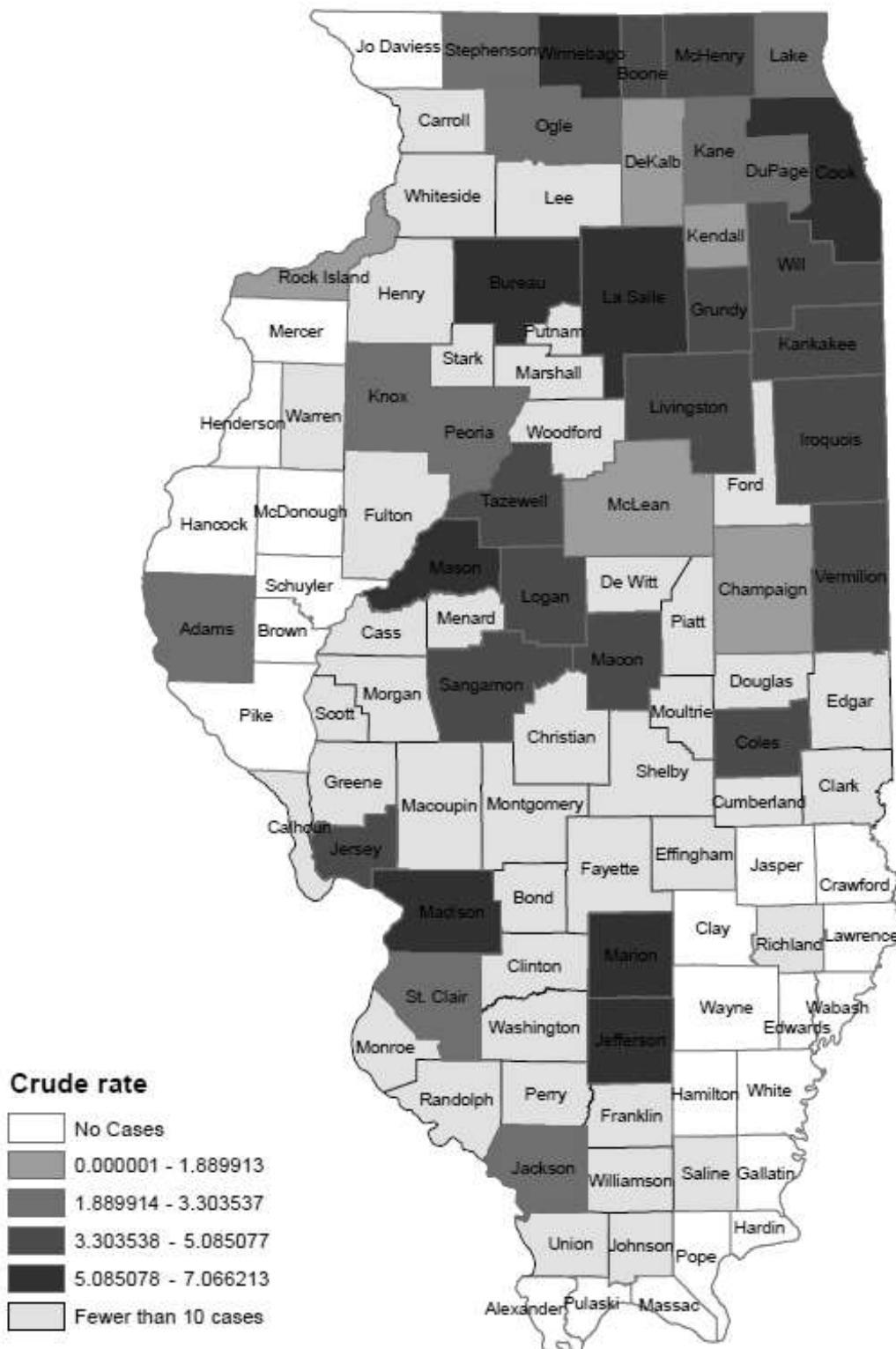


Figure 10. Rate of emergency department visits due to opioid analgesic and heroin overdose combined per 10,000 population, Illinois, 2016

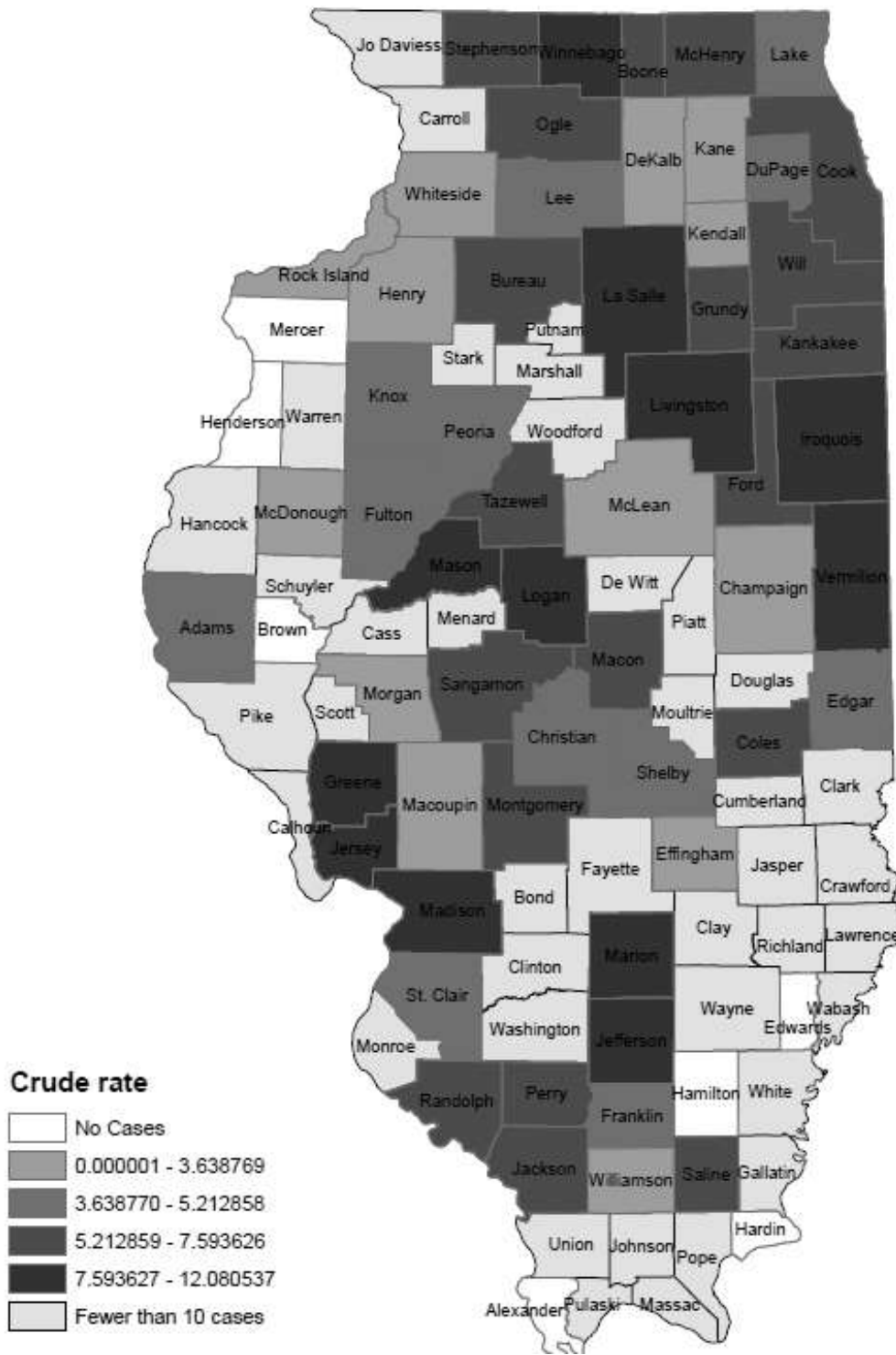
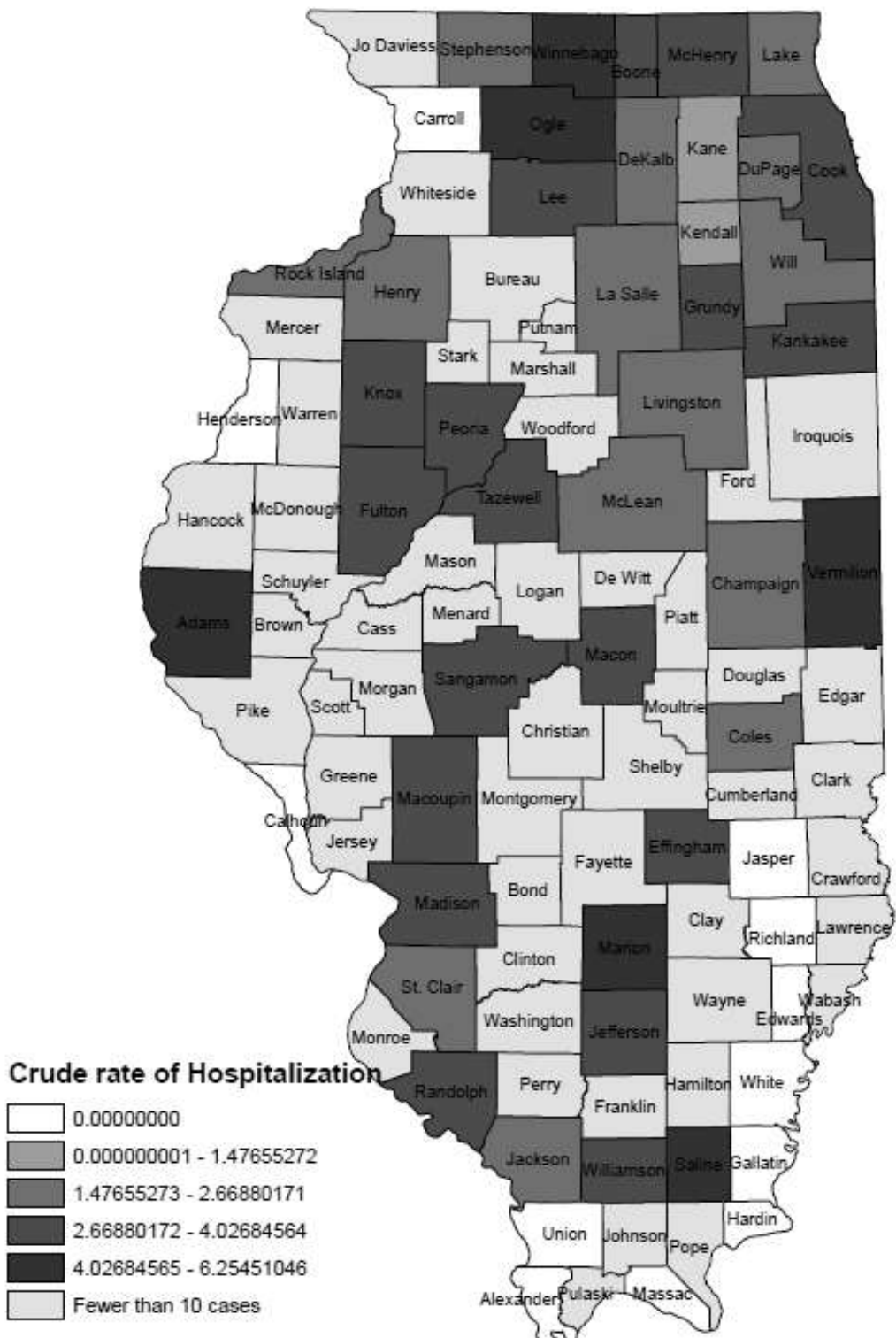


