

OPIOID POISONINGS A PUBLIC HEALTH CRISIS

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WHAT ARE OPIOIDS

- Medications that relieve pain
- Reduce the intensity of pain signals reaching the brain and affect those brain areas controlling emotion, which diminishes the effects of a painful stimulus
- Hydrocodone – commonly prescribed for a variety of painful conditions, including dental and injury-related pain
- Morphine - often used before and after surgical procedures to alleviate severe pain.
- Codeine - often prescribed for mild pain
 - Can also be used to relieve coughs and severe diarrhea

Common Opioids
Heroin
Methadone
Hydrocodone (Vicodin)
Morphine
Codeine
Fentanyl
Oxycodone (OxyContin, Percocet)
Meperidine
Tramadol

OPIOID FACTS

- Street Names

- Big H, Black Tar, Brown Sugar, Dover's Powder, Hillbilly Heroin, Horse, Junk, Lean or Purple Drank, MPTP (New Heroin), Mud, OC, Ox, Oxy, Oxycotton, Paregoric, Sippin Syrup, Smack

- Forms

- Tablets, capsules, skin patches, powder, chunks in varying colors (from white to shades of brown and black), liquid form for oral use and injection, syrups, suppositories, and lollipops

- Methods of abuse

- Can be swallowed, smoked, sniffed, or injected.

OPIOID EFFECTS

- Effect on mind - Produces a general sense of well-being
 - Reduces tension, anxiety, and aggression
 - Helpful in a therapeutic setting but contribute to the drugs' abuse
 - Unwanted effects
 - Drowsiness, inability to concentrate, and apathy
 - Can create psychological dependence
 - Long after the physical need for the drug has passed, a person may continue to think and talk about using drugs and feel overwhelmed coping with daily activities

OPIOID EFFECTS

- Effect on body – Prescribed to treat pain, suppress cough, cure diarrhea, and put people to sleep
 - Effects depend heavily on the dose, how it's taken, and previous exposure to the drug
 - Negative effects include: slowed physical activity, constriction of the pupils, flushing of the face and neck, constipation, nausea, vomiting, and slowed breathing
 - As the dose is increased, both the pain relief and the harmful effects become more pronounced
 - Physical dependence is a consequence of chronic opioid use, and withdrawal takes place when drug use is discontinued
 - Early withdrawal symptoms: watery eyes, runny nose, yawning, and sweating
 - As the withdrawal worsens, symptoms can include: restlessness, irritability, loss of appetite, nausea, tremors, drug craving, severe depression, vomiting, increased heart rate and blood pressure, and chills alternating with flushing and excessive sweating
 - Most withdrawal physical symptoms disappear within days or weeks, depending on the particular drug

OPIOID EFFECTS

- Overdose effects – Can be fatal
 - Respiratory failure – lack of sufficient oxygen in the blood
 - Vital organs like the heart and brain start to fail
 - Leads to unconsciousness, coma, death
- Physical signs of opioid overdose include:
 - Constricted (pinpoint) pupils, cold clammy skin, confusion, convulsions, extreme drowsiness, and slowed breathing

OPIOID MISUSE/ABUSE

- On a daily basis 3,900 people initiate nonmedical use of prescription opioids*
 - Amounts to 1.4 million persons/year
- Reasons for increase in misuse/abuse
 - Ease of access
 - Prescriptions for these medications have increased dramatically since the 1990's
 - Misinformation pertaining to the addictive properties of opioids
 - Misconception that prescription drugs are less harmful than illicit drugs
- 1.9 million people reported prescription opioid abuse or dependence during 2013 , whereas 517,000 reported heroin abuse or dependence (Florence et al. 2016)

OPIOID POISONINGS – NATIONAL EPIDEMIC

- Poisonings attributed to prescription drugs are the leading cause of injury-related mortality in United States
 - Between 2000 & 2014, the rate of deaths from drug overdoses increased 137% (Rudd et al. 2016)
 - 47,055 drug overdose deaths occurred in the United States during 2014
 - From 13.8 per 100,000 persons in 2013 to 14.7 per 100,000 persons in 2014 (6.5% increase)
 - A corresponding 200% increase in the rate of overdose deaths involving opioids (opioid pain relievers and heroin)
 - 28,647 (61%) drug overdose deaths involved some type of opioid including heroin during 2014

ECONOMIC BURDEN

- Total economic burden estimate (FY - 2013) - \$78.5 billion (Florence et al. 2016)
 - Nearly two-thirds related to health care, substance abuse treatment, and lost productivity costs
 - Fatal cases – approximately $\frac{1}{4}$ of total costs
 - One-fourth borne by public sector in:
 - Health care costs
 - Substance abuse treatment costs
 - Criminal justice costs

RISK FACTORS

- Among those who died from prescription opioid overdose between 1999 and 2014:
 - Overdose rates highest among people aged 25 to 54 years
 - Overdose rates higher among non-Hispanic whites and American Indian or Alaskan Natives, compared to non-Hispanic blacks and Hispanics
 - Men were more likely to die from overdose, but the mortality gap between men and women is closing

