



# Opioids: Characteristics, Prevalence, Policies

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## Washington State Prevention Summit

**Yakima, Washington  
November 3, 2017**

**Steven Freng, Psy.D., MSW  
NW HIDTA Prevention/Treatment Manager**



By DEAN REYNOLDS / CBS NEWS / June 6, 2017, 8:00 PM

# Overdoses now leading cause of death of Americans under 50

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**CLEVELAND, Ohio** -- Overdoses are now the leading cause of death of Americans under the age of 50.

According to preliminary data compiled by The New York Times, deaths last year likely topped 59,000 -- 19 percent more than the year before.

In Ohio, they were up even more.

On May 26, Cleveland Police Sgt. Timothy Maffo-Judd's body camera was running as he approached a man slumped in his car. It turned out that the man was minutes from a fatal drug overdose.

Three applications of Narcan -- the anti-overdose drug -- and the victim finally started coming around.

Maffo-Judd says it's become a grim routine, and he's even encountered the same person twice. "That's pretty common," he says.

# A Brief History of Opiates

This is the seed pod of the  
Opium Poppy (*Papaver somniferum*).



It's use as an analgesic dates back 7,000 years to the ancient civilizations of Sumer, Assyria, Egypt and Persia.

The Sumerians characterized it in an ideogram translated as HUL, meaning "joy" or "rejoicing".

Cultivation in Western Asia is known to have been widespread as early as 4,000 years ago.

In Greek mythology Hypnos was known as the personification of sleep. Morphine was named after the Greek god Morpheus, "the god of dreams" and a son of Hypnos.





# A Brief History of Opiates

The dried extract of Opium contains the active ingredients Morphine and Codeine. Raw opium (seen here) contains about 12% morphine.



# A Brief History of Opiates

- Morphine is isolated in 1805 in Germany and spreads widely as an anesthetic
- Codeine is isolated in 1832
- The hypodermic needle is invented in 1853
- Morphine is widely administered during the American Civil War – and the Franco-Prussian War
- By the end of the Civil War approximately 45,000 soldiers are addicted to morphine
- The Bayer company invests to diversify its product range and synthesizes heroin (and aspirin) in 1888 as a treatment for morphine addiction – embarking on the creation of commercial medicine.



# Apothecary – 1860's





# A Brief History of Opiates

- Immigrant Chinese railroad laborers introduce opium smoking – and the first federal law regulating importation is passed in 1887.
- Heroin is found to be more addictive than morphine in clinical observations 1899-1902.
- Opium-bearing patent medicines gain mass appeal and availability i.e., Godfrey's Cordial for Infants sold by apothecaries and druggists.
- Patent medicines peak – more Americans are addicted per capita in 1900 than at present.
- A national “opium craze” is associated with Asian immigrants, increasing crime and becomes highly stigmatized – importation and trafficking are banned in 1924.
- The Pure Food and Drug Act, the FDA and the Harrison Narcotics Act are passed 1906-1914 – and 29 states have passed opiate prohibitions.





## Winslow's Soothing Syrup for infants

*Active Ingredient: Morphine*







THE YELLOW TERROR IN ALL HIS GLOP\*

# A Brief History of Opioids

- Post-WW II drug use in the U.S. is associated with inner cities, poverty, immigrants, communities of color.
- The Controlled Substances Act is enacted in 1970.
- President Nixon creates the DEA in 1973.
- Viet Nam veterans return addicted to heroin, “redefining” addiction and the homeless street junkie stereotype.
- Methadone becomes widely available in licensed clinics.
- The National HIDTA Program is created in 1989.
- Drug abuse in the U.S. involves 12 million people in 1992.
- The first of several national articles asserting that surgery and pain patients are undermedicated is published.
- Drug abuse in the U.S. involves 16 million people in 2001.
- Drug abuse in the U.S. involves 24 million people in 2012.
- Opioid addiction in the U.S. includes 591,000 people who are addicted to heroin and 2 million people who are addicted to prescription opioids.



# Opioids



- **Natural** - Opium, morphine, codeine
- **Semi-synthetic** - Heroin, Dilaudid (hydromorphone)
- **Synthetics** - Oxycontin®, Percodan®, Percoset®  
(oxycodone, derived from morphine)  
Vicodin®, Lortab® (hydrocodone)  
Methadose®, Dolophine® (methadone)  
Darvon® (propoxyphene)  
Demerol® (meperidine)  
Duagesic® (fentanyl)





# Opioids

- **Opium, heroin, morphine, codeine, Dilaudid, Percodan, Demerol, Methadone, Fentanyl**
  - Potent analgesics
  - Relatively short half-life, tolerance develops very rapidly with frequent use
  - Overwhelming sense of well-being, altering the subjective experience of physical *and* emotional pain
  - Gastrointestinal symptoms most common among chronic users
  - Relatively mild withdrawal syndrome (especially when compared to alcohol/sedatives)
  - Severe health risks due to intravenous administration, including HIV/AIDS, Hepatitis, aggressive infections



# Opioid Effects

- Analgesia
- Euphoria
- Anxiolytic- calming
- Sleep Inducing
- Sensation of warmth
- Constipation
- Dry mucous membranes
- Pupils constrict (pinpoint pupils)
- Sedation/Sleepiness (nodding)
- Depresses respiration



# Opioid Withdrawal

- Pain
- Dysphoria
- Anxiety
- Insomnia
- Diarrhea
- Rhinorrhea
- Chills
- Pupils dilate
- Increased heart rate & blood pressure





# Opioid Prescribing

- Prescribing rates increased from 2006 to 2012 when more than 255 million prescriptions were filled at a rate of 81.3 per 100 persons.
- From 2012 to 2016 the prescribing rate fell to 66.5 per 100 persons, totaling 214 million.
- However, rates remain very high in some areas –
  - In app. 25% of U.S. counties, rates would provide every person to have a prescription;
  - Some counties have rates seven times higher than 66.5 per 100 persons.
- Prescribing rates for opioids vary widely across states and counties.



# Washington's Top 10 Prescribed Drugs

Generic Name	2012	2013	2014	2015	2016
Hydrocodone (all)	3,043,357	2,928,052	2,855,227	2,521,688	2,371,802
Oxycodone (all)	1,816,171	1,827,750	1,889,380	1,952,720	1,937,349
Tramadol HCL	0	0	308,803	730,446	718,261
Zolpidem Tartrate	898,620	838,636	790,571	761,159	712,360
Dextro/Amphetamine	466,702	323,013	579,927	626,923	701,795
Lorazepam	632,757	634,566	643,922	640,505	623,551
Alprazolam	644,377	641,634	644,930	625,209	609,594
Clonazepam	519,642	521,425	527,935	520,615	502,644
Methylphenidate HCL	397,021	410,821	422,664	420,891	443,262
Morphine Sulfate	327,191	330,399	336,190	362,408	351,167



# Availability and Accessibility

- 20.8% of survey respondents reported using at least one prescribed opioid medication during the preceding 12 months
- 72% reported having leftover medication
- 71% reported keeping the medication
- Therefore, at least **10%** of households are accumulating medications each year





# Vicodin (hydrocodone)

- Includes Acetaminophen (Tylenol)
- Narcotic/Opioid pain reliever
- Used to relieve moderate to severe pain
- Antitussive (cough suppressant)
- Structurally similar to codeine but with effects more similar to morphine
- Habit-forming: use/abuse of hydrocodone is associated with tolerance, dependence, and addiction
- Risk of liver toxicity when high, acute doses are consumed
- Schedule II
- 124 million prescriptions written in U.S. in 2013



# Oxycontin (oxycodone)

- Opioid pain reliever
- Used to treat moderate to high pain
- Oxycodone, the medication's active ingredient, is produced in a timed-release tablet
- Has been abused illicitly for the past 30+ years
- Drug addicts crush and then snort, inject, smoke the pills to bypass the time-release outer layer
- Schedule II
- 53 million prescriptions written in U.S. in 2013



# Methadone

- Developed to treat heroin dependence.
- Now also widely prescribed for pain due changes in pain management practices (prescribing has increased by 700% since 1996).
- In 2005, 41,216 Emergency Room visits involved non-medical use of methadone
- From 1999 to 2004, methadone deaths jumped from 786 to 3,849
- Much longer half-life than other opiates, remains in the blood after analgesia effects have worn off, increasing the danger of taking too much
- In 2004, 10 people died from methadone toxicity every day
- Schedule II







