



## **The *Other* Opioid Crisis: Heroin and Fentanyl**

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Kevin L. Zacharoff, MD, FACIP, FACPE, FAAP

### **Disclosures**

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- Nothing to disclose



## Learning Objectives

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- Describe the opioid overdose crisis in the United States today
- Discuss common beliefs and inconsistencies about the role of prescription opioids in the opioid crisis
- Identify the intersection of illicit drug use and clinical pain practice in today's "opioid epidemic"
- Provide clinically relevant recommendations for navigating the current landscape without depriving pain care to patients in need



## Is There More than one Opioid Crisis?

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## The Facts

### The Facts: No Lack of Media Attention



**OPIOID  
EPIDEMIC**

**Painweek**



**HEROIN  
EPIDEMIC**



## The Facts

- People are dying...
- People are angry and reacting
- People are scared
- Overdoses from drugs (**ALL** drugs, legally prescribed or not) including opioids, hallucinogens, cocaine, etc
  - ~ **64,000 deaths** nationwide in 2016
    - ↑**21%** from 2015
    - **More than 42,000 (66%)** involved some type of opioid



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There Is More Than One Opioid Crisis. To better tackle the epidemic, Kentucky needed to know which drugs were causing lethal overdoses. By Kathryn Casteel  
Published Jan. 17, 2018. <https://fivethirtyeight.com/features/there-is-more-than-one-opioid-crisis/>. Accessed January 18, 2018.

## The Facts

- Drug(s) responsible may be unknown
  - Overdose is usually about  
**RESPIRATORY DEPRESSION**
- Sometimes causes are not reported
  - May depend on the state
  - Trends can be difficult to identify
- This may lead to a lack of focus

**Identifying drugs in overdose deaths**  
In each state, 2016

STATE	ALL DEATHS	CASES IN WHICH NO DRUG WAS SPECIFIED	
		TOTAL	SHARE
Louisiana	996	473	47.5%
Pennsylvania	4,627	2,075	44.8
Alabama	756	308	40.7
Montana	119	46	38.7
Indiana	1,526	547	35.8
Delaware	282	99	35.1
Nebraska	120	37	30.8
Arkansas	401	115	28.7
Florida	4,728	1,144	24.2
Idaho	243	55	22.6
New Jersey	2,056	461	22.4
Mississippi	352	78	22.2
Wyoming	99	21	21.2
California	4,654	930	20.0
Kansas	313	62	19.8
Colorado	942	172	18.3
Kentucky	1,419	253	17.8
Missouri	1,371	199	14.5
North Dakota	77	11	14.3
Arizona	1,382	196	14.2

There Is More Than One Opioid Crisis. To better tackle the epidemic, Kentucky needed to know which drugs were causing lethal overdoses. By Kathryn Casteel Published Jan. 17, 2018.  
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# The Facts: Kentucky as an Example

There Is More Than One Opioid Crisis. To better tackle the epidemic, Kentucky needed to know which drugs were causing lethal overdoses. By Kathryn Casteel Published Jan. 17, 2018. <https://fivethirtyeight.com/features/there-is-more-than-one-opioid-crisis/>. Accessed January 18, 2018.

## The most common drugs found in Kentucky's overdose victims

Based on an analysis of 1,471 drug overdose deaths in 2016

Individual drugs		Two-drug combinations		Three-drug combinations	
DRUG	SHARE	DRUGS	SHARE	DRUGS	SHARE
Morphine	45.4%	Heroin, morphine	24.3%	Heroin, morphine, codeine	16.6%
Fentanyl	37.0	Fentanyl, morphine	23.7	Heroin, morphine, fentanyl	11.6
Gabapentin	32.6	Codeine, morphine	20.0	Morphine, codeine, fentanyl	9.3
Alprazolam	25.5	Heroin, codeine	16.6	Heroin, morphine, THC-COOH	7.9
THC-COOH	24.9	Gabapentin, morphine	14.2	Heroin, codeine, fentanyl	7.6
Heroin	24.7	Morphine, THC-COOH	12.8	Fentanyl, morphine, THC-COOH	7.3
Codeine	20.7	Alprazolam, morphine	12.6	Alprazolam, heroin, morphine	7.3
Ethanol	18.4	Methamphetamine, amphetamine	12.0	Gabapentin, heroin, morphine	7.1
Oxycodone	17.2	Heroin, fentanyl	11.7	Gabapentin, fentanyl, morphine	6.8
Methamphetamine	17.1	Oxycodone, oxymorphone	11.5	Alprazolam, codeine, morphine	6.6

In cases in which multiple drugs are detected, every individual drug — as well as every two- and three-drug combination — is counted separately.

FiveThirtyEight

SOURCE: KENTUCKY INJURY PREVENTION AND RESEARCH CENTER

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## THE DENVER POST

NEWS > HEALTH

### Colorado's opioid and heroin overdose deaths outnumbered homicides in 2015

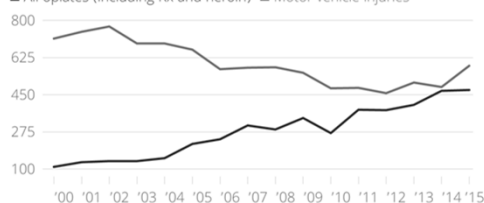
Opiate deaths are catching up to alcohol-related liver disease deaths

By **JOHN INGOLD** | [jingold@denverpost.com](mailto:jingold@denverpost.com) | The Denver Post