10 Leading Causes of Injury Deaths by Age Group Highlighting Unintentional Injury Deaths, United States – 2014

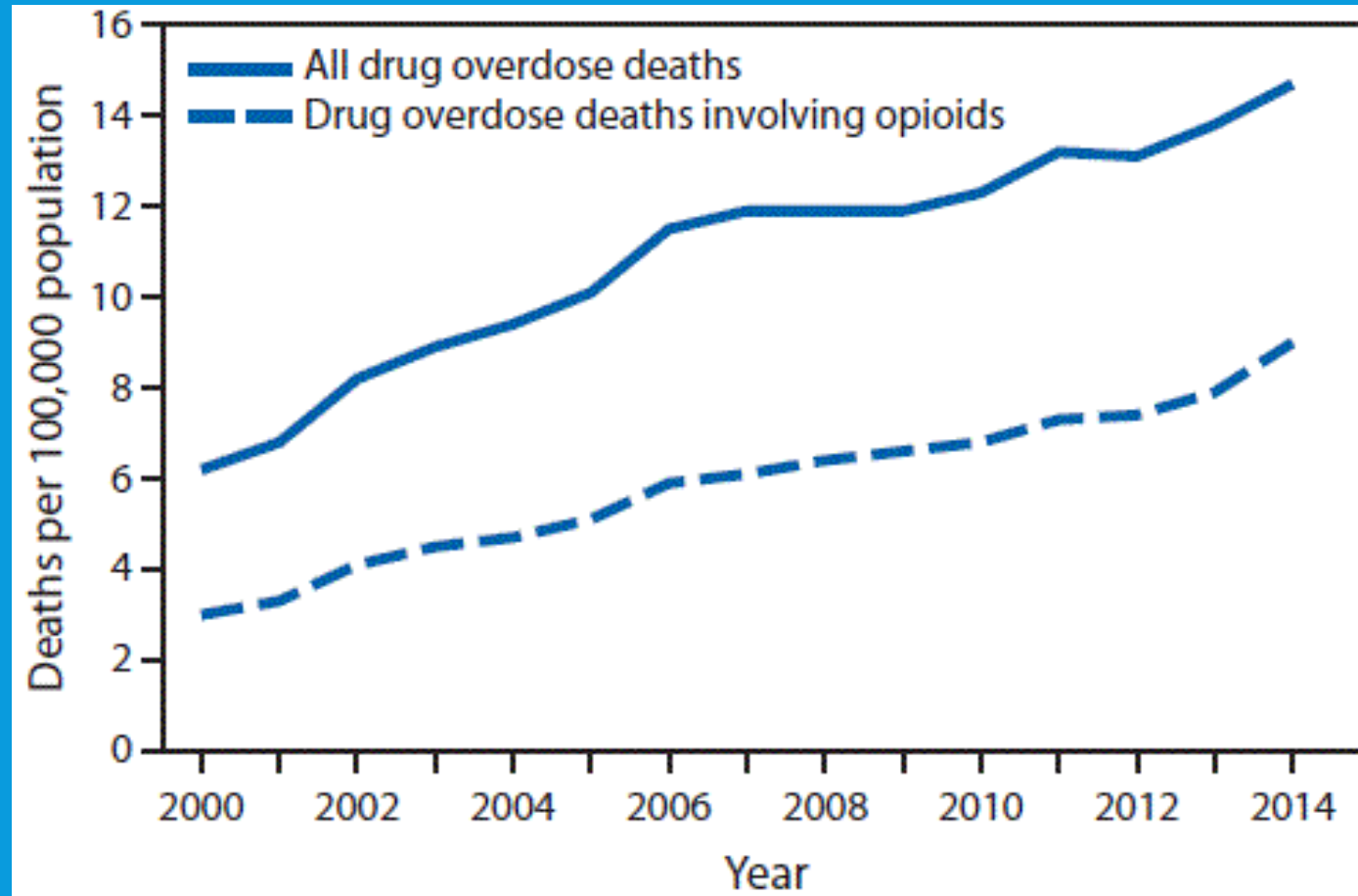
Rank	Age Groups										Total
	<1	1-4	5-9	10-14	15-24	25-34	35-44	45-54	55-64	65+	
1	Unintentional Suffocation 991	Unintentional Drowning 388	Unintentional MV Traffic 345	Unintentional MV Traffic 384	Unintentional MV Traffic 6,531	Unintentional Poisoning 9,334	Unintentional Poisoning 9,116	Unintentional Poisoning 11,009	Unintentional Poisoning 7,013	Unintentional Fall 27,044	Unintentional Poisoning 42,032
2	Homicide Unspecified 119	Unintentional MV Traffic 293	Unintentional Drowning 125	Suicide Suffocation 225	Homicide Firearm 3,587	Unintentional MV Traffic 5,856	Unintentional MV Traffic 4,308	Unintentional MV Traffic 5,024	Unintentional MV Traffic 4,554	Unintentional MV Traffic 6,373	Unintentional MV Traffic 33,736
3	Homicide Other Spec., Classifiable 83	Homicide Unspecified 149	Unintentional Fire/Burn 68	Suicide Firearm 174	Unintentional Poisoning 3,492	Homicide Firearm 3,260	Suicide Firearm 2,830	Suicide Firearm 3,953	Suicide Firearm 3,910	Suicide Firearm 5,367	Unintentional Fall 31,959
4	Unintentional MV Traffic 61	Unintentional Suffocation 120	Homicide Firearm 58	Homicide Firearm 115	Suicide Firearm 2,270	Suicide Firearm 2,829	Suicide Suffocation 2,057	Suicide Suffocation 2,321	Unintentional Fall 2,558	Unintentional Unspecified 4,590	Suicide Firearm 21,334
5	Undetermined Suffocation 40	Unintentional Fire/Burn 117	Unintentional Other Land Transport 36	Unintentional Drowning 105	Suicide Suffocation 2,010	Suicide Suffocation 2,402	Homicide Firearm 1,835	Suicide Poisoning 1,795	Suicide Poisoning 1,529	Unintentional Suffocation 3,692	Suicide Suffocation 11,407
6	Unintentional Drowning 29	Unintentional Pedestrian, Other 107	Unintentional Suffocation 34	Unintentional Fire/Burn 49	Unintentional Drowning 507	Suicide Poisoning 800	Suicide Poisoning 1,274	Unintentional Fall 1,340	Suicide Suffocation 1,509	Unintentional Poisoning 1,993	Homicide Firearm 10,945
7	Homicide Suffocation 26	Homicide Other Spec., Classifiable 73	Unintentional Natural/Environment 22	Unintentional Other Land Transport 49	Suicide Poisoning 363	Undetermined Poisoning 575	Undetermined Poisoning 637	Homicide Firearm 1,132	Unintentional Suffocation 698	Adverse Effects 1,554	Suicide Poisoning 6,808
8	Unintentional Natural/Environment 17	Homicide Firearm 47	Unintentional Pedestrian, Other 18	Unintentional Suffocation 33	Homicide Cut/Pierce 314	Homicide Cut/Pierce 430	Unintentional Fall 504	Undetermined Poisoning 820	Undetermined Poisoning 539	Unintentional Fire/Burn 1,151	Unintentional Suffocation 6,580
9	Undetermined Unspecified 16	Unintentional Struck by or Against 38	Unintentional Struck by or Against 16	Unintentional Poisoning 22	Undetermined Poisoning 229	Unintentional Drowning 399	Unintentional Drowning 363	Unintentional Suffocation 452	Homicide Firearm 538	Suicide Poisoning 1,028	Unintentional Unspecified 5,848
10	Unintentional Fire/Burn 15	Unintentional Natural/Environment 35	Unintentional Firearm (fired) 14	Homicide Cut/Pierce 19	Unintentional Other Land Transport 177	Unintentional Fall 285	Homicide Cut/Pierce 313	Unintentional Drowning 442	Unintentional Unspecified 530	Suicide Suffocation 880	Unintentional Drowning 3,406

