

The Other Opioid Crisis: Heroin and Fentanyl

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Disclosures

■ Nothing to disclose



Learning Objectives

- 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?

The Facts



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
 - •**121**% from 2015
 - More than 42,000 (66%) involved some type of opioid





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

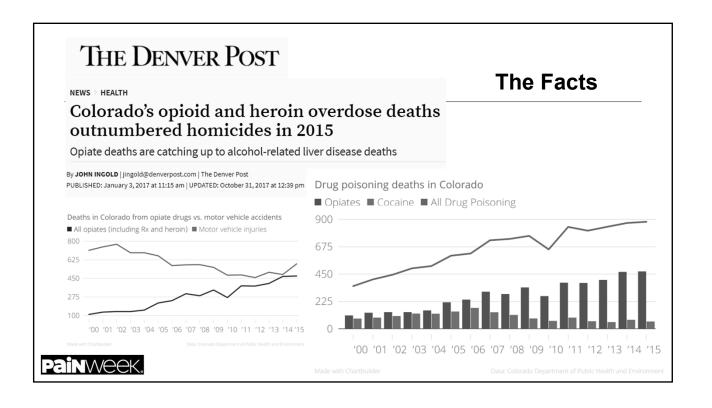
Identifying drugs in overdose deaths

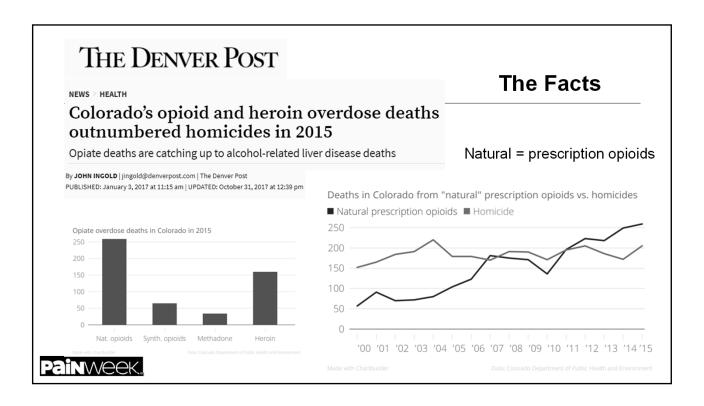
		CASES IN WHICH NO DRUG WAS SPECIFIED		
STATE	ALL DEATHS	TOTAL	SHARE	
Louisiana	996	473	47.5%	
Pennsylvania	4,627	2,075	44.8	
Alabama	756	308	40.7	
Montana	119	46	38.7	
Indiana	1,526	547	35.8	
Delaware	282	99	35.1	
Nebraska	120	37	30.8	
Arkansas	401	115	28.7	
Florida	4,728	1,144	24.2	
Idaho	243	55	22.6	
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. https://fivethirtyeight.com/features/there-is-more-than-one-opioid-crisis/. Accessed January 18, 2018.



e Facts: Kentucky as an Example							
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		
ТНС-СООН	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		





THE DENVER POST

POLITICS > COLORADO POLÍTICS

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 \mid 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 Seroin 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

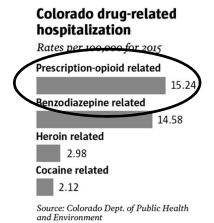
The Facts

Painweek.

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"

The Facts



The Denver Post

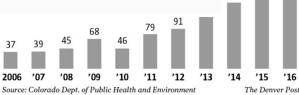
By JOHN FRANK | jfrank@denverpost.com | The Denver Post
PUBLISHED: November 5, 2017 at 12:01 am | UPDATED: November 6, 2017 at 11:02 am



THE 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

Painweek.