Figure 11. Rate of hospitalization for opioid analgesic and heroin overdose combined per 10,000 population, Illinois, 2016

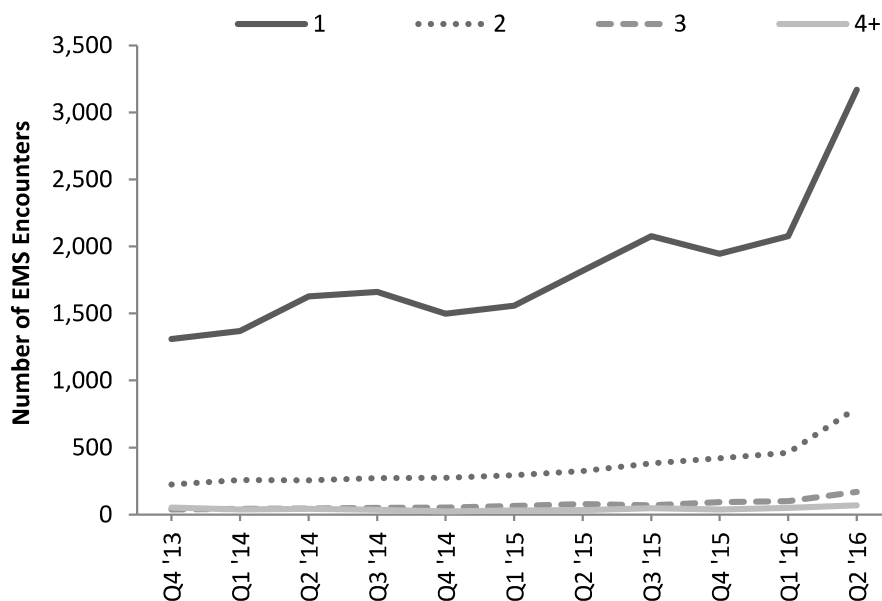


Naloxone Administration by EMS Providers

Emergency medical service (EMS) providers are often the first responders on the scene of an opioid overdose. Under the Heroin Crisis Act, all EMS vehicles in Illinois must be equipped with naloxone, often referred to by its brand name Narcan, a drug that can quickly reverse an opioid overdose. Although many people who overdose are transported to the emergency room, some patients refuse transport after treatment. EMS encounter data provide information about naloxone use by EMS providers to reverse opioid overdoses. EMS encounter data also provide information on individuals who experience an overdose but are not subsequently transported to a hospital for further evaluation and treatment.

In Illinois, the number of EMS encounters involving the administration of naloxone increased nearly 250%, from 1,697 events in Q4 2013 to 4,169 events in Q2 2016. Administration of more than one dose of naloxone also increased significantly throughout that period (Figure 12). This likely reflects the increasing amount of synthetic opioids such as fentanyl and its analogues entering the illicit opioid supply in Illinois, a trend that has also been seen nationally.^{4,5} Synthetic opioids bind more strongly to opioid receptors and can be tens to hundreds of times more potent than morphine or heroin, necessitating multiple naloxone administrations in the event of a single overdose.

Figure 12. Number of EMS encounters involving opioid overdose and doses of naloxone administered, Illinois, 2013–2016



Source: IDPH EMS Data System

⁴ Warner, Margaret, et al., et al. *Drugs Most Frequently Involved in Drug Overdose Deaths: United States, 2010-2014*. National Center for Health Statistics. s.l. : National Vital Statistics Reports, 2016.

⁵ Centers for Disease Control and Prevention. *Influx of Fentanyl-laced Counterfeit Pills and Toxic Fentanyl-related Compounds Further Increases Risk of Fentanyl-related Overdose and Fatalities*. 2016.

Neonatal Abstinence Syndrome

Neonatal Abstinence Syndrome (NAS) refers to the collection of signs and symptoms that occur when a newborn prenatally exposed to prescribed, diverted, or illicit opioids experiences opioid withdrawal. Symptoms of NAS include irritability, tremors, feeding problems, vomiting, diarrhea, sweating, and, in some cases, seizures. In addition to the direct symptoms of NAS, infants with NAS are more likely to experience other adverse outcomes and complications at birth, including low birth weight, respiratory problems, jaundice, feeding difficulties, and sepsis.⁶

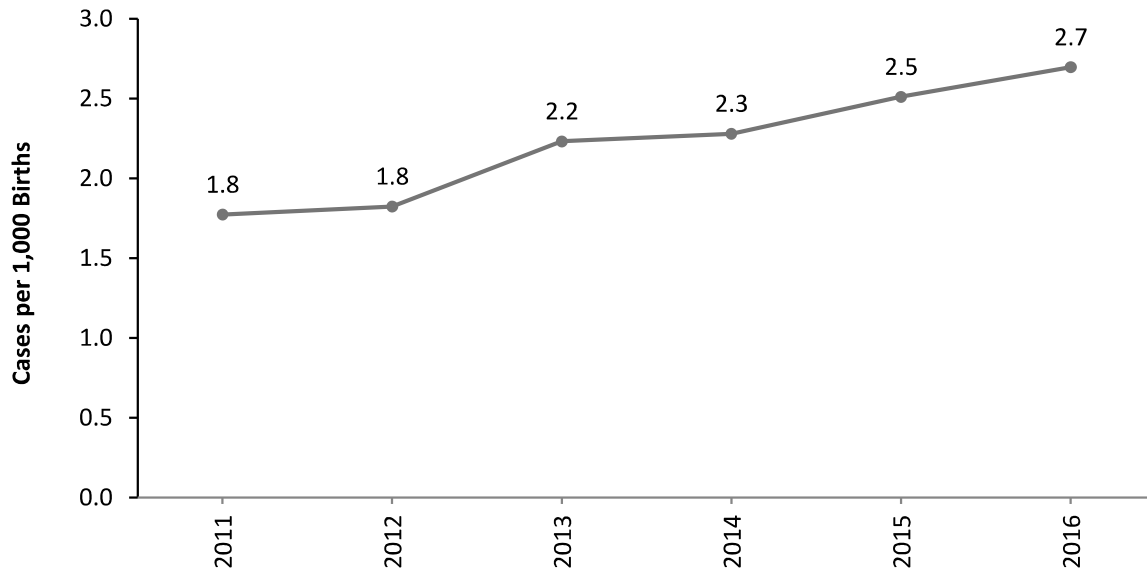
Between 2011 and 2016, there was a 53% increase in the NAS rate in Illinois. In 2016, the rate of NAS in Illinois was 2.7 cases per 1,000 live births, affecting 391 newborn infants born in Illinois that year. NAS rates were highest among non-Hispanic whites, mothers on public insurance, and in rural and urban counties outside of Cook and the Collar Counties (Figure 15). Other urban counties outside of Cook County also had the steepest increase in NAS rates from 2015 to 2016.