# Synthetic Opioids



Furanyl fentanyl



Acetylfentanyl



Valeryl fentanyl

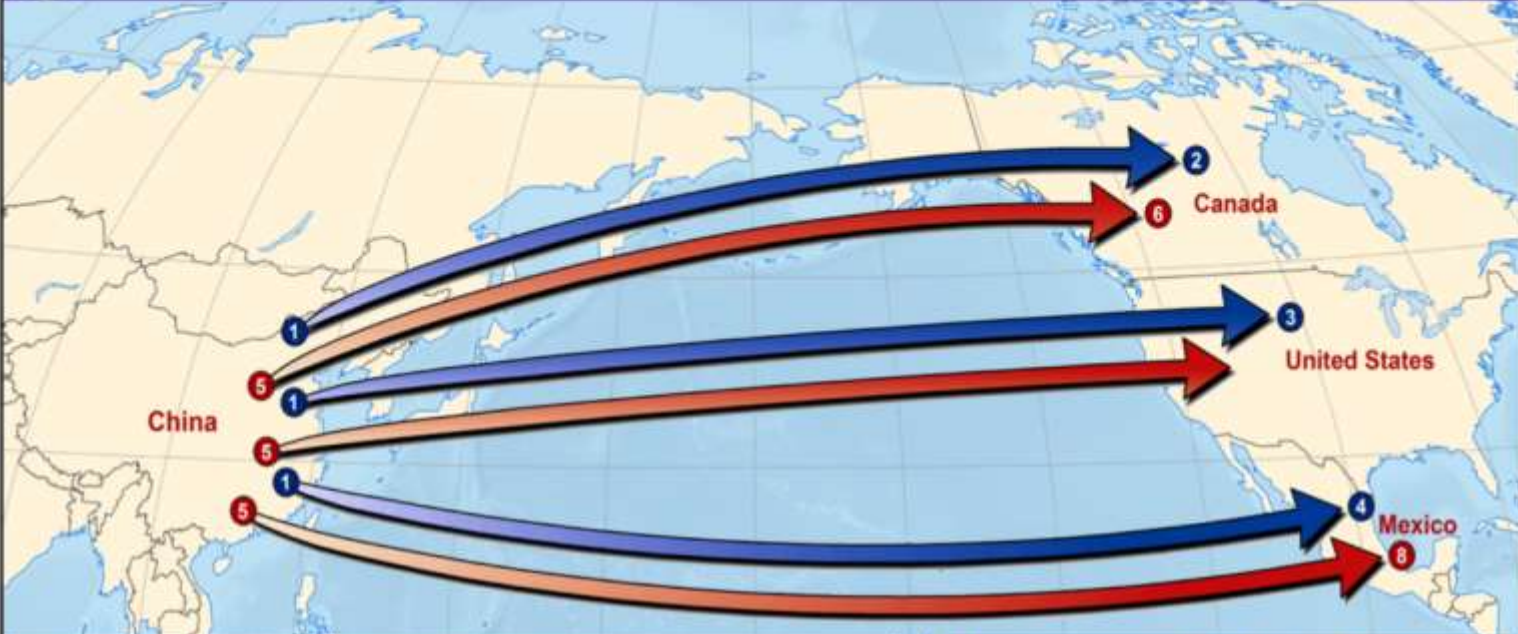


Fentanyl

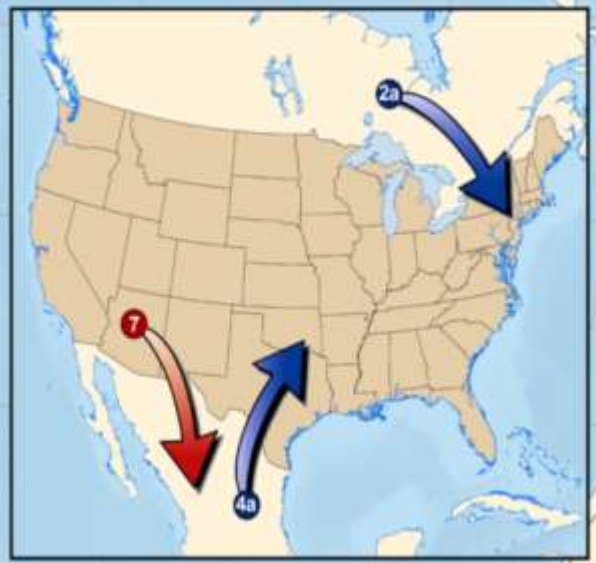




### (U) Illicit Fentanyl and Fentanyl Precursor Flow Originating in China

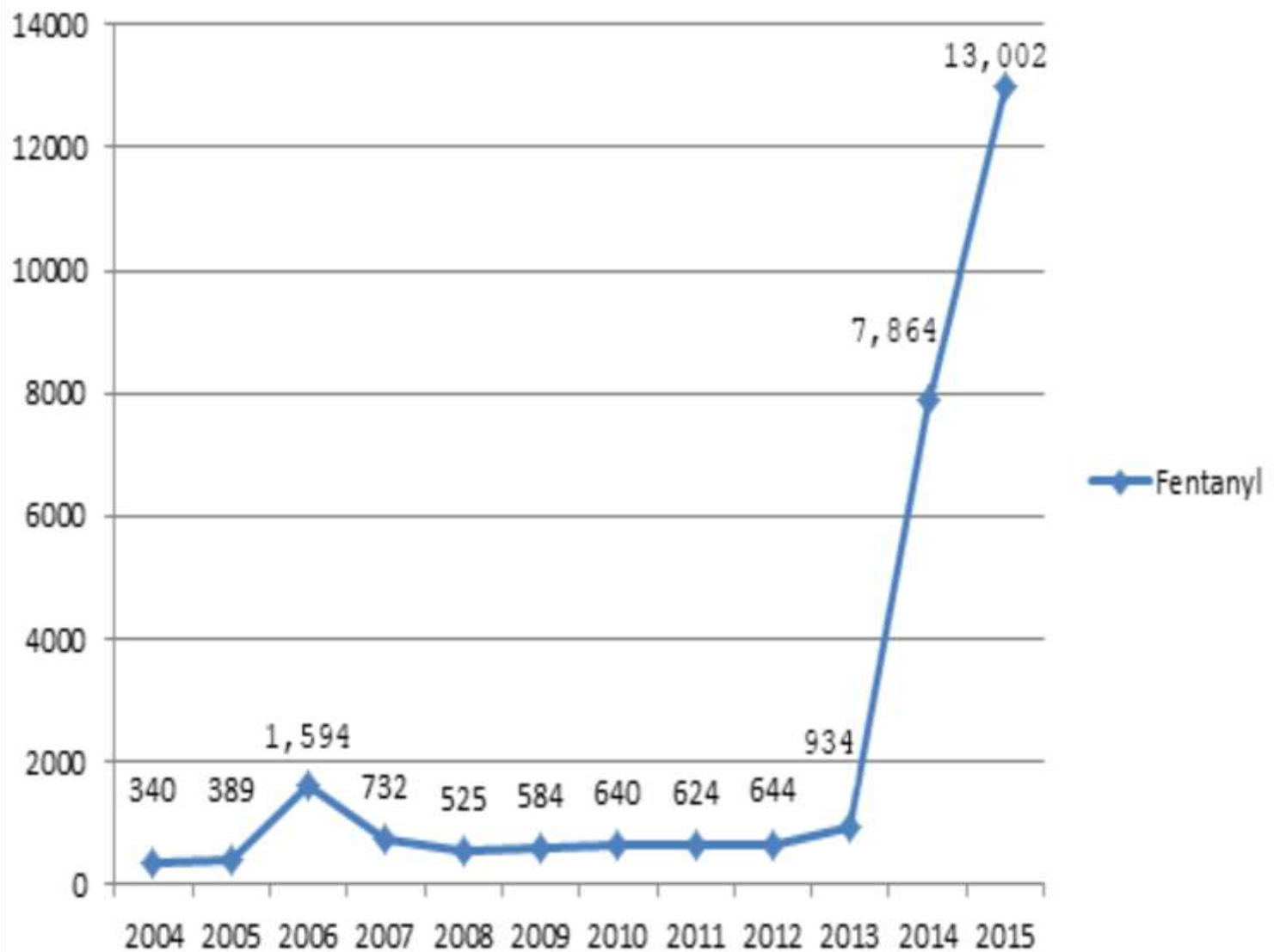


- 1 Fentanyls in powder form and pill presses are shipped via mail services.
- 2 The powder fentanyls are processed and mixed with heroin, or sold as heroin, or pressed into pills and sold in the Canadian drug market.
  - 2a Some fentanyl products are smuggled from Canada into the United States for sale, on a smaller scale.
- 3 The powder fentanyls are processed and mixed with heroin, or sold as heroin, or pressed into pills and sold in the United States drug market.
- 4 The powder fentanyls are cut and diluted for further smuggling, or pressed into counterfeit prescription pills.
  - 4a Diluted powder fentanyls and counterfeit prescription pills containing fentanyl are smuggled from Mexico into the United States.
- 5 Precursors for manufacturing fentanyls are shipped via mail services.
- 6 Precursors are used to manufacture fentanyls in clandestine laboratories.
- 7 Precursors are likely smuggled across the Southwest border into Mexico to manufacture fentanyls.
- 8 Precursors are likely used to manufacture fentanyls in clandestine laboratories.





# Number of Fentanyl Exhibits in NFLIS, 2004-2015

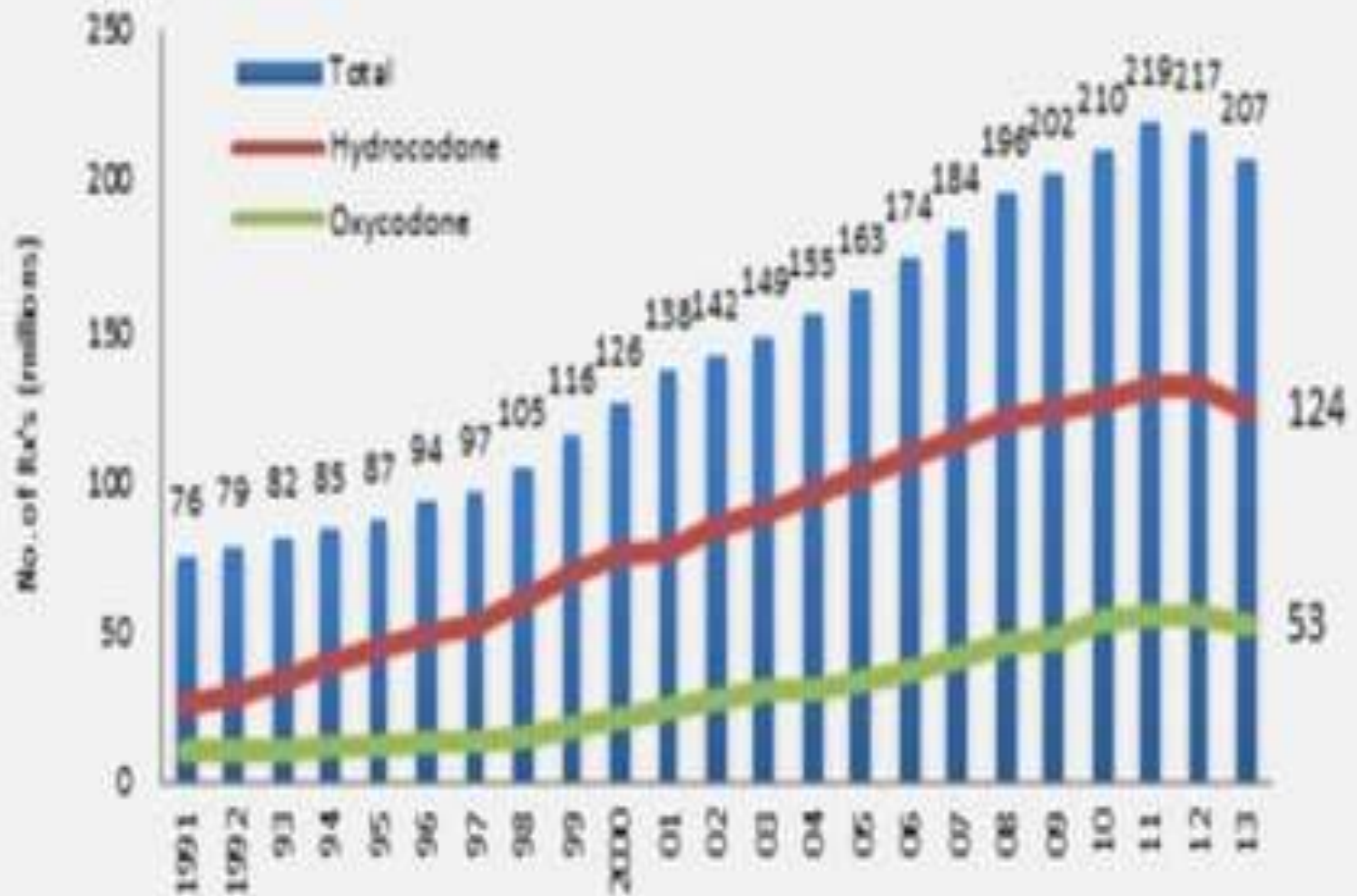


# Counterfeit 30 Milligram Oxycodone Pills Containing Fentanyl





# Opiate Prescriptions Dispensed by Retail Pharmacies, 1991-2013



# Opioid Progression Pills to the Needle

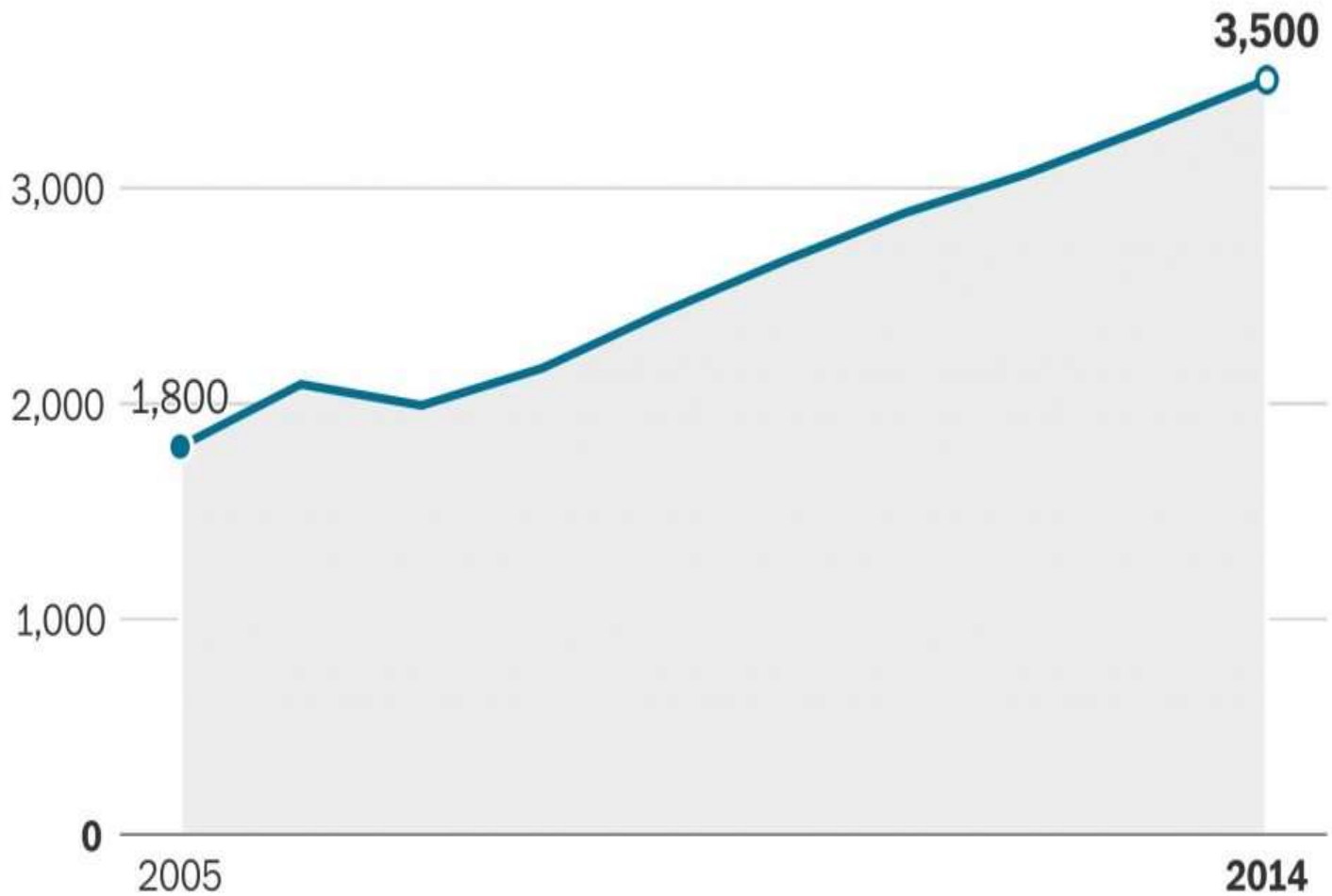
Historically, untreated dependence on prescription opiates led to a trajectory following:

- Pills ingested orally
- Pills crushed and snorted or smoked
- Pills injected
- Heroin snorted or smoked
- Heroin used intravenously
- This progression develops over from 12 to 24 months





## Opioid hospital admissions or emergency room visits per day

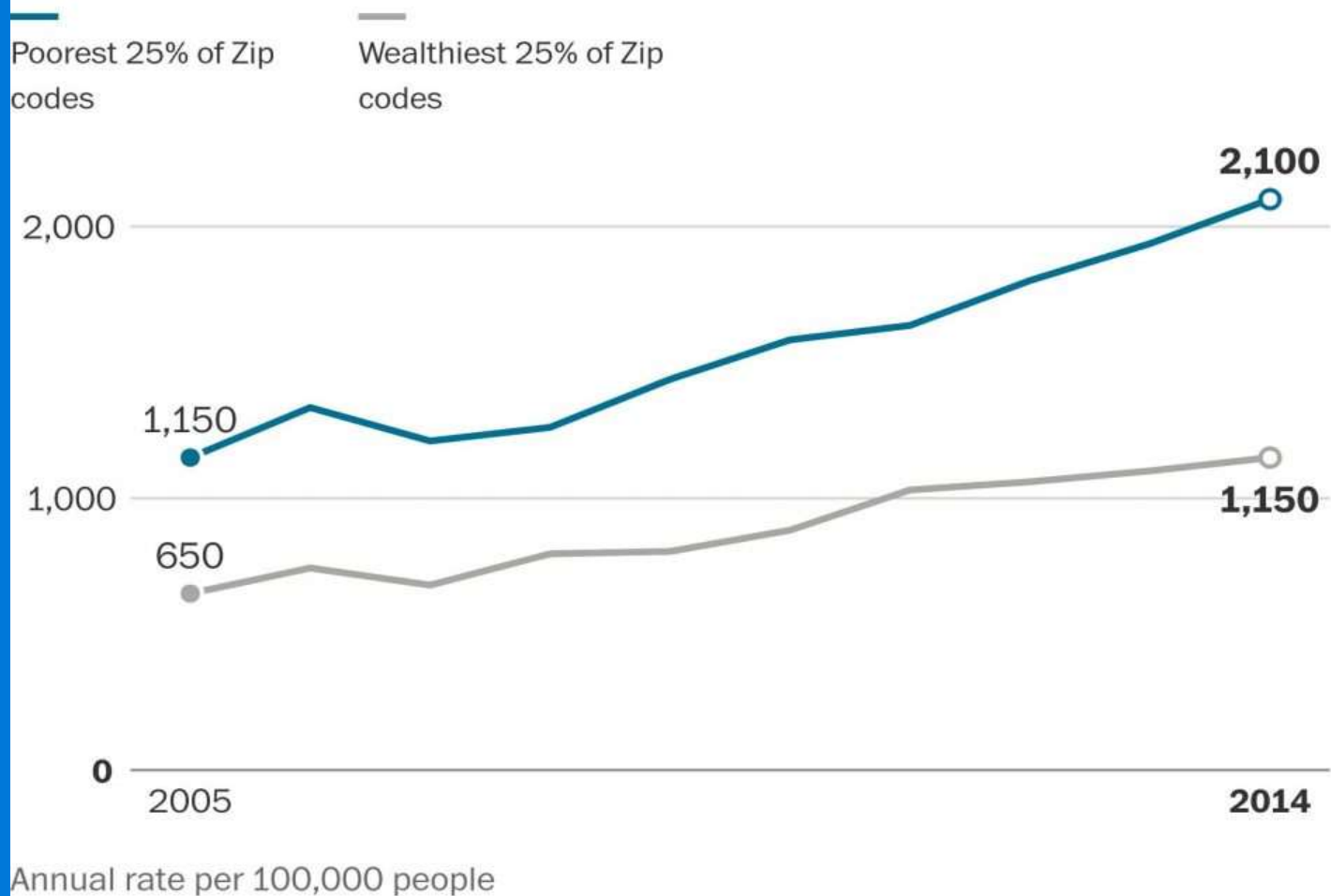


Source: HCUP Fast Stats, Agency for Healthcare Research and Quality

WASHINGTON POST

## Opioid hospitalization going up for poorest and wealthiest

Data for hospital admissions and emergency room visits show rates for patients from the wealthiest and poorest Zip codes went up comparably, but the rates from the poorest Zip codes remain higher.