The Facts

228

151

THE DENVER POST Colorado The Facts opioid-related deaths Doctors will soon get opioid prescription "report cards." Rates per 100,000 for 2016 Male "The idea is that prescribers 11.3 Female To educate doctors about the dangers of might be prescribing more than 6.3 15 to 19 years overprescribing opioids, Colorado is testing a average for their particular relatively new idea that is showing early 20 to 24 years specialty" results - prescriber report cards. 25 to 34 years ■ "They'll say 'Oh, I better look at 35 to 44 years The reports, also known as scorecards, will things more closely" 45 to 64 years give clinicians a summary of their prescriber history and how they rank with their peers in ■ "What we are hoping to see is a the same specialty in terms of dosage, White, non-Hispanio change in prescriber behavior" duration and type of drug. White, Hispanic Black/African-American Asian/Pacific Islander By JOHN FRANK | jfrank@denverpost.com | The Denver Post American Indian PUBLISHED: November 5, 2017 at 12:01 am \mid UPDATED: November 6, 2017 at 11:02 am Source: Colorado Dept. of Public Health and Environ Painweek

IMPORTANT SOCIETAL QUESTIONS



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 Clinical

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.

By **JOHN INCOLD** | Jingold@denverpost.com | The Denver Post

John Leyba, The Denver

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.





Understanding the Epidemic

The Facts



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

- The majority of drug overdose deaths involve an opioid¹
- Since 1999 the # of overdose deaths quadrupled²
 - -Prescription opioids
 - -Heroin
- ■91 Americans die every day from an opioid overdose



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.mm655051e1

CDC. Wide-ranging online data for epidemiologic research (WONDER). Atlanta, GA: CDC, National Center for Health Statistics; 2016. Available at http://wonder.cdc.gov.



Understanding the Epidemic

The Facts



Heroin use is trending up

- From 2002-2013, past month/year heroin use and addiction have all increased among 18-25 year olds¹
- Among new heroin users, 75% report abusing prescription opioids prior to using heroin²
- Heroin-related deaths more than tripled from 2010-2015
 - -The largest increase was for those heroin-related deaths involving synthetic opioids: **FENTANYL**



Centers for Disease Control and Prevention. Demographic and Substance Use Trends Among Heroin Users — United States, 2002–2013. MMWR 2015; 64(26):719-725

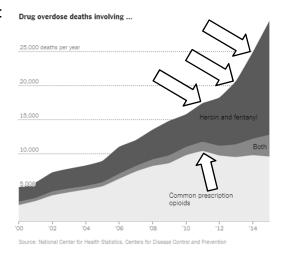
Muhuri PK, Gfroerer JC, Davies C. Associations of nonmedical pain reliever use and initiation of heroin use in the United States. CBHSQ Data Review, 2013.