Data Source: National Center for Health Statistics (NCHS), National Vital Statistics System.
Produced by: National Center for Injury Prevention and Control, CDC using WISQARS™.

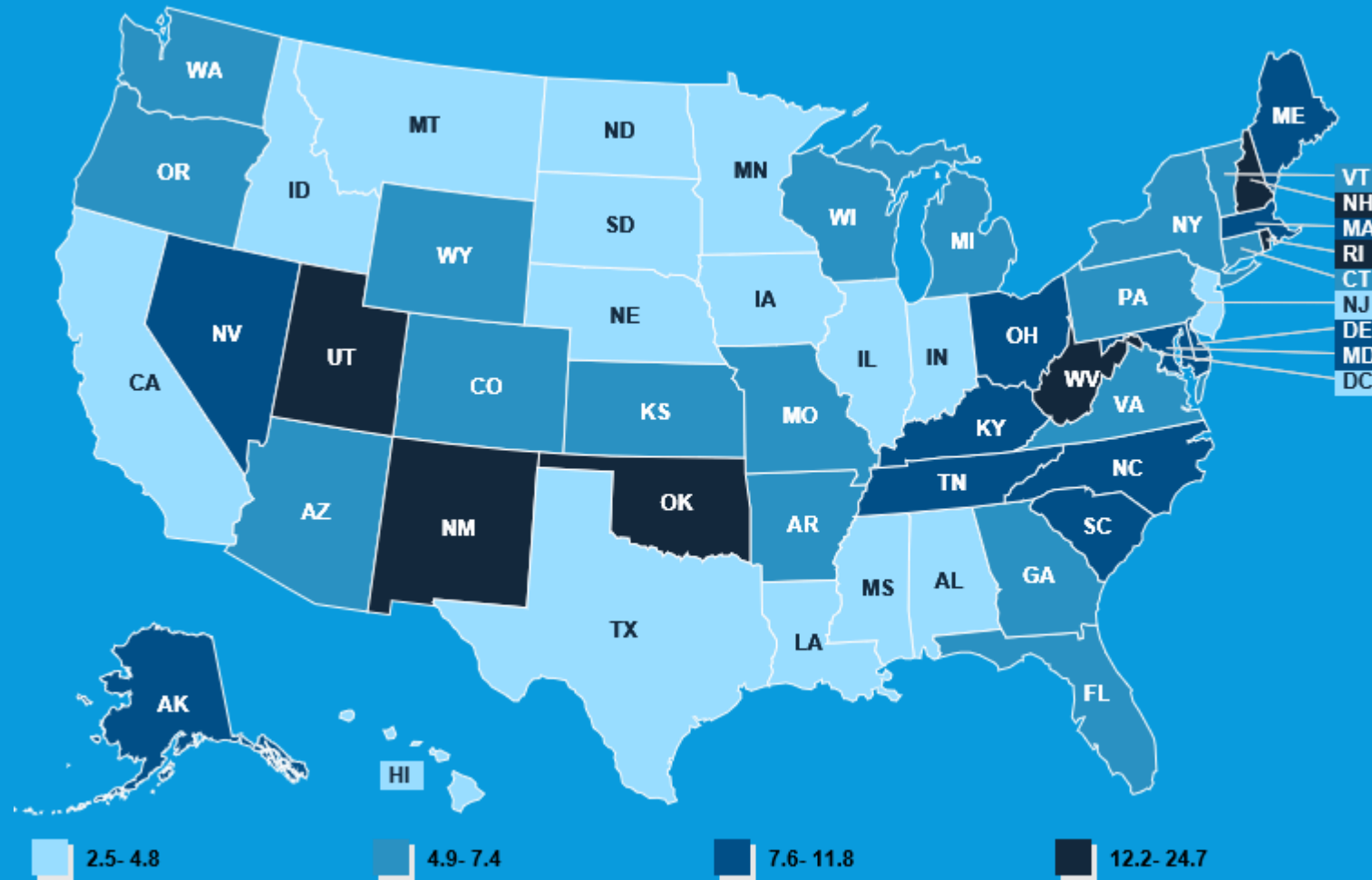


Centers for Disease Control and Prevention
National Center for Injury Prevention and Control

