RUSH UNIVERSITY MEDICAL CENTER

22nd Annual Chicago Infection Control Conference

June 9, 2017

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Medical Director of Behavioral Health, Chicago Department of Public Health

All planners, editors, faculty and reviewers of this activity have no relevant financial relationships to disclose. This presentation was created without any commercial support.

Learning Objectives

At the conclusion of this course participants will be able to

- **Enable the learner to gain knowledge of emerging healthcare-associated infections pathogens.**
- **Identify effective infection control strategies to mitigate spread of multi-drug resistant organisms.**
- **Raise awareness of emerging disease threats and identify appropriate diagnostic testing, reporting and prevention methods.**
- **Raise awareness of local public health issues including opioid epidemic and immigrant health.**

To obtain credit you must:

- **Be present for the entire session**
- **Complete an evaluation form**
- **Return the evaluation form to staff**

Certificate will be sent to you by e-mail upon request.

In support of improving patient care, [Insert name of Joint Accredited Provider] is jointly accredited by the Accreditation Council for Continuing Medical Education (ACCME), the Accreditation Council for Pharmacy Education (ACPE), and the American Nurses Credentialing Center (ANCC), to provide continuing education for the healthcare team.

Rush University Medical Center designates this live activity for a maximum of 6.25 AMA PRA Category 1 Credit(s)™. Physicians should claim only credit commensurate with the extent of their participation in the activity.

ANCC Credit Designation – Nurses
The maximum number of hours awarded for this CE activity is 6.25 contact hours.

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Rush University is an approved provider for physical therapy (216.000272), occupational therapy, respiratory therapy, social work (159.001203), nutrition, speech-audiology, and psychology by the Illinois Department of Professional Regulation.

HEALTHY CHICAGO

CHICAGO DEPARTMENT OF PUBLIC HEALTH

Addressing the Opioid Crisis: Evidence-Based Practice and Public Health Approach

Elizabeth Salisbury-Afshar, MD, MPH, FAAFP, FASAM, FACPM
Medical Director of Behavioral Health

June 9, 2017

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My background

- Family Medicine
- Preventive Medicine
- Addiction Medicine

Goals

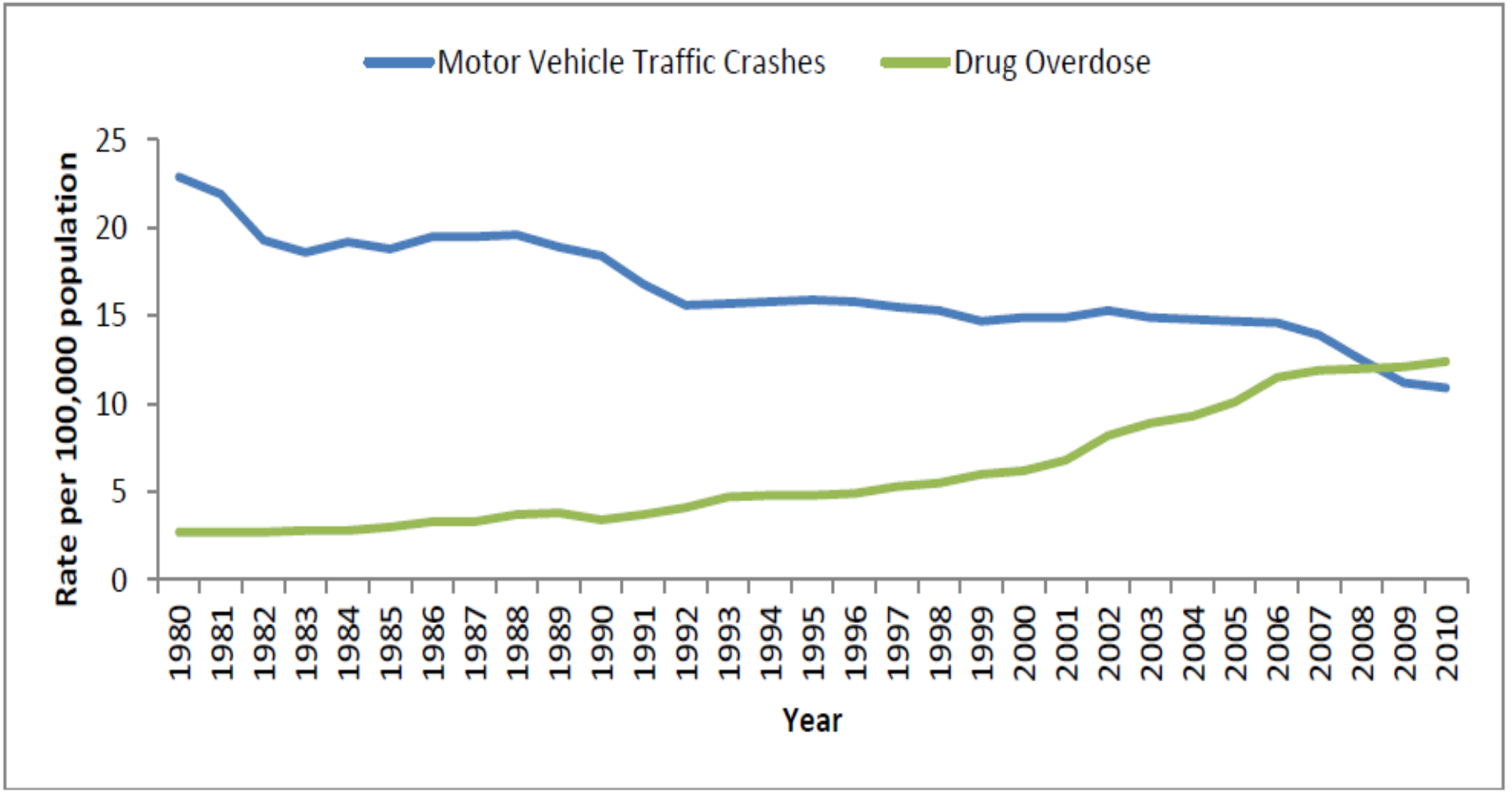
- Epidemiology of opioid use and overdose
- Public Health Interventions to Address the Opioid Crisis
- Chicago Response

HEALTHY CHICAGO

CHICAGO DEPARTMENT OF PUBLIC HEALTH

EPIDEMIOLOGY OF OPIOID USE DISORDER/OVERDOSE

Overdose Deaths in US- all types



Source: National Vital Statistics System, 2000-2010

National Story

OPIOID

Florida's Opioid Crackdown Might Be Curbing Number Of Prescriptions

Jun 02, 2016 02:49 PM EDT

The two policies implemented in late 2011 to reduce the use of opioids might be connected to a decrease in their prescriptions among the top prescribers of the drugs in the state.

Opioid Misuse And Overdose Deaths On The Rise, Study Finds

Oct 14, 2015 09:33 AM EDT

The number of people who are using opioid for nonmedical reasons and overdose deaths in the U.S. rose from 2003 to 2013, even if opioid prescriptions have decreased for the same period.

FDA Approves Painkiller OxyContin For Children Ages 11 to 16

Aug 14, 2015 03:29 PM EDT

The FDA said children with pain due to trauma, surgery or cancer could potentially qualify to receive OxyContin.

Chronic Pain Is Suffered By 100 Million Americans: But Are They Being Sufficiently Treated?

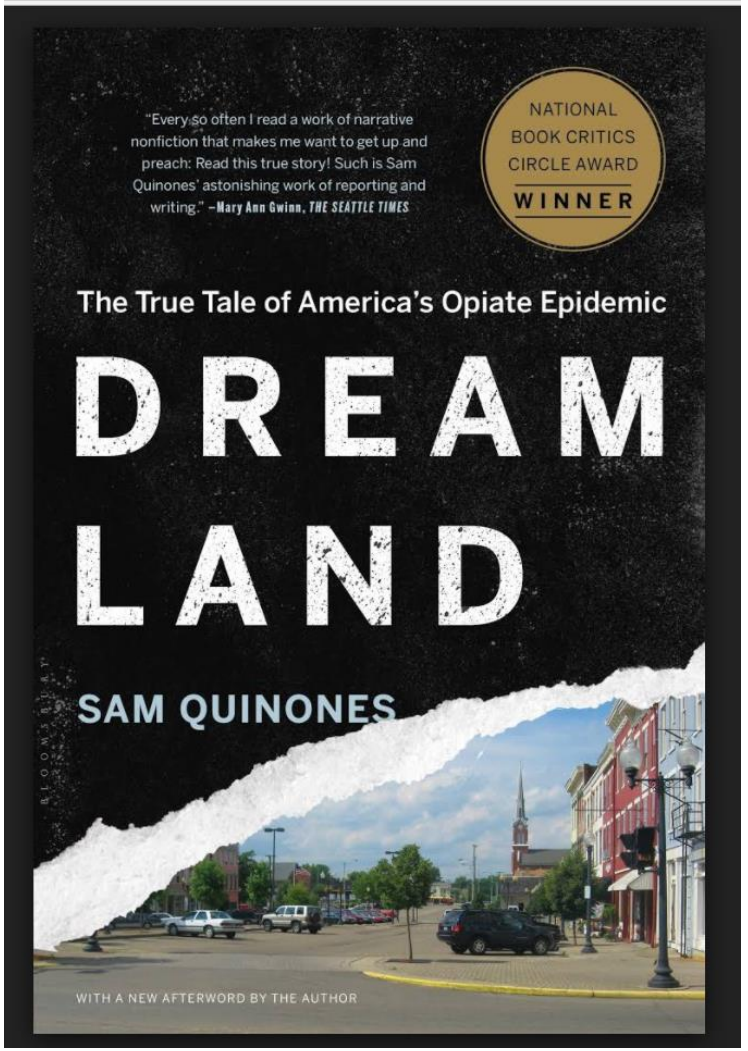
Jan 13, 2015 06:21 PM EST

An estimated 100 million Americans live with chronic pain, but new research suggests that many of these patients receive insufficient treatment.