In addition to the biological effects of NAS, there are substantial costs associated with these births. Infants born in Illinois with NAS have longer hospital stays and much higher hospital charges than infants without NAS. In 2015, the median length of hospital stay after birth was 13 days longer for infants with NAS compared to infants without NAS. Median hospital charges for infants with NAS was more than ten times higher than for infants without NAS (\$46,200 compared to \$4,200). Overall, in 2015, the charges to care for infants born with NAS were \$22 million higher than what would have been expected if they had been born without NAS.⁷

Figure 13. Rate of babies born with NAS per 1,000 births by year, Illinois 2011–2016

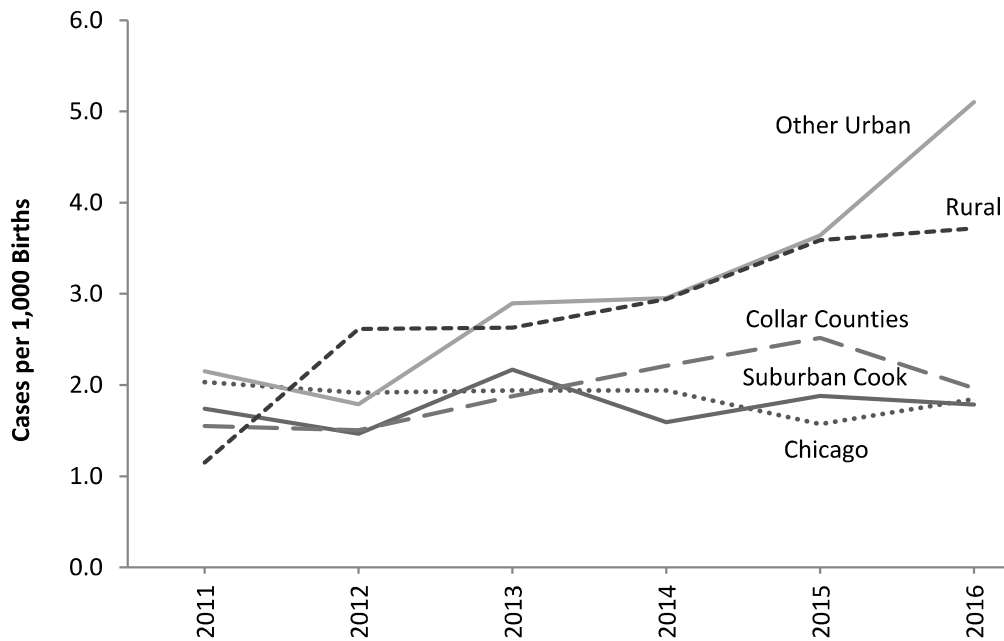
⁶ Illinois Department of Public Health. Neonatal Abstinence Syndrome. [Online] [Cited: August 21, 2017.] <http://dph.illinois.gov/topics-services/prevention-wellness/prescription-opioids-and-heroin/neonatal-abstinence-syndrome>.

⁷ Illinois Department of Public Health, (n.d.)



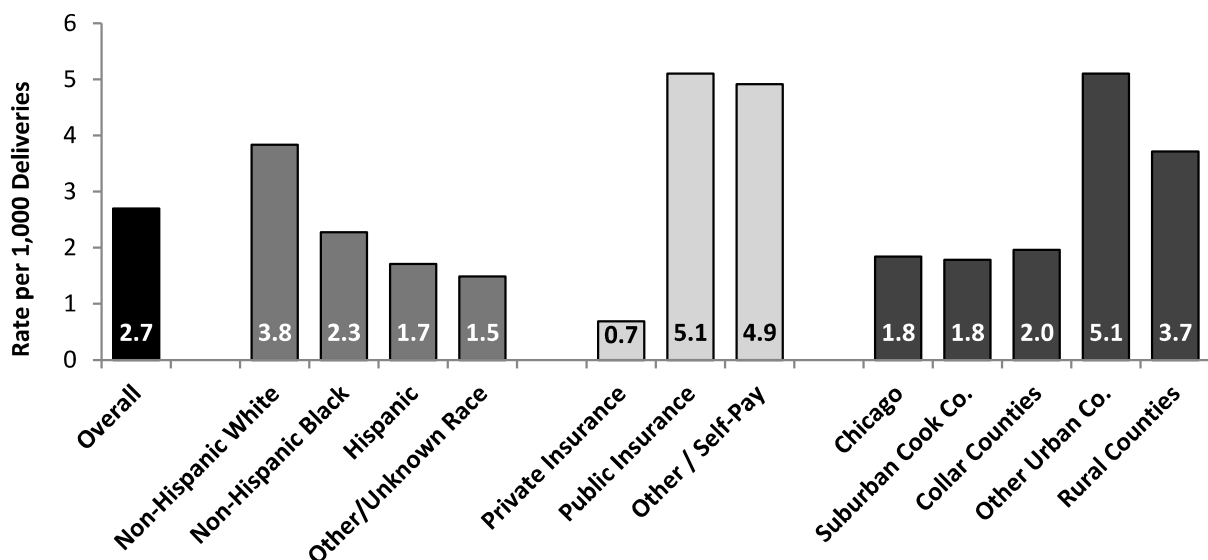
Source: Illinois Hospital Discharge Data
Notes: Includes non-residents

Figure 14. Rate of babies born with NAS per 1,000 births by year and location, Illinois 2011–2016



Source: Illinois Hospital Discharge Data
Notes: Illinois Residents only. County classification corresponds with Illinois Behavioral Risk Factor Surveillance System classification

Figure 15. NAS rate per 1,000 live births, Illinois, 2016



Source: Hospital Discharge Data for Illinois Residents in Illinois Hospitals
Notes: Rates per 1,000 Live Births, 2016

Opioid Prescribing

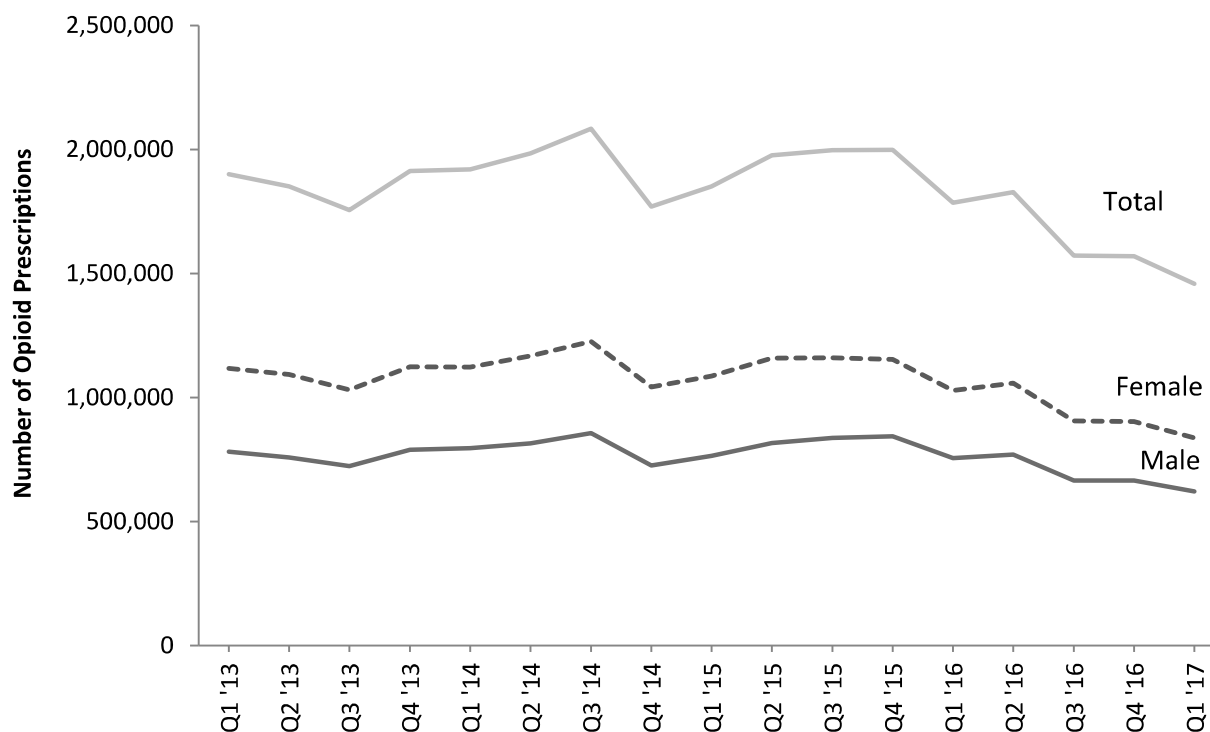
The Illinois Prescription Monitoring Program (PMP) is an electronic system that collects information on controlled substance prescriptions (Schedules II, III, IV and V). These data are required to be reported on a daily basis by all retail pharmacies dispensing prescriptions in Illinois.⁸ Data from the Illinois PMP can be utilized to understand opioid prescription practices in Illinois. It is important to note that while PMP data can be a useful tool to assess prescription practices and inform efforts to reduce high-risk opioid prescribing practices, many opioid prescriptions are medically necessary and issued in accordance with appropriate clinical judgment and prescriber oversight.

The total number of opioid prescriptions in Illinois reported to the PMP decreased by 9.8% from 2013 to 2017. This is consistent with overall nationwide trends indicating reductions in opioid prescribing in recent years as compared to peak prescribing activity in the late 2000s and early 2010s. The decrease among female patients was greater at 10.7% compared to 6.4% among male patients, although there were higher numbers of prescriptions among females than males during 2013–2017. Despite recent decreases, opioid prescribing activity overall remains significantly higher today as compared to the late 1990s.⁹ In Illinois, the almost 1.5 million opioid prescriptions in Q1 2017 translated into more than one opioid prescription for every 8.5 Illinois residents.

⁸ Illinois Prescription Monitoring Program. Illinois Prescription Monitoring Program. [Online] August 21, 2017. <https://www.ilpmp.org/>.

⁹ Centers for Disease Control and Prevention. *Vital Signs: Overdoses of Prescription Opioid Pain Relievers — United States, 1999—2008*. MMWR 2011; 60(43):1487-1492.