The New York Times

Short Answers to Hard Questions About the Opioid Crisis

The Facts: Times are Changing

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







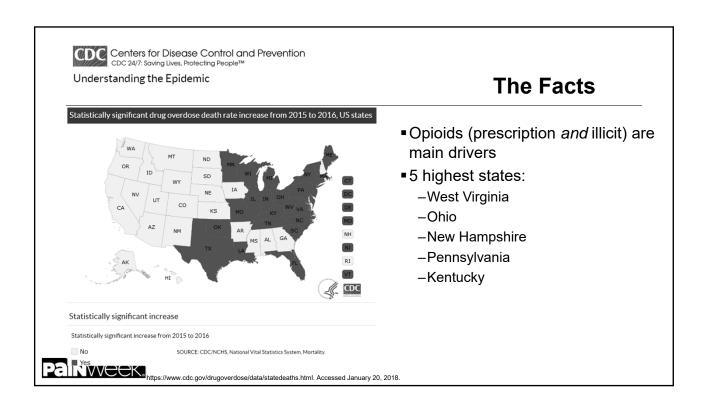
Understanding the Epidemic

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







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





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



Understanding the Epidemic

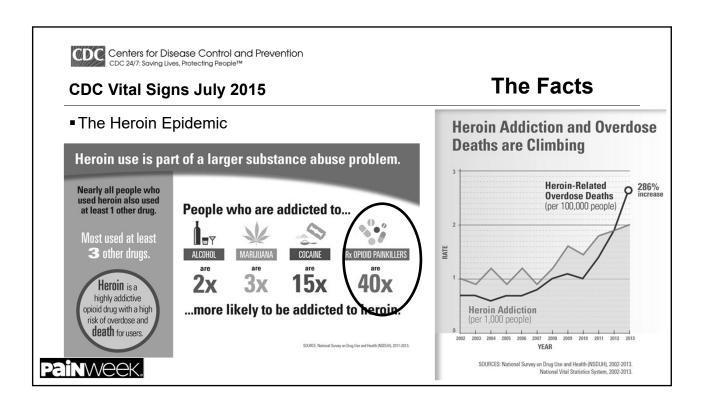
- Heroin use has been increasing¹
 - -Men
 - -Women
 - -Most age groups
 - -All income levels
- Past misuse/abuse of prescription opioids is the strongest risk factor for starting heroin²

The Facts

	Most Demographic Groups							
	2002-2004*	2011-2013*	% CHANGE					
SEX								
Male	2.4	3.6	50%					
Female	8.0	1.6	100%					
AGE, YEARS								
12-17	1.8	1.6						
18-25	3.5	7.3						
26 or older		1.9	58%					
RACE/ETHNICITY								
Non-Hispanic white		3	114%					
Other		3 1.7						
ANNUAL HOUSEHOLD	NCOME							
Less than \$20,000	3.4	5.5	62%					
\$20,000-\$49,999	1.3	2.3	77%					
\$50,000 or more		1.6						
HEALTH INSURANCE C	OVERAGE							
None	4.2	6.7	60%					
Medicaid	4.3	4.7						
Private or other	0.8	1.3	63%					



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





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



https://www.drugabuse.gov/publications/research-reports/relationship-between-prescription-drug-abuse-heroin-use/introduction. Accessed January 30, 2018. https://d14rmgtrwzf5a.cloudfront.net/sites/default/files/rx_and_heroin_rs_layout_final.pdf. Accessed January 30, 2018.



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

Pain/Veek.

buse.gov/publications/research-reports/relationship-between-prescription-drug-abuse-heroin-use/introduction. Accessed January 30, 2018 zf5a.cloudfront.net/sites/default/files/rx_and_heroin_rrs_layout_final.pdf. Accessed January 30, 2018.



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.

 $A + B \neq C$



https://www.drugabuse.gov/publications/research-reports/relationship-between-prescription-drug-abuse-heroin-use/introduction. Accessed January 30, 2018.
 https://d14rmgtrwzf5a.cloudfront.net/sites/default/files/rx_and_heroin_rrs_layout_final.pdf. Accessed January 30, 2018.

PainWeek



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

Responding to the Heroin Epidemic



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



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.



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

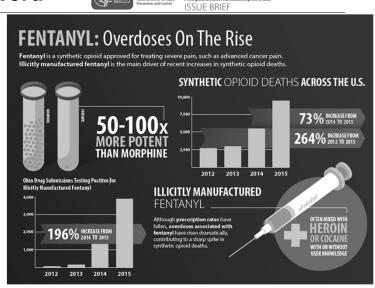
OURCE: CDC Vitalsigns, July 2015



The Facts - The "F" Word



- 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





Case 1

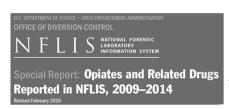
- ■42-year-old Hispanic male
 - -Addicted to heroin
 - -Comes to the same street corner every day to buy heroin
 - First dose usually free
 - -He's actually buying heroin laced with fentanyl
 - -"It's a new epidemic" he says
 - -"If you catch a bag of pure fentanyl, that Narcan ain't bringing you back"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