PUBLISHED: January 3, 2017 at 11:15 am | UPDATED: October 31, 2017 at 12:39 pm

Deaths in Colorado from opiate drugs vs. motor vehicle accidents

■ All opiates (including Rx and heroin) ■ Motor vehicle injuries



Made with Chartbuilder

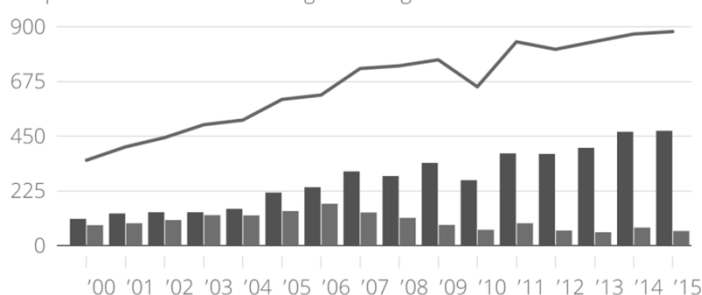
Data: Colorado Department of Public Health and Environment

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## The Facts

### Drug poisoning deaths in Colorado

■ Opiates ■ Cocaine ■ All Drug Poisoning



Made with Chartbuilder

Data: Colorado Department of Public Health and Environment



# THE DENVER POST

NEWS HEALTH

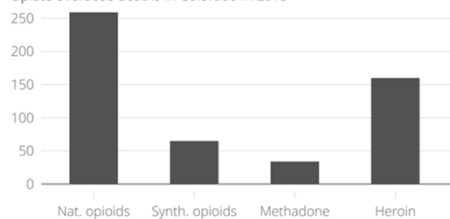
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Opiate overdose deaths in Colorado in 2015



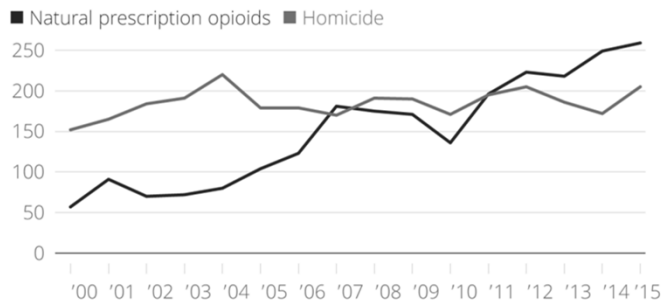
Data: Colorado Department of Public Health and Environment

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## The Facts

Natural = prescription opioids

Deaths in Colorado from "natural" prescription opioids vs. homicides



Made with Chartbuilder

Data: Colorado Department of Public Health and Environment

# THE DENVER POST

POLITICS COLORADO POLITICS

## Here's how Colorado is combating the prescription opioid and heroin epidemic

Colorado is exploring opioid prescription limits, prescriber report cards and new treatment options.

By **JOHN FRANK** | jfrank@denverpost.com | The Denver Post

PUBLISHED: November 5, 2017 at 12:01 am | UPDATED: November 6, 2017 at 11:02 am

The nation's drug epidemic kills someone in Colorado about every 9 hours and 36 minutes, a fact that rings like a siren for state leaders who are combating the leading driver: prescription and illicit opioids.

The most alarming trend is the rate of heroin deaths. The number of overdoses caused by heroin, an opioid, continues to skyrocket, contributing to 228 deaths last year, compared with just 79 five years earlier, according to state figures.

## The Facts



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## THE DENVER POST

- “The state tracks opioid prescriptions, but doctors aren't required to check the database”
- “The vast majority of states require clinicians to check the Prescription Drug Monitoring Program (PDMP) database before writing most opioid prescriptions”

By **JOHN FRANK** | jfrank@denverpost.com | The Denver Post

PUBLISHED: November 5, 2017 at 12:01 am | UPDATED: November 6, 2017 at 11:02 am

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## The Facts

### Colorado drug-related hospitalization

Rates per 100,000 for 2015

Prescription-opioid related

15.24

Benzodiazepine related

14.58

Heroin related

2.98

Cocaine related

2.12

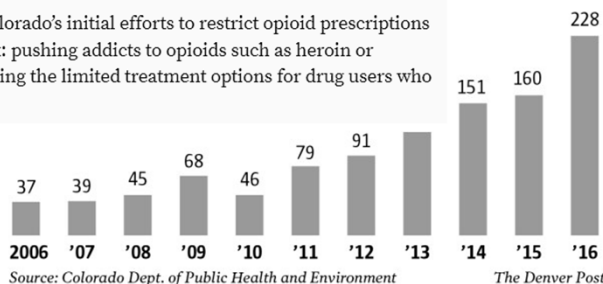
Source: Colorado Dept. of Public Health and Environment

The Denver Post

## THE DENVER POST

A crackdown on overprescribing isn't enough — drug treatment options remain a challenge.

According to policymakers, Colorado's initial efforts to restrict opioid prescriptions may have an unintended effect: pushing addicts to opioids such as heroin or fentanyl. The trend is spotlighting the limited treatment options for drug users who want help.



By **JOHN FRANK** | jfrank@denverpost.com | The Denver Post

PUBLISHED: November 5, 2017 at 12:01 am | UPDATED: November 6, 2017 at 11:02 am

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## THE DENVER POST

### Doctors will soon get opioid prescription “report cards.”

To educate doctors about the dangers of overprescribing opioids, Colorado is testing a relatively new idea that is showing early results — prescriber report cards.