Age-adjusted rate of drug overdose deaths
and drug overdose deaths involving opioids
United States, 2000–2014



Prescription Opioid Overdose Death Rate per 100,000 Population (Age-Adjusted)*



* Source – CDC, National Center for Health Statistics

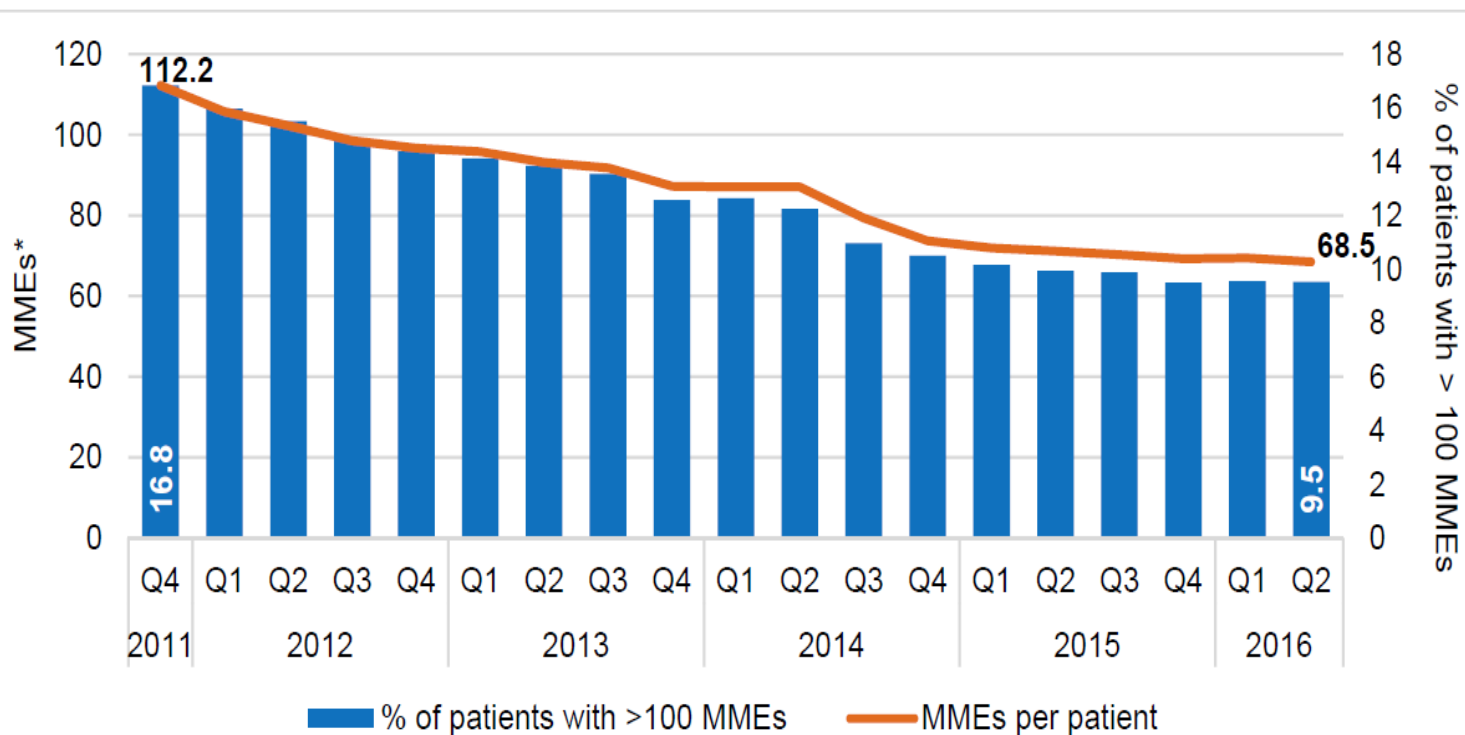
Number and Percentage of Total Prescriptions of the 10 Most Commonly Dispensed
Controlled Substances to Florida Residents

Drug	Drug Class	RY2015		RY2016		Change (%)
		No.	%	No.	%	
Hydrocodone SA	O	5,359,325	14.81	5,123,070	13.81	-4.41
Alprazolam	B	4,300,495	11.89	4,385,815	11.83	1.98
Oxycodone SA	O	3,963,049	10.95	4,263,901	11.50	7.59
Tramadol SA*	O	2,598,803	7.18	2,763,302	7.45	6.33
Zolpidem	M	2,452,610	6.78	2,397,758	6.47	-2.24
Clonazepam	B	2,034,561	5.62	2,117,128	5.71	4.06
Lorazepam	B	1,706,759	4.72	1,788,012	4.82	4.76
Amphetamine	S	1,406,733	3.89	1,585,922	4.28	12.74
Temazepam	B	1,465,763	4.05	1,328,281	3.58	-9.38
Diazepam	B	980,806	2.71	991,567	2.67	1.10

B=Benzodiazepine, O=Opioid, S=Stimulant, M=Miscellaneous, rank refers to the current reporting period.

* Tramadol SA was moved from a legend prescription drug to a schedule IV controlled substance, August 2014.