Opioid Overdoses Impose A Financial 'Burden' On U.S. Medical Facilities

Oct 28, 2014 04:46 PM EDT

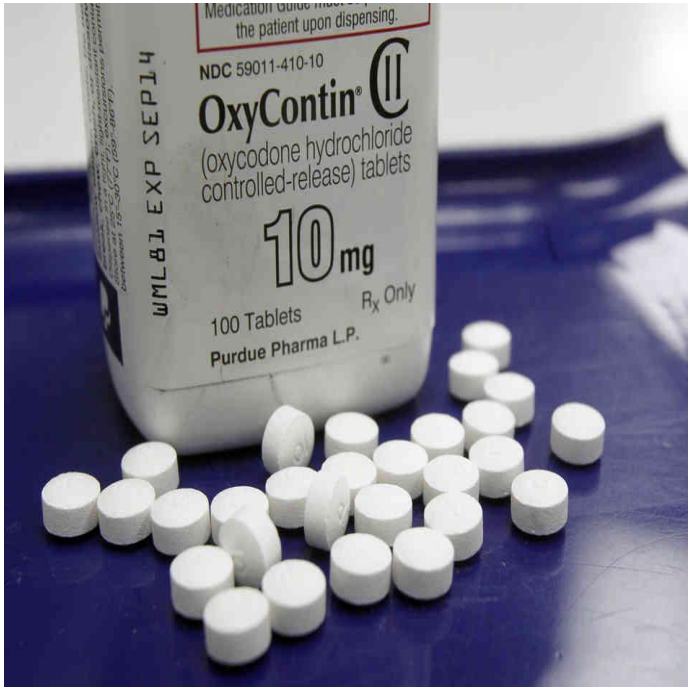
Opioid overdoses are common and expensive.



Pain: The 5th Vital Sign

- History
  - Introduced by president of American Pain Society 1995
  - Embraced by VA system late 1990s
  - Became Joint Commission standard 2001
- Because
  - Recognition pain undertreated
  - Untreated pain leads to chronic pain
  - Chronic pain interferes with quality of life, is costly, and common

Education: Oxycodone (OxyContin)



- Approved 1995
- Sales:
  - 1996 $45 million
  - 2000 $1.1 billion
  - 2010 $3.1 billion (30% of painkiller market)
- 1996-2002 funded >20,000 pain-related educational programs
- Provided financial support to: American Pain Society, the American Academy of Pain Medicine, the Federation of State Medical Boards, the Joint Commission

N Engl J Med. 1980 Jan 10;302(2):123.

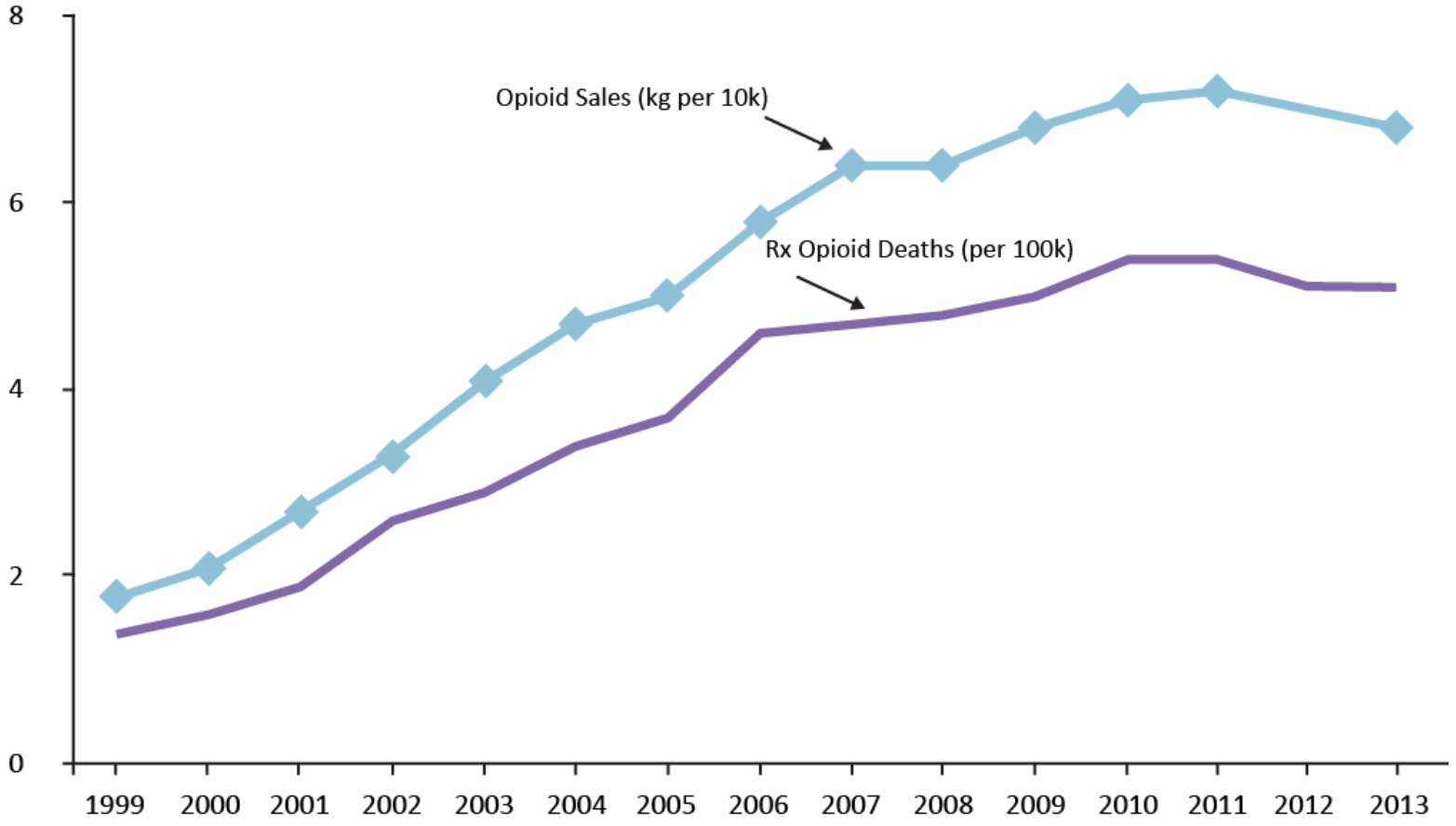
ADDICTION RARE IN PATIENTS TREATED WITH NARCOTICS

To the Editor: Recently, we examined our current files to determine the incidence of narcotic addiction in 39,946 hospitalized medical patients[1] who were monitored consecutively. Although there were 11,882 patients who received at least one narcotic preparation, there were only four cases of reasonably well documented addiction in patients who had no history of addiction. The addiction was considered major in only one instance. The drugs implicated were meperidine in two patients,[2] Percodan in one, and hydromorphone in one. We conclude that despite widespread use of narcotic drugs in hospitals, the development of addiction is rare in medical patients with no history of addiction.

JANE PORTER
HERSHEL JICK, M.D.
Boston Collaborative Drug Surveillance Program
Boston University Medical Center
Waltham, MA 02154

1. Jick H, Miettinen OS, Shapiro S, Lewis GP, Siskind Y, Slone D. Comprehensive drug surveillance. JAMA. 1970; 213:1455-60.
2. Miller RR, Jick H. Clinical effects of meperidine in hospitalized medical patients. J Clin Pharmacol. 1978; 18:180-8.

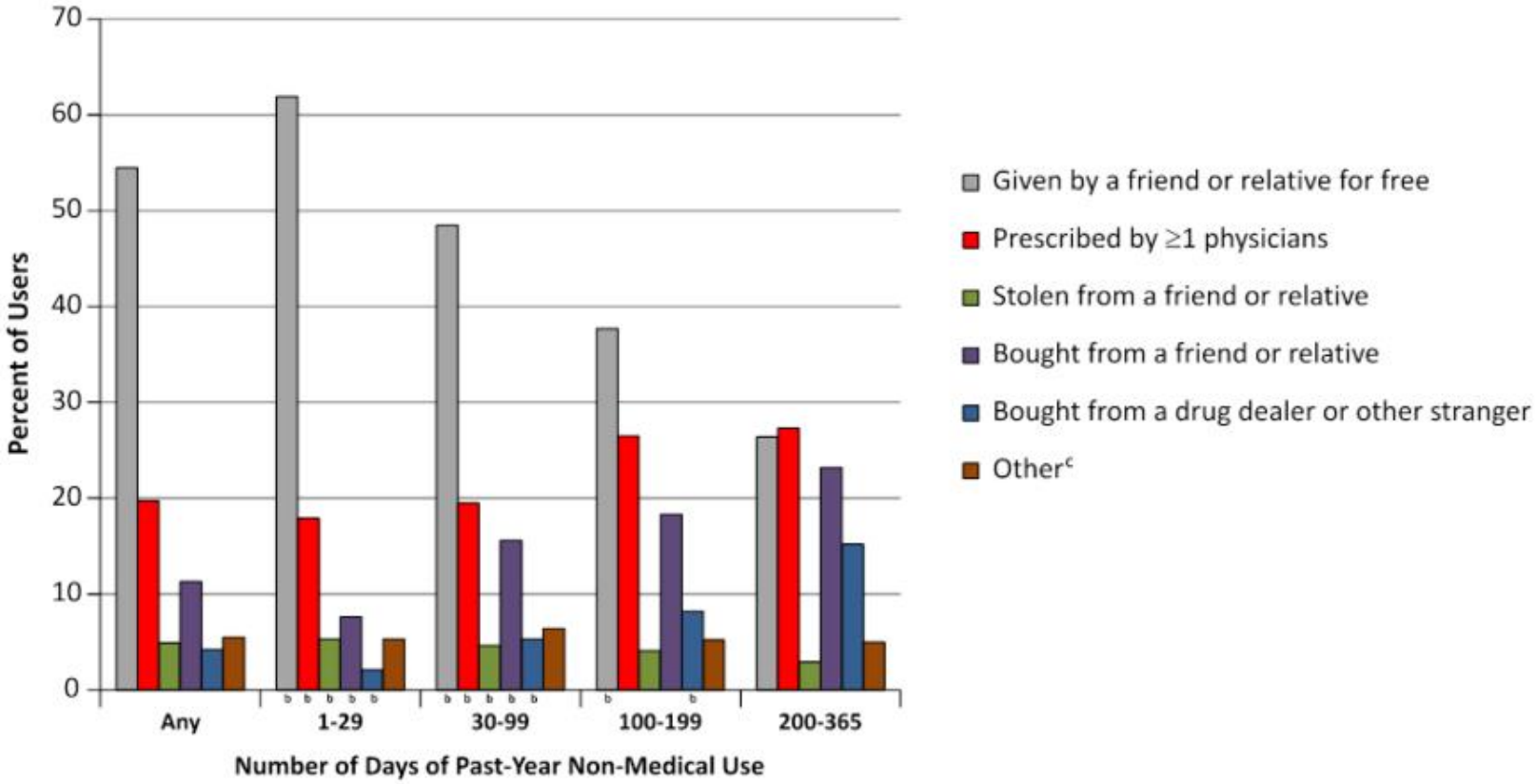
Increase in Opioid Prescribing Associated with Increase in Death



National Vital Statistics System, DEA's Automation of Reports and Consolidated Orders System

Slide from and used with permission of CDC Division of Unintentional Injury Prevention

Sources of Rx Opioids Among Past-year Non-Medical Users



[a] Obtained from the US National Survey on Drug Use and Health, 2008 through 2011.[5]
[b] Estimate is statistically significantly different from that for highest-frequency users (200-365 days) ($P < .05$).
[c] Includes written fake prescriptions and those opioids stolen from a physician's office, clinic, hospital, or pharmacy; purchases on the Internet; and obtained some other way.