The reports, also known as scorecards, will give clinicians a summary of their prescriber history and how they rank with their peers in the same specialty in terms of dosage, duration and type of drug.

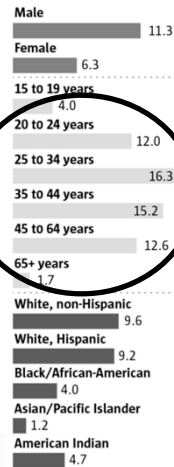
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#### Colorado opioid-related deaths

Rates per 100,000 for 2016



Source: Colorado Dept. of Public Health and Environment  
The Denver Post

## The Facts

- “The idea is that prescribers might be prescribing more than average for their particular specialty”
- “They’ll say ‘Oh, I better look at things more closely’”
- “What we are hoping to see is a change in prescriber behavior”

## IMPORTANT SOCIETAL QUESTIONS



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## Is the Current Climate Living up to Promises Made in the Past?

Does the chronic pain patient still have rights?

Is this a problem about chronic pain patients abusing prescription pain medications?

### *Bill of Rights for People with Chronic Pain*

The right to have your report of pain taken seriously and to be treated with dignity and respect by doctors, nurses, pharmacists and other healthcare professionals.

The right to have your pain thoroughly assessed and promptly treated.

The right to be informed by your doctor about what may be causing your pain, possible treatments, and the benefits, risks and costs of each.

The right to participate actively in decisions about how to manage your pain.

The right to have your pain re-assessed regularly and your treatment adjusted if your pain has not been eased.

The right to be referred to a pain specialist or other healthcare provider if your pain persists.

The right to get clear and prompt answers to your questions, take time to make decisions, and refuse a particular type of treatment if you choose.

## THE DENVER POST

NEWS HEALTH

### Chronic pain patients say they are hurt by Colorado's opioid prescription guidelines

Some Colorado doctors are refusing to prescribe opioids to chronic pain sufferers



David and Marjorie Orthman discuss David's painful form of cystic fibrosis Dec. 6, 2016 at their home.

John Leyba, The Denver Post

By JOHN INGOLD | jingold@denverpost.com | The Denver Post  
PUBLISHED: December 6, 2016 at 9:27 pm | UPDATED: December 7, 2016 at 10:31 am

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## The Clinical Implications

Now, across Colorado and the rest of the nation, these policies intended to address opioid abuse have unexpectedly harmed patients who depend on the drugs to treat chronic conditions, pain specialists and patient advocates say. The policies are supposed to offer guidance — helpful advice to doctors to be cautious in prescribing more than a certain amount of opioids to any one patient.

Officials at the Colorado Department of Regulatory Agencies are looking at revising the guidelines. The Colorado Consortium for Prescription Drug Abuse Prevention, a group of medical and drug experts, is also working on ideas to protect pain patients while cracking down on opioid abuse.



## The Facts

Record Overdose Deaths

Heroin Use

Preventing Overdose Deaths

Drug overdose deaths in the United States continue to increase in 2015

- The majority of drug overdose deaths involve an opioid<sup>1</sup>
- Since 1999 the # of overdose deaths quadrupled<sup>2</sup>
  - Prescription opioids
  - Heroin
- 91 Americans die every day from an opioid overdose

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1. Rudd RA, Seth P, David F, Scholl L. Increases in Drug and Opioid-Involved Overdose Deaths — United States, 2010–2015 MMWR Morb Mortal Wkly Rep. ePub: 16 December 2016. DOI: <http://dx.doi.org/10.15585/mmwr.mm6505051e1>
2. CDC. Wide-ranging online data for epidemiologic research (WONDER). Atlanta, GA: CDC, National Center for Health Statistics; 2016. Available at <http://wonder.cdc.gov>.

## The Facts

Record Overdose Deaths

Heroin Use

Preventing Overdose Deaths

Heroin use is trending up

- From 2002-2013, past month/year heroin use and addiction have all increased among 18-25 year olds<sup>1</sup>
- Among new heroin users, 75% report abusing prescription opioids prior to using heroin<sup>2</sup>
- Heroin-related deaths more than tripled from 2010-2015
  - The largest increase was for those heroin-related deaths involving synthetic opioids - FENTANYL

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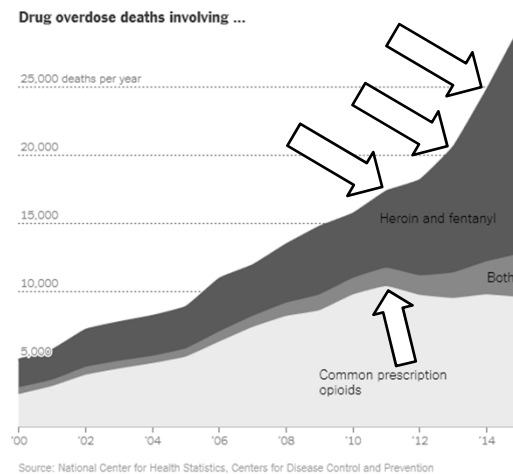
1. Centers for Disease Control and Prevention. Demographic and Substance Use Trends Among Heroin Users — United States, 2002–2013. MMWR 2015; 64(26):719-725
2. Muhuri PK, Gfroerer JC, Davies C. Associations of nonmedical pain reliever use and initiation of heroin use in the United States. CBHSQ Data Review, 2013.