Mean daily dosage/patient in morphine milligram equivalents and Percent of patients receiving a dosage > 100 MMEs, Florida Residents



- Persons with dosages between 50 - 99 MMEs/day are at 3.7 times greater risk of an overdose event
- Persons with dosages over 99 MMEs/day are at 8.9 times greater risk of an overdose event

HEROIN

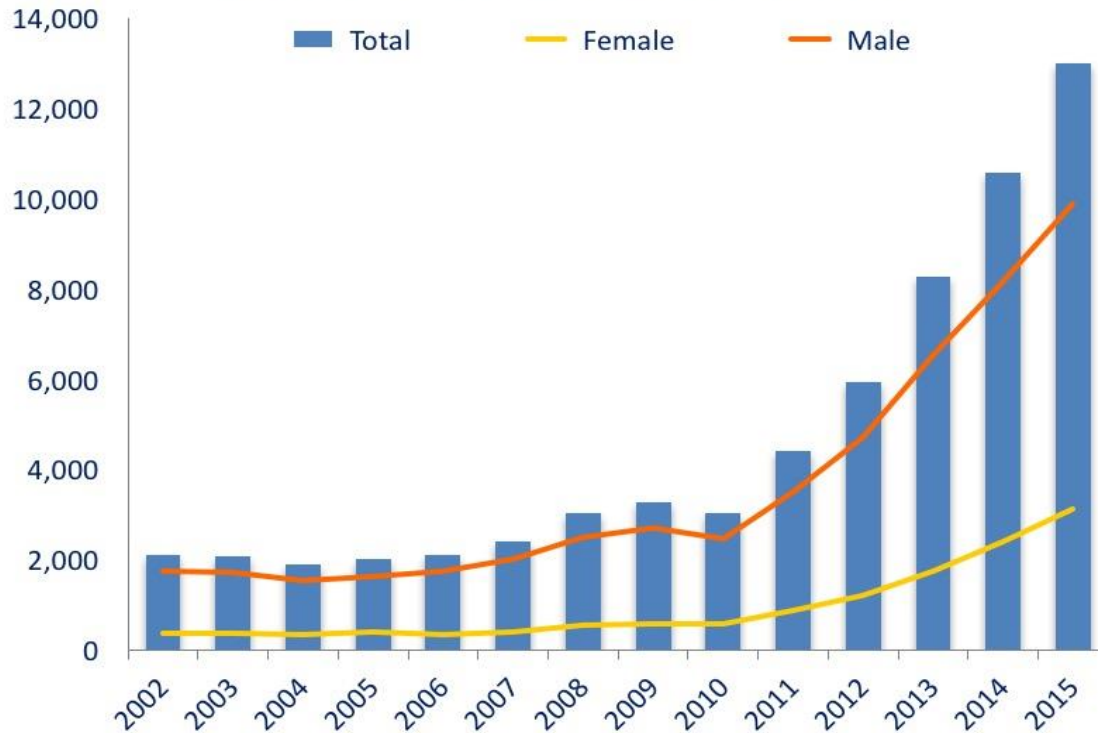
- Opioid drug that is synthesized from morphine
- Usually appears as a white or brown powder or as a black sticky substance, known as “black tar heroin”
- Can be injected, inhaled (snorting or sniffing), or smoked
 - All three routes deliver the drug to the brain very rapidly, which contributes to its health risks and to its high risk for addiction
- Associated with a number of serious health conditions including fatal overdose, spontaneous abortion, and infectious diseases such as hepatitis and HIV