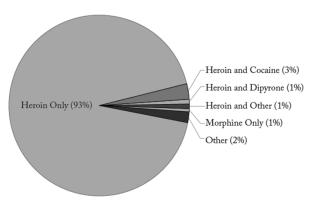




Heroin and Fentanyl: A "Perfect" Pair The Facts

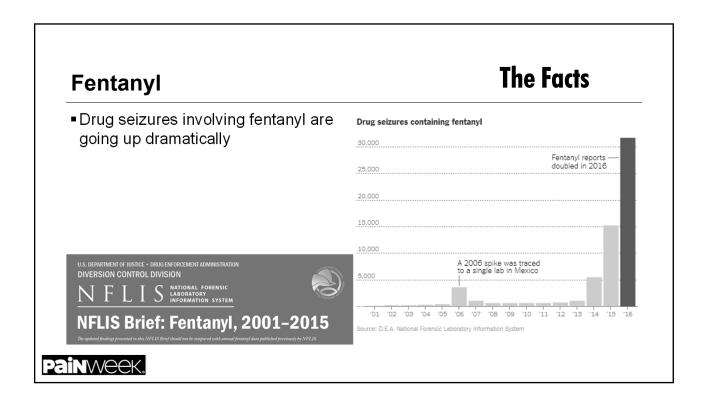
- The overwhelming majority of the time fentanyl is paired with heroin
- To get a better "high"
- "Better" economic profile

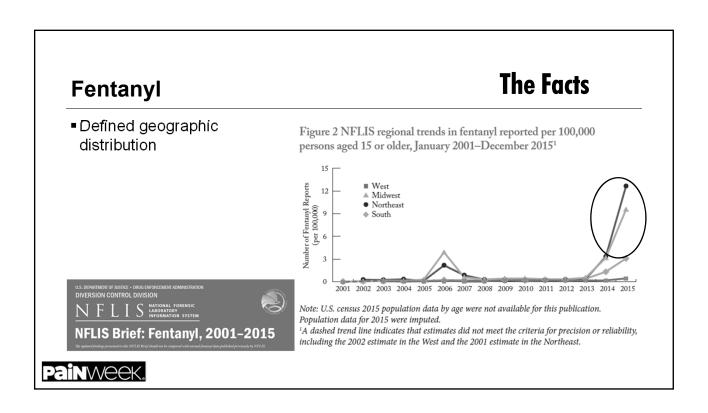




Note: Percentages may not sum to total because of rounding.







The Facts

WORLD | ASIA | CHINA NEWS

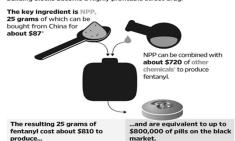
The Chinese Connection Fueling America's Fentanyl Crisis

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.



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

PainWeek.

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

THE WALL STREET JOURNAL

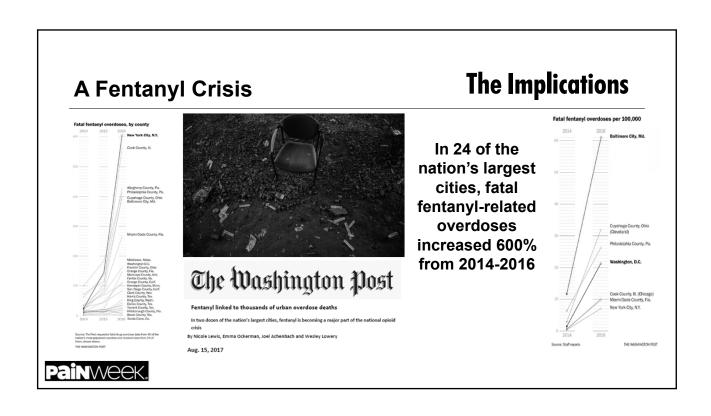
■ Fentanyl label:

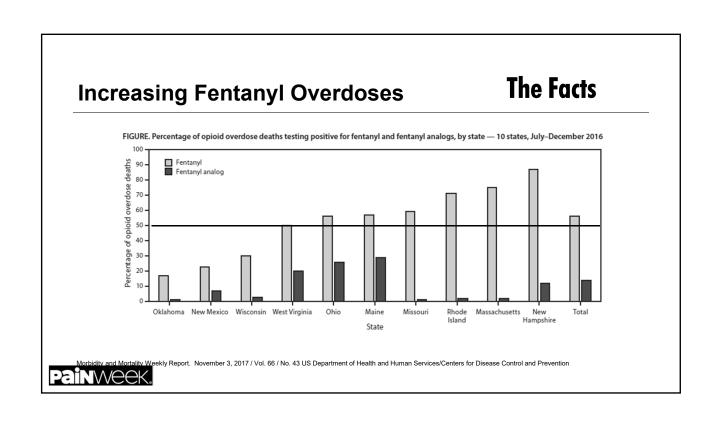
Terminology

- -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 CO2 STIMULATION MAY PERSIST LONGER THAN DEPRESSION OF RESPIRATORY RATE









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.