Figure 16. Number of reported opioid prescriptions by sex, Illinois, 2013–2017

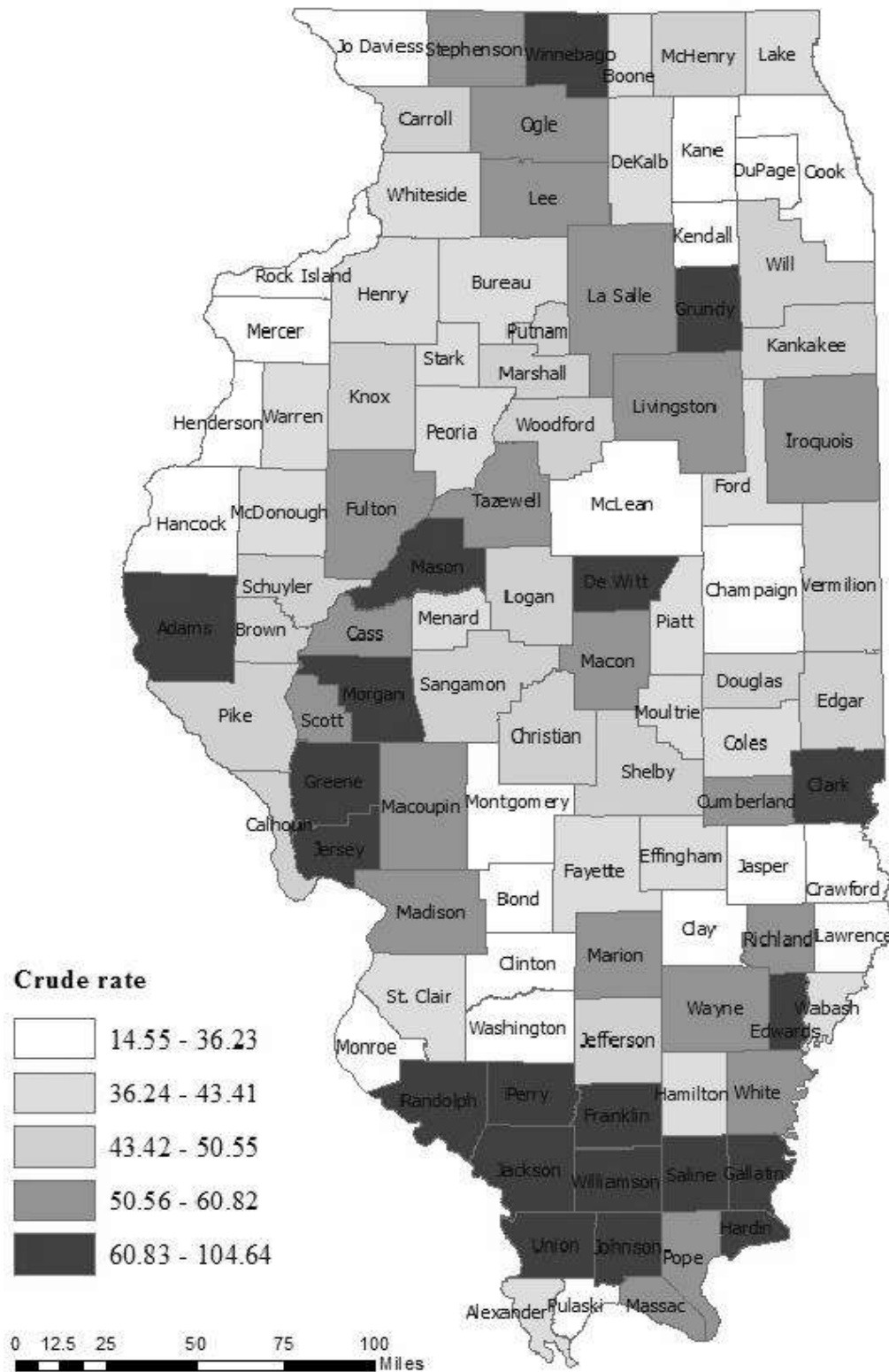


Source: Illinois Prescription Monitoring Program

In addition to the number of prescriptions, the PMP also analyzes opioid prescriptions in Illinois in terms of morphine milligram equivalents (MMEs). Given that prescriptions can vary with respect to dosage amounts and number of days supply, MMEs, which use morphine as a benchmark, are a standardized way of measuring the actual opioid content of prescriptions dispensed.

Figure 17 shows a county-level snapshot of high opioid prescribing activity, expressed as the rate of opioid prescriptions with greater than 90 MMEs in one month. As can be seen, higher opioid prescribing is primarily observed in rural areas of the state, particularly in central and southern Illinois.

Figure 17. Rate of prescriptions filled with greater than 90 morphine milligram equivalents, January 2017 (per 10,000 population)

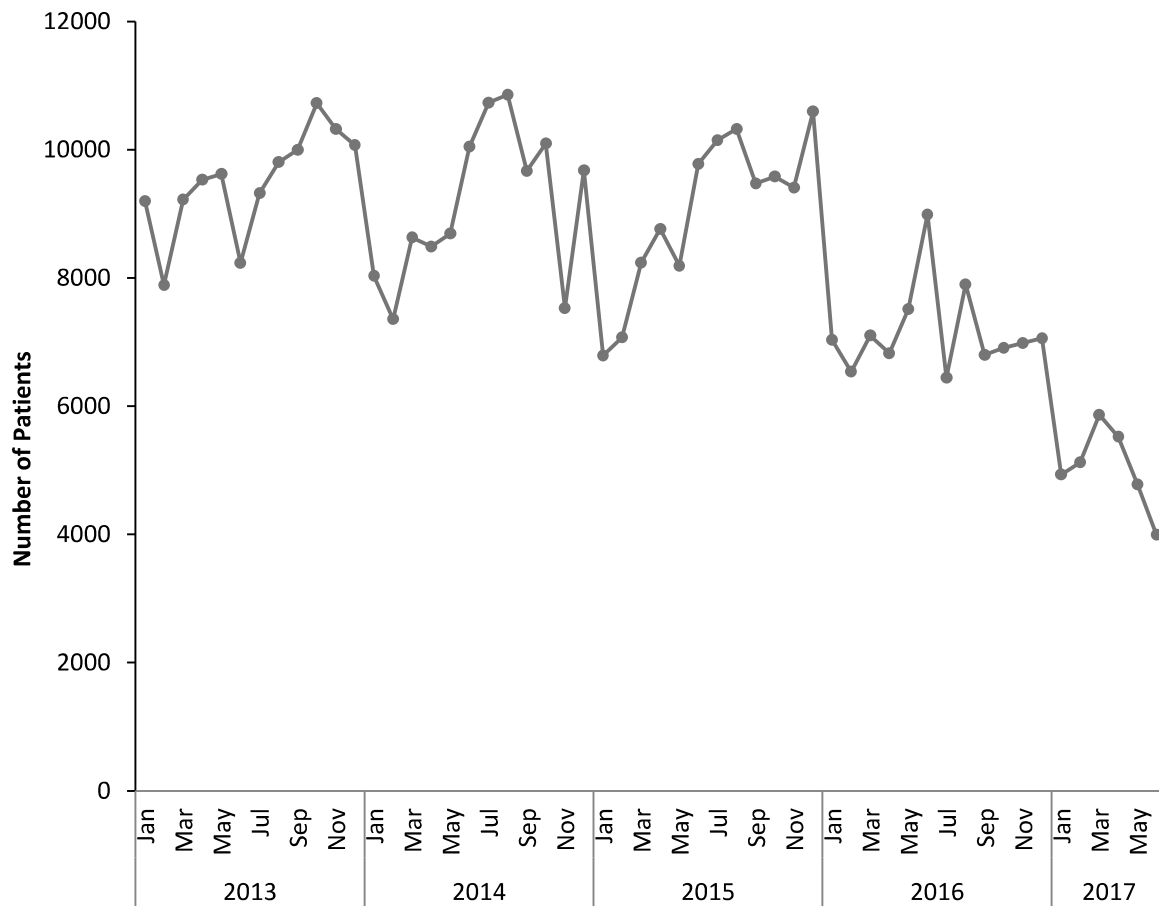


Source: Illinois Prescription Monitoring Program and US Census Bureau 2016 population estimates

Patients Under 18

The average number of patients under the age of 18 prescribed opioids in a given month decreased 24.4% from 2013 to 2016. There was no significant difference observed in opioid prescribing to male versus female patients under the age of 18.

Figure 18. Patients under 18 receiving opioid prescriptions, 2013-2017

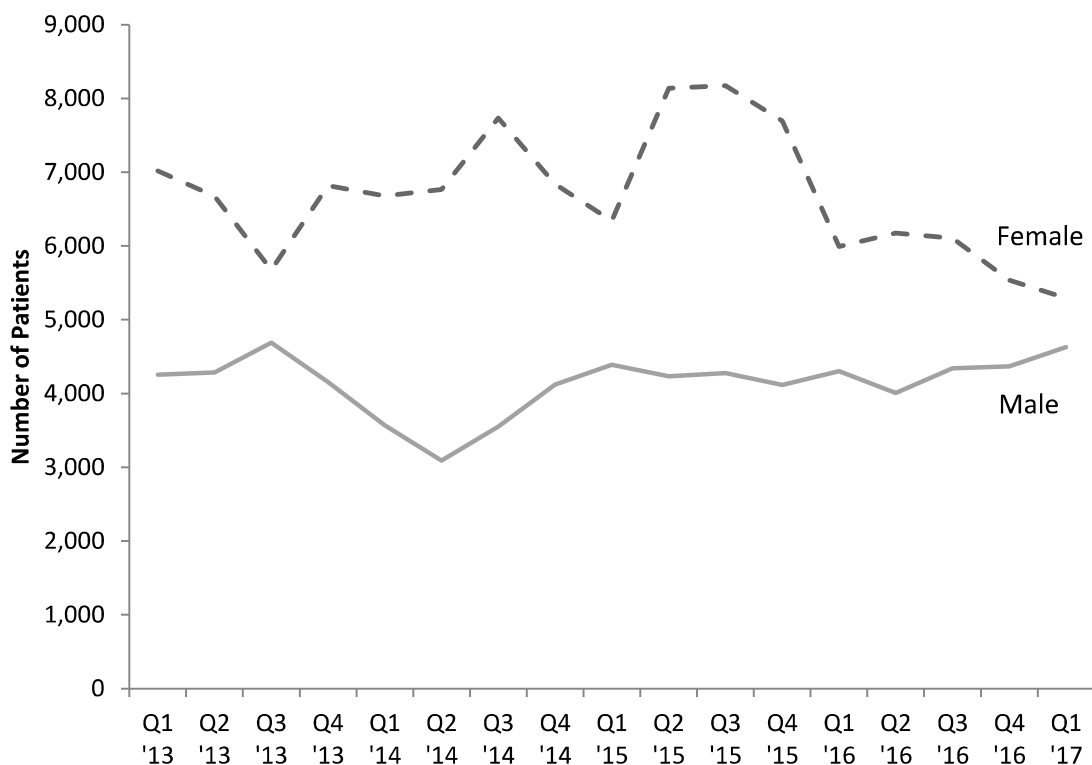


Source: Illinois Prescription Monitoring Program

“3-3-1” Prescriptions

When a patient in the Illinois PMP is prescribed three opioids by three different providers in one month (3-3-1), the PMP flags the patient and sends prescribers an unsolicited report, allowing prescribers to make better informed clinical decisions when prescribing opioids. This is done to prevent “doctor shopping” by patients, a practice of seeing multiple treatment providers to obtain prescriptions that may otherwise be unobtainable. While some 3-3-1 prescriptions may be obtained legitimately, 3-3-1 reports provide prescribers with the information they need to manage patient prescriptions appropriately.