Source: HCUP Fast Stats, Agency for Healthcare Research and Quality

WASHINGTON POST



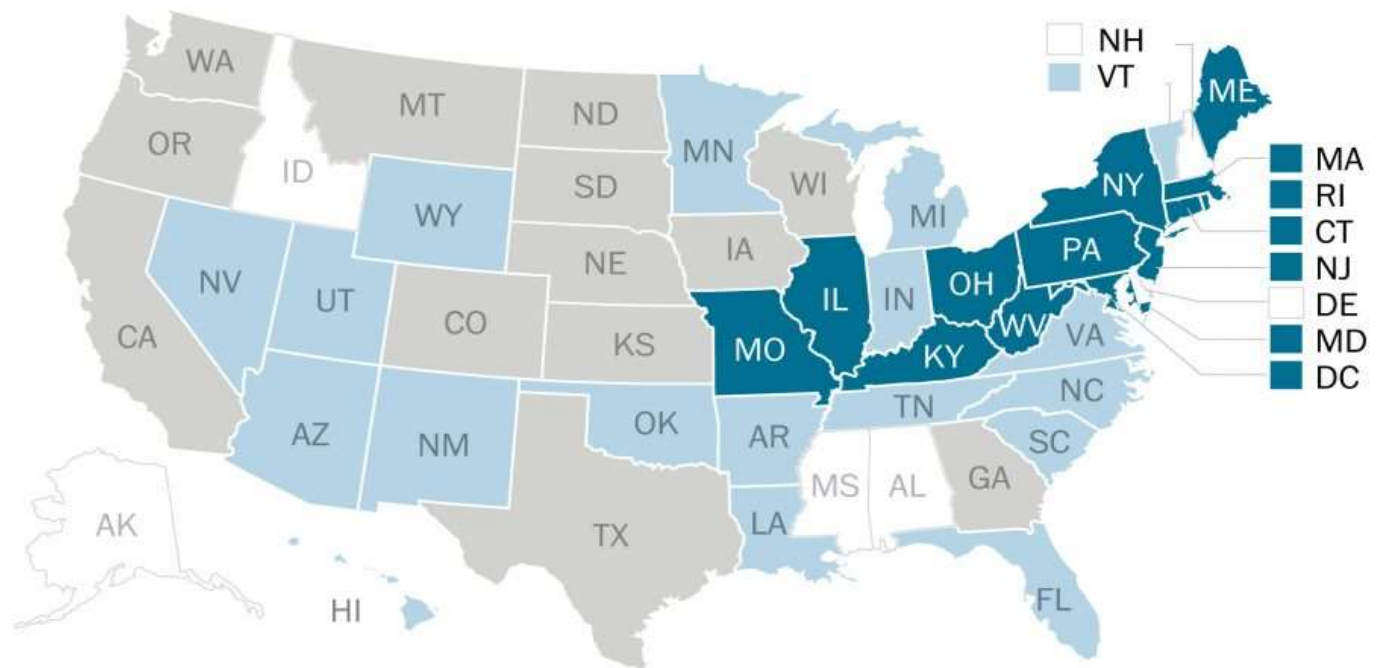
## Where the opioid crisis has hit different age groups

In 13 states, the highest rate of hospitalization for opioids is for people older than 65, indicating reactions to prescribed drugs rather than overdoses and illegal drugs. The other states tend to have higher rates of hospitalization.

### HIGHEST RATE UNDER AGE 65

- More than 450 hospitalizations per 100K people
- Less than 450 hospitalizations

- HIGHEST RATE 65 OR OLDER
- NO DATA

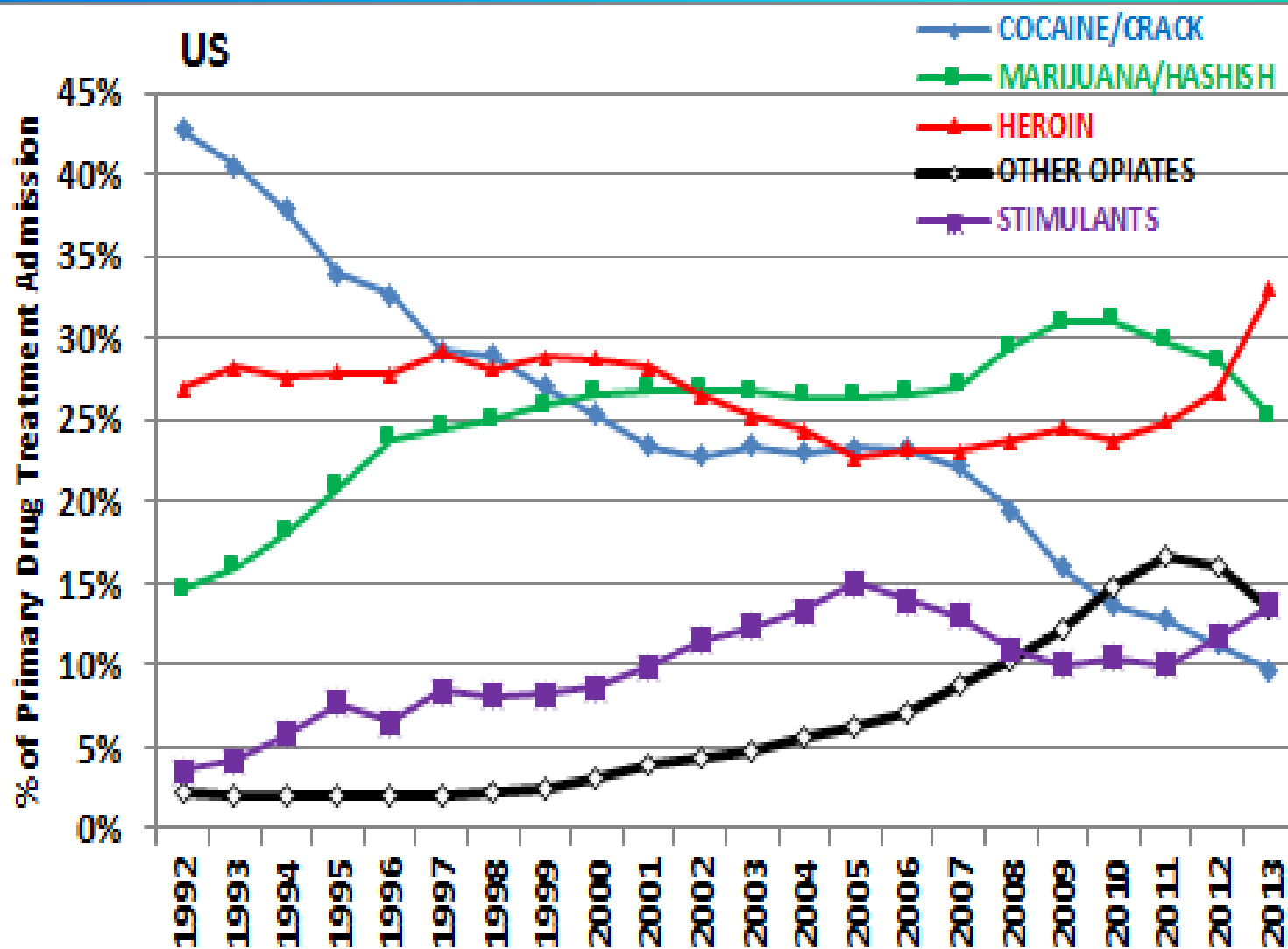


Note: Hospitalization data from 2014.

Sources: HCUP Fast Stats, Agency for Healthcare Research and Quality

DAN KEATING/THE WASHINGTON POST

# U.S. Drug Treatment Admissions



Source: Treatment Episode Data Set (TEDS), extracted 12/06/2014

# WA State Opioid-related Disease Burden, 2014

- Persons 12 years of age and older who use prescription opioids non-medically:

**259,000**

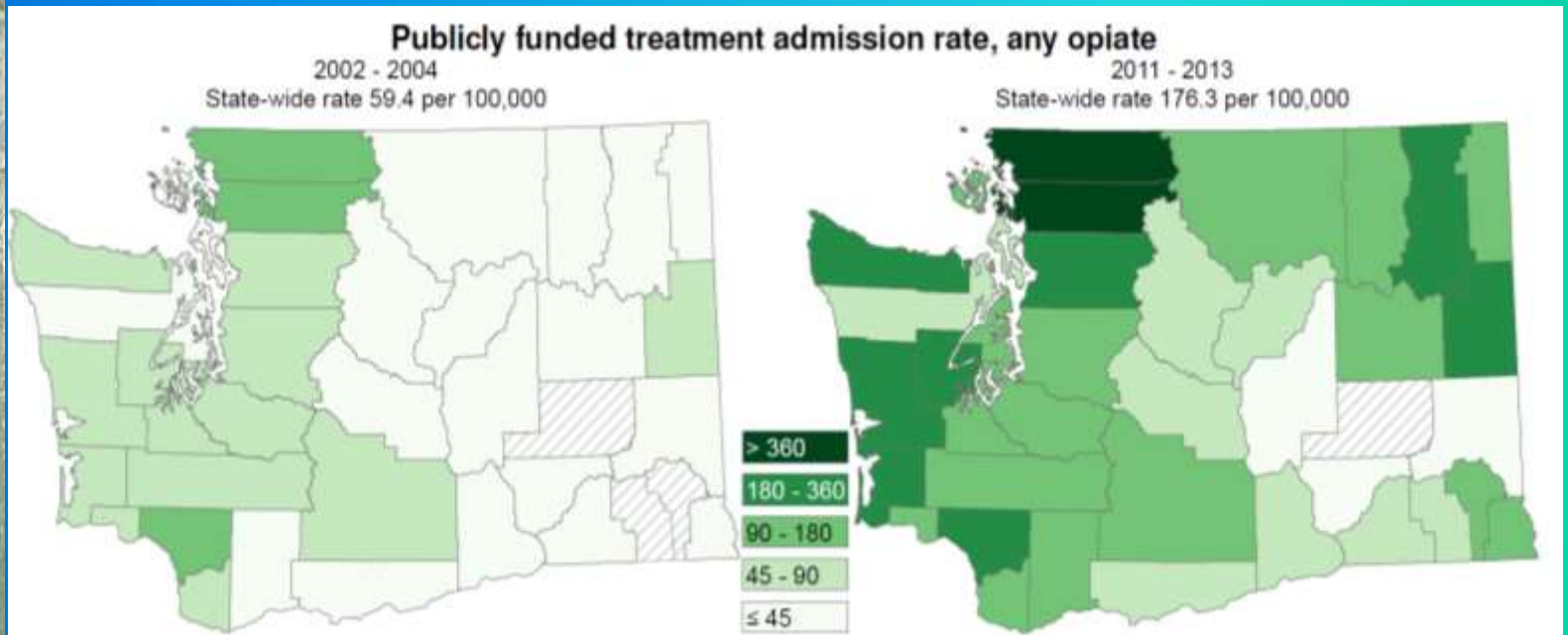
- Opioid Substance Abuse Treatment Admissions: **13,215**

- Opioid Overdose Hospitalizations: **1,552**

- Opioid Overdose Deaths: **612**



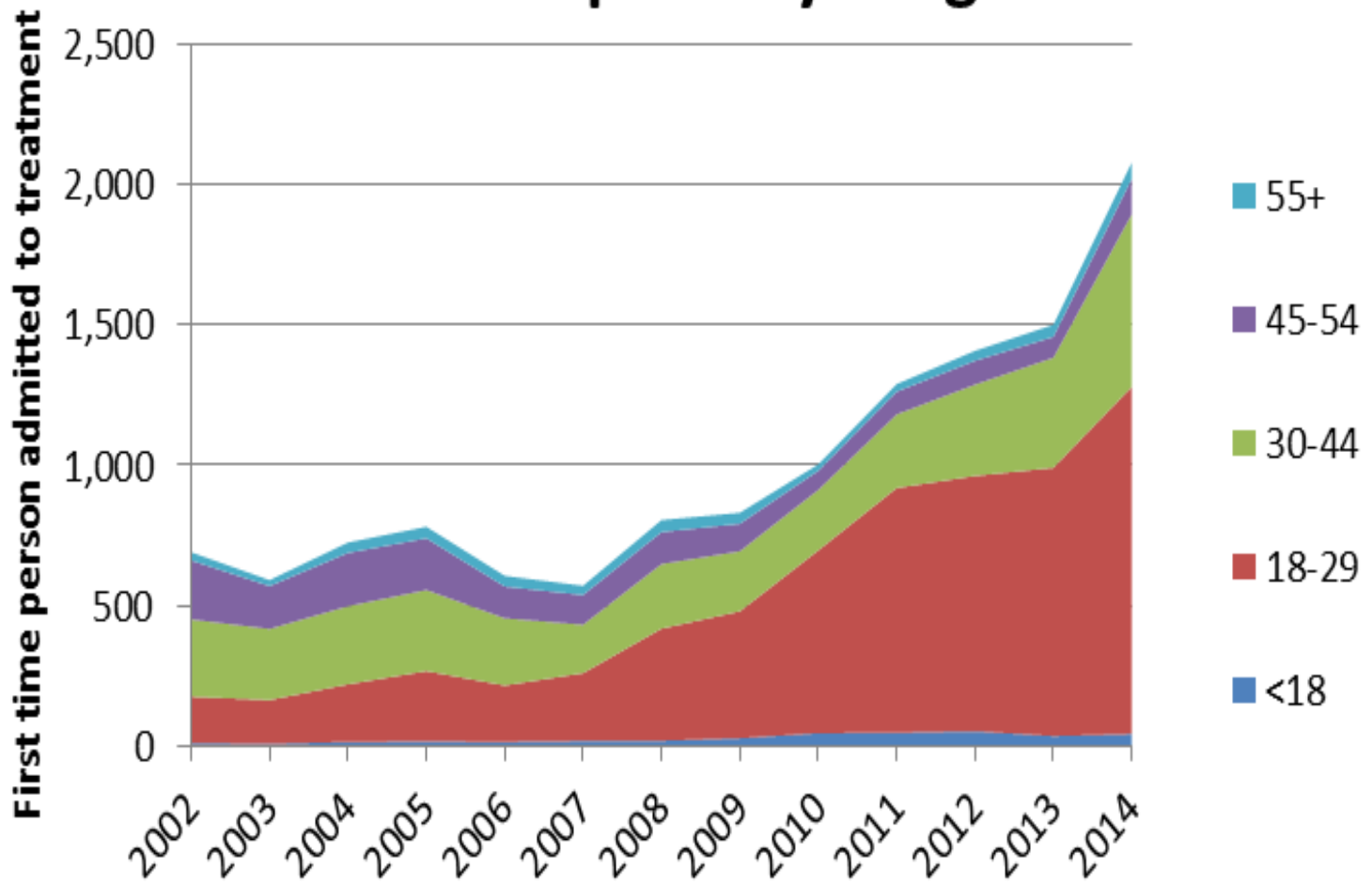
# Publicly-funded Treatment Admission Rate, Any Opiate