# The Facts: Times are Changing

The New York Times  
Short Answers to Hard  
Questions About the Opioid  
Crisis  
By JESSICA KATZ, 4/10/15, Page B1, 2015

- Characteristics of opioid drug overdoses:
  - Fast
  - Deadly
  - Scary
  - Socioeconomic status – neutral
  - Abuse-history – neutral
  - Increasing exponentially



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**CDC** Centers for Disease Control and Prevention  
CDC 24/7: Saving Lives, Protecting People™

Understanding the Epidemic

Record Overdose Deaths

Heroin Use

**Preventing Overdose Deaths**

## The Clinical Implications

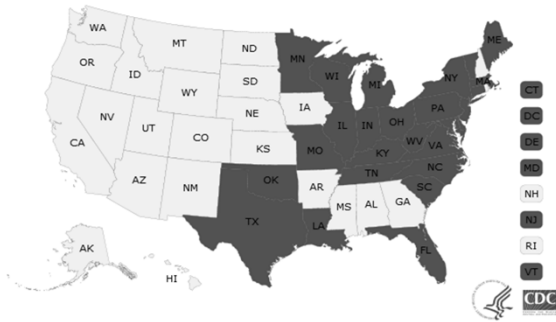
- Improved opioid prescribing
- Expanded access to substance abuse treatment
- Naloxone
- Prescription Drug Monitoring Programs (PDMPs)
- State-level strategies to prevent high risk prescribing and opioid overdoses
- Improved detection of illegal opioid use by law enforcement

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## The Facts

Statistically significant drug overdose death rate increase from 2015 to 2016, US states



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<https://www.cdc.gov/drugoverdose/data/statedeaths.html>. Accessed January 20, 2018.

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## The “Other” Epidemic



# Heroin

- Highly addictive
- It is an opioid
- Made from morphine
  - ~3 times more potent
- A natural substance
  - Extracted from the opium poppy plant
    - Asia
    - Mexico
    - Colombia

## The Facts



<https://www.drugabuse.gov/publications/drugfacts/heroin>. Accessed January 22, 2018.



Understanding the Epidemic

## The Facts

- Heroin use has been increasing<sup>1</sup>
  - Men
  - Women
  - Most age groups
  - All income levels
- Past misuse/abuse of prescription opioids is the strongest risk factor for starting heroin<sup>2</sup>

Heroin Use Has INCREASED Among Most Demographic Groups			
	2002-2004*	2011-2013*	% CHANGE
<b>SEX</b>			
Male	2.4	3.6	50%
Female	0.8	1.6	100%
<b>AGE, YEARS</b>			
12-17	1.8	1.6	--
18-25	3.5	7.3	109%
26 or older	1.2	1.9	58%
<b>RACE/ETHNICITY</b>			
Non-Hispanic white	1.4	3	114%
Other	2	1.7	--
<b>ANNUAL HOUSEHOLD INCOME</b>			
Less than \$20,000	3.4	5.5	62%
\$20,000-\$49,999	1.3	2.3	77%
\$50,000 or more	1	1.6	60%
<b>HEALTH INSURANCE COVERAGE</b>			
None	4.2	6.7	60%
Medicaid	4.3	4.7	--
Private or other	0.8	1.3	63%

\*Annual average rate of heroin use (per 1,000 people in each group)



1. Centers for Disease Control and Prevention. Vital Signs: Today's Heroin Epidemic – More People at Risk, Multiple Drugs Abused. MMWR 2015.
2. Compton WM, Jones CM, and Baldwin GT. Understanding the Relationship between Prescription Opioid and Heroin Abuse. NEJM.



## CDC Vital Signs July 2015

### ■ The Heroin Epidemic

**Heroin use is part of a larger substance abuse problem.**

Nearly all people who used heroin also used at least 1 other drug.

Most used at least **3** other drugs.

Heroin is a highly addictive opioid drug with a high risk of overdose and death for users.

**People who are addicted to...**

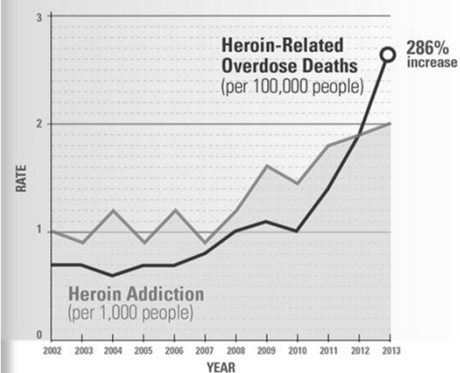


SOURCE: National Survey on Drug Use and Health (NSDUH), 2011-2013.

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## The Facts

### Heroin Addiction and Overdose Deaths are Climbing



SOURCES: National Survey on Drug Use and Health (NSDUH), 2002-2013.  
National Vital Statistics System, 2002-2013.



National Institute  
on Drug Abuse

### Research Report Series

“The relationship between prescription opioid abuse and increases in heroin use in the U.S. is under scrutiny. These substances are all part of the same opioid drug category and overlap in important ways”



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1. <https://www.drugabuse.gov/publications/research-reports/relationship-between-prescription-drug-abuse-heroin-use/introduction>. Accessed January 30, 2018.
2. [https://d14rmgtrwzf5a.cloudfront.net/sites/default/files/rx\\_and\\_heroin\\_rrs\\_layout\\_final.pdf](https://d14rmgtrwzf5a.cloudfront.net/sites/default/files/rx_and_heroin_rrs_layout_final.pdf). Accessed January 30, 2018.