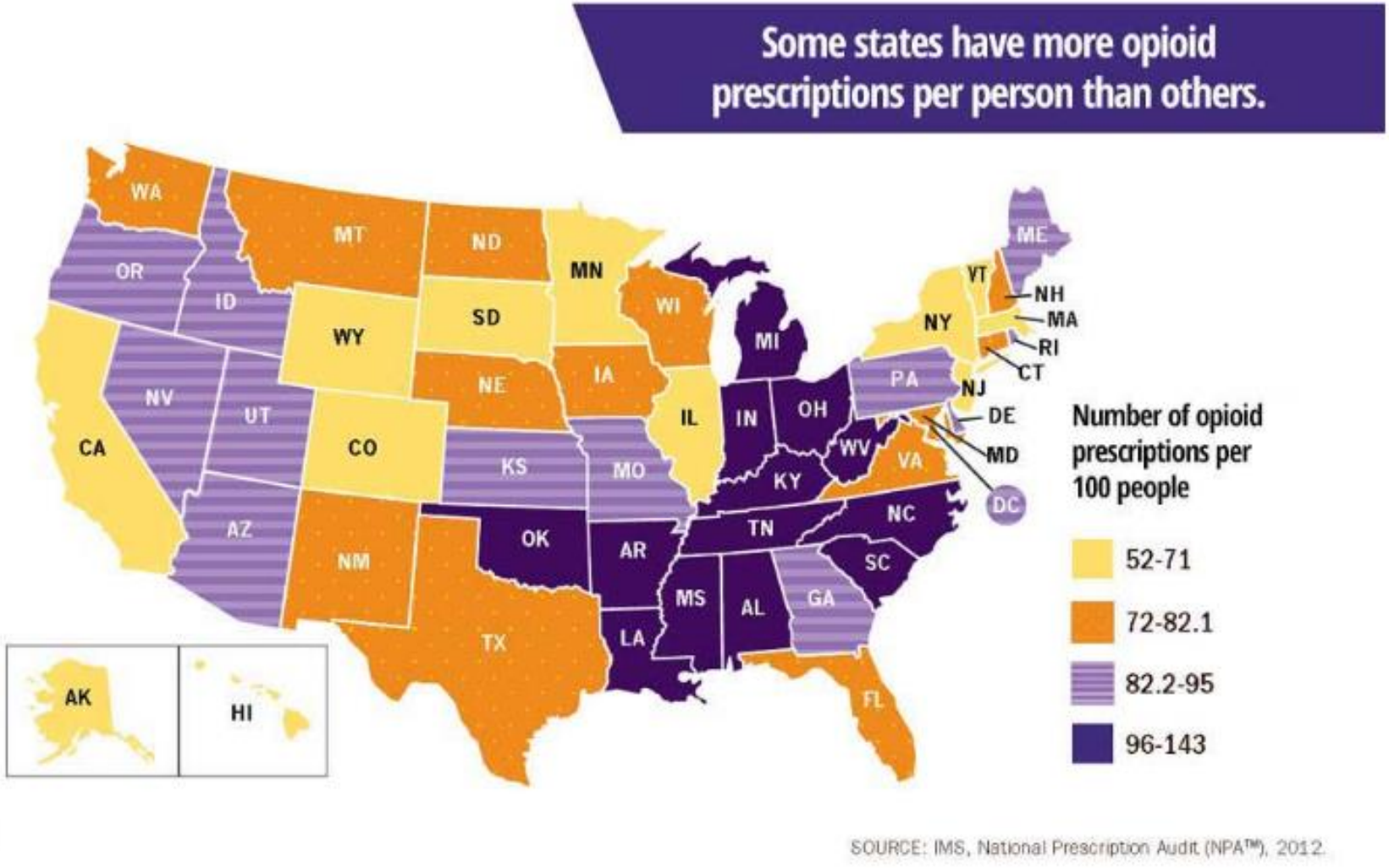
Jones, Paulozzi, et al. JAMA Int Med 2014

Rx Opioids and Transition to Heroin

- Nonmedical use of Rx opioids is the strongest risk factor for heroin use[1]
- Majority of current heroin users initiated opioid use with Rx opioids for non-medical purposes (approx 75%)[2]
- Only a small percentage of nonmedical Rx opioid users transition to heroin (approx 3-5%)[1]

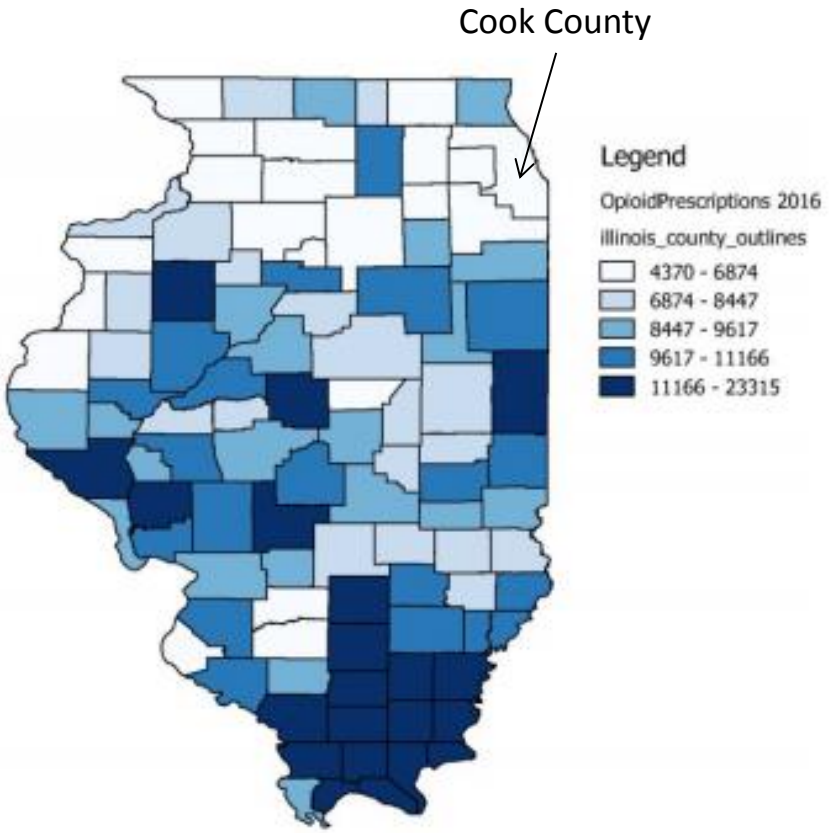
1- Compton W, et al. NEJM. 2016; 374; 154-63. 2- Cicero et al. JAMA Psychiatry; 2014; 71(7):821-826

US Opioid Prescription Patterns- 2012



https://www.cdc.gov/drugoverdose/data/prescribing.html

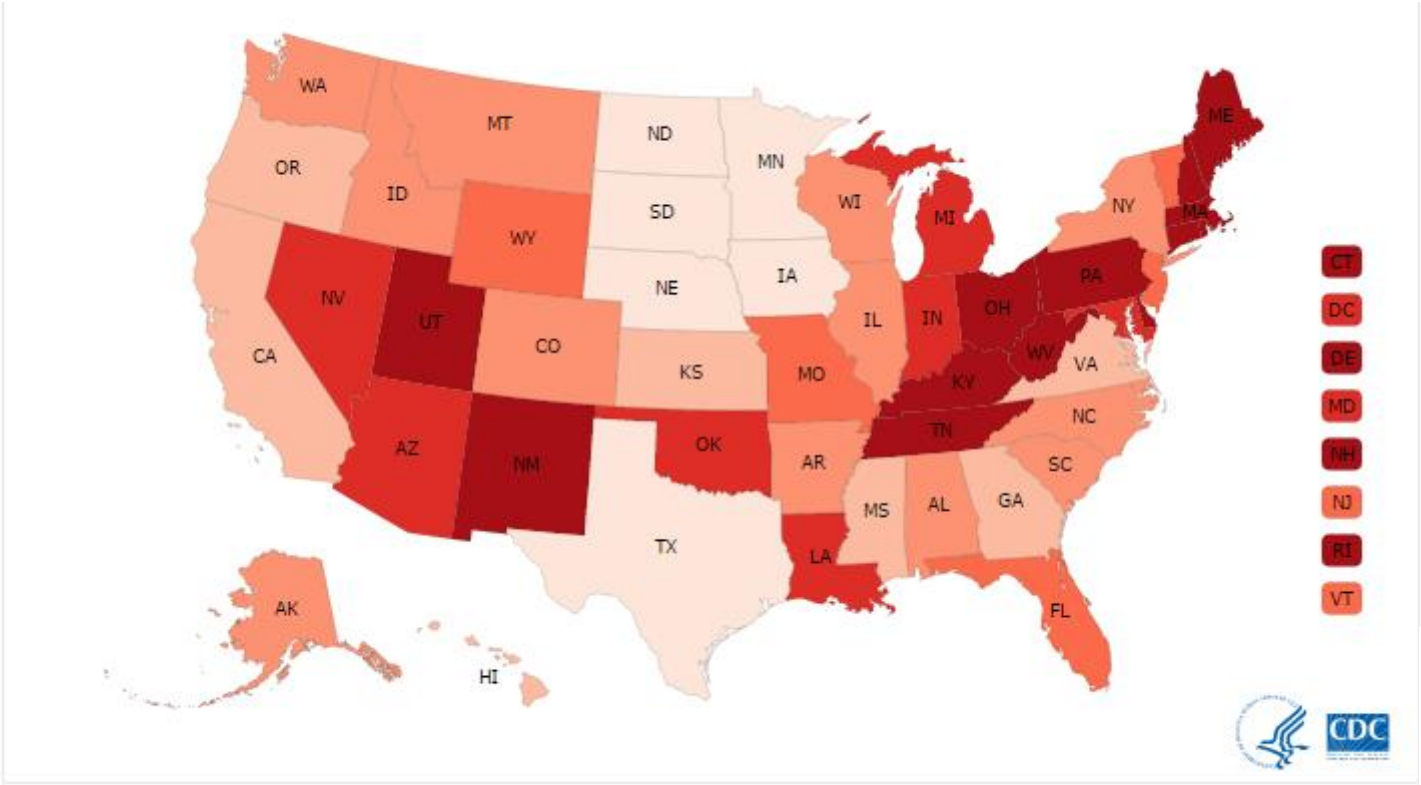
Illinois Opioid Prescribing Patterns-2015