Figure 19. Number of “3-3-1” patients by sex, Illinois, 2013–2017



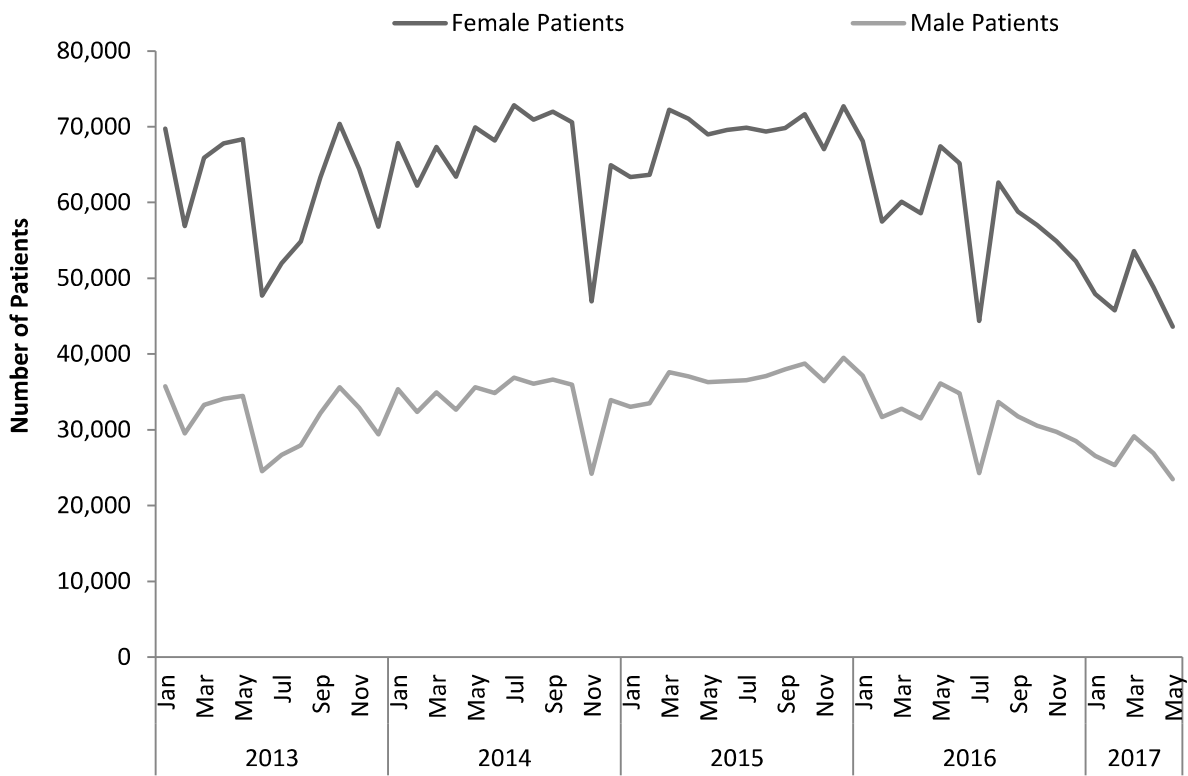
Source: Illinois Prescription Monitoring Program

Benzodiazepines and Opioids

Although benzodiazepines and opioids are prescribed for different conditions, both classes of drugs depress the central nervous system. Combining benzodiazepines with opioids can be particularly dangerous, and patients with concurrent prescriptions for both drug classes have an increased risk of overdose.¹⁰ In Illinois from 2013 to 2017, there was a reduction in the number of patients who received concurrent prescriptions of both drug classes. Throughout the period 2013-2017, females were prescribed more concurrent prescriptions of opioids and benzodiazepines than males. The number of overall concurrent prescriptions decreased slightly by 2.2% between 2013 and 2016.

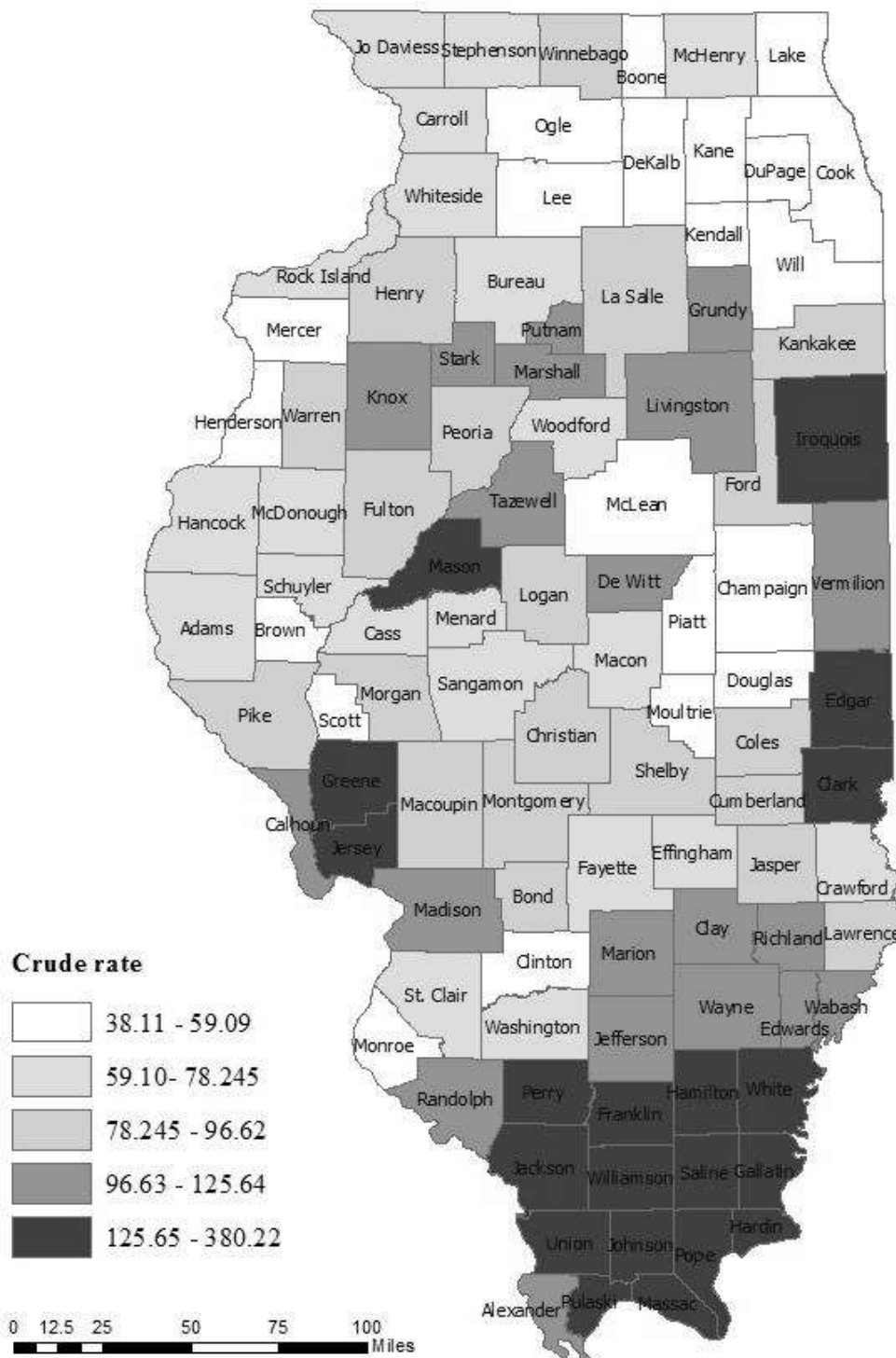
Figure 20. Rate of patients receiving both opioid and benzodiazepines in the same month

¹⁰ *Emergency Department Visits and Overdose Deaths From Combined Use of Opioids and Benzodiazepines*. Jones, Christopher M and McAninch, Jana K. 4, October 2015, American Journal of Preventive Medicine, Vol. 49, pp. 493-501.