National Institute  
on Drug Abuse

Research Report Series

## The Facts

- “Current” ~ 2013-2015 research regarding prescription opioids and heroin shows:
  - Prescription opioid abuse *is* a risk factor for heroin use
  - Heroin use is *rare* in prescription drug abusers (<4% start within 5 years)
  - Although similar effects, risk factors are different
  - A subset of people who abuse prescription opioids may progress to heroin use
  - Availability of drug(s) is associated with increased use and overdose
  - Heroin use is driven by cost advantage and availability
  - Emphasis is needed on prevention and treatment

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1. <https://www.drugabuse.gov/publications/research-reports/relationship-between-prescription-drug-abuse-heroin-use/introduction>. Accessed January 30, 2018.
2. [https://d14mgtrwzf5a.cloudfront.net/sites/default/files/rx\\_and\\_heroin\\_rrs\\_layout\\_final.pdf](https://d14mgtrwzf5a.cloudfront.net/sites/default/files/rx_and_heroin_rrs_layout_final.pdf). Accessed January 30, 2018.



National Institute  
on Drug Abuse

Research Report Series

## The Facts

- And...
  - “Analyses suggest that those who transition to heroin use tend to be frequent users of multiple substances (polydrug users)”
    - Jones CM. Heroin use and heroin use risk behaviors among nonmedical users of prescription opioid pain relievers – United States, 2002-2004 and 2008-2010. Drug Alcohol Depend. 2013;132(1-2):95-100.

**A + B ≠ C**



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1. <https://www.drugabuse.gov/publications/research-reports/relationship-between-prescription-drug-abuse-heroin-use/introduction>. Accessed January 30, 2018.
2. [https://d14mgtrwzf5a.cloudfront.net/sites/default/files/rx\\_and\\_heroin\\_rrs\\_layout\\_final.pdf](https://d14mgtrwzf5a.cloudfront.net/sites/default/files/rx_and_heroin_rrs_layout_final.pdf). Accessed January 30, 2018.



## CDC Vital Signs July 2015

# The Clinical Implications

### Recommendations that impact us:

- Screen and identify high-risk individuals
- Treat people with substance abuse disorders
- Naloxone

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## Responding to the Heroin Epidemic



### PREVENT People From Starting Heroin

**Reduce prescription opioid painkiller abuse.**  
Improve opioid painkiller prescribing practices and identify high-risk individuals early.



### REDUCE Heroin Addiction

**Ensure access to Medication-Assisted Treatment (MAT).**  
Treat people addicted to heroin or prescription opioid painkillers with MAT which combines the use of medications (methadone, buprenorphine, or naltrexone) with counseling and behavioral therapies.



### REVERSE Heroin Overdose

**Expand the use of naloxone.**  
Use naloxone, a life-saving drug that can reverse the effects of an opioid overdose when administered in time.

SOURCE: CDC Vital Signs, July 2015

## The Facts – The “F” Word



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

Prescription Behavior Surveillance System (PBSS)

ISSUE BRIEF

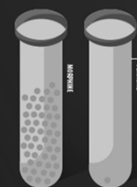
### Fentanyl

- Originally developed as an anesthetic
  - One of the safest opioids
  - High LD50/ED50 ratio
- More potent than morphine
  - 100 times more potent
- More potent than heroin
  - 20-50 times more potent
- NOT NEW

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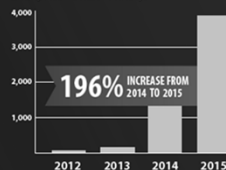
## FENTANYL: Overdoses On The Rise

Fentanyl is a synthetic opioid approved for treating severe pain, such as advanced cancer pain. Illicitly manufactured fentanyl is the main driver of recent increases in synthetic opioid deaths.

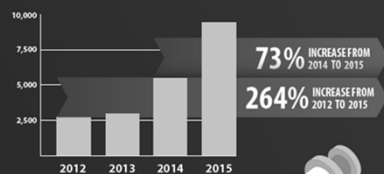


**50-100x MORE POTENT THAN MORPHINE**

Ohio Drug Submissions Testing Positive for Illicitly Manufactured Fentanyl

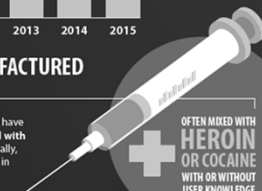


### SYNTHETIC OPIOID DEATHS ACROSS THE U.S.



### ILICITLY MANUFACTURED FENTANYL

Although prescription rates have fallen, overdoses associated with fentanyl have risen dramatically, contributing to a sharp spike in synthetic opioid deaths.





## Case 1

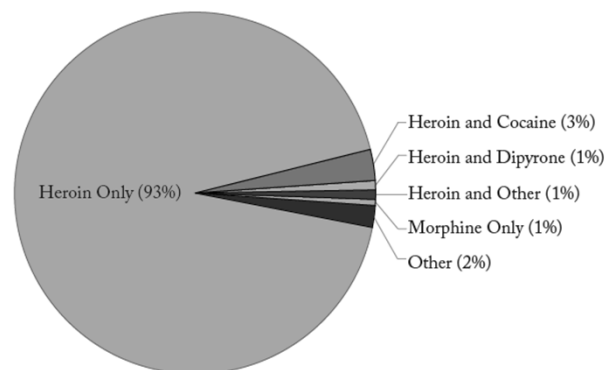
- 42-year-old Hispanic male
  - Addicted to heroin
  - Comes to the same street corner every day to buy heroin
    - First dose usually free
  - He's actually buying heroin laced with fentanyl
  - "It's a new epidemic" he says
  - "If you catch a bag of pure fentanyl, that Narcan ain't bringing you back"
  - "I just watched my friend die from fentanyl"



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## Heroin and Fentanyl: A "Perfect" Pair

- The overwhelming majority of the time fentanyl is paired with heroin
- To get a better "high"
- "Better" economic profile



Note: Percentages may not sum to total because of rounding.