Data source: DSHS/DBHR TARGET



# WA First time in Treatment Heroin primary drug



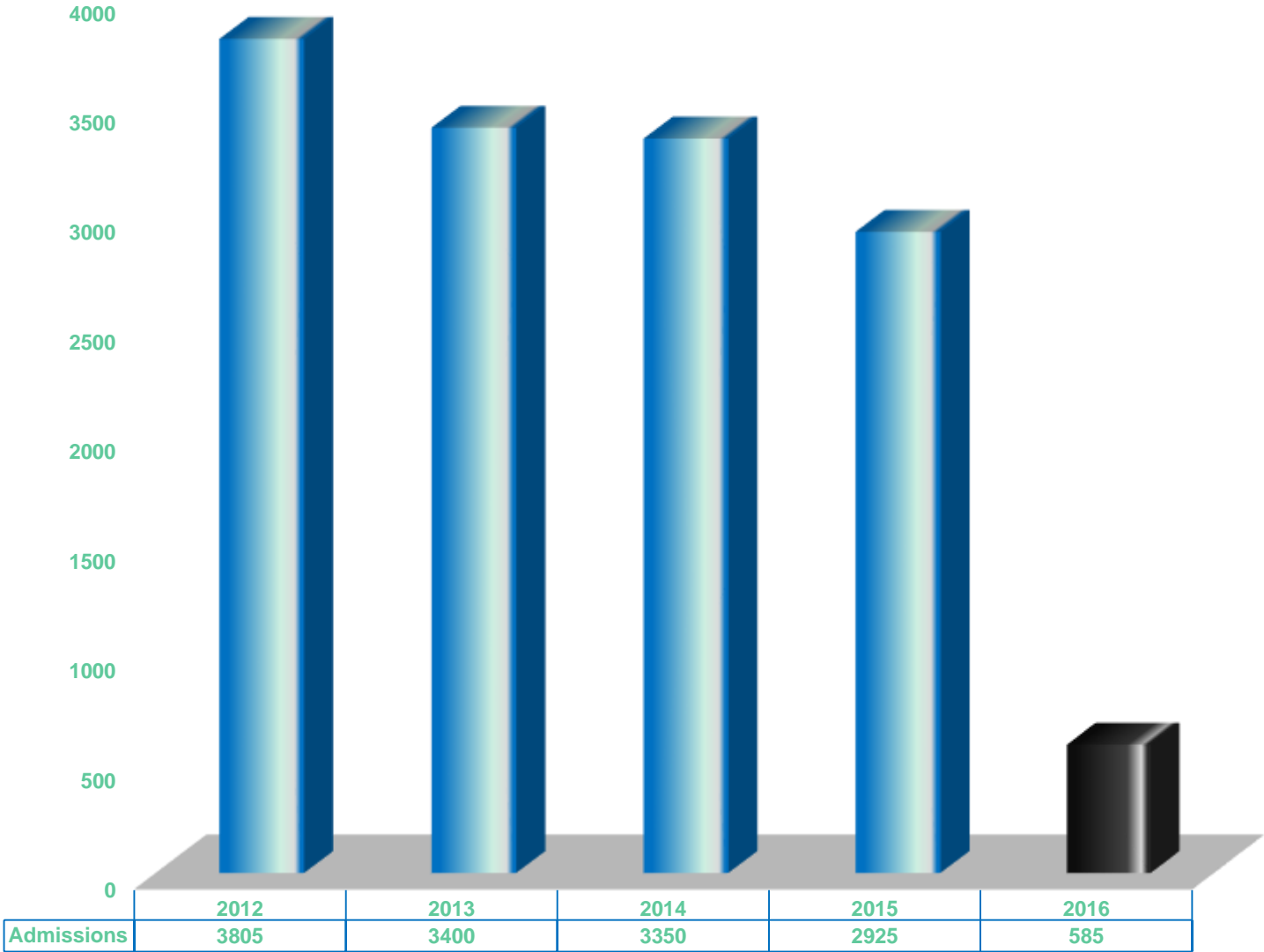
# WA State Treatment Admissions by Drug (Adults, 2009-15)

	2009	2010	2011	2012	2013	2014	2015
Meth	7,431	6,234	6,069	6,012	6,885	7,250	7,330
Marijuana	6,393	5,799	5,411	4,630	3,965	3,785	3,570
Heroin	4,393	4,939	6,330	7,267	7,555	9,675	11,215
Cocaine	3,813	2,383	1,865	1,443	1,085	930	750
Rx Opiates	3,921	4,151	3,337	4,581	2,855	2,785	2,740