HEROIN DEATHS AND RISK FACTORS

NIH National Institute on Drug Abuse



National Overdose Deaths Number of Deaths from Heroin

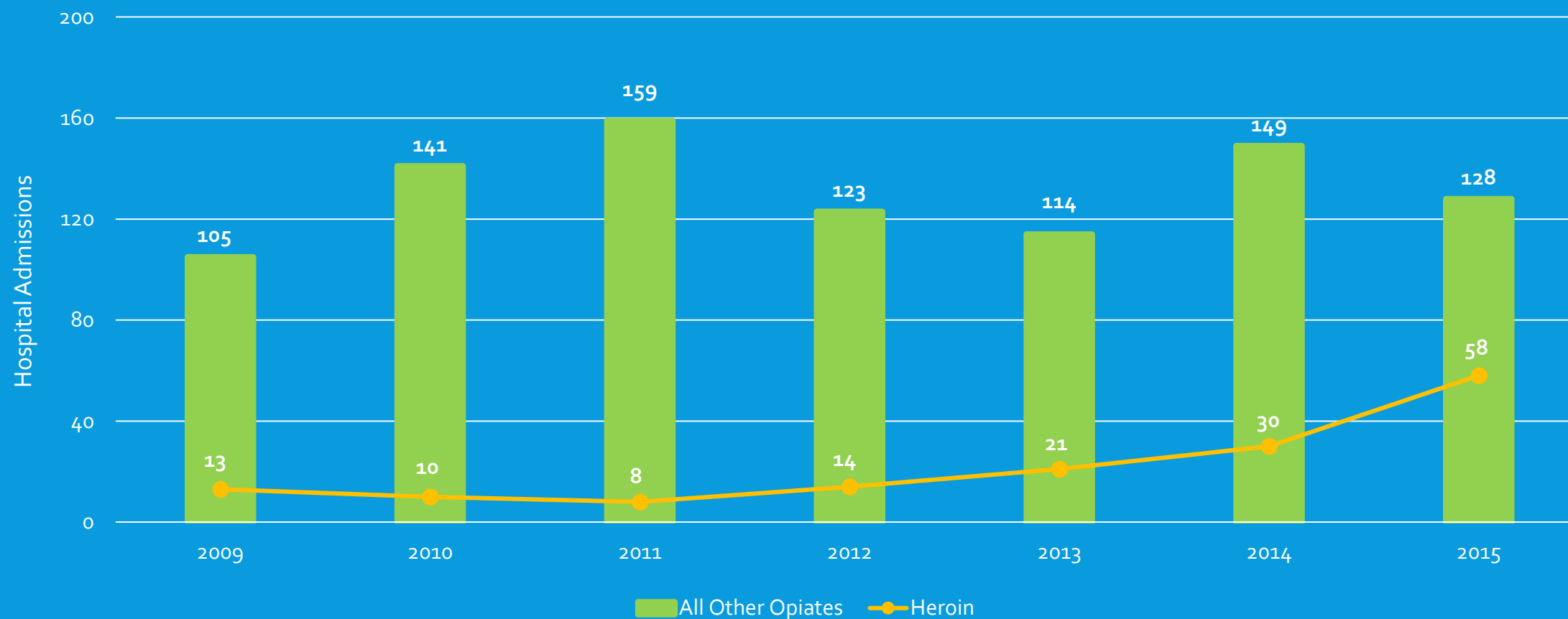


Source: National Center for Health Statistics, CDC Wonder

Heroin Use Risk Factors

- Strongest Risk Factor - Past misuse of prescription opioids
 - Especially among people who became dependent upon or abused prescription opioids in the past year
- Non-Hispanic whites
- Males
- People addicted to marijuana and alcohol
- People addicted to cocaine
- Living in a large metropolitan area
- 18 to 25 year olds

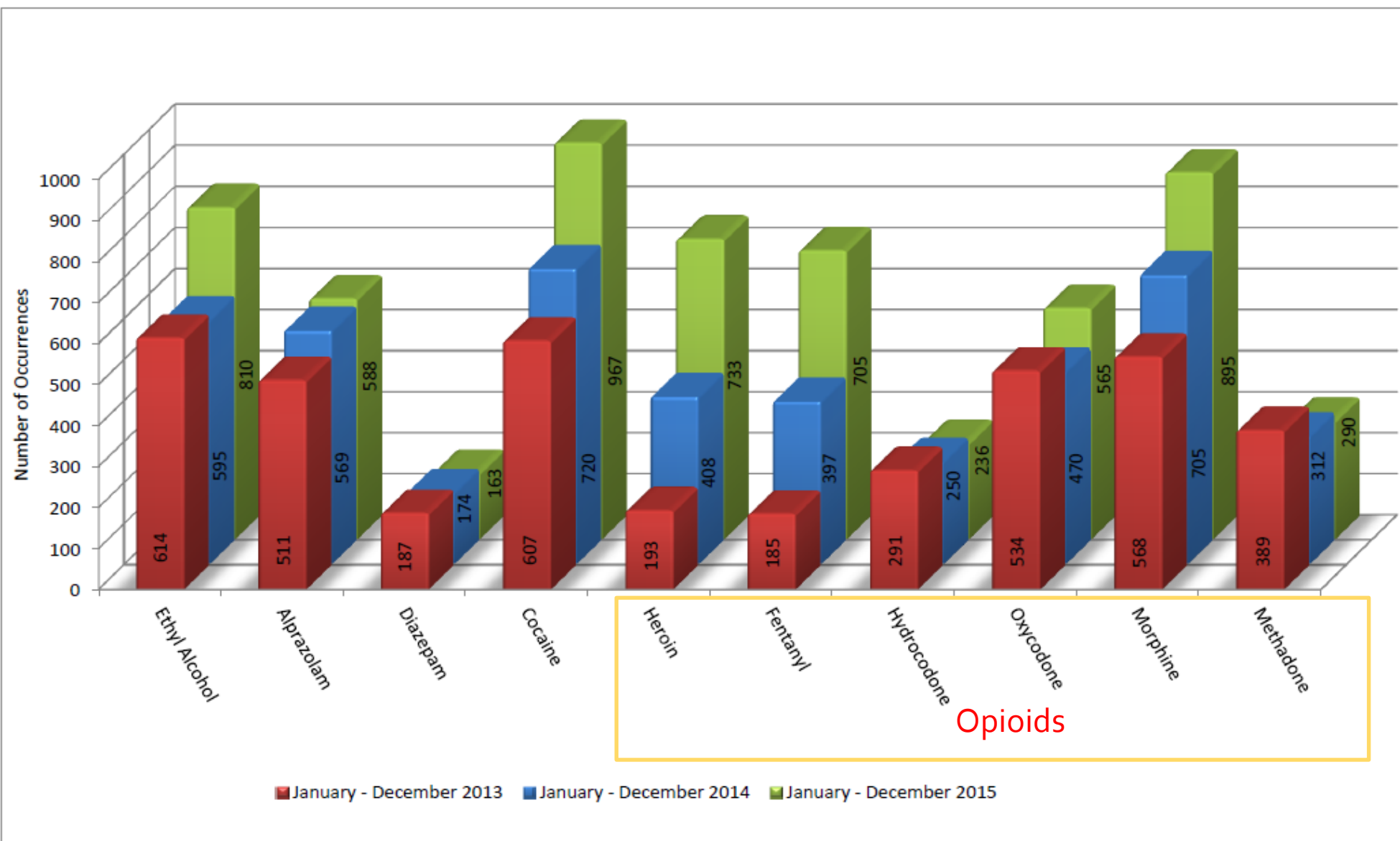
HOSPITAL ADMISSIONS FOR OPIOID POISONING, BY SUBSTANCE, MIAMI-DADE COUNTY RESIDENTS, 2009 - 2015