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

The Facts



By Lynh Bui and Peter Hermann April 26, 2017

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 a ntercepting a package containing approximately one kilogram (2.2 pounds) of the opioid carfentanil imported from China. (Royal Canadia



The Facts

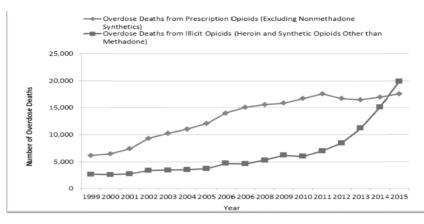
- Fentanyl in the wrong hands is deadly
- Potentially contributing significantly to overdose/fatal overdose risk
- Analogs not often tested for in routine toxicology testing
- Naloxone is a bridge to survival but not a final solution
 - -Re-narcotization from fentanyl is common
 - $-\mathrm{CO}_2$ will persist
 - -Diminished hypoxic drive may persist

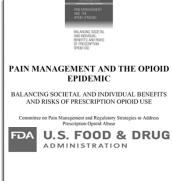


SUMMARY

The Co-Existing Opioid Crises

The Facts

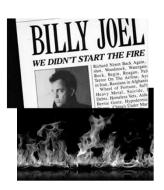






We Didn't Start the Fire...Or Did We?

- 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





Case 2

- ■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"







Who and What is Our Responsibility?

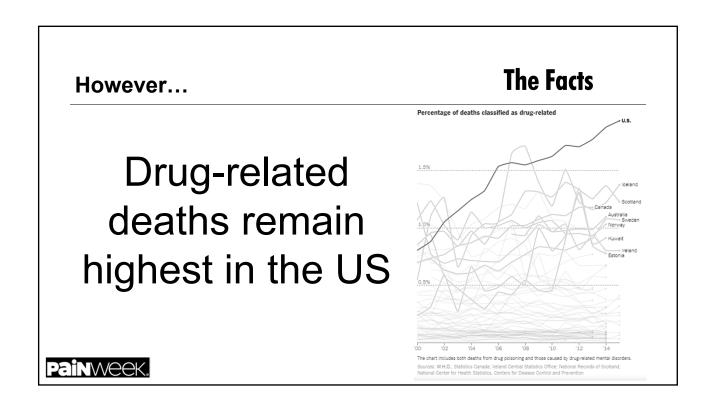
We Are Involved Like it or Not

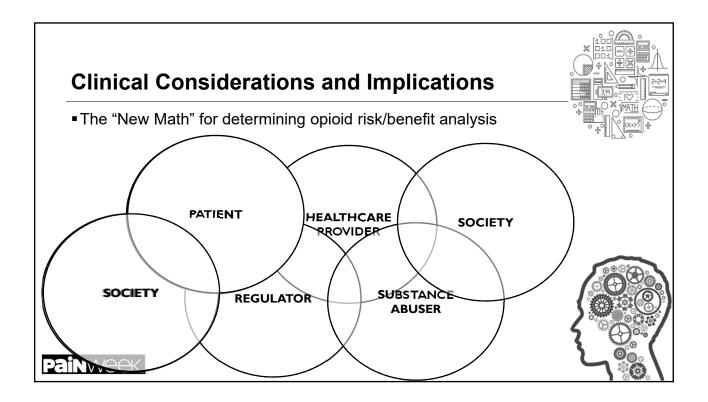
Does the United States Own the Problem??

- 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









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

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





"Cure sometimes, treat often, comfort always."

— Hippocrates