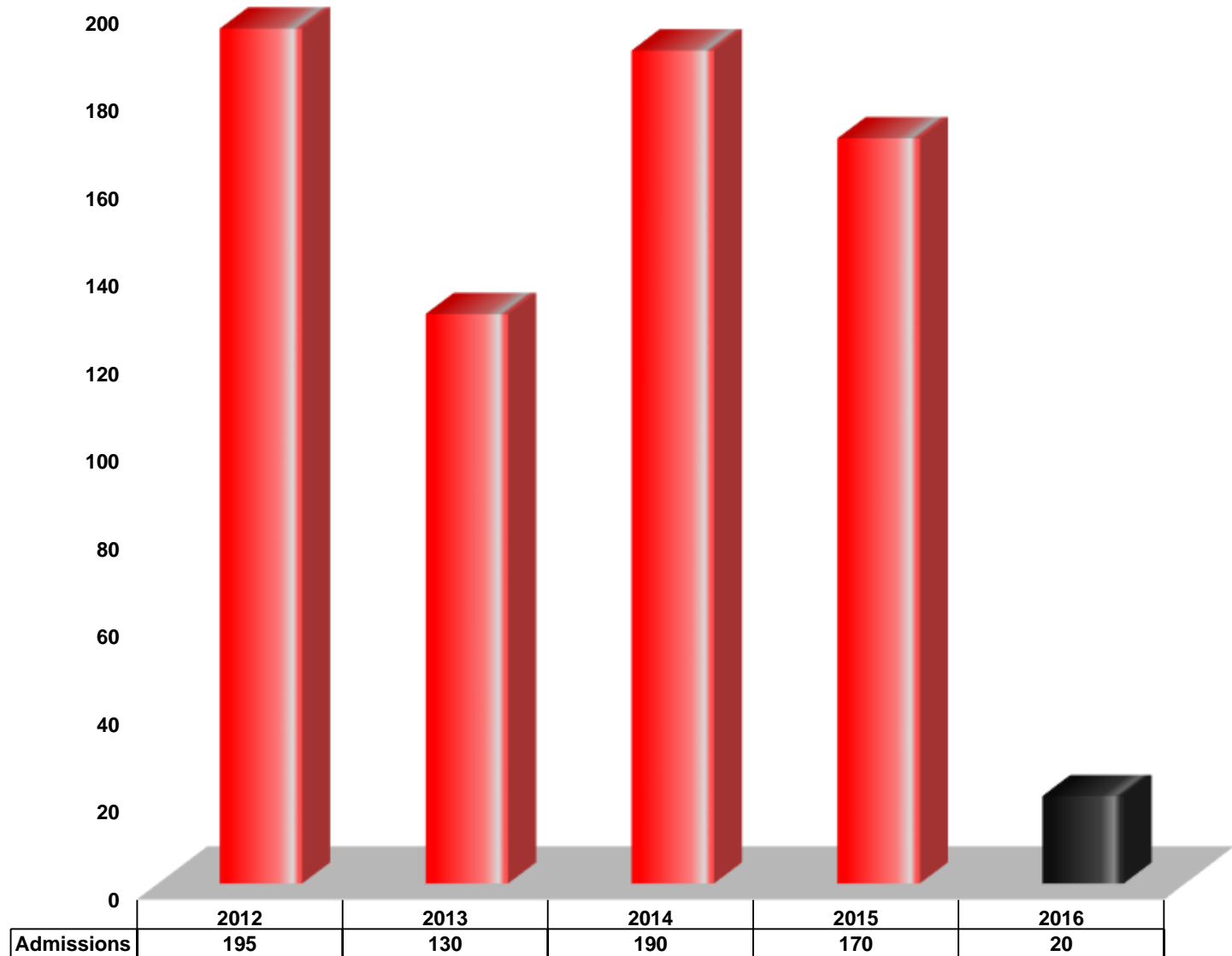


# Adult Rx Treatment Admissions





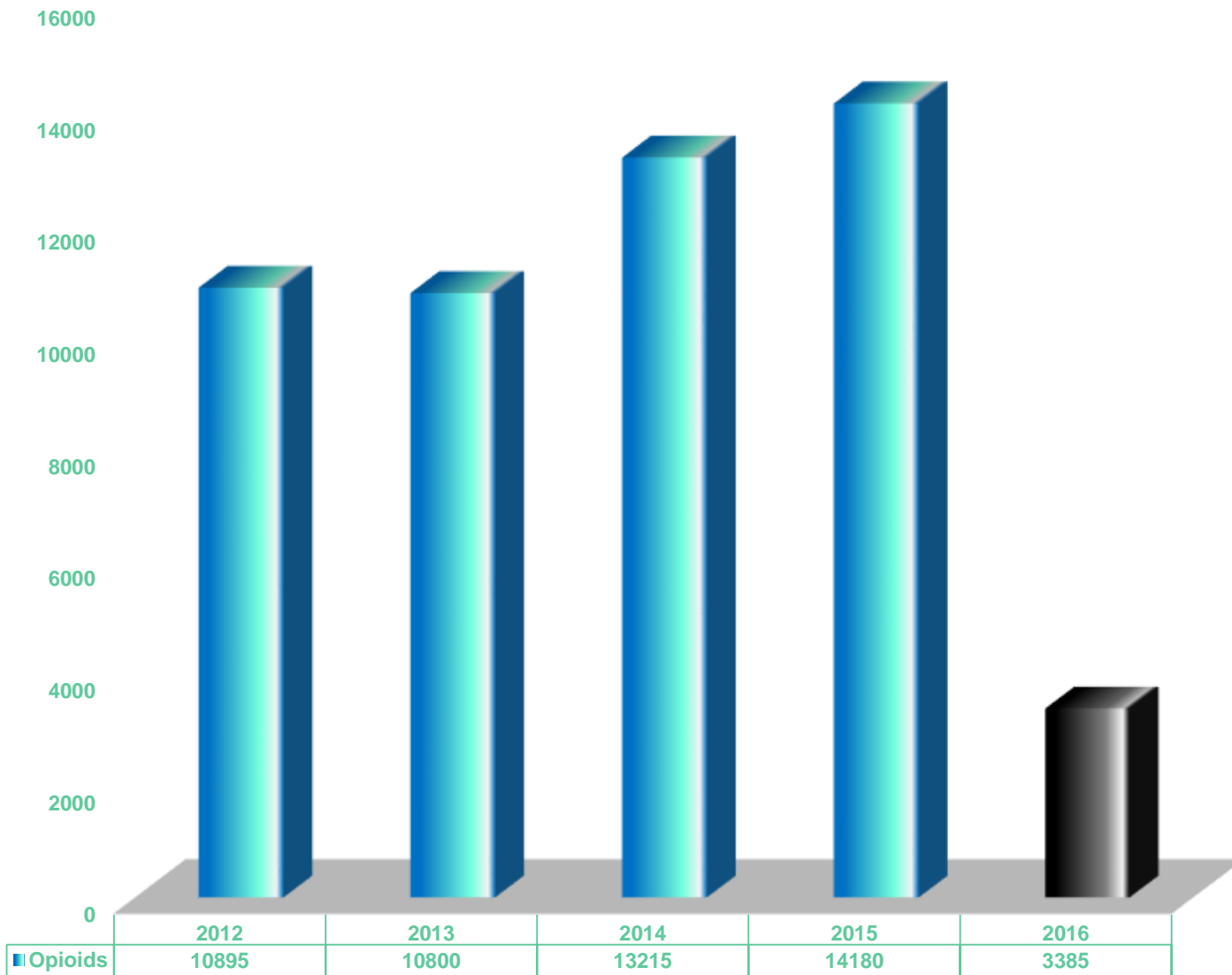
## Youth Rx Treatment Admissions





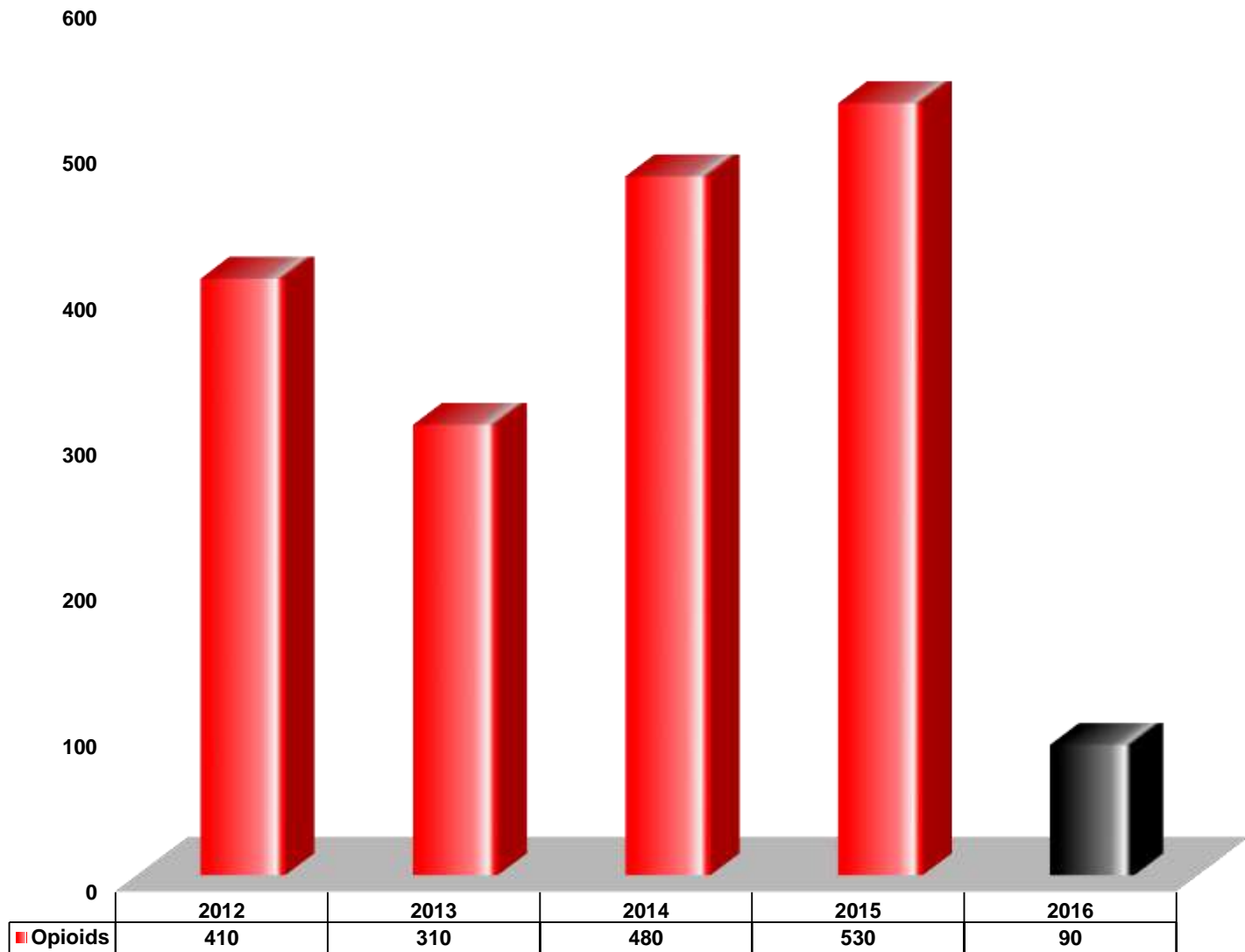


## Adult Opioid Admissions

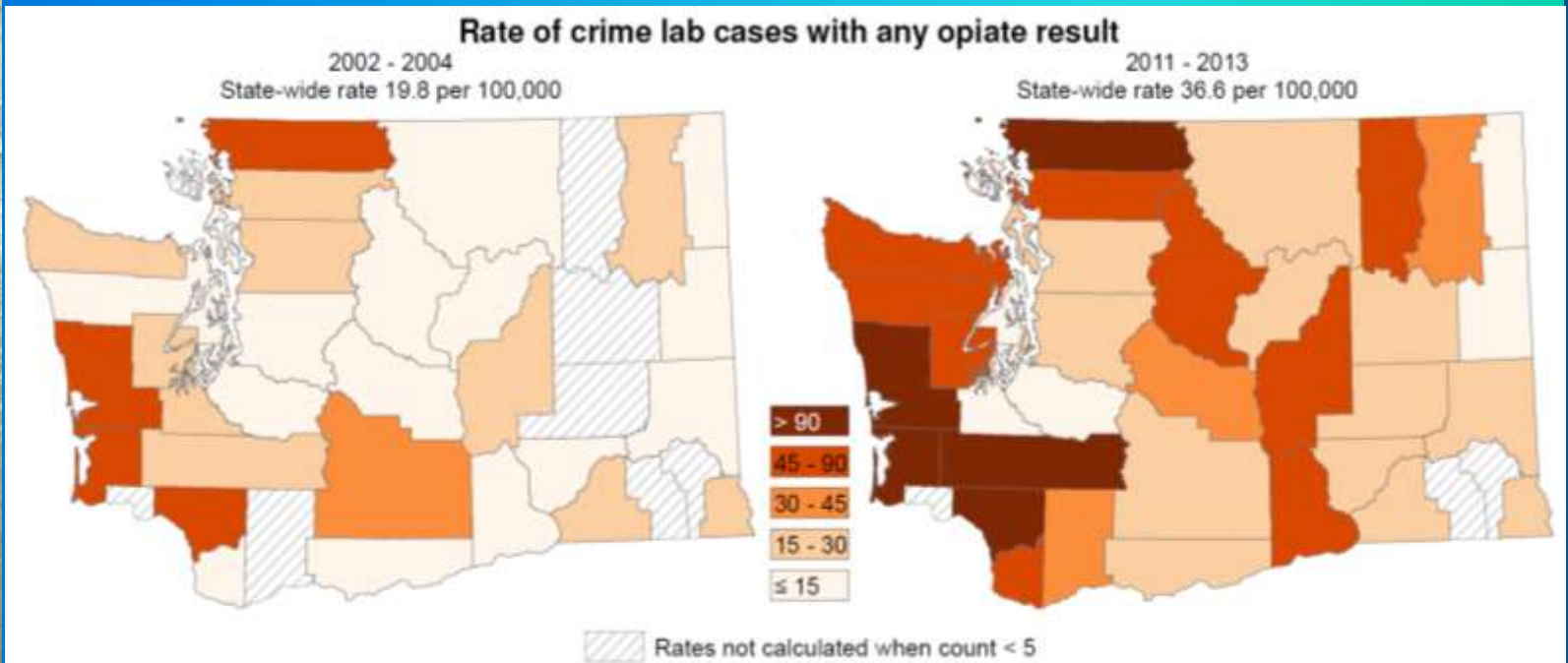




## Youth Opioid Admissions

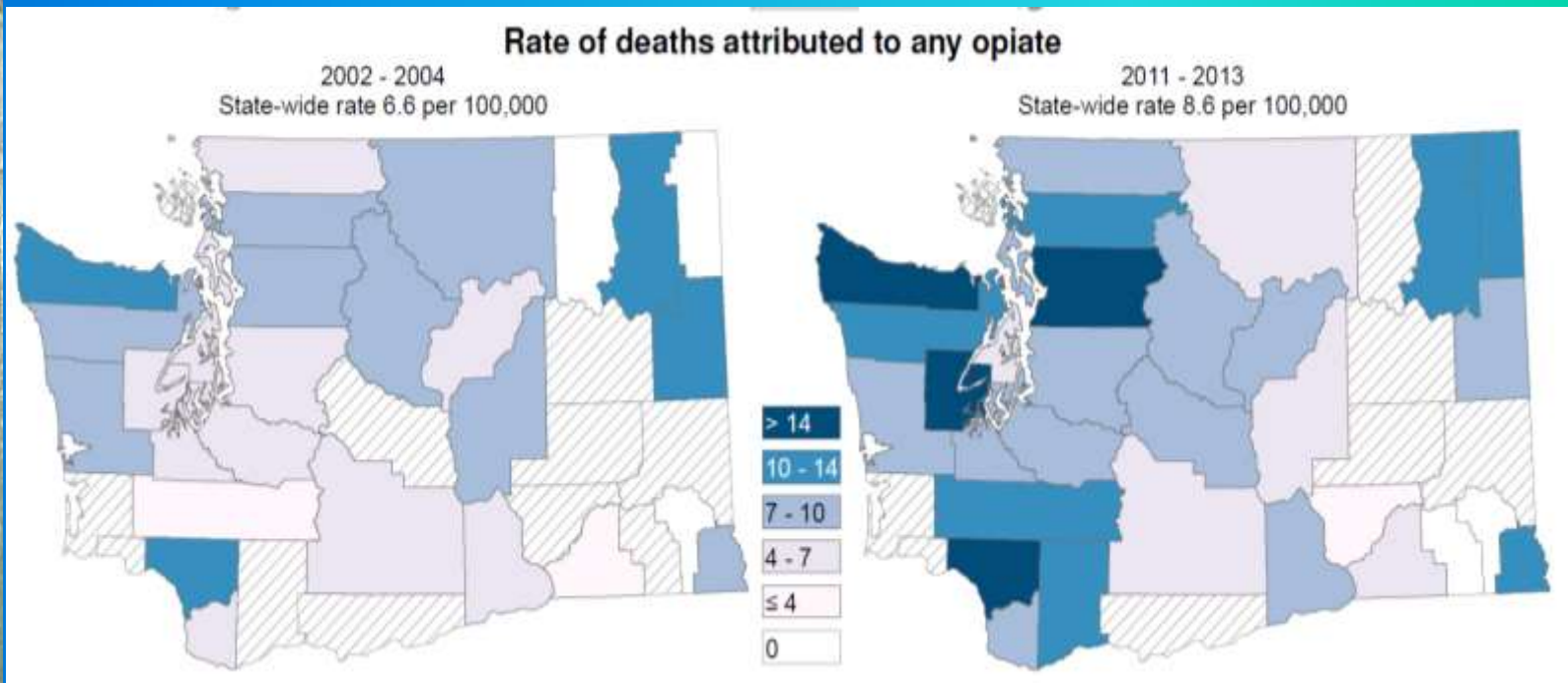


# Rate of Crime Lab Cases, Any Opioid Result



Data source: WA State Patrol- Forensic Lab Services Bureau

# Rate of Deaths Attributed to Any Opiate

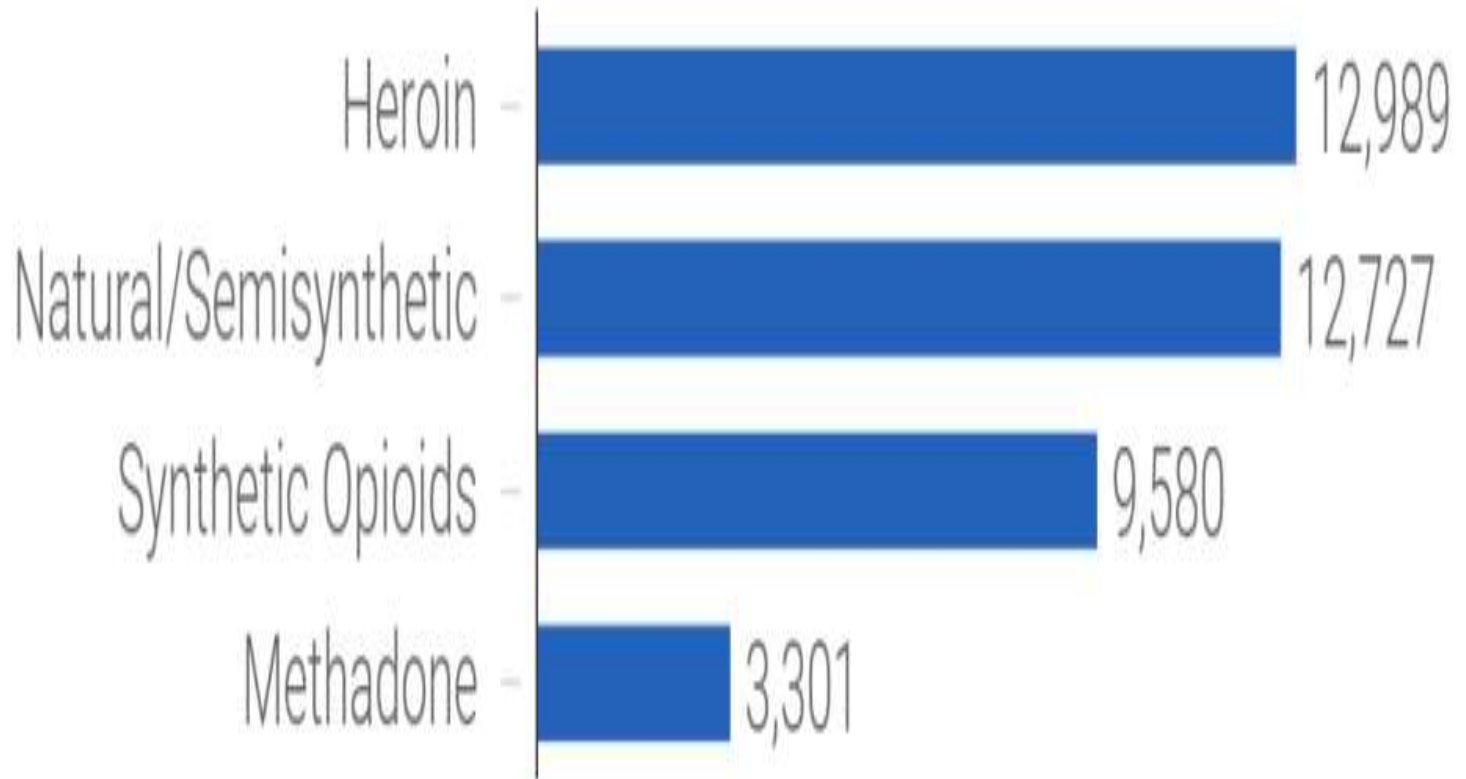


Data source: WA State Dept. of Health

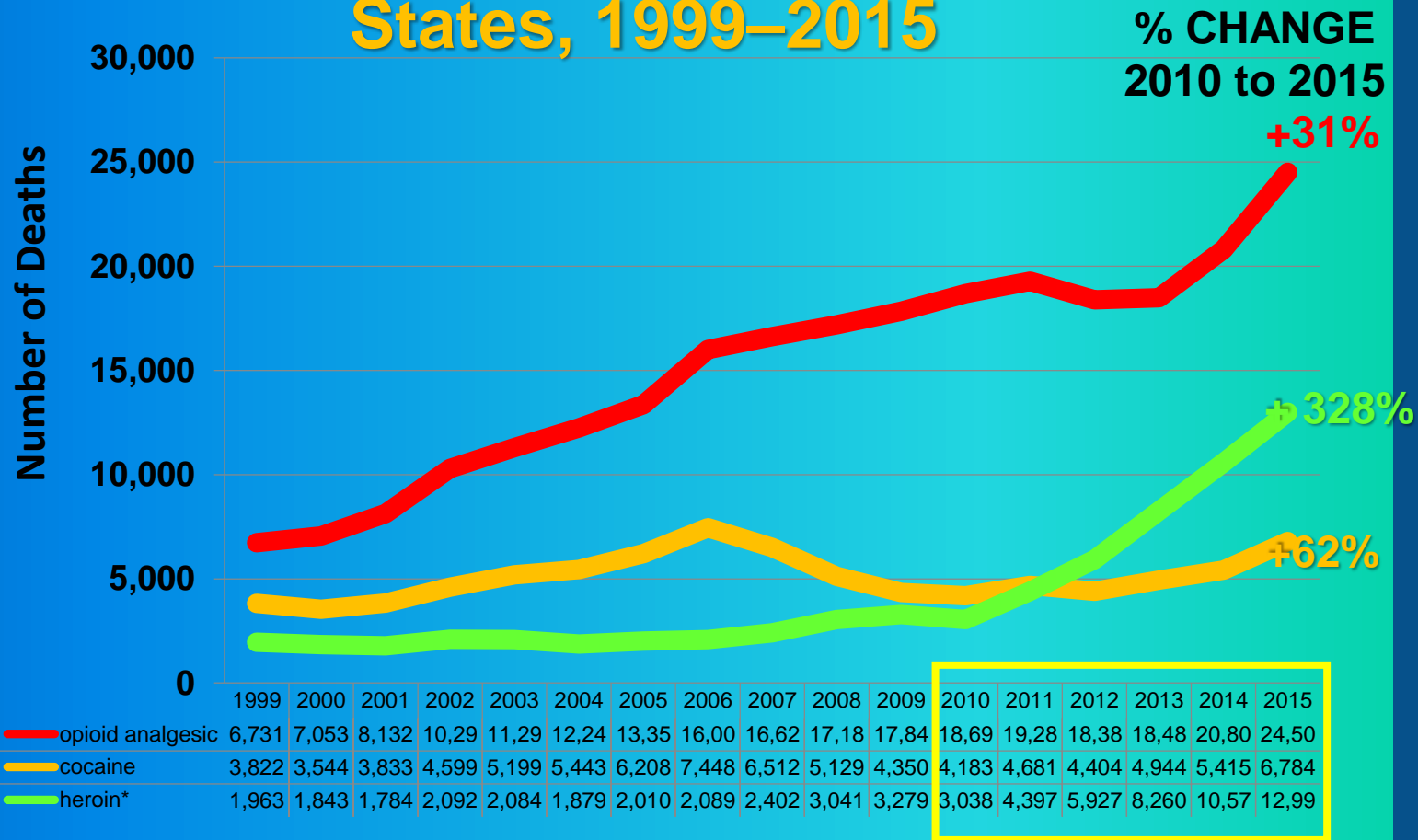




## Deaths From Opioids, 2015

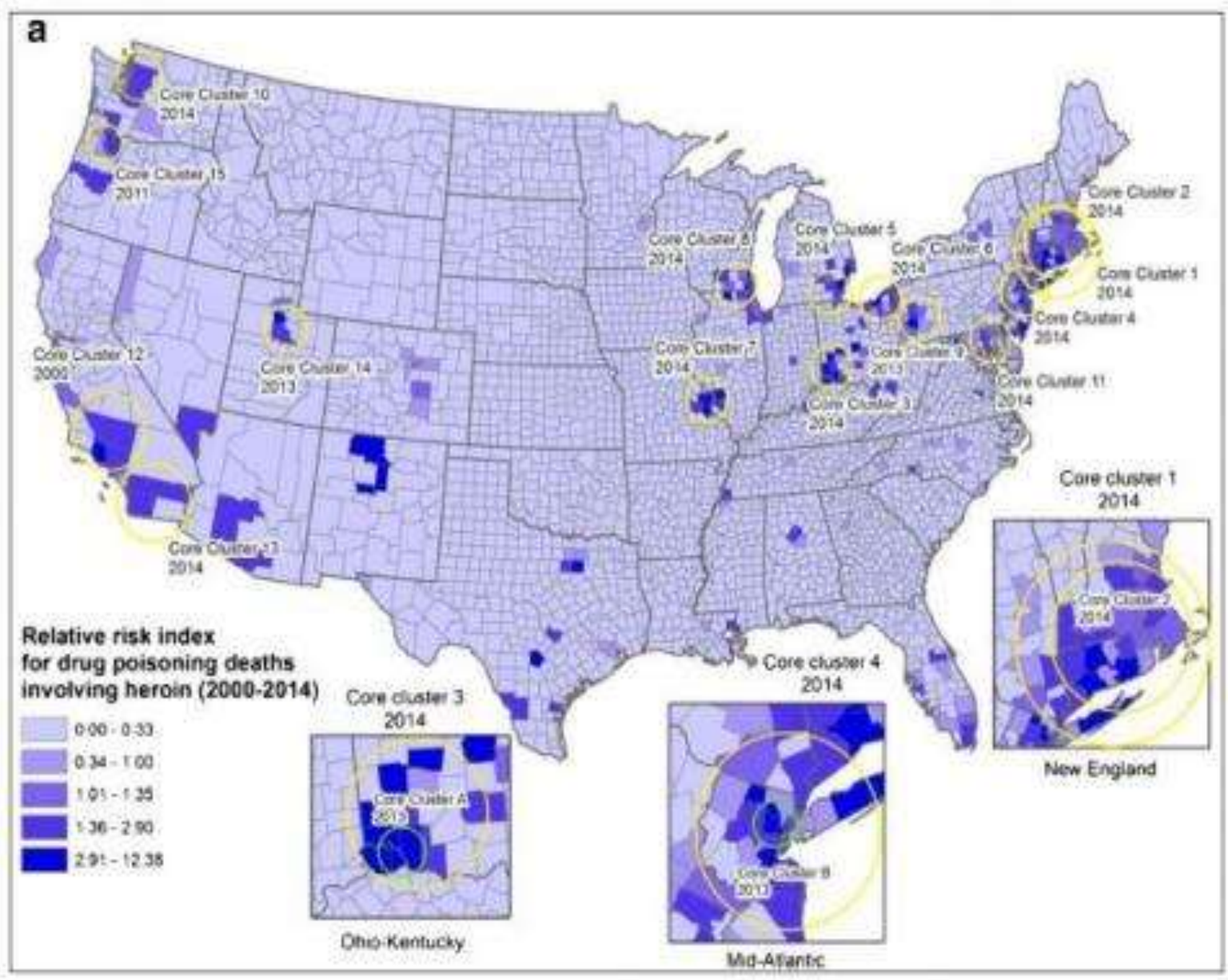


