

# The Opioid Crisis and Epidemic

OLLI at University of Illinois  
December 12, 2019

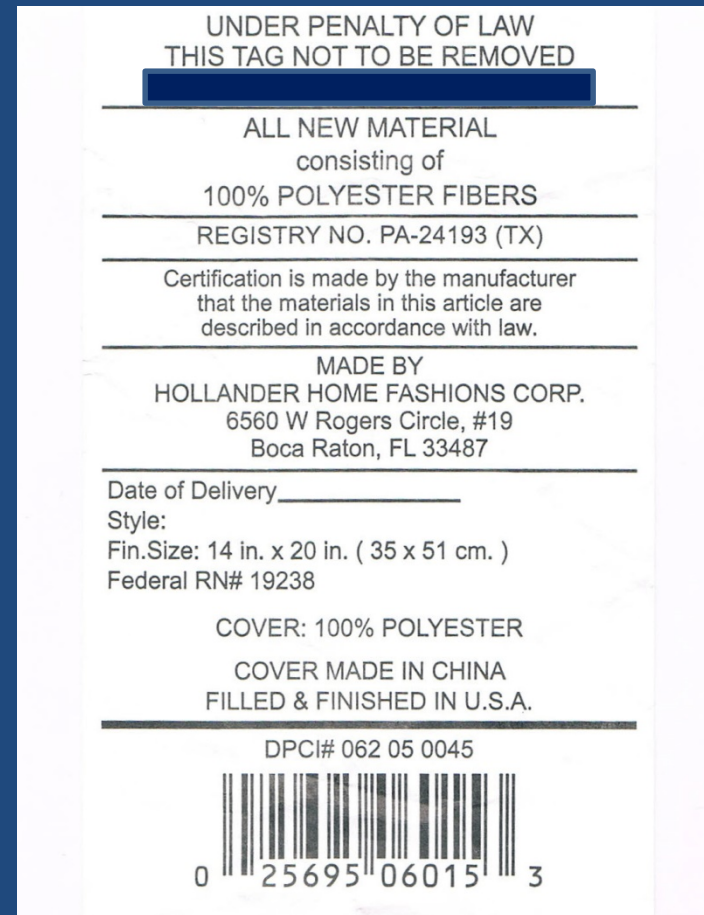
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# Opioid Use Disorder

A Review of the Causes, Effects and  
Possible Solutions

# Disclosures

- I regret that I have no financial conflicts of interest related to this presentation.
- In the interest of full disclosure, when I was 12, I cut the “Under Penalty of Law This Tag Not to be Removed” tag from my new pillow.



# Objectives

Analyze the Opioid crisis and its root causes.

Assess the dangers of drug overdoses.

Evaluate the perils of drug combinations.

Propose possible solution paths.

Review the basic definitions of drug use.