Number of Patients on any opioid (per 100,000)

Source: IL PMP unpublished data. Received June 2017

Rates of Drug Overdose Deaths, 2015

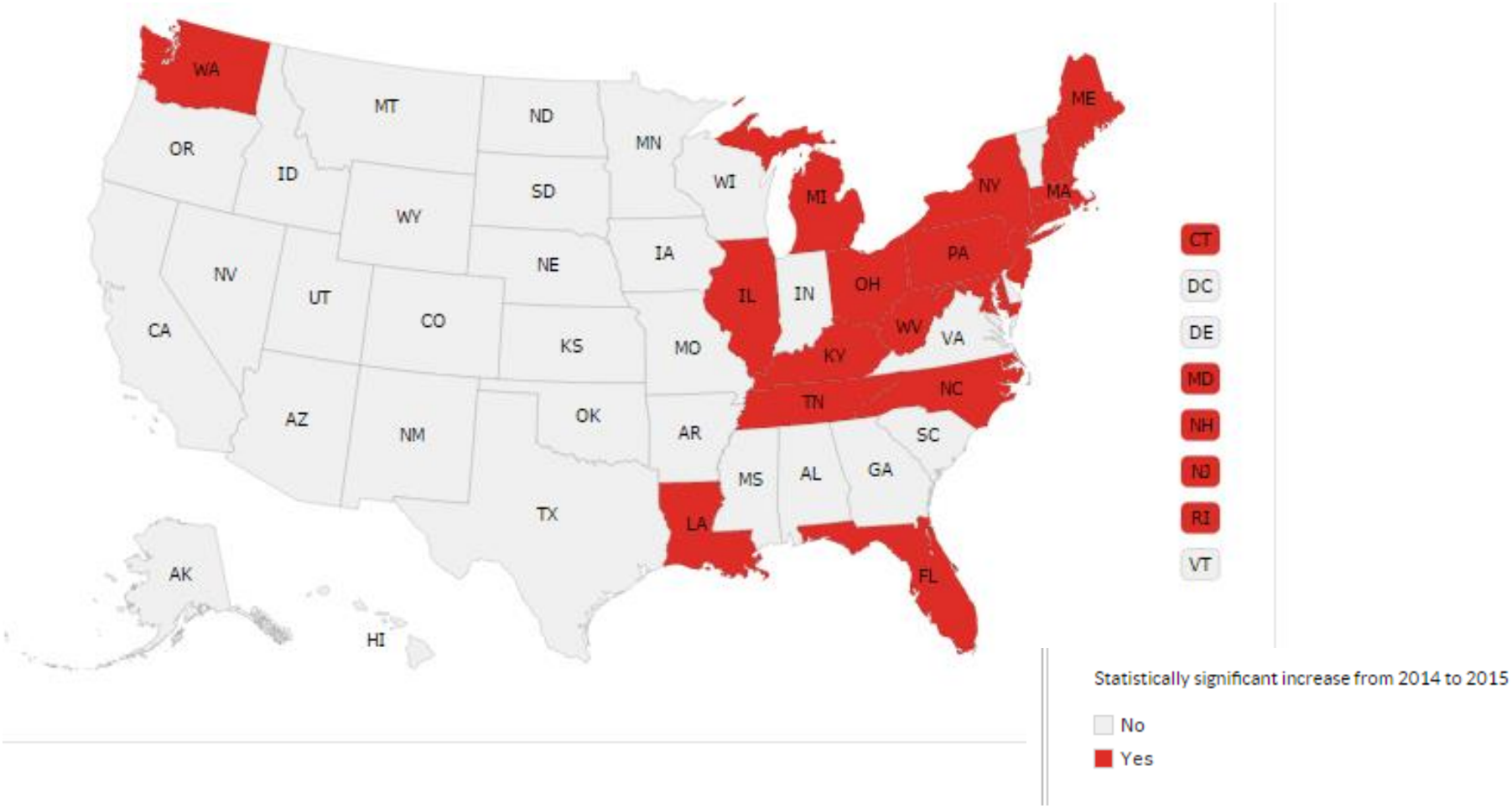


2015 Age-adjusted rate

- 2.8 to 11.0
- 11.1 to 13.5
- 13.6 to 16.0
- 16.1 to 18.5
- 18.6 to 21.0
- 21.0 to 41.5

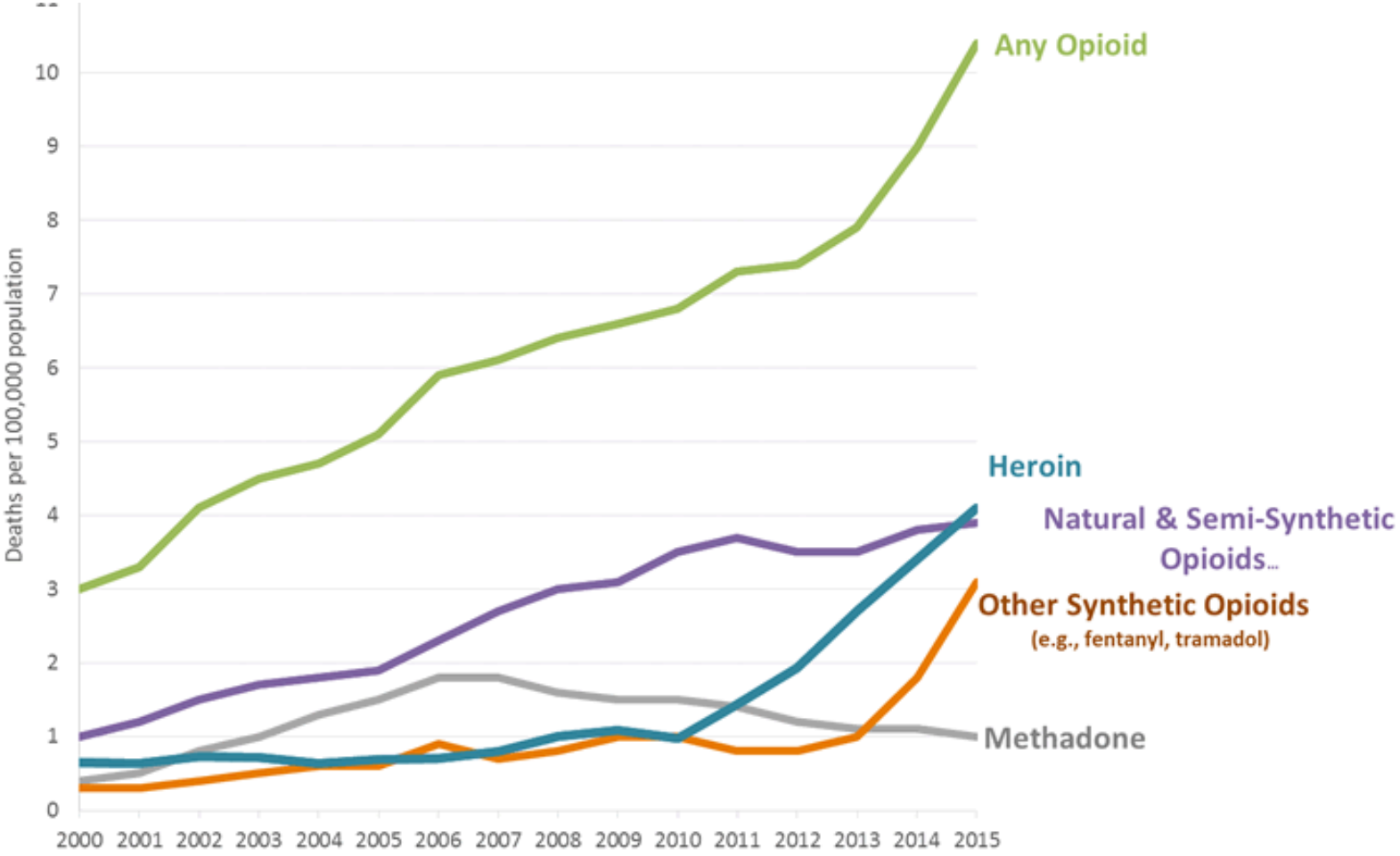
Source: https://www.cdc.gov/drugoverdose/data/statedeaths.html