# Drug Poisoning Deaths Involving Opioid Analgesics, Cocaine and Heroin: United States, 1999–2015



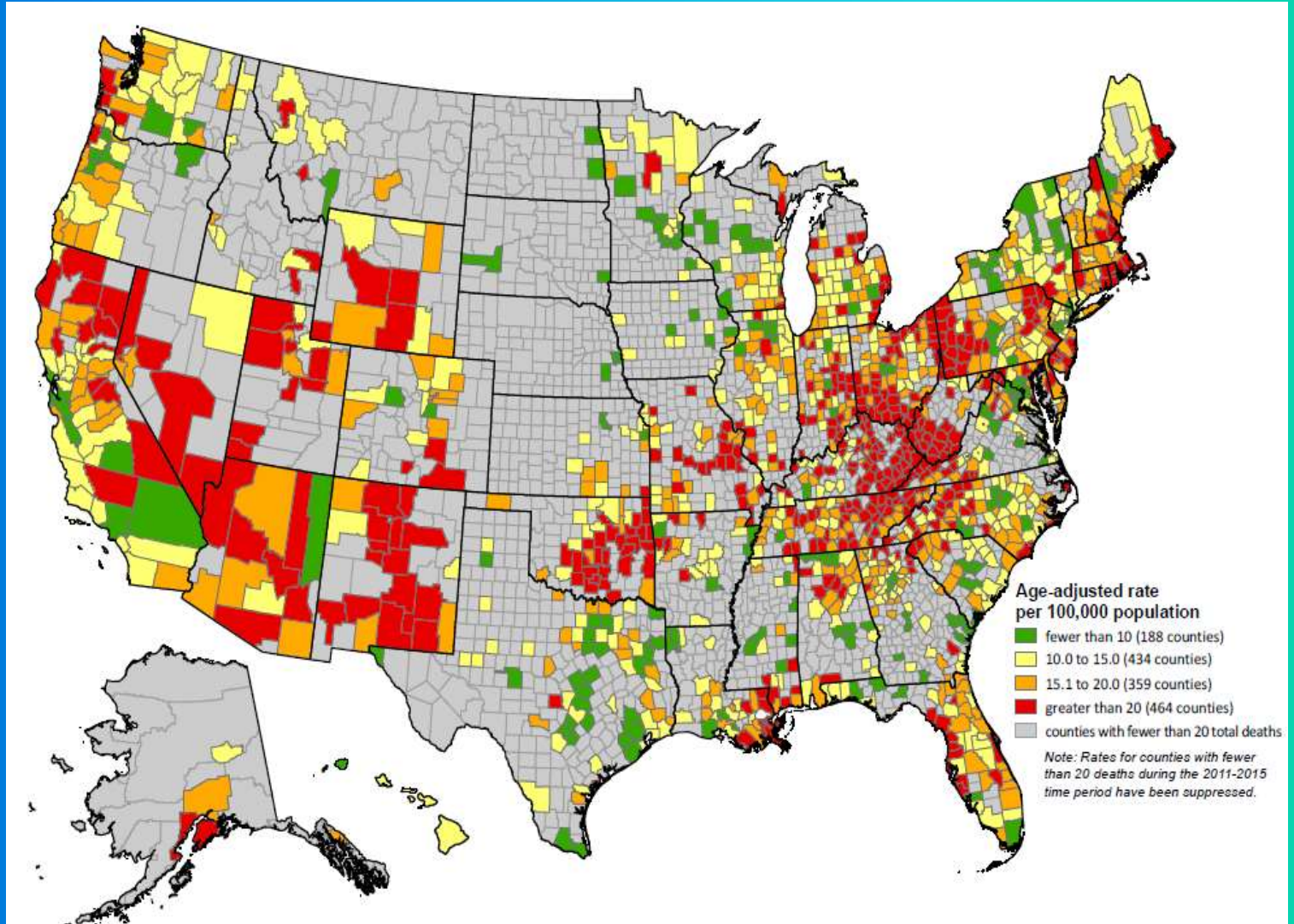
Note: Not all drug poisoning deaths specify the drug(s) involved, and a death may involve more than one specific substance. The rise in 2005-2006 in opioid deaths is related to non-pharmaceutical fentanyl (see <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5729a1.htm>). \*Heroin includes opium.

Source: Centers for Disease Control and Prevention, National Center for Health Statistics. *Multiple Cause of Death 1999-2015* on CDC WONDER Online Database, released 2016. Data were extracted by ONDCP from <http://wonder.cdc.gov/mcd->