U.S. DEPARTMENT OF JUSTICE • DRUG ENFORCEMENT ADMINISTRATION  
OFFICE OF DIVERSION CONTROL

**NFLIS** NATIONAL FORENSIC  
LABORATORY  
INFORMATION SYSTEM

Special Report: **Opiates and Related Drugs**  
**Reported in NFLIS, 2009–2014**

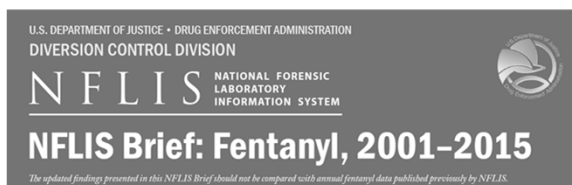
Revised February 2016



# Fentanyl

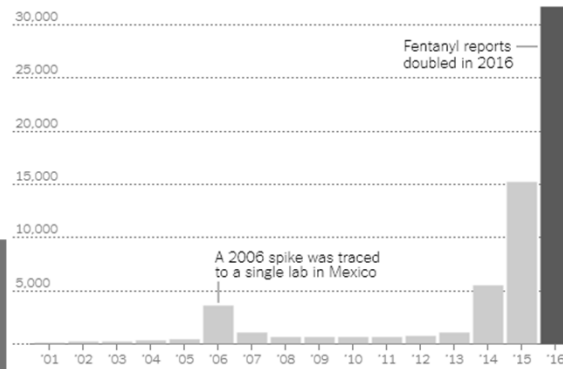
## The Facts

- Drug seizures involving fentanyl are going up dramatically



**PainWeek**

Drug seizures containing fentanyl



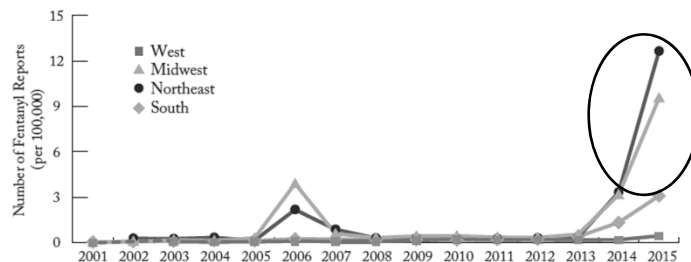
Source: D.E.A. National Forensic Laboratory Information System

# Fentanyl

## The Facts

- Defined geographic distribution

Figure 2 NFLIS regional trends in fentanyl reported per 100,000 persons aged 15 or older, January 2001–December 2015<sup>1</sup>



Note: U.S. census 2015 population data by age were not available for this publication. Population data for 2015 were imputed.

<sup>1</sup>A dashed trend line indicates that estimates did not meet the criteria for precision or reliability, including the 2002 estimate in the West and the 2001 estimate in the Northeast.



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## The Facts

WORLD | ASIA | CHINA NEWS

### The Chinese Connection Fueling America's Fentanyl Crisis

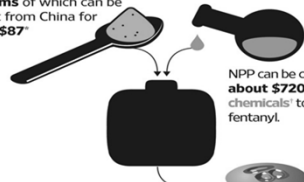
A vast network beginning in China feeds fentanyl, a deadly synthetic opioid, to the U.S., Mexico and Canada

By JEANNE WHALEN and BRIAN SPEGELE  
Updated June 23, 2016 1:44 a.m. ET

#### Criminal Chemistry

Traffickers manufacturing fentanyl often purchase the key ingredient from China, which doesn't regulate its sale. Here's how the chemical building blocks become a highly profitable street drug.

The key ingredient is NPP, 25 grams of which can be bought from China for about \$87\*



NPP can be combined with about \$720 of other chemicals<sup>†</sup> to produce fentanyl.

The resulting 25 grams of fentanyl cost about \$810 to produce...

...and are equivalent to up to \$800,000 of pills on the black market.

\*Average current price from Chinese suppliers  
Sources: NES Inc.; Drug Enforcement Administration; Calgary Police

†Prices from U.S. suppliers

THE WALL STREET JOURNAL.

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- Fentanyl can be manufactured anywhere
  - Synthetic
- N-Phenethyl-4-piperidinone is NPP
  - Intermediate precursor to fentanyl
- It is cheap
- It is not going anywhere

## Terminology

## The Facts

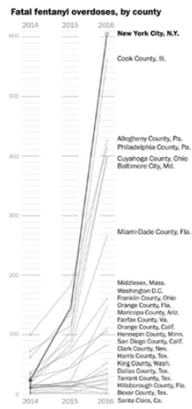
- A very small amount of fentanyl is potentially fatal
- This applies to **licit or illicit** fentanyl
  - Illicitly manufactured fentanyl is likely no more dangerous than legally manufactured fentanyl
- Fentanyl label:
  - FENTANYL CITRATE SHOULD BE ADMINISTERED ONLY BY PERSONS SPECIFICALLY TRAINED IN THE USE OF INTRAVENOUS ANESTHETICS AND MANAGEMENT OF THE RESPIRATORY EFFECTS OF POTENT OPIOIDS
  - AN OPIOID ANTAGONIST, RESUSCITATIVE AND INTUBATION EQUIPMENT AND OXYGEN SHOULD BE READILY AVAILABLE
  - Fentanyl may cause muscle rigidity, particularly involving the muscles of respiration
  - DIMINISHED SENSITIVITY TO CO<sub>2</sub> STIMULATION MAY PERSIST LONGER THAN DEPRESSION OF RESPIRATORY RATE