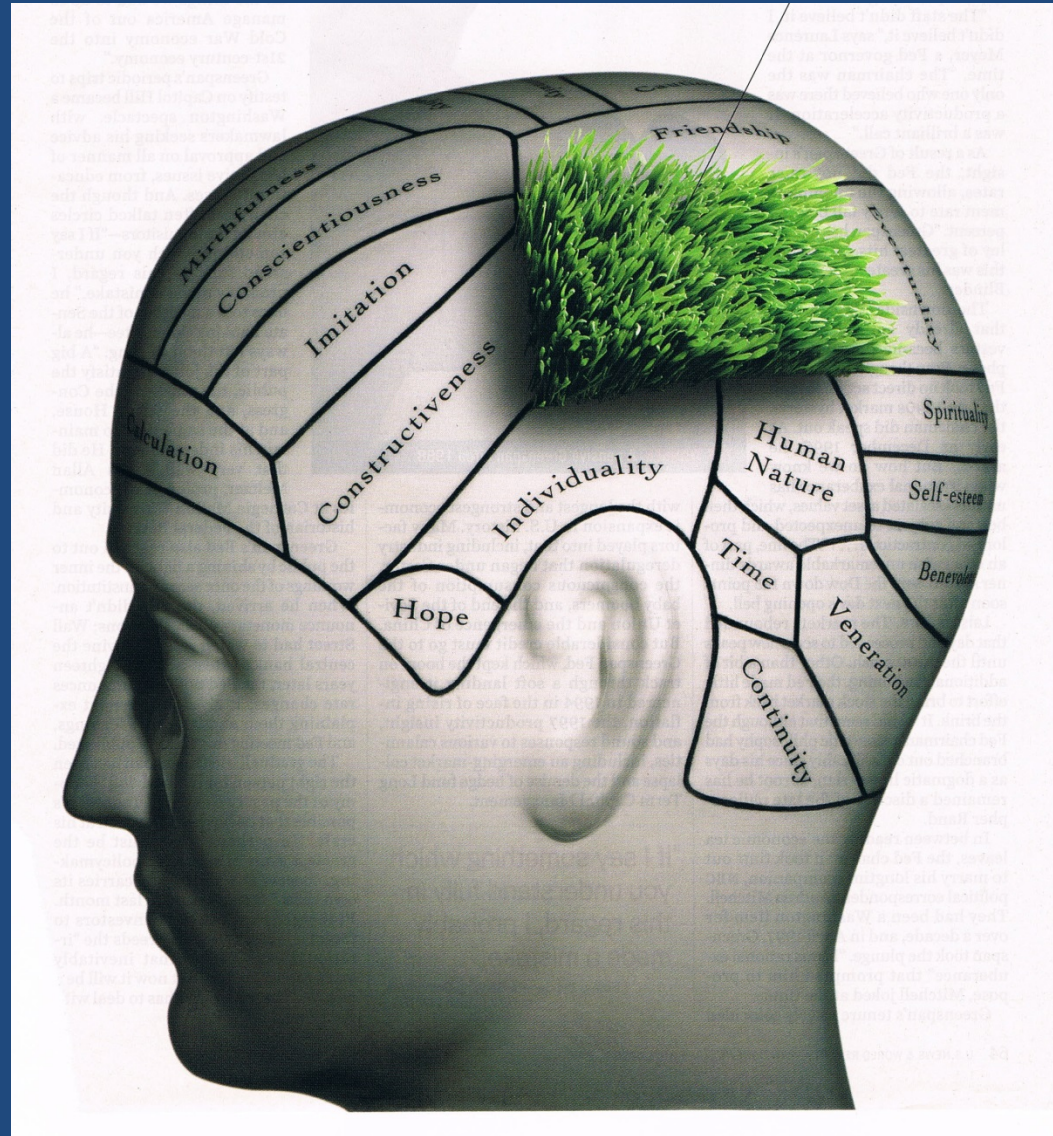
Understand Opioid Use Disorder (OUD)

Overview of the history of opioid use.

Quantify the opioid epidemic.



I Am Going  
to Nurture  
Your  
Opioid Use  
Disorder  
Brain Lobe

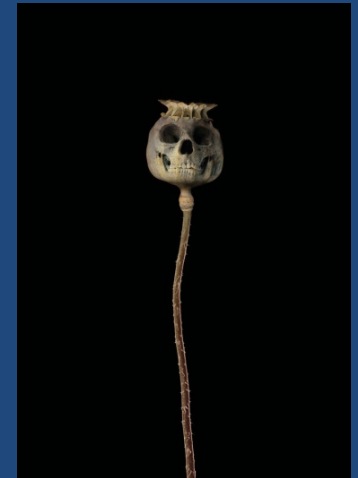


# What are Opioids?

# Opiates

Naturally occurring alkaloids derived/extracted from the oriental poppy, *papaver somniferum*.  
Drugs produced or extracted from this source:

- Morphine
- Codeine
- Heroin
- Opium



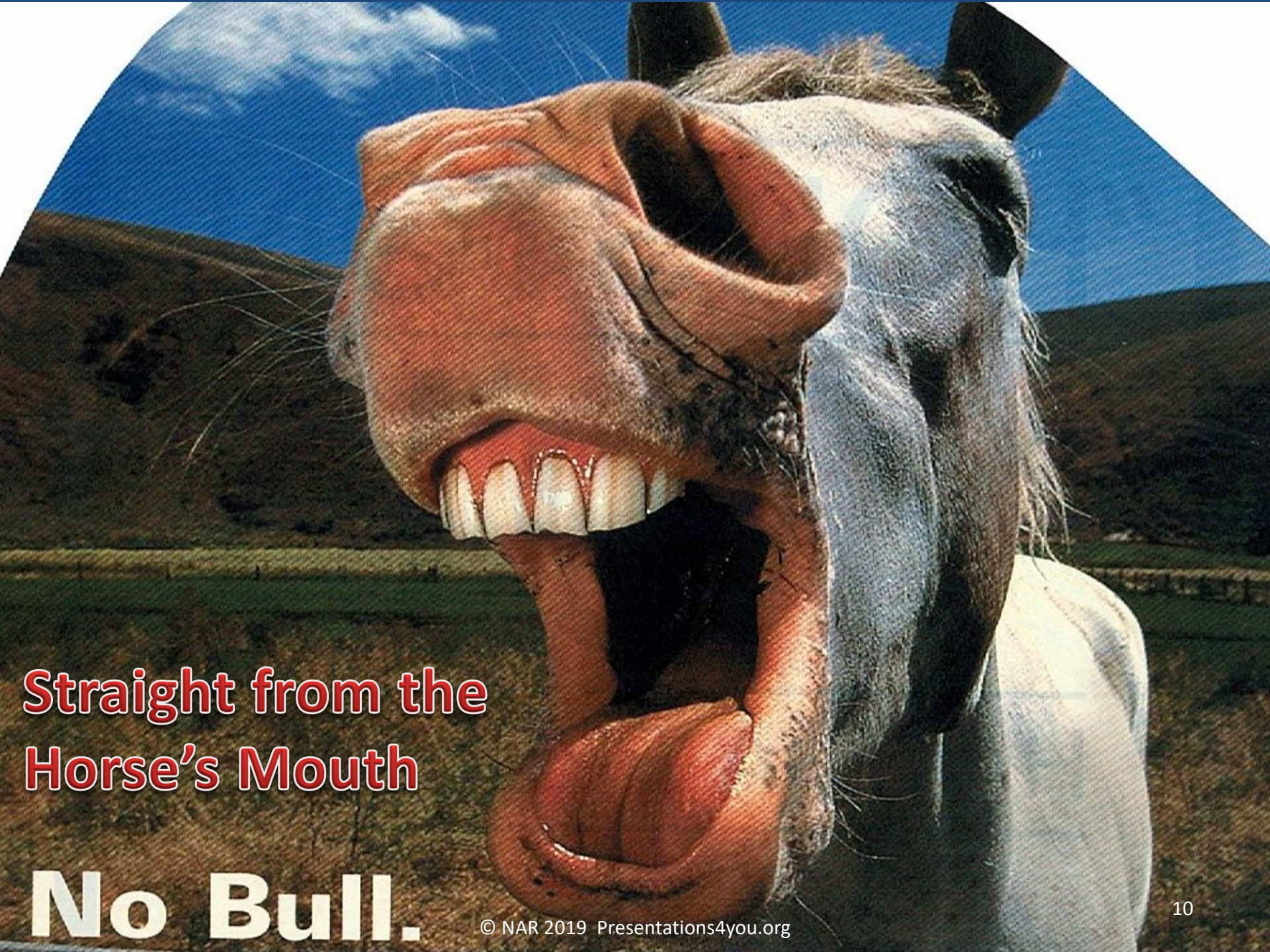
# Opioids

- Drugs wholly or partially produced chemically.
- Similar effects and issues as opiates.
- Examples:
  - ❖ oxycodone (Percocet<sup>®</sup>, Oxycontin<sup>®</sup>).
  - ❖ hydrocodone (Norco<sup>®</sup>, Vicodin, <sup>®</sup>Lorcet<sup>®</sup>).
  - ❖ fentanyl (Duragesic<sup>®</sup>, Subsys<sup>®</sup>).
  - ❖ tramadol (Ultram<sup>®</sup>, ConZip<sup>®</sup>).
  - ❖ codeine (combined with: Tylenol<sup>®</sup>, Phenergan<sup>®</sup>).
  - ❖ loperamide (Imodium<sup>®</sup>, Lomotil<sup>®</sup>).
  - ❖ Methadone (don't confuse with "meth").

# Current Terminology

Current usage by some governmental entities, press/media, and physician groups refers to both groups simply as “**Opioids**”, as the issues, problems and solutions aren’t significantly different.