# Drug Overdose Deaths by County, 2011-15

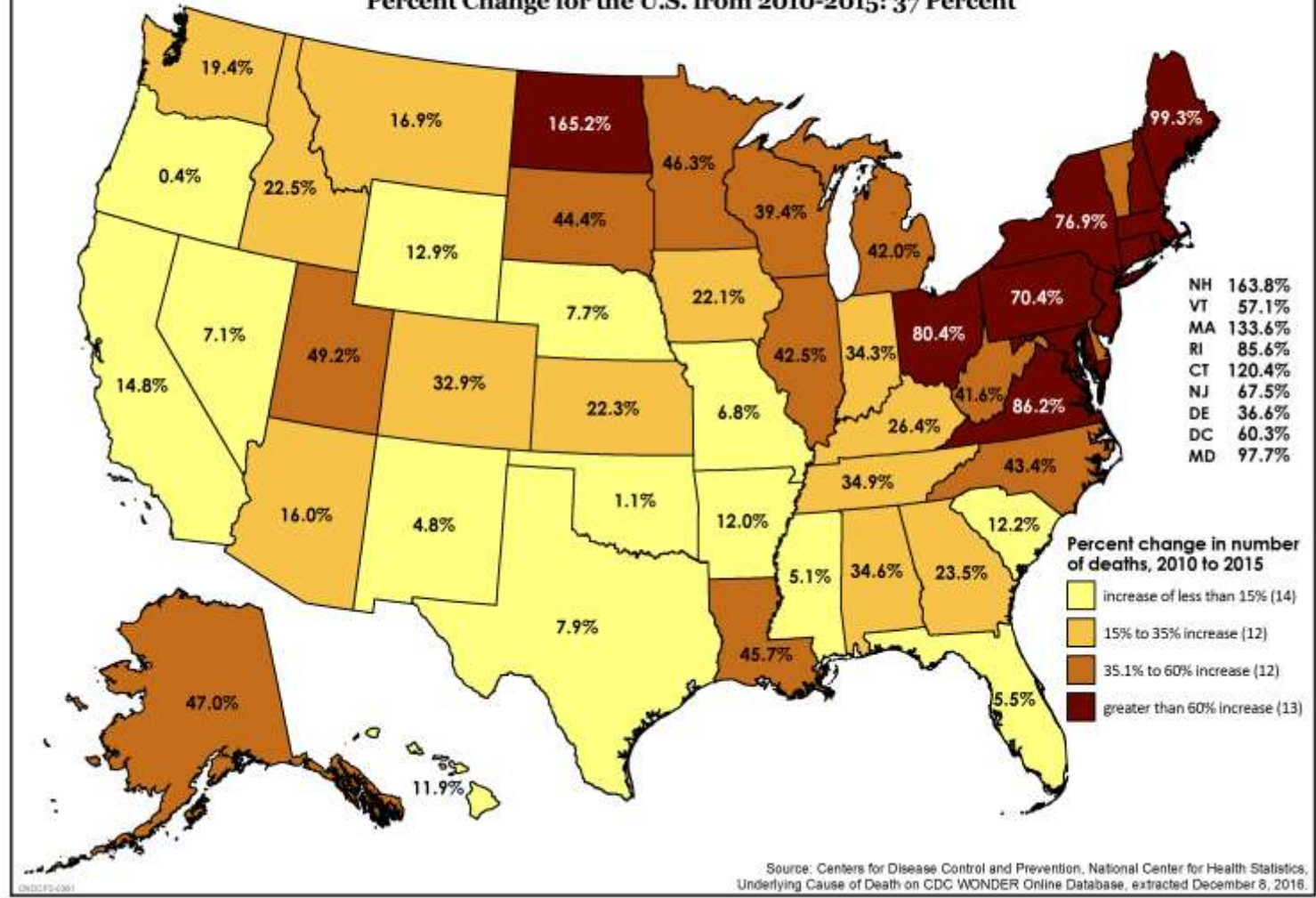






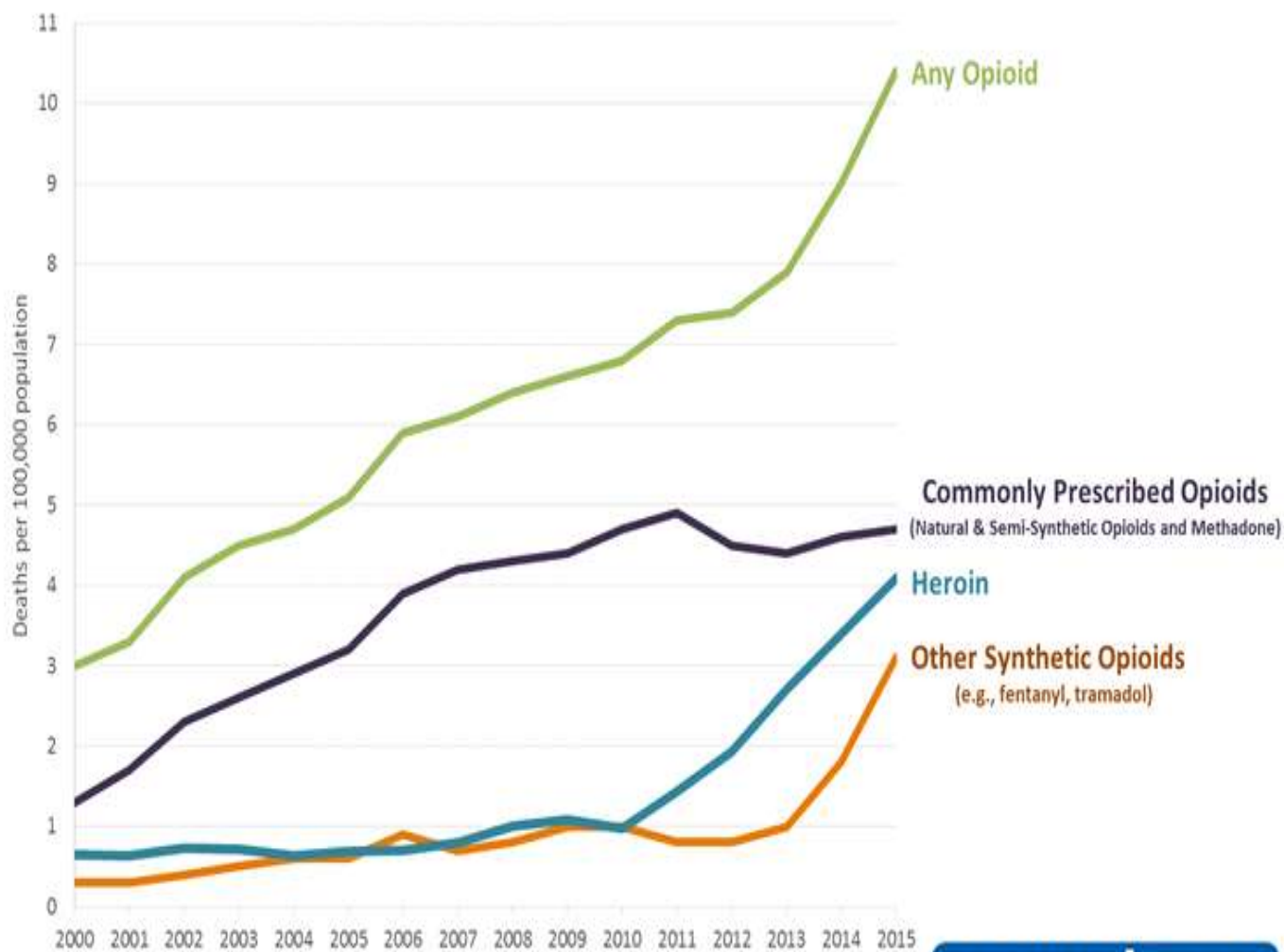
# Percent Change in Number of Drug Poisoning Deaths by State, 2010-2015

Percent Change for the U.S. from 2010-2015: 37 Percent





## Overdose Deaths Involving Opioids, United States, 2000-2015



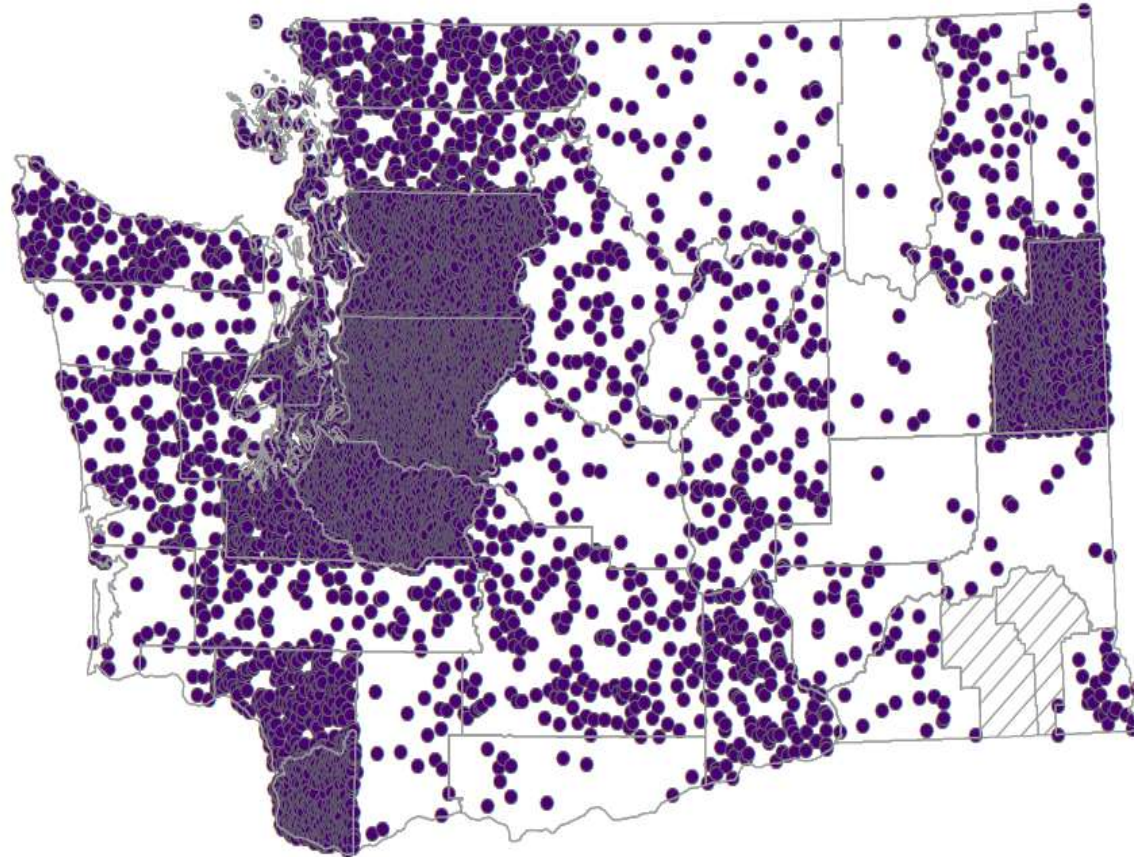
SOURCE: CDC/NCHS, National Vital Statistics System, Mortality. CDC WONDER, Atlanta, GA: US Department of Health and Human Services, CDC; 2016. <https://wonder.cdc.gov/>.

[www.cdc.gov](http://www.cdc.gov)  
Your Source for Credible Health Information



# Opioid Deaths by County, 2000-2013

(Total deaths = 7834 Current annual avg. =600)



1 Dot = 1 death attributed to any opiate in the 14-year period      Data suppressed when count is 1 to 4



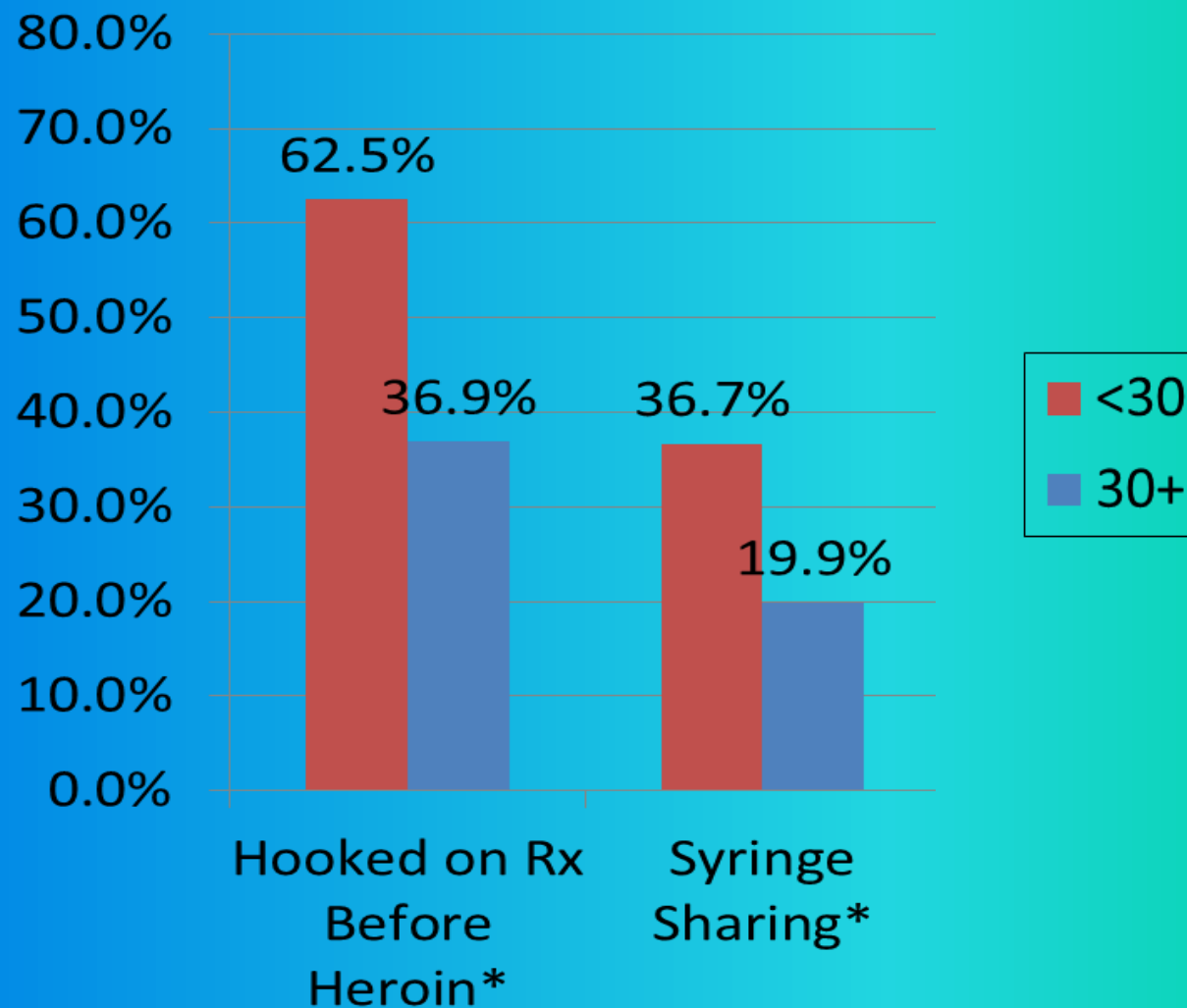
# Syringe Exchanges

- **21** syringe exchanges are currently operating in WA State
- **14,330,534** clean syringes were distributed by these service sites in 2015
- **66%** of drug injectors surveyed at these service sites reported that they would like help stopping or reducing their drug use
- In total, an estimated **11,334** heroin injectors are interested in “getting help to stop or reduce” their drug use





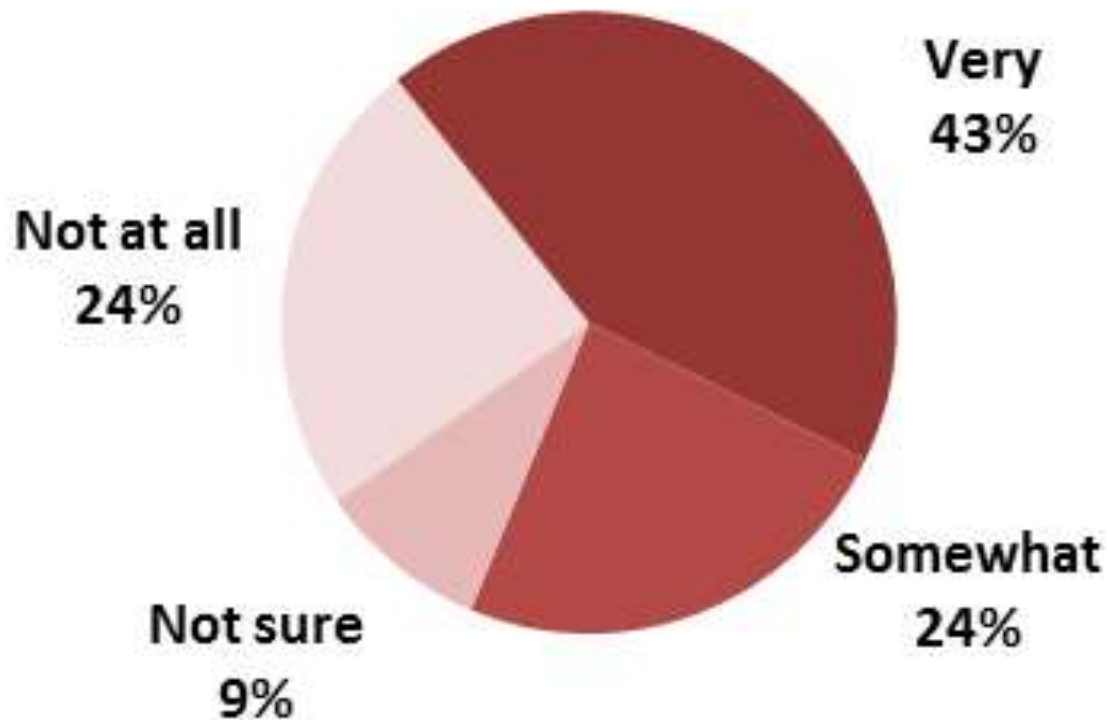
# 2013 Syringe Exchange Survey King County Heroin Users by Age