Significant Increase in OD Death Rate from 2014-2015



Source: https://www.cdc.gov/drugoverdose/data/statedeaths.html

Overdose Deaths Involving Opioids by type, US 2000-2015

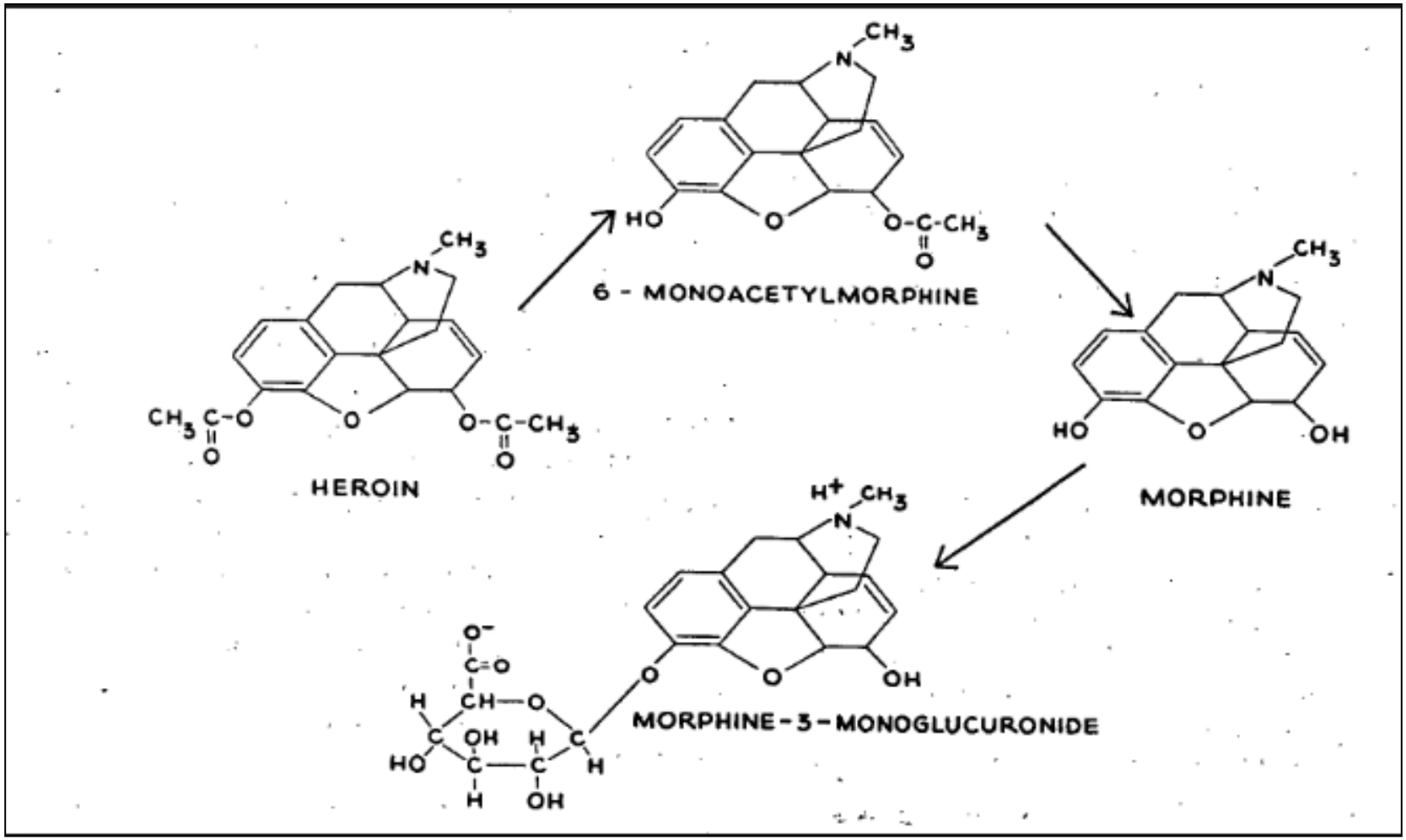


https://www.cdc.gov/drugoverdose/data/analysis.html

How are Opioids Types Involved in Overdose Reported?

- Medical Examiner lists cause of death
- Text from cause of death is converted into ICD10 codes
- ICD 10 codes are reported by state
  - T40.0: poisoning by opium
  - T40.1: poisoning by heroin
  - T40.2: poisoning by other opioid (includes morphine)
  - T40.3: poisoning by methadone
  - T40.4: Poisoning by synthetic narcotics (would include tramadol, fentanyl)
  - T40.6: Poisoning by other and unspecified narcotics

Heroin Breakdown Products



HEALTHY CHICAGO

CHICAGO DEPARTMENT OF PUBLIC HEALTH

Epidemiology Brief: Characterizing Opioid Use, Misuse, and Overdose in Chicago, IL, 2015

June 2017

The United States has seen a dramatic increase in opioid pain reliever misuse in the last fifteen years.[1] Nationally, an estimated 11.5 million individuals aged 18 years and older (4.7%) used opioid pain relievers for non-medical purposes in 2015.[2] According to the CDC, the amount of opioid pain relievers sold in the United States is four times higher now than it was in 1999.[1]

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

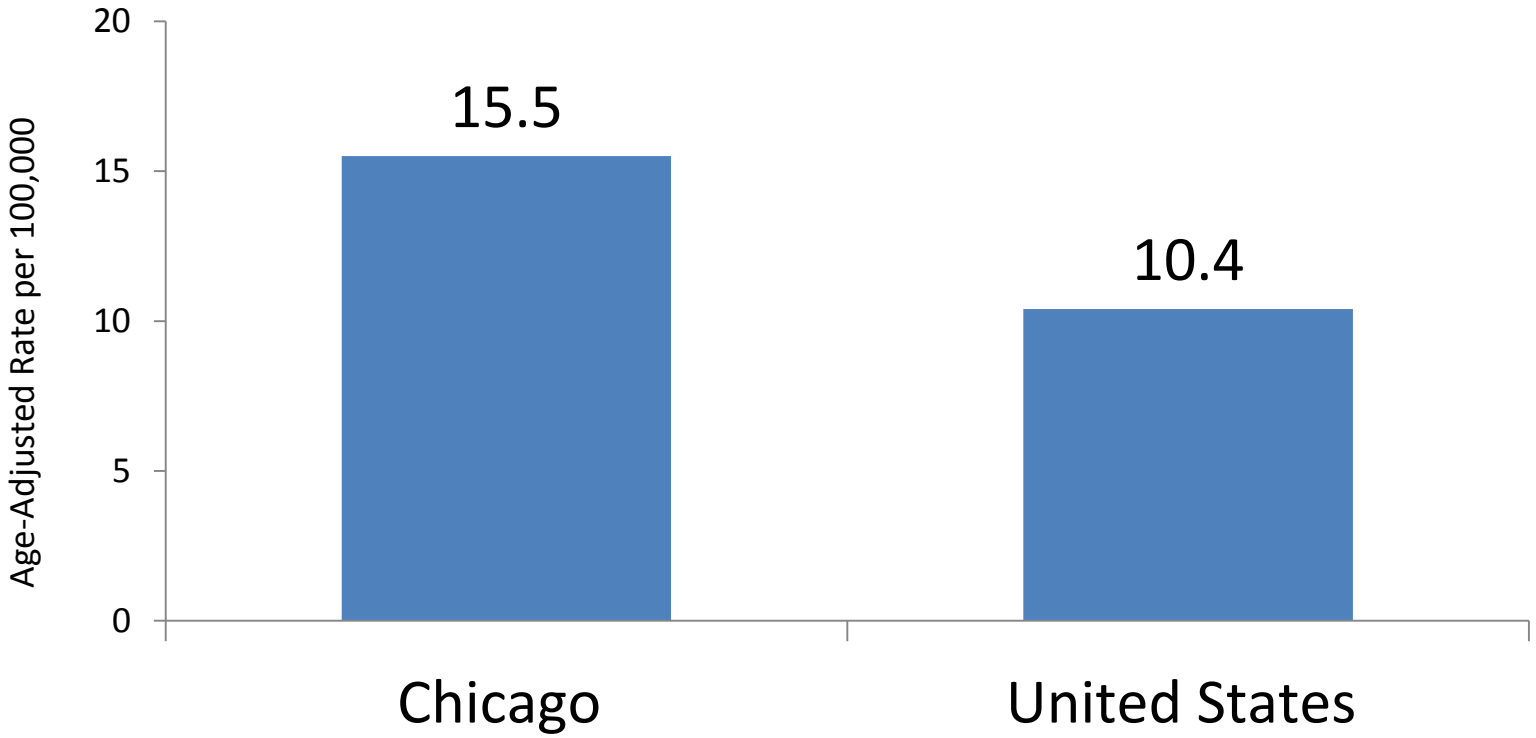
Heroin: A highly addictive and illegally produced drug derived from morphine.