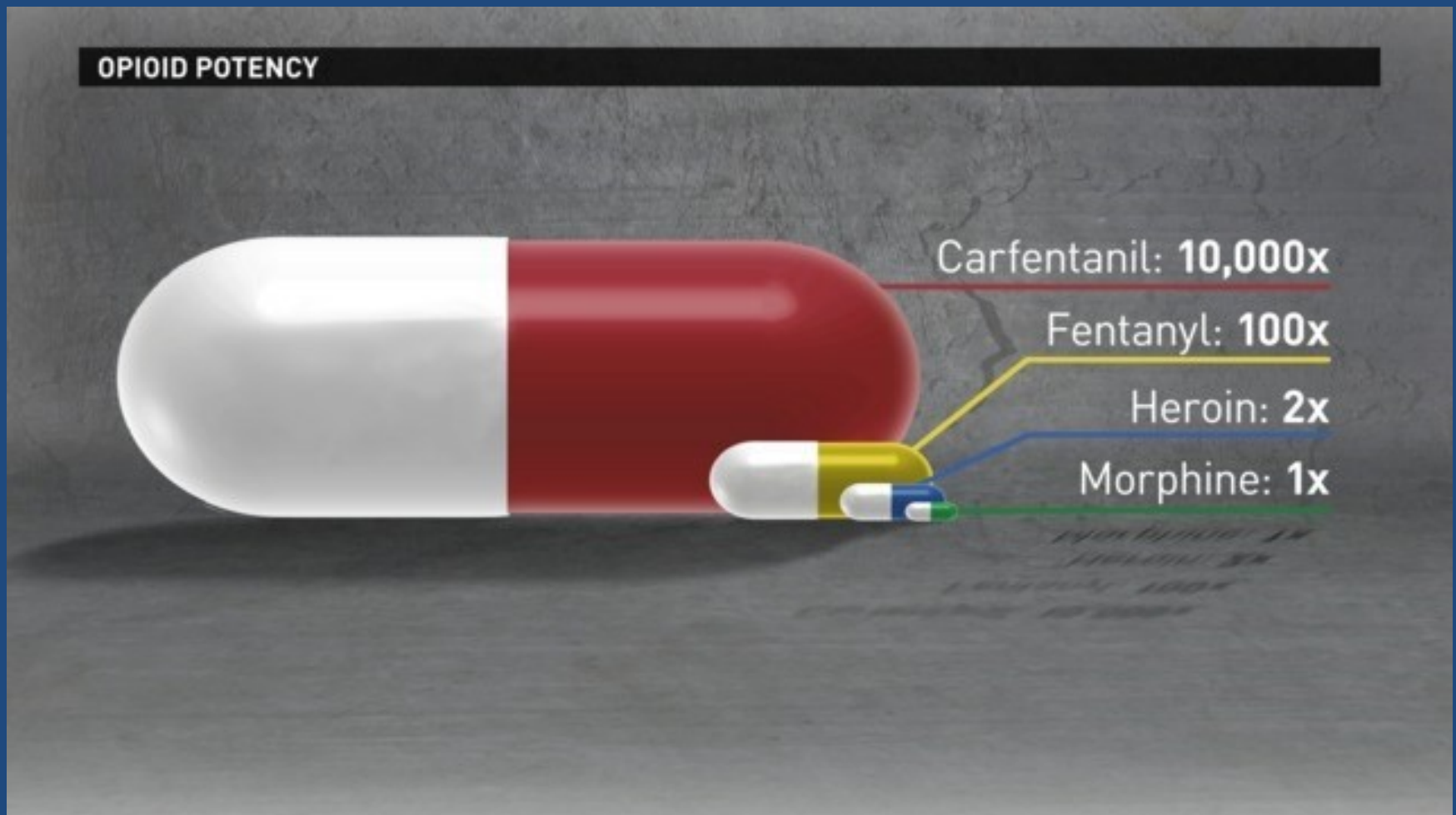


**Straight from the  
Horse's Mouth**

**No Bull.**



# Comparative Opioid Potency



# Carfentanyl is a Veterinary Drug for Use in Elephants

**THIS MUCH CARFENTANIL  
WILL KILL YOU.**



Someone has been mixing deadly carfentanil into heroin.  
People are dying at alarming rates, nationwide.







**DEADLY !!!**



# Economics of Illegal Drugs

It costs \$3K to \$4K to produce 1 kilogram (2.2 lb) of heroin or 1 kilogram of fentanyl.

One kg of heroin sells in the USA for ~ \$60 K.

If cut to 5 kg and sold on the street by the gram it can generate \$3 to \$4 hundred thousand.

Fentanyl is 50X to 100X stronger than heroin.

It can be cut to make 18 to 24 Kg of product.

That's about 650K pills to sell at \$20 to \$30 each.