Source: Illinois Prescription Monitoring Program

Figure 21. Rate of patients receiving prescriptions for opioids and benzodiazepines, January 2017

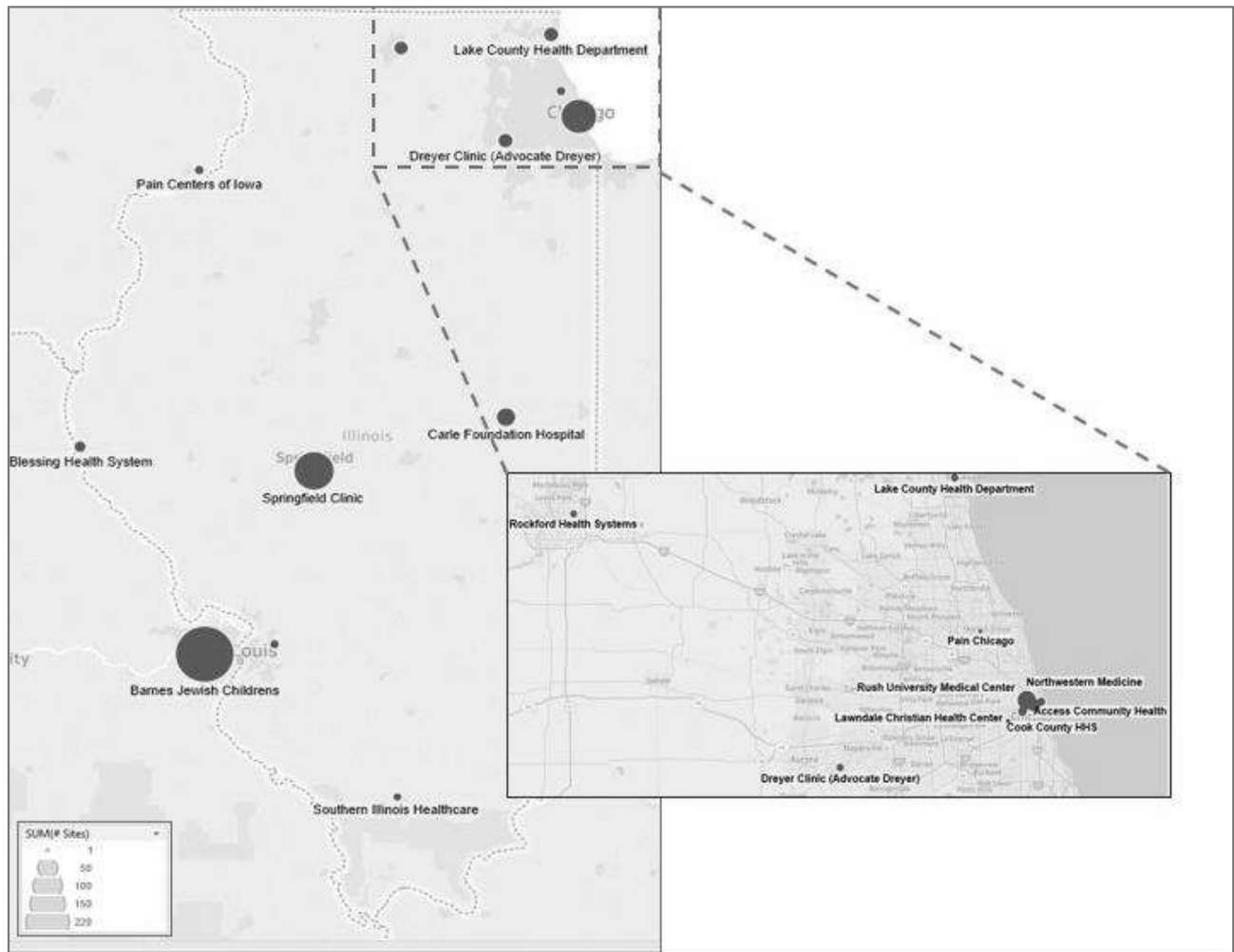


Source: Illinois Prescription Monitoring Program and US Census Bureau 2016 population estimates

Electronic Health Record Integration

During clinical encounters, it can often be burdensome for a provider to take the extra step to run a PMP inquiry, particularly if accessing the PMP database is not integrated into clinical routines. Integrating an automated connection to the PMP into the provider's electronic health record (EHR) system facilitates PMP usage because the information is displayed in the EHR that the provider is already accessing. The Illinois PMP has been rapidly expanding automated connection sites statewide. As of November 2017, 17 health care systems, comprising 573 sites, have integrated automated PMP connections into their EHRs.

Figure 22. Map of automated PMP-EHR connection sites, November 2017



Source: Illinois Prescription Monitoring Program

Notes: This map shows provider headquarters addresses. Many of these providers have multiple sites, the number of which determines bubble size (and label) on this map. Specific site addresses were not readily available at the time of drafting but could be added in the future. Bubble size indicates number of sites provider operates.

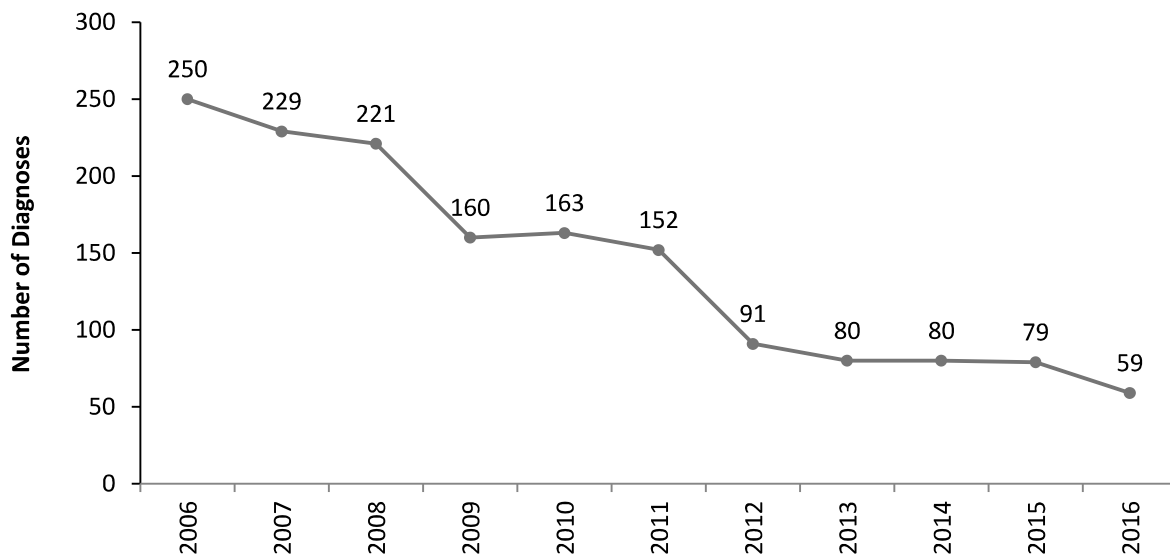
Infectious Diseases

HIV

People who inject drugs (PWID) are at high risk of contracting HIV. Fortunately, advancements in HIV treatment have led to suppression of HIV viral activity among many persons living with HIV/AIDS (PLWHA) engaged in medical care and compliant with HIV medication regimens. As a result, there has been a decrease in the spread of HIV among most groups, including drug-using communities. In addition to HIV treatment and virologic suppression, PWID have greatly benefited from prevention activities and harm reduction programs providing syringe exchange services, targeted HIV testing, and timely linkage to culturally-responsive medical care. Illinois has seen steep declines in HIV diagnoses among PWID in the past decade, in part due to Illinois' robust and effective harm reduction HIV prevention services. Specifically, between 2006 and 2016, new HIV diagnoses decreased from 250 to 59 per year (12% to 4% of the incidence, respectively), representing an overall decline of 76% in new HIV diagnoses (Figure 24).

Due to improved survival from more effective medication regimens, most risk groups have seen increases in the overall number of PLWHA. By contrast, the number of PLWHA in Illinois in the injection drug user risk group has steadily declined from 6258 to 5489 persons (23% to 14% of the prevalence, respectively) between 2006 and 2016, representing a decline of 12%. This decline indicates that injection drug users living with HIV/AIDS were dying at a greater rate than were being newly diagnosed with HIV (Figure 25). In 2016, among PLWHA who reported injection drug use, nearly 75% were male, and 39% were 50-59 years of age (comprising the age group of PLWHA who reported injection drug use) (Figure 27).

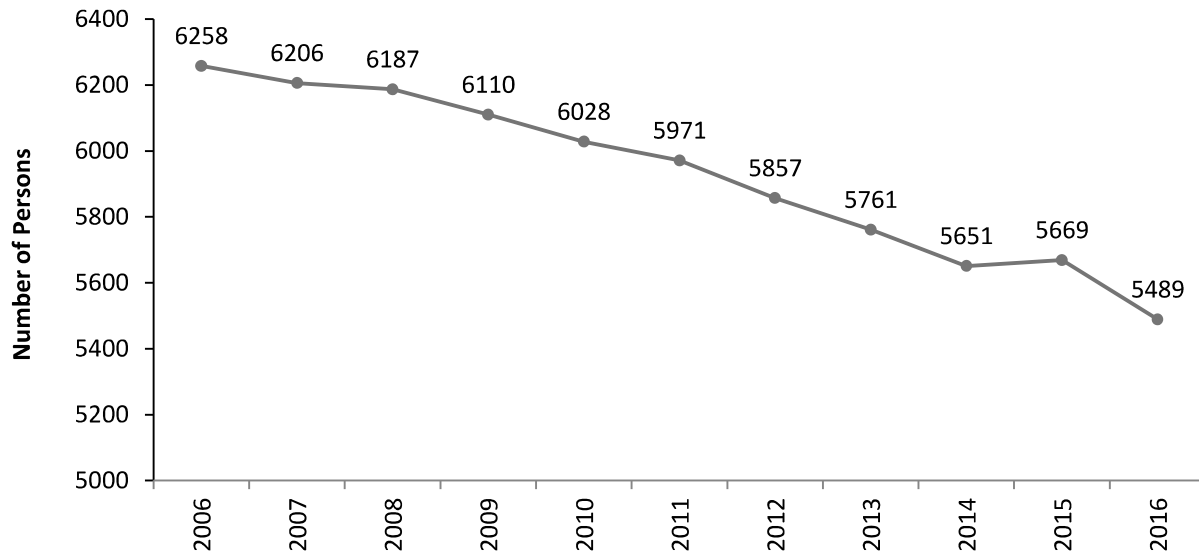
Figure 24. HIV Disease Diagnoses among Persons Who Inject Drugs, Illinois, 2006-2016