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# A Fentanyl Crisis



**The Washington Post**

**Fentanyl linked to thousands of urban overdose deaths**

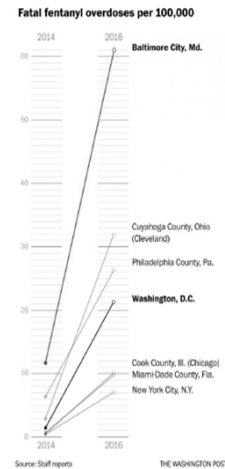
In two dozen of the nation's largest cities, fentanyl is becoming a major part of the national opioid crisis

By Nicole Lewis, Emma Ockerman, Joel Achenbach and Wesley Lowery

Aug. 15, 2017

# The Implications

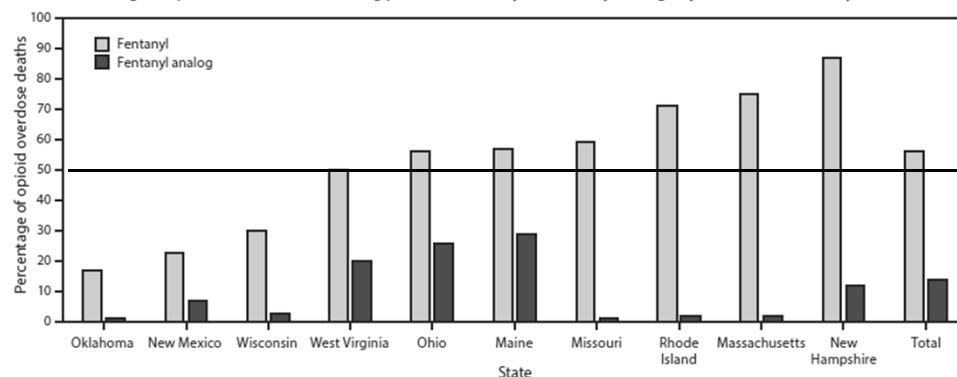
**In 24 of the nation's largest cities fatal fentanyl-related overdoses increased 600% from 2014-2016**



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# Increasing Fentanyl Overdoses The Facts

**FIGURE. Percentage of opioid overdose deaths testing positive for fentanyl and fentanyl analogs, by state — 10 states, July–December 2016**



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Morbidity and Mortality Weekly Report. November 3, 2017 / Vol. 66 / No. 43 US Department of Health and Human Services/Centers for Disease Control and Prevention



## Different Types of Fentanyl and Presentations

- Different formulations and varying potencies:

- Fentanyl
- Analogs
  - Acetyl fentanyl
  - Ocfentanil
  - Carfentanyl
  - Remifentanyl
  - Alfentanyl
  - Sufentanyl
  - Furanylfentanyl



- Presentations

- Powder
- Counterfeit pills
- Etc

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## Carfentanyl

- Synthetic
- Large animal anesthetic
- 100 times more potent than fentanyl
- 10,000 times more potent than morphine
- Airborne/skin exposure often fatal
  - 2012 Moscow Theater Hostage Crisis

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## The Facts

### The Washington Post

By Lynh Bui and Peter Hermann April 26, 2017

Public Safety  
Elephant tranquilizer is the latest lethal addition to the heroin epidemic



Members of the Royal Canadian Mounted Police go through a decontamination procedure in Vancouver, British Columbia, in June 2016 after intercepting a package containing approximately one kilogram (2.2 pounds) of the opioid carfentanil imported from China. (Royal Canadian Mounted Police via AP/AP)



## The Facts

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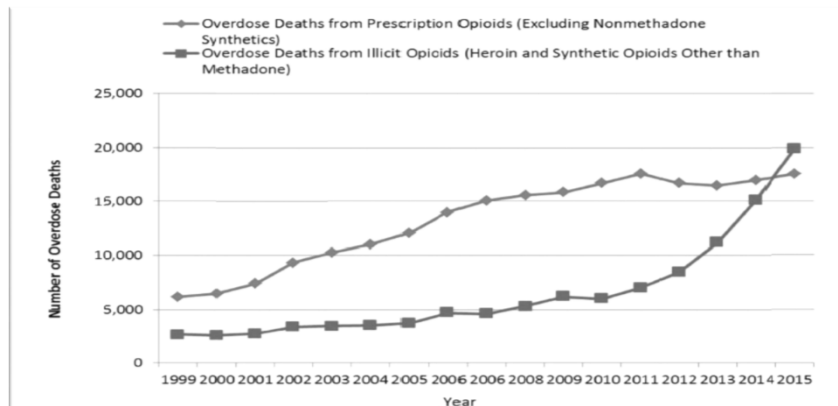
- Fentanyl in the wrong hands is deadly
- Potentially contributing significantly to overdose/fatal overdose risk
- Analogs not often tested for in routine toxicology testing
- Naloxone is a bridge to survival but not a final solution
  - Re-narcotization from fentanyl is common
  - CO<sub>2</sub> will persist
  - Diminished hypoxic drive may persist

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## SUMMARY



# The Co-existing Opioid Crises The Facts



## PAIN MANAGEMENT AND THE OPIOID EPIDEMIC

BALANCING SOCIETAL AND INDIVIDUAL BENEFITS AND RISKS OF PRESCRIPTION OPIOID USE

Committee on Pain Management and Regulatory Strategies to Address Prescription Opioid Abuse



U.S. FOOD & DRUG ADMINISTRATION

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## We Didn't Start the Fire...Or did We?