Source: Public Health- Seattle & King County, Emily Cederbaum analyses

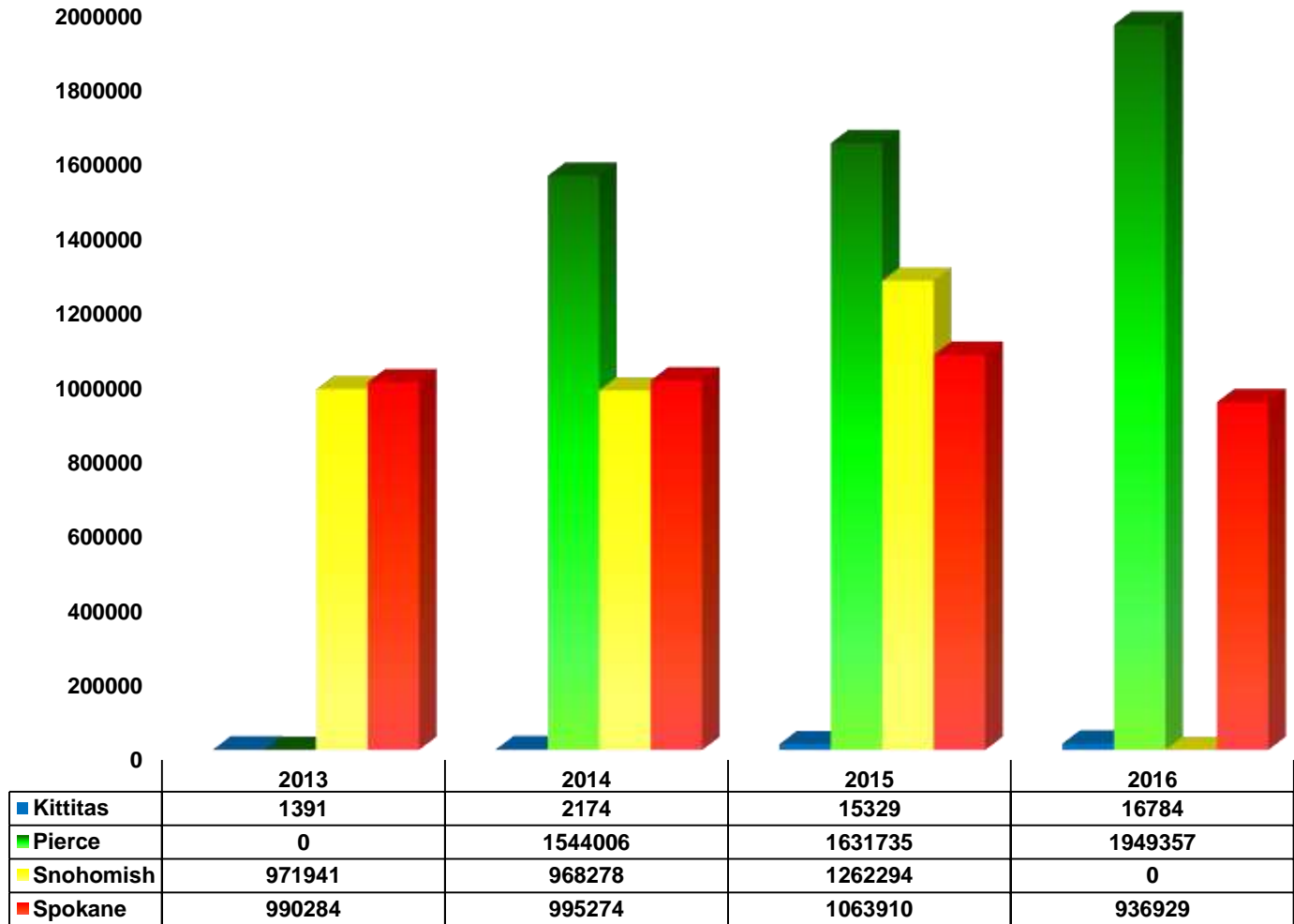
# WA State Drug Injector Health Survey, 2015 (n=1,036)

“How interested are you in getting help to cut down or quit using?”





## County Needle Exchange Totals



■ Kittitas ■ Pierce ■ Snohomish ■ Spokane

# Preventing Rx Drug Abuse Among Teens

- Safeguard all drugs at home – monitor quantities and control access
- Set clear rule for teens about all drug use, including not sharing medicine and always following medical advice and dosages
- Be a good role model by following these same rules with your own medicines
- Properly conceal and dispose of old or unused medicines
- Ask friends and family to safeguard their prescription drugs as well







THE ORIGINAL

# Rx Locker™



**SAFETY · SECURITY · PRIVACY**

- Locks up your Rx bottles
- Helps prevent drug abuse
- Fits in medicine cabinet
- Protects your privacy

**70% of Teens**  
who have abused Rx Drugs took  
them from friends or family.

Source: Market Survey of Drug Use among Teens

<http://takeasdirected.doh.wa.gov/>

## TakeAsDirected

» [Health Systems Quality Assurance](#) » [TakeAsDirected](#)

[Search](#) | [Emp](#)



### Prescription Opioid Pain Medicine

Health care providers are prescribing more opioid medicine. Along with this increase came unintended consequences. Opioids are also called narcotic pain medicine. Examples are Morphine, Fentanyl, Methadone, Oxycontin, Vicodin, and Codeine.

#### Get Help Now

Call the Alcohol Drug Help Line -  
Washington Only 1.800.562.1240  
Seattle: 206.722.3700

[www.adhl.org](http://www.adhl.org)

Call the Poison Center at 1.800.222.1222 if you think someone has taken too much or misused medicine.

Call 9-1-1 if that person is having trouble breathing or will not wake up.

Adapted from Utah Department of Health

#### Resources

[Data Summary](#)

[For Pain Patients](#)

[For Health Care Providers](#)

[For Older Adults](#)

[For Teens](#)

[For Parents](#)

Education Materials (available soon)

[Frequently Asked Questions](#)

[Additional Information \(links\)](#)

# Signs of Opioid Overdose

Might not happen right away – could be minutes or hours after use.

- Won't wake up, even with sternal rub
- Not breathing, barely breathing
- Ashy, pale skin
- Blue color, especially lips, nailbeds
- Deep snoring, gurgling sound







# Risk Factors for Overdose

- Interruptions in tolerance
- Mixing drugs
- Variation in heroin purity, additive(s)
- Misuse of prescription pain medicine
- Using alone



# Responding to an Overdose

1. Call 911
2. Give rescue breaths
3. Give naloxone



# Good Samaritan Law

## RCW 69.50.315

(1) A person acting in good faith who seeks medical assistance for someone experiencing a drug-related overdose shall not be charged or prosecuted for possession of a controlled substance pursuant to RCW [69.50.4013](#), or penalized under RCW [69.50.4014](#), if the evidence for the charge of possession of a controlled substance was obtained as a result of the person seeking medical assistance.

(2) A person who experiences a drug-related overdose and is in need of medical assistance shall not be charged or prosecuted for possession of a controlled substance pursuant to RCW [69.50.4013](#), or penalized under RCW [69.50.4014](#), if the evidence for the charge of possession of a controlled substance was obtained as a result of the overdose and the need for medical assistance.

(3) The protection in this section from prosecution for possession crimes under RCW [69.50.4013](#) shall not be grounds for suppression of evidence in other criminal charges.



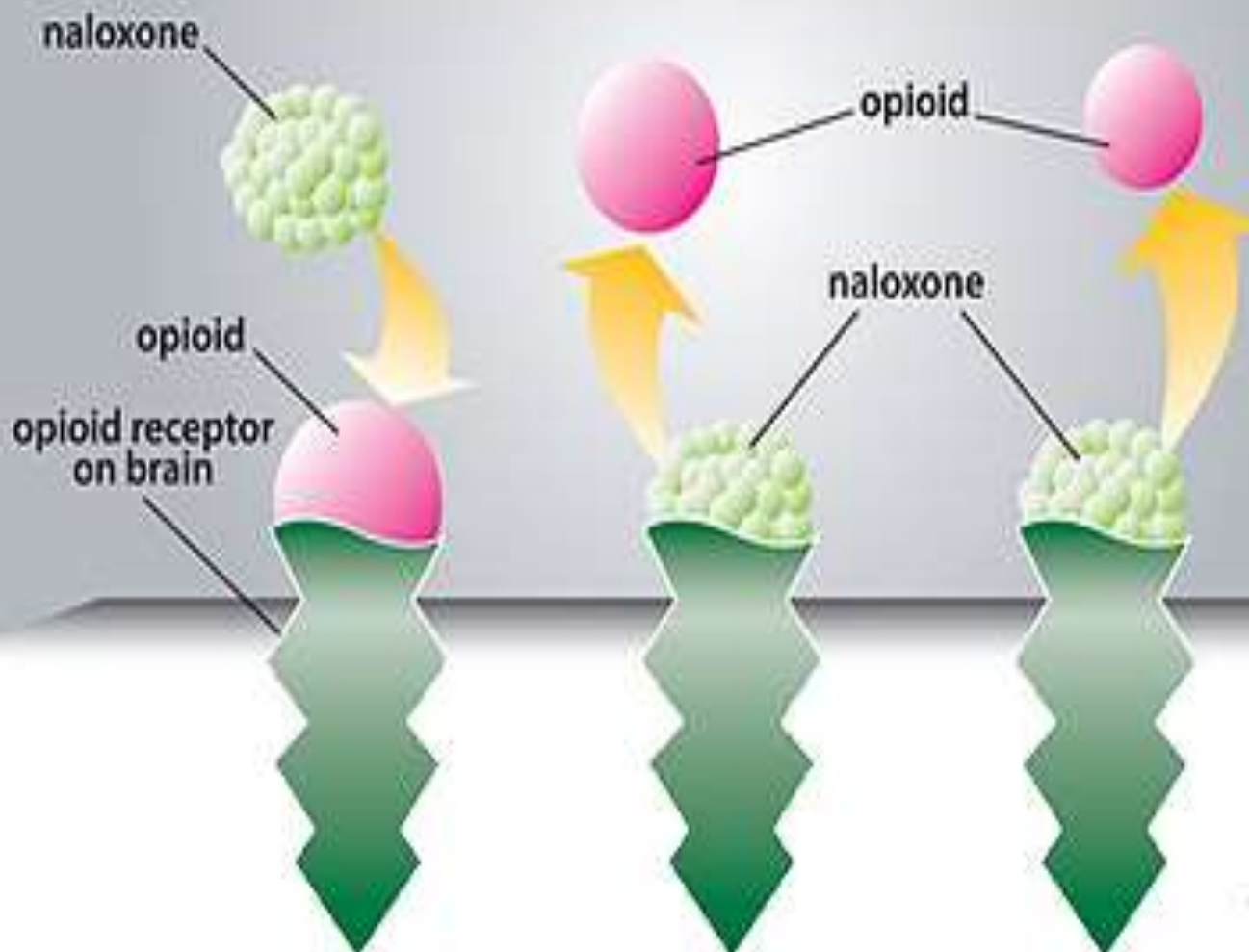
# What is naloxone/Narcan®?

- Prescription medicine that reverses an opioid overdose. It cannot be used to get high.
- No effects on a person who has not used opioids.
- Safe and effective; used by emergency medical professionals for decades.
- Takes effect in 2-3 minutes. Lasts 30-90 minutes.



# Naloxone reversing an overdose

Naloxone has a stronger affinity to the opioid receptors than opioids, such as heroin or oxycodone, so it knocks the opioids off the receptors for a short time (30-90 minutes). This allows the person to breathe again and reverse the overdose.



COPE

*University of Michigan* | ANALOGY  
RESEARCH



# Naloxone



# Community sources of naloxone

- Prescriber
- Pharmacy with collaborative practice agreement
- Organization with a standing order  
(e.g., syringe exchange, housing unit, jail)  
[www.stopoverdose.org/naloxone](http://www.stopoverdose.org/naloxone)
- First responders/law enforcement usually have a standing order with a medical director or local health officer.



# 2015 Naloxone Law RCW 69.41.095

“Any person or entity may lawfully possess, store, deliver, distribute, or administer an opioid overdose medication pursuant to a prescription or standing order issued by a practitioner in accordance with this section.”

## Main components:

- Allows prescribing to an entity (e.g., police dept., homeless shelter.)
- Allows standing order so lay people (e.g. health educators) can distribute.
- Assures criminal and civil immunity for anyone “acting in good faith and with reasonable care for any actions authorized by this section.” Includes prescriber, pharmacist, and person who possesses/administers the naloxone.





## *Is naloxone just a "safety net" that allows users to use even more?*

- Making naloxone available does NOT encourage people to use opiates more. **Withdrawal feels terrible.**
- The goal of distributing naloxone and teaching people how to prevent, recognize and intervene in overdoses is to prevent deaths.

*"You can't get clean if you're dead."*



# Continuum of Interventions

- Careful opioid prescribing
- Prevent inappropriate initiation
- Dampen illicit supply
- Buprenorphine/Methadone agonist therapy
- Syringe exchange, infectious disease prevention
- Overdose prevention
- Public stigma





# StopOverdose.org

*Opioid overdoses can be prevented and reversed!*

Home / Opioid OD Education

Where to Get Naloxone / FAQ

Sources for Help

Law Enforcement

Evaluation of WA Law

Pharmacy/Prescribers

Other Drugs and Overdose

Resources

News

Center for Opioid Safety  
Education (COSE) *new!*

## Opioid Overdose Prevention Education

Learn how you can save a life:

**WATCH** a video, **REVIEW** the steps, then **TAKE A QUIZ**.



**A community health worker** explains overdose prevention and demonstrates how to administer intra-nasal naloxone (Marsan®) in an overdose. Also in Spanish.



**A doctor** teaches patients, their families and friends, what to do in case of overdose from prescription opioids, including how to administer the opioid antidote naloxone.



# Disposal of Controlled Substances (Final Rule effective 10/9/14)




Authorized collectors may collect pharmaceutical controlled substances from ultimate users using one of the following methods: **collection receptacles, or mail-back programs**. The following categories of registrants may modify their registration to become collectors if they are authorized to handle schedule II controlled substances: **manufacturers, distributors, reverse distributors, narcotic treatment programs, hospitals/clinics** with an on-site pharmacy, and **retail pharmacies**. These registrants may modify their registrations to become authorized collectors online at <http://www.DEAdiversion.usdoj.gov>. There is no fee to modify a registration for this purpose. Authorized collectors may maintain collection receptacles at their registered locations; and they may operate a mail-back program as long as they have an on-site means of destruction for the mail-back packages. Retail pharmacies and hospitals/clinics with an on-site pharmacy may manage collection receptacles at long-term care facilities.



**Coming soon! A new medicine disposal program will be available to all King County residents starting January 17, 2017. To be notified when these locations open click [here](#)**



Map Legend

-  Pharmacy - Accepts Controlled Substances
-  Pharmacy - Takes Non-Controlled Substance
-  Law enforcement - Accepts Controlled Substances



# Drugs in Combination

- **Additive Effect:** When two or more drugs are taken at the same time, and the action of one plus the action of the other results in an action as if just one drug had been given. An example would be a barbiturate and a benzodiazepine given together before surgery to relax a patient.
- **Potentiation:** Occurs when two drugs are taken and one of them intensifies the action of the other. An example would be an antihistamine given with an opiate to intensify its effect, lessening the amount of the opiate needed.
- **Synergism:** When two drugs with similar actions are taken together resulting in an exaggerated action, out of proportion to that of each drug taken separately. An example would be alcohol taken together with an opiate.





J+P  
Rx  
PHARMACY

HAPPY  
HOUR  
5-7 p.m.



SIPRESS