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,

Opioid Overdose Death Rates in 2015



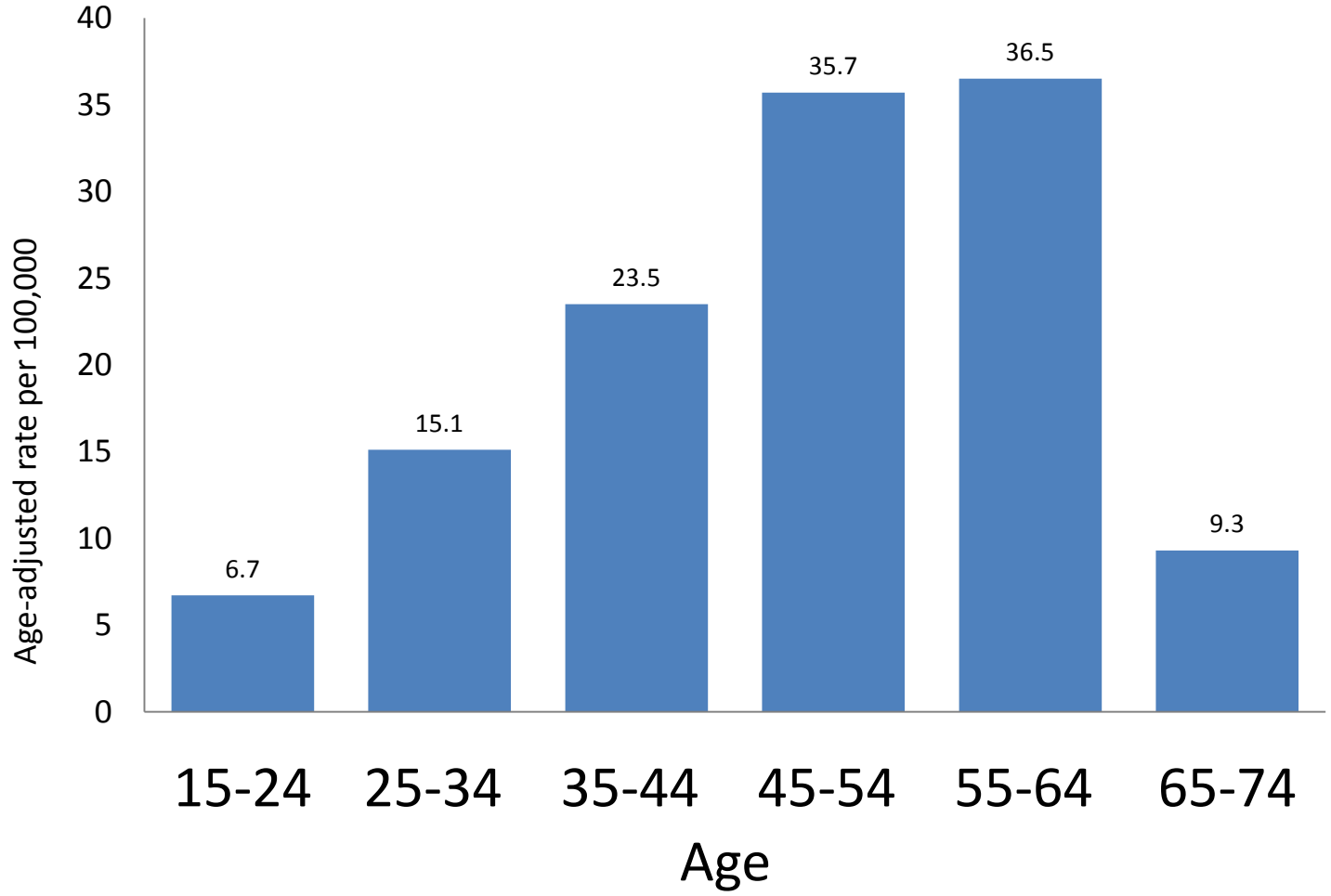
Source: 2015 CDPH Opioid Overdose Brief

Chicago Opioid-Related Overdose Deaths- 2015

Opioid Type	
Total Opioid	426
Heroin-involved	345 (81%)
Fentanyl-involved	71 (17%)
Opioid Pain Reliever-involved	32 (8%)

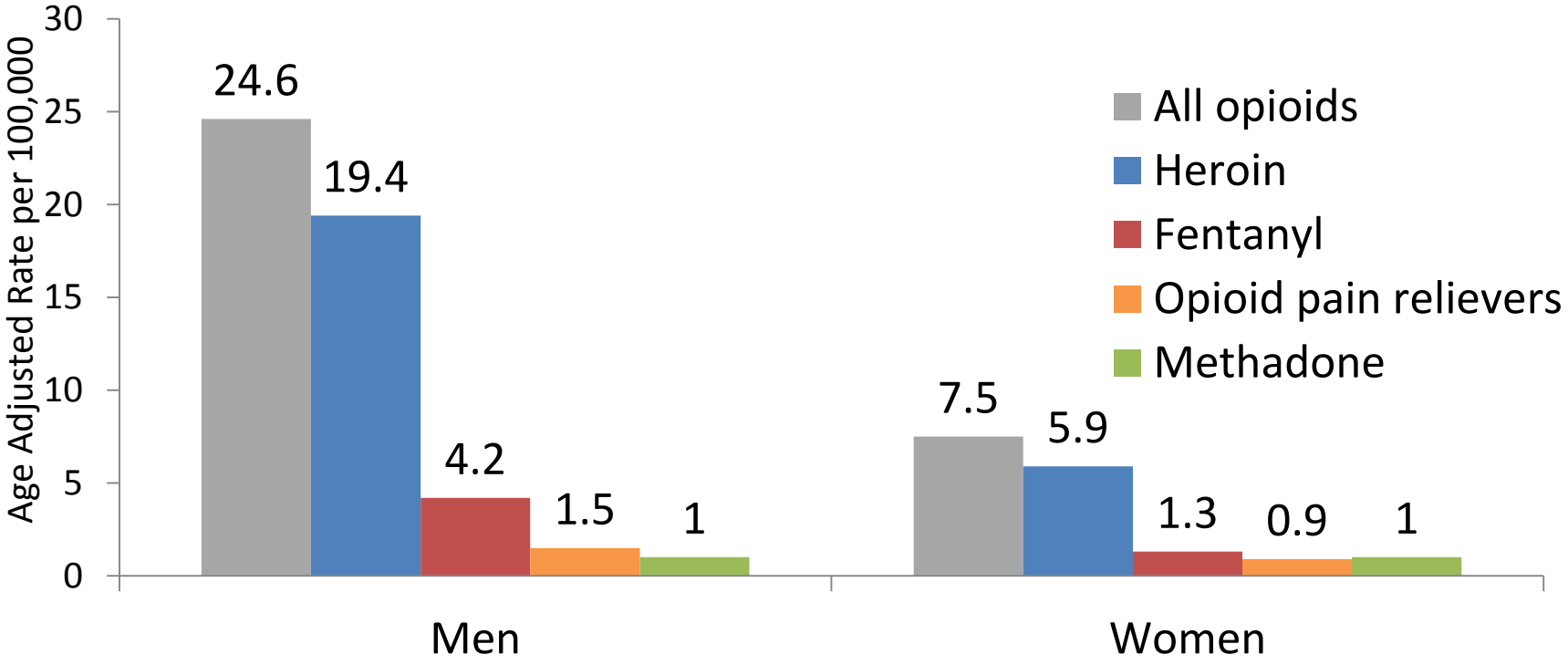
^ when multiple substances involved, they are counted in multiple categories

Chicago Opioid Overdose Death Rate by Age, 2015



Source: 2015 CDPH Opioid Overdose Brief

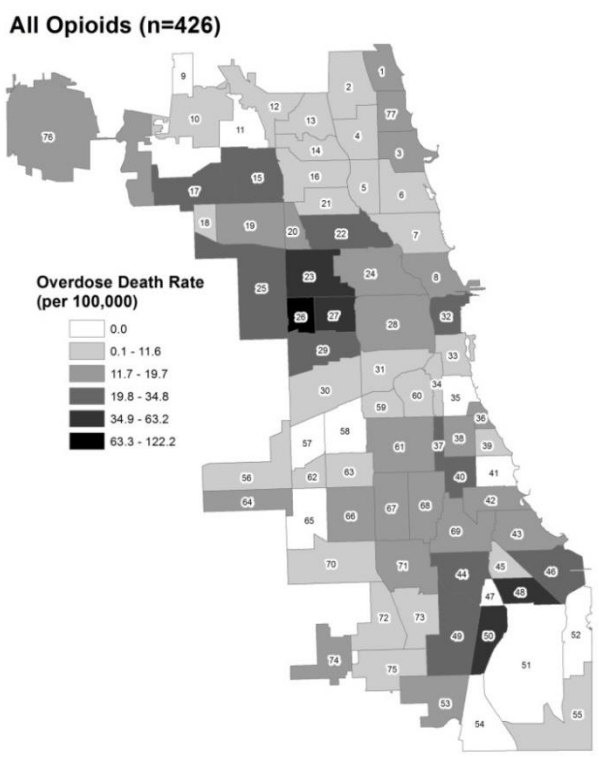
Chicago Opioid-Related Overdose Death Rates by Gender and Opioid Type (2015)

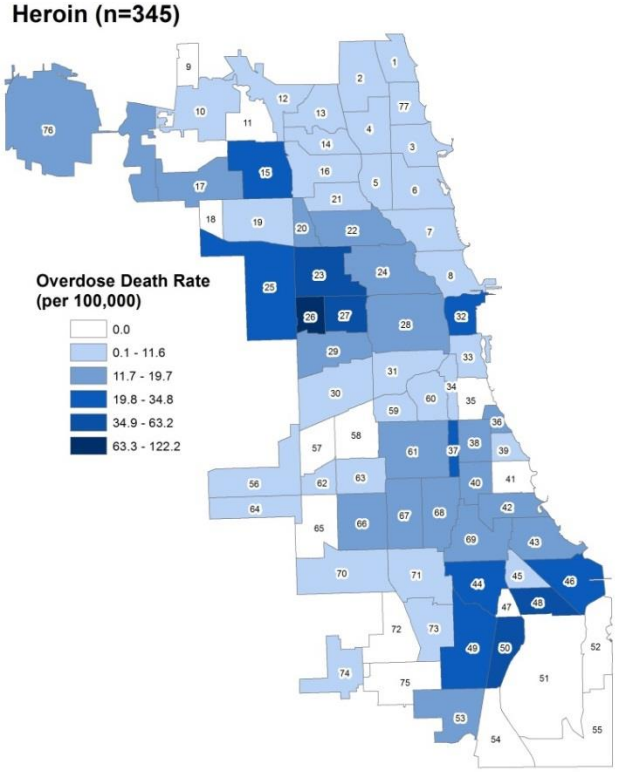


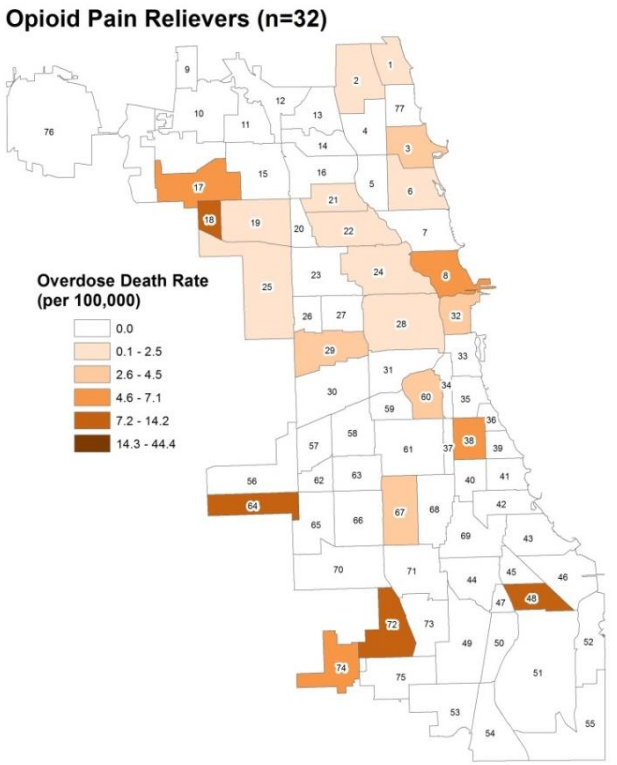
*Categories are not mutually exclusive as deaths may involve more than one drug

Source: 2015 CDPH Opioid Overdose Brief

Overdose Deaths in Chicago- 2015







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

Data Source: Cook County Medical Examiner. Community area overdose death rates are crude rates. Deaths are geocoded to location of incident.
Location of 12 deaths could not be accurately identified.