Source: Illinois Department of Public Health, HIV Section, Surveillance Unit

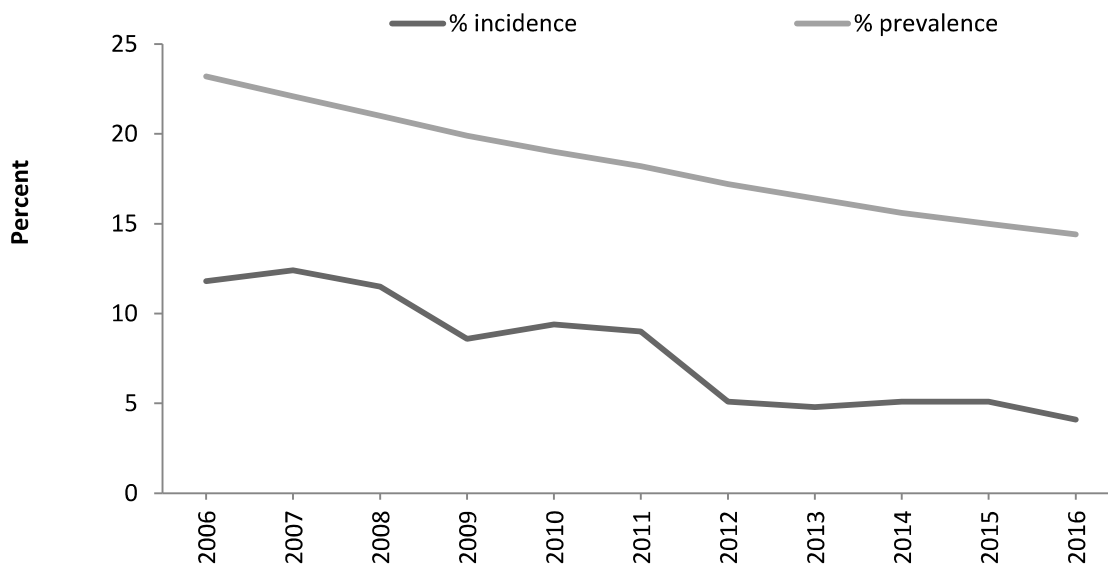
Notes: eHARS data as of October 2017

Figure 25. Persons Living with HIV/AIDS among Persons Who Inject Drugs, Illinois, 2006-2016



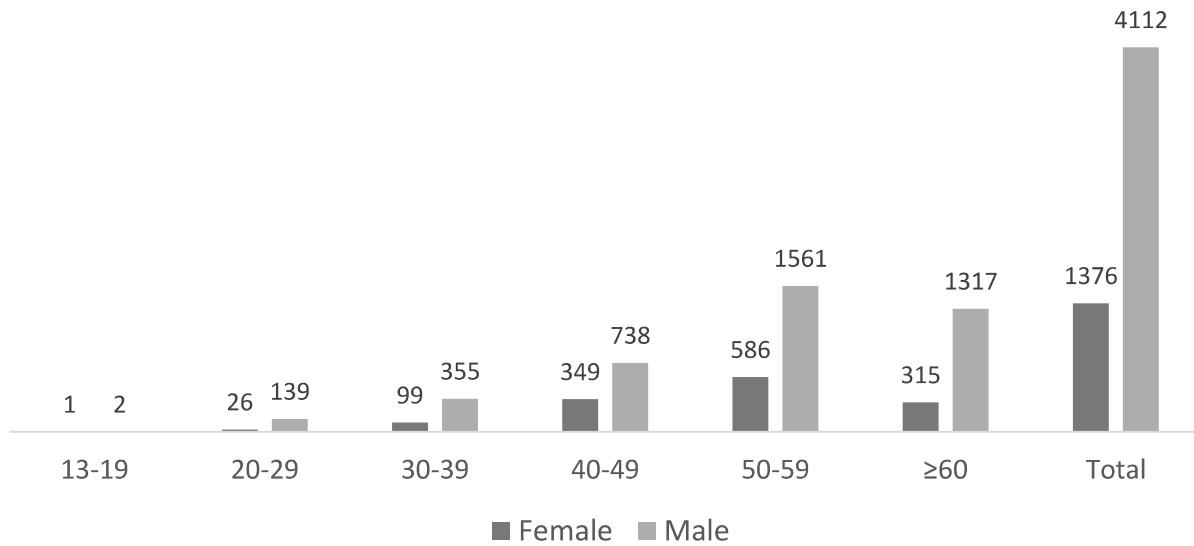
Source: Illinois Department of Public Health, HIV Section, Surveillance Unit
Notes: eHARS data as of October 2017

Figure 26. Percent of HIV Disease Diagnosis and Percent of Persons Living with HIV/AIDS Attributable to Injection Drug Use, Illinois, 2006-2016



Source: Illinois Department of Public Health, HIV Section, Surveillance Unit
Notes: eHARS data as of October 2017

Figure 27. Persons Living with HIV/AIDS Among Persons Who Inject Drugs by Sex and Current Age, Illinois, 2016



Source: Illinois Department of Public Health, HIV Section, Surveillance Unit
Notes: eHARS data as of October 2017

Hepatitis C

Similar to HIV, intravenous drug users have a particularly high risk of contracting Hepatitis C Virus (HCV), resulting in a high prevalence of the disease among individuals who use opioids.¹¹ HCV infection is a disease transmitted through blood that affects the liver. Acute HCV infection is a short-term illness that, for most people, develops into chronic HCV infection. Chronic HCV infection can last a lifetime and lead to serious liver problems, including cirrhosis and liver cancer. Both acute and chronic HCV infection can be treated with medication, including new treatments that are more effective and have fewer side effects than previously available medications.

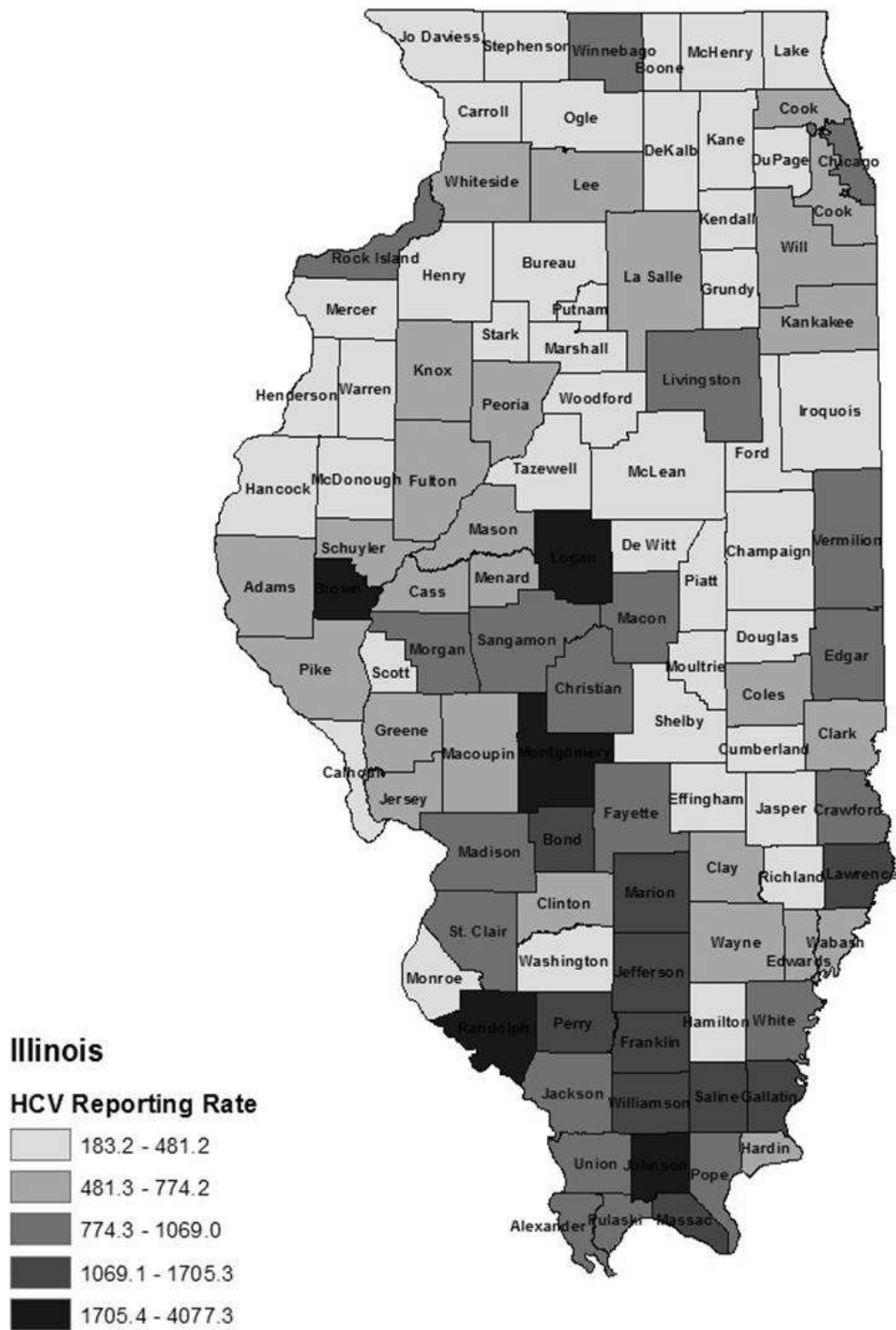
Nationally, rates of HCV increased 167 percent between 2000 and 2015 with the highest rates among people who inject drugs.¹² In Illinois, both chronic and acute HCV are reportable. Acute HCV infections that are very recently acquired cause minimal symptoms and are difficult to distinguish from chronic HCV. Reporting rates of HCV are highest in the central and southern regions of the state (Figure 28), while the overall HCV disease burden by absolute number counts remain highest in northeastern Illinois.