FENTANYL

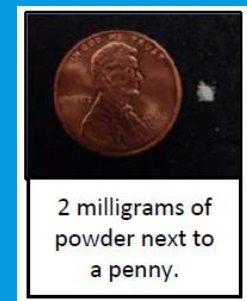
- Typically used to treat patients with severe pain or to manage pain after surgery
- Fentanyl associated with recent overdoses are produced in clandestine laboratories
- Fentanyl sold on the street can be mixed with heroin or cocaine
 - Powder form looks similar to heroin
 - 50 times more potent
- The high potency of fentanyl greatly increases risk of overdose
 - Especially if the person is unaware the drug contains fentanyl

Comparison of Drug Caused Deaths 2013 to 2015

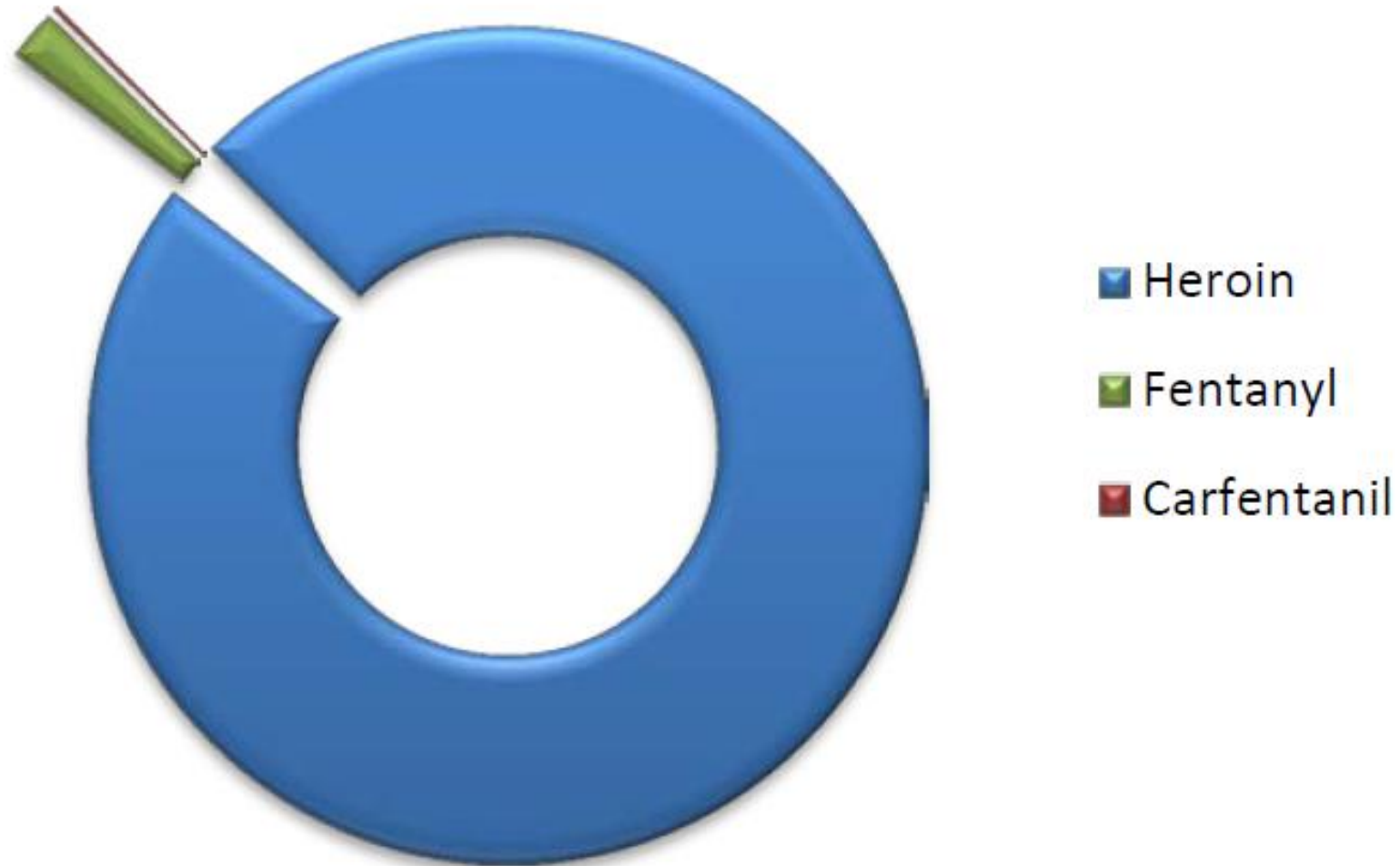


CARFENTANIL

- Synthetic opioid
- Used as a tranquilizing agent for elephants and other large mammals
- Can resemble powdered cocaine or heroin
- Approximately 10,000 times more potent than morphine
 - 100 times more potent than fentanyl
 - Fentanyl can be lethal at the 2-milligram range