Source: 2015 CDPH Opioid Overdose Brief

Takeaways:

- Opioid overdose mortality rates continue to increase nationally and locally
- Significant variations in prescribing practices, drug availability, and overdose death trends
- In Chicago, illicit substances seem to be the large majority of the burden of mortality with the highest rates of overdose among 45-64 year old men
- Understanding local trends can help craft more targeted interventions

PUBLIC HEALTH APPROACH TO OPIOID CRISIS

Public Health Approaches to Opioid Crisis

- Primary prevention school education programs
- Safe opioid prescribing & disposal
  - Prescription Drug Monitoring Programs*
  - Drug take-back initiatives
  - Provider education (and education mandates)
  - Regulation and legal action around “pill mills”
  - Opioid prescribing limits (insurance and legislation)
- Screening, Brief Intervention and Referral to Treatment
- Abuse-deterrent opioid formulations
- Opioid Use Disorder (OUD) treatment with agonist therapy**
- Overdose response education and naloxone distribution**
  - Good Samaritan Laws
  - Laws to allow access without a prescription
- Safe Injection/Consumption Facilities**

Prescription Drug Monitoring Programs

- Significant variability in how operated and how publicly available data may be
- Best practices are emerging
  - Pew Charitable Trusts "PDMP: Evidence Based-Practices to Optimize Prescriber Use"
- Emerging evidence base on impact of PDMPs
  - PDMP implementation is associated with reduction of 1.1/100,000 opioid-related overdose deaths
    - Patrick et al. *Health Affairs.* 2016.
  - More robust PDMPs are associated with greater reduction in opioid pain reliever overdoses
    - Pardo B. *Addiction*. 2017.

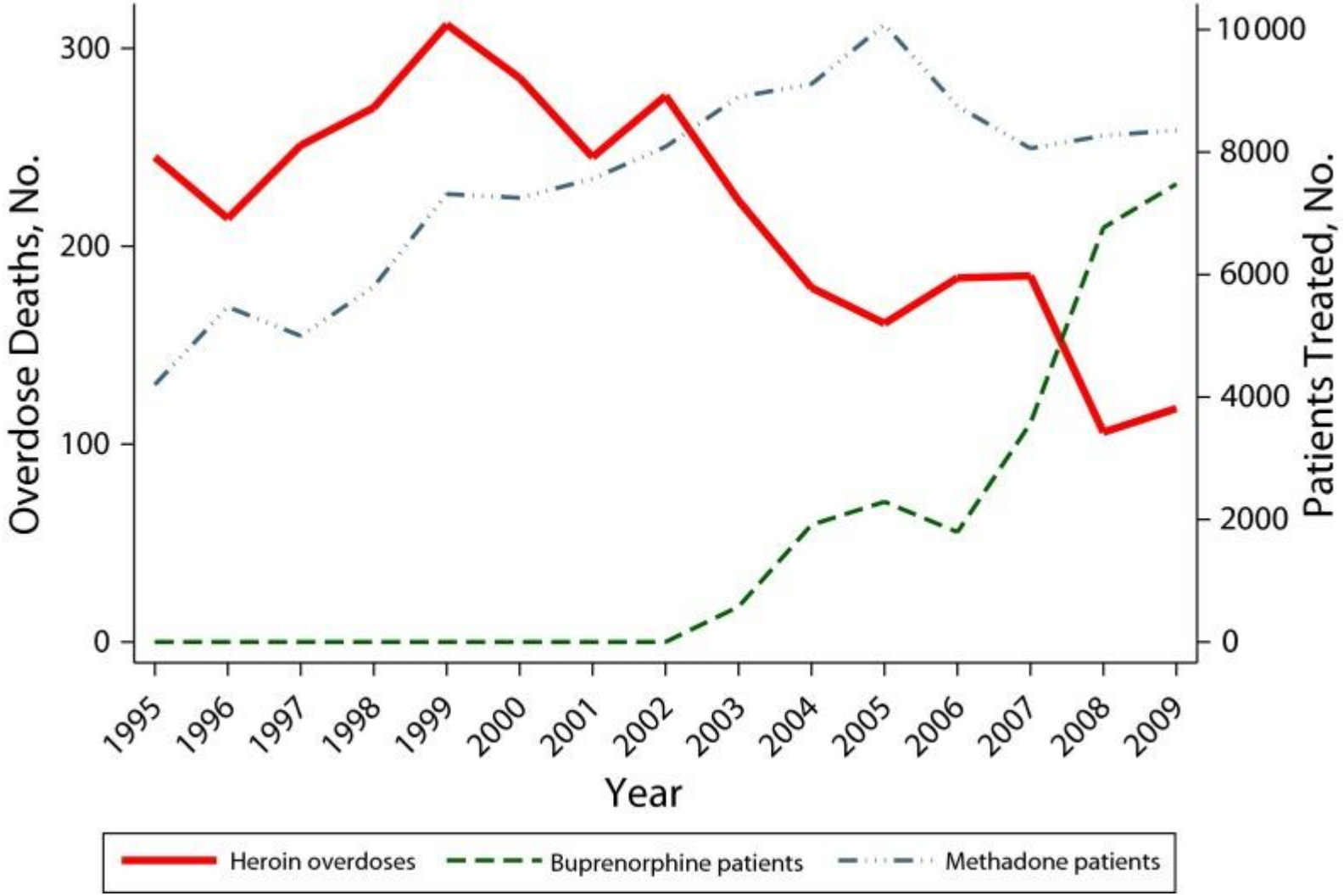
Opioid Use Disorder Treatment

- Counseling and Community Support (without medication)
- Medication assisted treatment (MAT):
  - Methadone**
    - Only available in Opioid Treatment Programs ("methadone clinics")
  - Buprenorphine**
    - Prescriber must have "waiver" to be able to prescribe and there are limits on size of patient population
  - Injectable extended release naltrexone
- Detox alone is not treatment!

Benefits Of Agonist (Methadone and Buprenorphine) Treatment

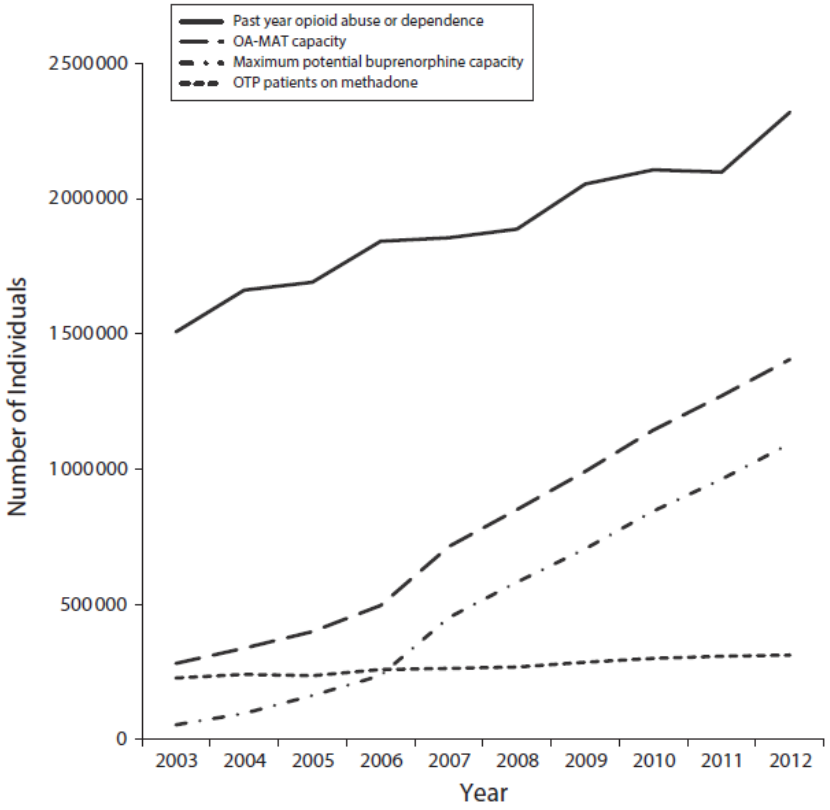
- Reduces risk of overdose
- Reduces risk of HIV infection
- Reduces risk of HBV and HCV infections
- Increases rates of employment
- Decreases crime
- Increases length of life