- Significant controversy exists to the relationship between prescription opioids and the heroin/fentanyl epidemic
  - Tracking back to prescribers
    - The 1990s when opioid prescribing increased
    - Pain being designated as the “fifth vital sign” in 2000
    - Pain Bill of Rights
    - Evolution of “pill mills”
  - Related to cost and availability
    - Heroin and fentanyl are cheaper and stronger



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## Case 2

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- 26-year-old white female

- Has 2 children ages 4 & 7 who live with their godmother
- Became addicted to opioids after being prescribed oxycodone post C-section
- Addiction to oxycodone transitioned to heroin
- Addiction to heroin transitioned to heroin/fentanyl
- “If there’s no fentanyl in it, I don’t want it at all”
- Tried 14-day rehab without success
  - “This is all I know anymore...*It’s all I know*”

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## Who and What is Our Responsibility?

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We Are Involved Like it or Not



## Does the United States Own the Problem??

- We are not alone
- This *is* a global issue
- In 2015, approximately ¼ billion people abused/misused drugs
  - ~29.5 million (0.6% of global adult population) engaged in problematic use/suffered from substance use disorder
- 70% of the global burden of disease caused by drug use disorders attributable to opioid use

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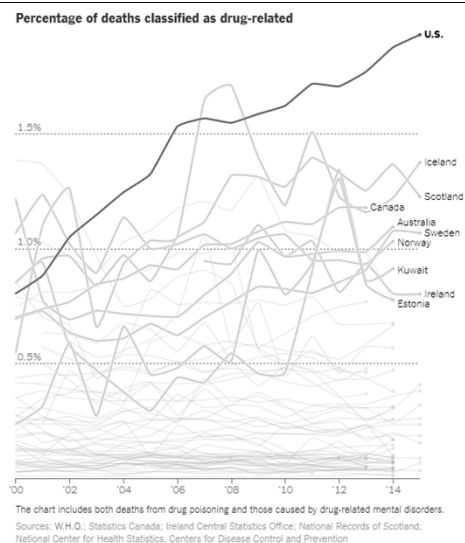


## However...

Drug-related deaths remain highest in the US

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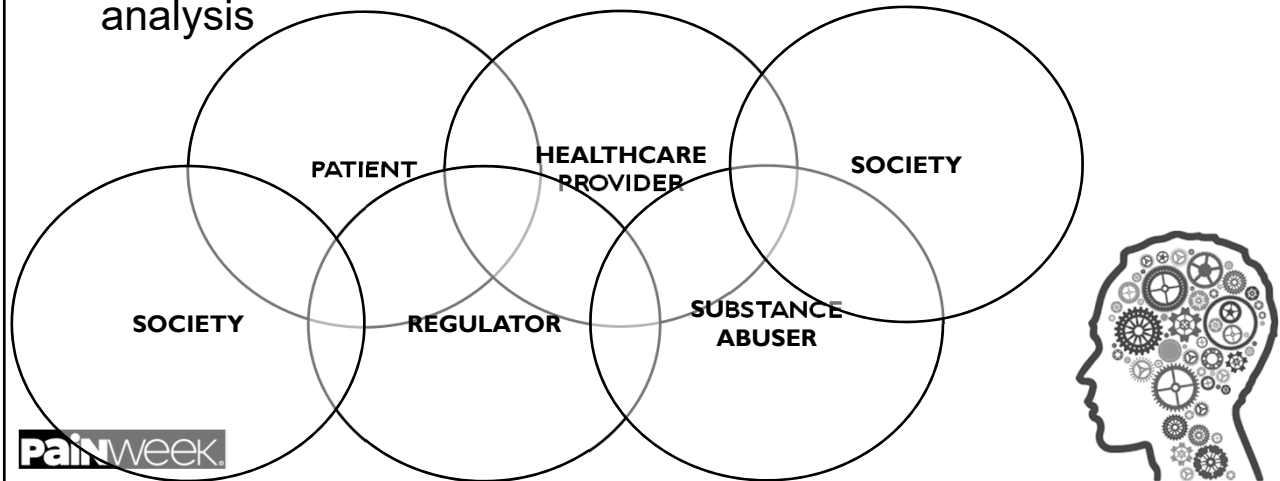
## The Facts





# Clinical Considerations and Implications

- The “New Math” for determining opioid risk/benefit analysis



## Final Thoughts

- We must consider the parallel “opioid” crises that exist today
  - Our role in these problems
- Heroin and fentanyl are not going anywhere
- Remember the “New Math”
- Naloxone is likely something to keep top of mind
- Avoidance of “risky” situations is critical
- Strongly consider and document appropriate candidates for fentanyl-based therapies
- Everyone is looking at us as an integral part of solving this “other” opioid crisis
- Everyone is looking to us to be a part of the solution





## Final Thoughts

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But... Let's not make patients "pay" for these crises



***"Cure sometimes, treat often,  
comfort always."***

**— Hippocrates**





**Questions?**