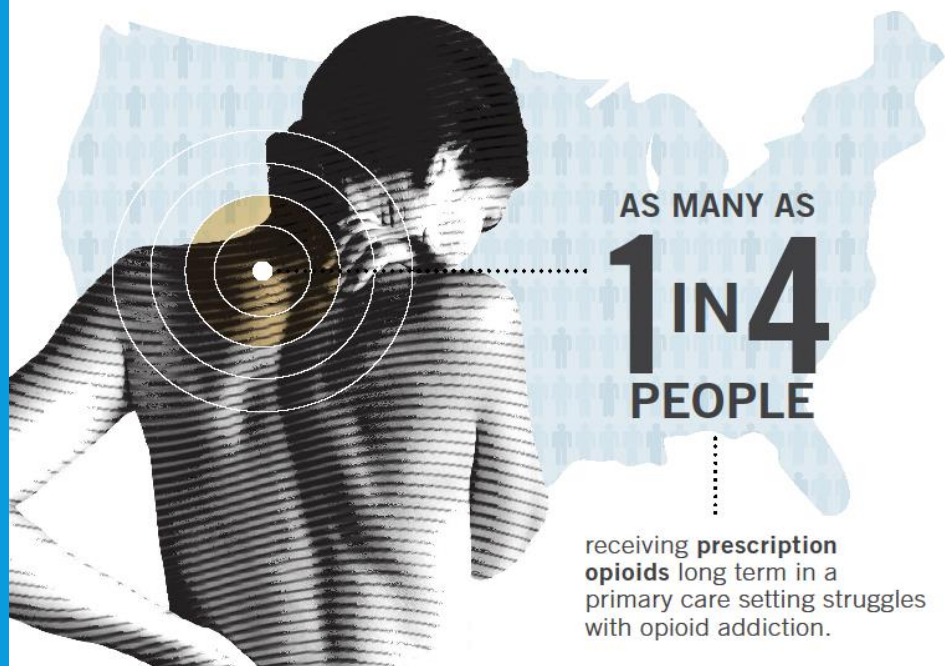
Equivalent Strengths of Heroin, Fentanyl, and Carfentanil



OPIOID ABUSE PREVENTION

- Health care practitioners, communities and workplaces, patients, and families all can contribute to preventing prescription drug abuse
- Improve opioid prescribing to reduce exposure to opioids, prevent abuse, and stop addiction
 - CDC Guideline for Prescribing Opioids for Chronic Pain – U.S. 2016
- Expand access to evidence-based substance abuse treatment, such as Medication-Assisted Treatment, for people already struggling with opioid addiction
- Expand access and use of naloxone
- Promote use of state prescription drug monitoring programs
- Collaboration between state and local public health agencies, medical examiners and coroners, and law enforcement to examine trends of illegal opioid use

KNOW THE RISKS



MANAGE YOUR PAIN, MINIMIZE YOUR RISK.

Chronic pain can be devastating, and effective pain management is essential to get your life back. Talk to your doctor about ways to manage your pain that don't involve prescription opioids, such as:

- Non-opioid pain relievers, such as acetaminophen (Tylenol®), ibuprofen (Advil®), or naproxen (Aleve®)
- Physical therapy and exercise
- Cognitive behavioral therapy
- Certain antidepressants and anticonvulsants

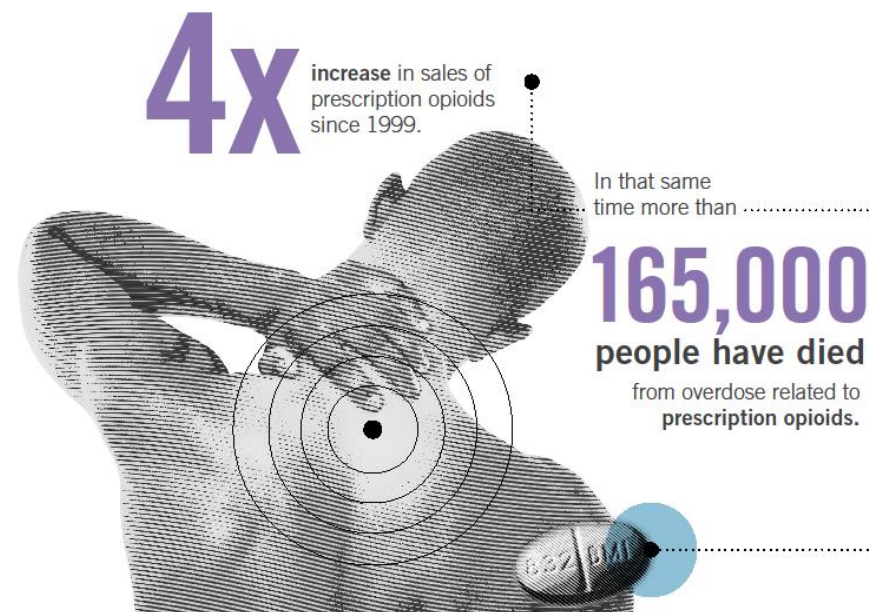


**GUIDELINE FOR PRESCRIBING
OPIOIDS FOR CHRONIC PAIN**

LEARN MORE | www.cdc.gov/drugoverdose/prescribing.guideline.html

REDUCE OVERDOSE. PRESCRIBE RESPONSIBLY.

OVERPRESCRIBING LEADS TO MORE ABUSE AND MORE OVERDOSE DEATHS.



REFER TO THE *CDC GUIDELINE FOR PRESCRIBING OPIOIDS FOR CHRONIC PAIN* FOR RESPONSIBLE PRESCRIBING OF THESE DRUGS¹.

- 1 USE NONOPIOID THERAPIES**
Don't use opioids routinely for chronic pain. Use nonopioid therapies alone or in combination with opioids. Only consider opioid therapy if you expect benefits for pain and function to outweigh risks.
- 2 START LOW AND GO SLOW**
When opioids are used, start with the lowest effective dosage and short-acting opioids instead of extended-release/long-acting opioids.
- 3 FOLLOW-UP**
Regularly assess whether opioids are improving pain and function without causing harm. If benefits do not outweigh harms, optimize other therapies and work with patients to taper opioids.

¹Recommendations do not apply to pain management in the context of active cancer treatment, palliative care, and end-of-life care



**GUIDELINE FOR PRESCRIBING
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