Opioid Agonist Treatments and Heroin Overdose Deaths in Baltimore 1995-2009



Schwartz et al. Am Journal of Public Health. 2013; 103(5):917-922

Access to opioid use disorder medication assisted treatment in US

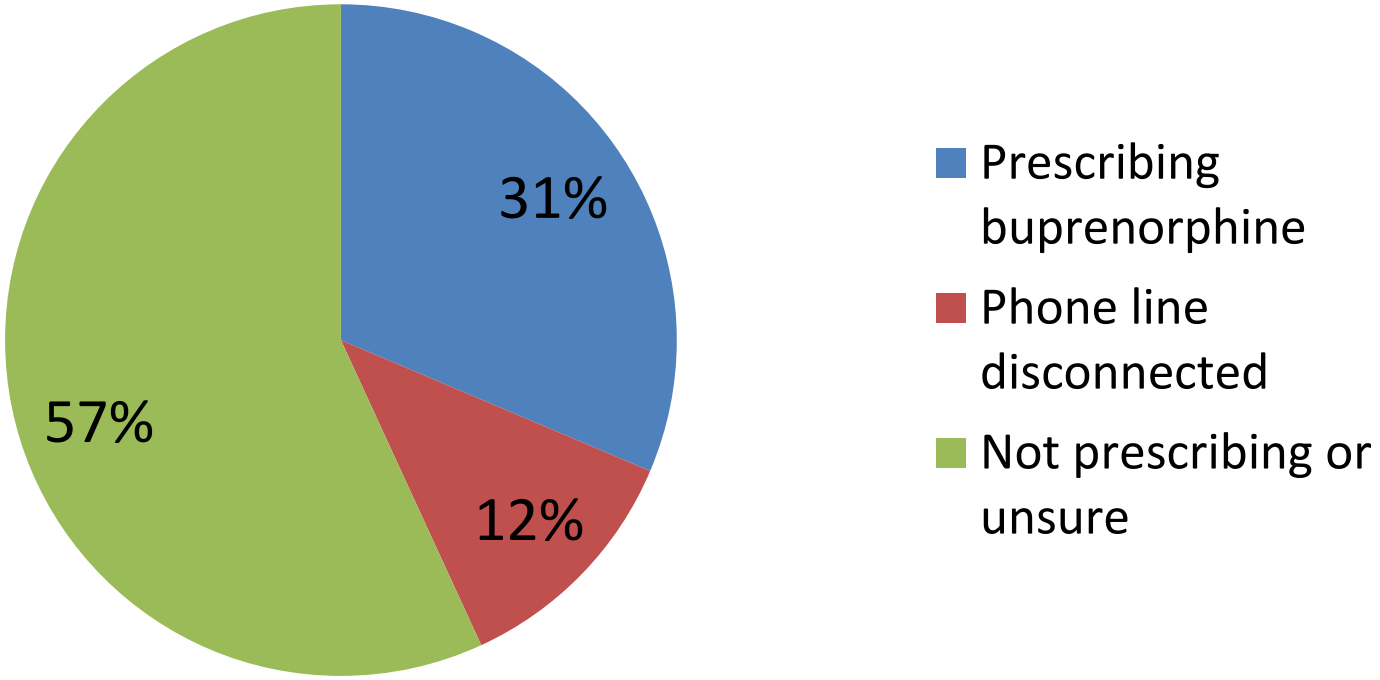


Note. OA-MAT = opioid agonist medication-assisted treatment; OTP = opioid treatment program.

FIGURE 1—Trends in past-year opioid abuse or dependence and opioid agonist medication-assisted treatment capacity: United States, 2003–2012.

Jones CM, Campopiano M, et al. Am Journal of Public Health. 2015; 105(8):e55-e63

Waivered Physician ≠ Prescribing Physician



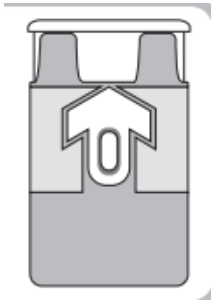
SAMHSA Treatment Finder Buprenorphine Prescriber Phone Survey
N=153

Overdose Response & Naloxone Distribution

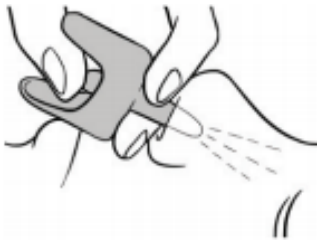
- No increase in drug use; increase in drug treatment
  - Seal et al. J Urban Health 2005:82:303-11
  - Galea et al. Addict Behav 2006:31:907-912
  - Wagner et al. Int J Drug Policy 2010: 21: 186-93
  - Doe-Simkins et al. BMC Public Health 2014; 14:297
- Cost effective
  - Coffin & Sullivan Ann Internal Med 2013; 158: 1-9
- Reduction in overdose deaths
  - Walley et al. BMJ 2013 346:f174
- Should center around people who use drugs
  - Rowe et al. Addiction 2015; 1360-0443

Overdose Response & Naloxone Distribution

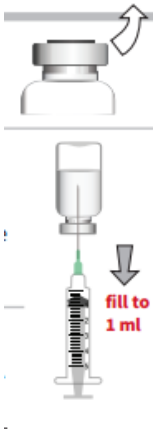
- Illinois law allows providers to prescribe to a layperson
- Illinois law allows trained pharmacists to dispense through standing order
- Laypeople have criminal and civil immunity when administering naloxone



Auto-injector



Intra-nasal



Intra-muscular

Supervised Consumption Facilities

- Facilities where people may go to consume drugs obtained elsewhere in a hygienic environment with appropriate equipment without fear of arrest under trained supervision
- Primary goals:
  - Provide an environment for safer drug use
  - Improve health status of target group
  - Reduce public disorder

Hedrich, D., T. Kerr & F. Dubois-Arber (2010) 'Chapter 11; Drug consumption facilities in Europe and beyond. European Monitoring Centre for Drugs and Drug Addiction

Slide credit: Sharon Stancliff, MD

Insite, Vancouver
British Columbia

Internationally:
97 facilities
66 cities
11 countries[1]

Photo Credit: Sharon Stancliff, MD

1- http://www.abell.org/sites/default/files/files/Safe%20Drug%20Consumption%20Spaces%20final.pdf

Findings from Insite Vancouver BC

- Overdose death reduction
  - *Milloy et al, PLOS One, 2008*
  - *Marshall et al, Lancet 2011*
  - *Kerr et al., International Journal of Drug Policy, 2006*
- Reductions in syringe sharing
  - *Kerr et al., The Lancet, 2005*
  - *Wood et al. American Journal of Infectious Diseases, 2005*
- Increases in safer injection behaviors
  - *Stoltz et al, Journal of Public Health, 2007*
  - *Small et al., Drug and Alcohol Dependence, 2008*
- Increased use of addiction treatment
  - *Wood et al., New England Journal of Medicine, 2006*
  - *Wood et al., Addiction, 2007*
  - *DeBeck et al., Drug and Alcohol Dependence, 2010*
- Reductions in violence against women
  - *Fairbairn et al, Social Science and Medicine, 2008*

Slide credit: Sharon Stancliff, MD

Findings from Insite Vancouver BC

- Reductions in public disorder
  - *Wood et al., Canadian Medical Association Journal, 2004*
  - *Petrar et al., Addictive Behaviors,*
  - *Stoltz et al., Journal of Public Health, 2007*
- No negative changes in community drug use patterns
  - *Kerr et al., British Medical Journal, 2006*
- No increases in initiation into injection drug use
  - *Kerr et al., American Journal of Public Health, 2007*
- No increases in drug-related crime
  - *Wood et al., Substance Abuse Treatment. Prevention, and Policy, 2006*
- Promotes effective police-public health partnerships
  - *DeBeck et al, Substance Abuse Treatment. Prevention, and Policy, 2008*
- Cost-effective
  - *Bayoumi & Zaric, CMAJ, 2009*
  - *Andersen & Boyd, IJDP, 2010*
  - *Pinkerton, et al, Addiction, 2010*

Slide credit: Sharon Stancliff, MD

Takeaways:

- Strong evidence base for opioid overdose morbidity and mortality reduction:
  - MAT with agonist medications (methadone and buprenorphine)
  - Naloxone distribution
  - Safe consumption facilities (but none in US)
- Emerging evidence base for opioid use and overdose mortality reduction:
  - Prescription drug monitoring program
- Many other areas under investigation

HEALTHY CHICAGO

CHICAGO DEPARTMENT OF PUBLIC HEALTH

LOCAL RESPONSE

Chicago-Cook Task Force on Heroin

Recommendation Categories:

1. Data
2. Community Education
3. Provider Education
4. Access to Treatment
5. Overdose response and naloxone distribution
6. Trafficking

https://www.cityofchicago.org/content/dam/city/depts/cdph/tobacco_alchohol_abuse/HeroinTaskForceReport_Final_10.6.16.pdf

Data

- Create a working group of stake holders to review data and make recommendations for improved data collection and dissemination
  - Epidemiology Brief: Opioid-Related Overdose Deaths in Cook County, IL, 2015
  - Epidemiology Brief: Characterizing Opioid Use, Misuse, and Overdose in Chicago, IL, 2015

Community Education

- Ensure the community is aware of naloxone availability
  - Availability through pharmacies
  - Availability through providers
- Community Education
  - Website development to include reliable information and local resources
  - Targeted community education in areas hardest hit by opioid overdose

Provider Education

- Provide opioid safety education for prescribers
- Promote CDC guidelines for safe opioid prescribing
- Encourage providers to use the prescription drug monitoring program
- Ensure providers understand how to refer for evidence-based opioid use disorder treatment
- Encourage pharmacists to complete naloxone training

Access to Treatment

- Increased funding specifically for medication assisted treatment (MAT) for opioid use disorder (additional $700,000 annually)
- Provide technical assistance in health centers to expand access to medication assisted treatment through Learning Collaborative
- Provide free waiver trainings for prescribers interested in prescribing buprenorphine

Overdose Response & Naloxone Access

- IL Heroin Crisis Act of 2015 allows:
  - Providers can prescribe naloxone for laypeople
  - Pharmacists who have completed training can dispense naloxone through standing order
  - Criminal and civil protections for laypeople who administer naloxone
- Provided City funding for naloxone purchase and distribution programs
  - $250,000 annually for naloxone education and distribution

Trafficking

- Encourage law enforcement representatives to regularly update service providers on trafficking patterns and market trends in order to prepare for future upticks in drug usage or the introduction of new drugs
- Expand CPD and HIDTA's diversion pilot program allowing some individuals involved in low-level narcotics offenses to access treatment in lieu of an arrest
- Develop innovative anti-trafficking prosecution strategies in partnership with federal and state prosecutors

What can Hospitals/Clinics Do?

- Support safe opioid prescribing
  - Provider education
  - Patient agreements/consents
  - Urine Drug Testing
  - PDMP integration into EHR
  - Multidisciplinary teams to address pain management
  - Streamline naloxone prescribing/distribution (possibly through standing order)
  - Integrate other tools into EHR (MME calculator, opioid risk tool, PEG tool for ongoing assessment, etc)

What can Hospitals/Clinics Do?

- Implement SBIRT (screening, brief intervention and referral to treatment) for earlier detection and intervention
- Ensure that referral networks are in place for MAT services
- Develop/expand access to MAT through your system
- Ensure pharmacists are trained and able to distribute naloxone without a prescription
- Train staff in harm reduction messaging

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