Baby boomers, born between 1945-1965, are at higher risk of having an HCV infection. As this cohort ages, disease reporting trends over time are expected to show decreases in rates amongst the 45-65 year old age group and an increase in the 65 and older age group. Figure 29 also shows an increasing trend in reported HCV among younger populations, particularly the 20-34 year old cohort, increasing from 7.54% of reported cases in 2006 to 20.31% of cases in 2016.

¹¹ Centers for Disease Control and Prevention. Viral Hepatitis. *Viral Hepatitis and Young Persons Who Inject Drugs*. [Online] April 17, 2017. <https://www.cdc.gov/hepatitis/featuredtopics/youngpwid.htm>.

¹² MMWR Morbidity and Mortality Weekly Report. *Hepatitis Awareness Month and Testing Day — May 2017*. s.l. : Centers for Disease Control and Prevention, 2017.

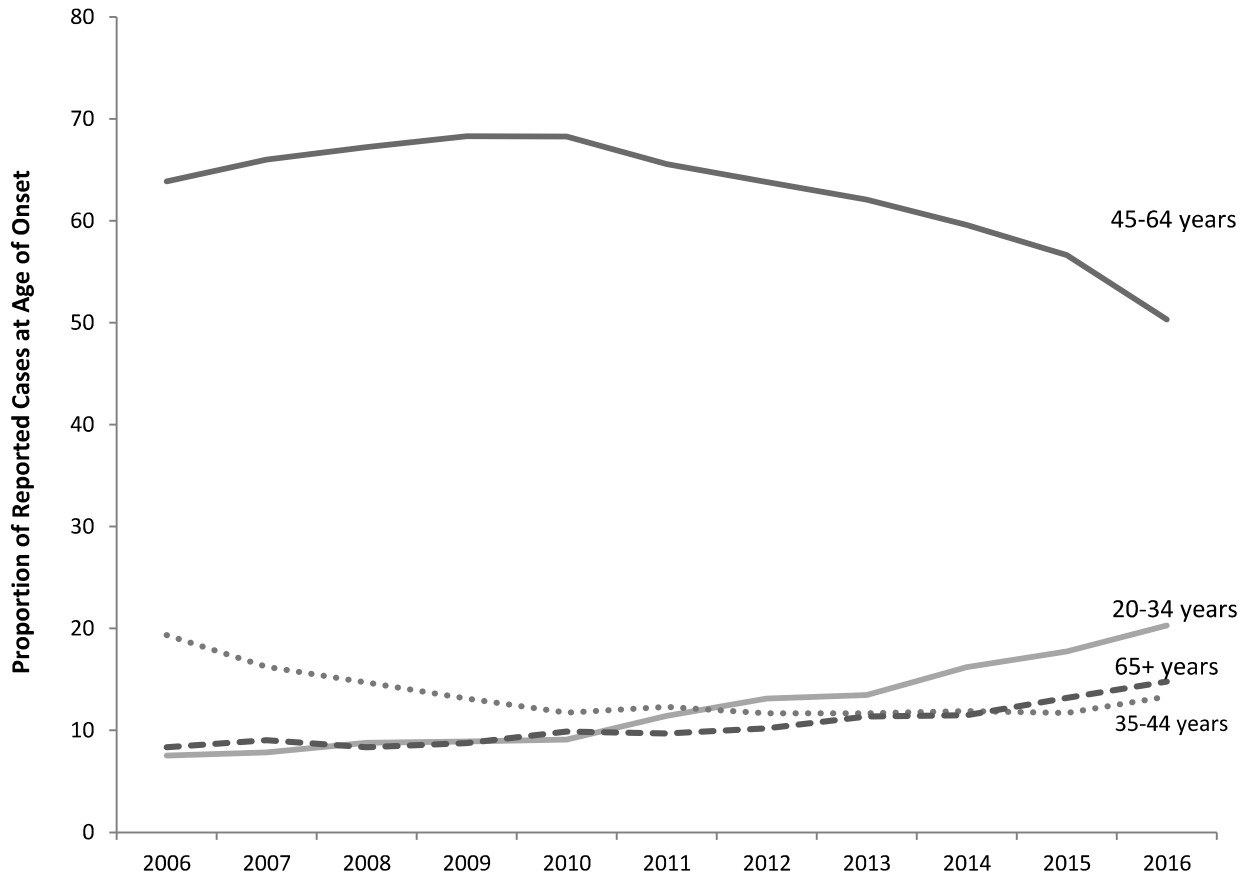
Figure 28. Hepatitis C reporting rate per 100,000 persons, 2006-2016



Source: Illinois National Electronic Disease Surveillance System (I-NEDSS)

Note: Rate per 100,000 population

Figure 29. Trends in proportion of Hepatitis C reporting by age group, 2006-2016



Source: Illinois National Electronic Disease Surveillance System (I-NEDSS)

Harm Reduction Sites

Harm reduction is a set of pragmatic strategies aimed at minimizing the negative consequences of substance use. In order to reduce the harmful effects of opioid misuse, harm reduction sites across Illinois provide services including: naloxone distribution and training, opioid overdose education, safe injection education, clean syringe access, support and counseling, and other services aimed at reducing the spread and treating diseases spread through injection drug use such as HIV and Hepatitis C. These sites are located across Illinois, with the largest concentrations in the Chicago area, near St. Louis, and in Southern Illinois.

Figure 30. Harm reduction sites, Illinois

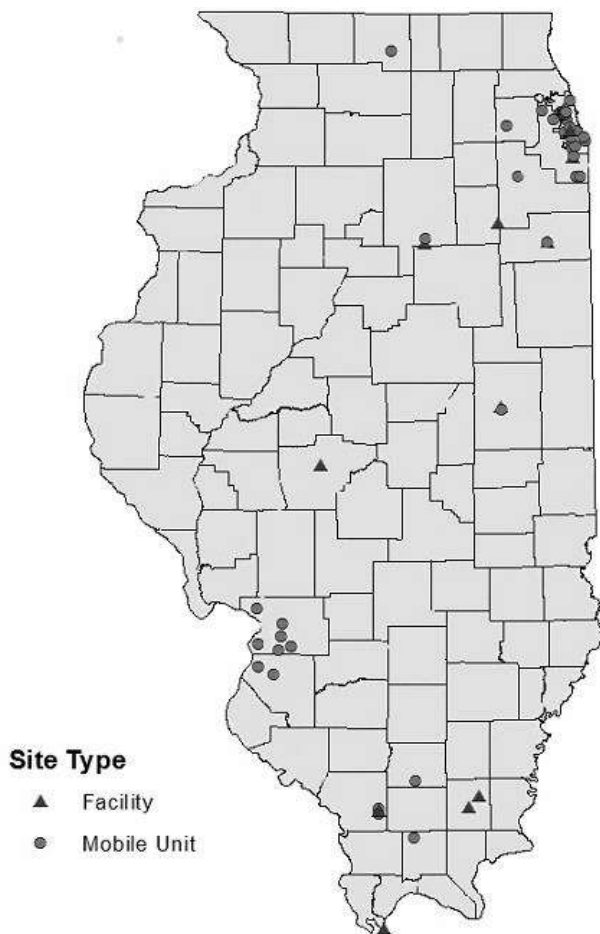
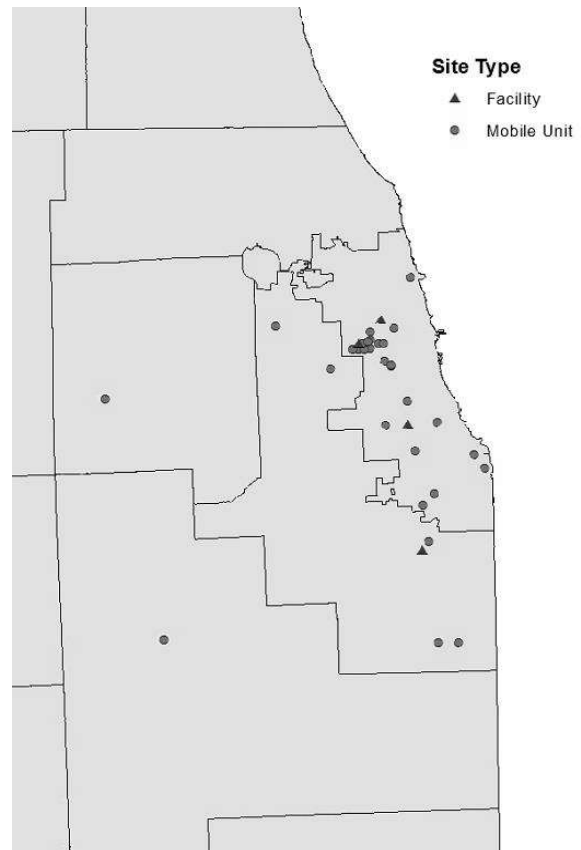


Figure 31. Harm reduction sites, Chicago



Conclusion

This report is a compilation of existing opioid data currently being collected by state agencies. It is meant to inform statewide efforts to combat the opioid epidemic and implement the State of Illinois Opioid Action Plan. The report provides an initial understanding of opioid misuse, overdose, and overdose deaths on Illinois. Efforts are underway to expand and analyze these existing data and to strengthen data collection and analysis statewide. It is important to remember that any individual dataset cannot tell the entire story of opioid use—or indeed any other public health issue—and data must always be put into context to be understood fully.

The data in this report show that no group is unaffected by the opioid crisis in Illinois. Rather, different groups are affected differently when it comes to prescribing, nonfatal overdose, fatal overdose, infectious disease, and other aspects of opioid use. This understanding will help shape future research, interventions, and policies as we target interventions appropriately, culturally competently, and effectively.