Ultimately yields profits of \$1.3 Million per kg.

# Substance Use Disorder (SUD) Definitions

# Types of Drugs Used

- Nicotine.
- Alcohol.
- Tranquilizers (Benzodiazepines), sleep aids.
- Antidepressants, Amphetamines, Stimulants.
- Barbiturates.
- Anesthetics (Propofol, PCP).
- Prescribed Opioids.
- “Street” Opioids: Heroin, Illegal Fentanyls (IMF).
- *Cocaine, including crack.*
- *Cannabis.*

# Tolerance

Increasingly larger or more frequent doses are required to produce the same effects previously obtained.

# Dependence

A compulsion:

- ❖ to take a drug continuously or periodically.
- ❖ to feel its effects.
- ❖ to avoid the discomfort of its absence.

**A person may be dependent on more than one drug !!!**

# Addiction

Overwhelming desire to take a drug for its effects on the brain and/or body.

Usually accompanied by a compulsion to:

- Obtain the drug.
- Increase the dose.
- Maintain psychological/physical dependence.
- Endure the detrimental consequences.
- Disregard damage to individual and society.

# Withdrawal

Symptoms caused by the abrupt discontinuation or decreased intake of drugs or medications on which the person is dependent.

- Acute withdrawal from certain drugs like barbiturates, alcohol, benzodiazepines, and glucocorticoids can be fatal.
- Withdrawal from opioids can be a very painful, uncomfortable, harrowing experience, but it will NOT kill you.



# NAS/NOWS Illinois

- Babies can have severe withdrawal symptoms if mother addicted to drugs during pregnancy.
- In 2016, the rate of Neonatal Abstinence Syndrome/Neonatal Opioid Withdrawal Syndrome in Illinois was about 2.7 cases per 1,000 live hospital births.
- This affected 391 babies born in Illinois that year (Illinois Department of Public Health).

# Neonatal Drug Withdrawal (NAS/NOWS)

- **W**akefulness
- **I**rritability, **I**ncreased tone
- **T**achypnea, **T**remors
- **H**yperthermia, **H**yperphagia, **H**ypertension, **H**yperreflexia
- **D**iarrhea, **D**iaper rash
- **R**educed pressure sucking
- **A**spiration pneumonia, **A**spiration of meconium
- **W**asting
- **A**bdominal Cramps
- **L**ow Birth Weight
- **S**neezing, **S**tuffiness, **S**weating, **S**eizures, **S**GA

Ramírez 2004

# Who are the Addicts?

# Which One Has an Opioid Use Disorder?



# Which One Has an Opioid Use Disorder?

**ANY** or **ALL** of them could have an OUD.

- You really can't tell just by looking at them.
- You must have a high index of suspicion.
- Be proactive and helpful.
- Do not be an enabler
- You could save a life !!!

# What Does an Addict Look Like?





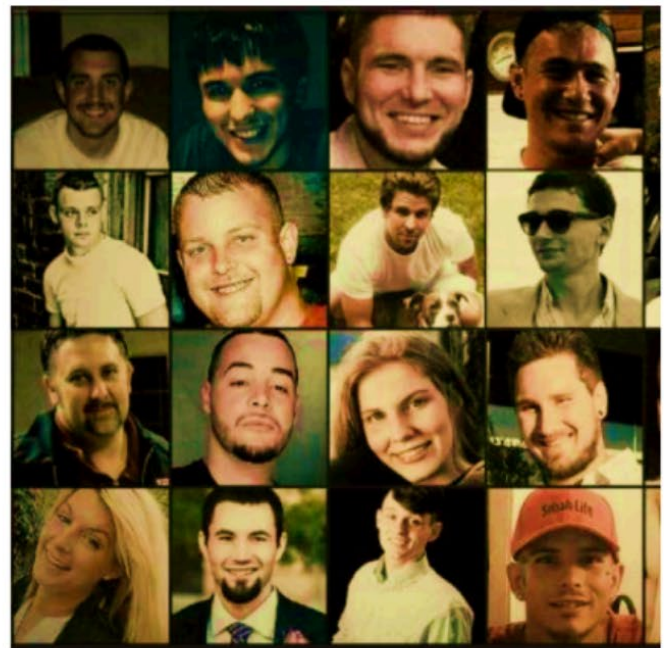
# Addiction No Longer Looks like This:



# This is What Addiction Looks Like Now



Faces of the opioid epidemic

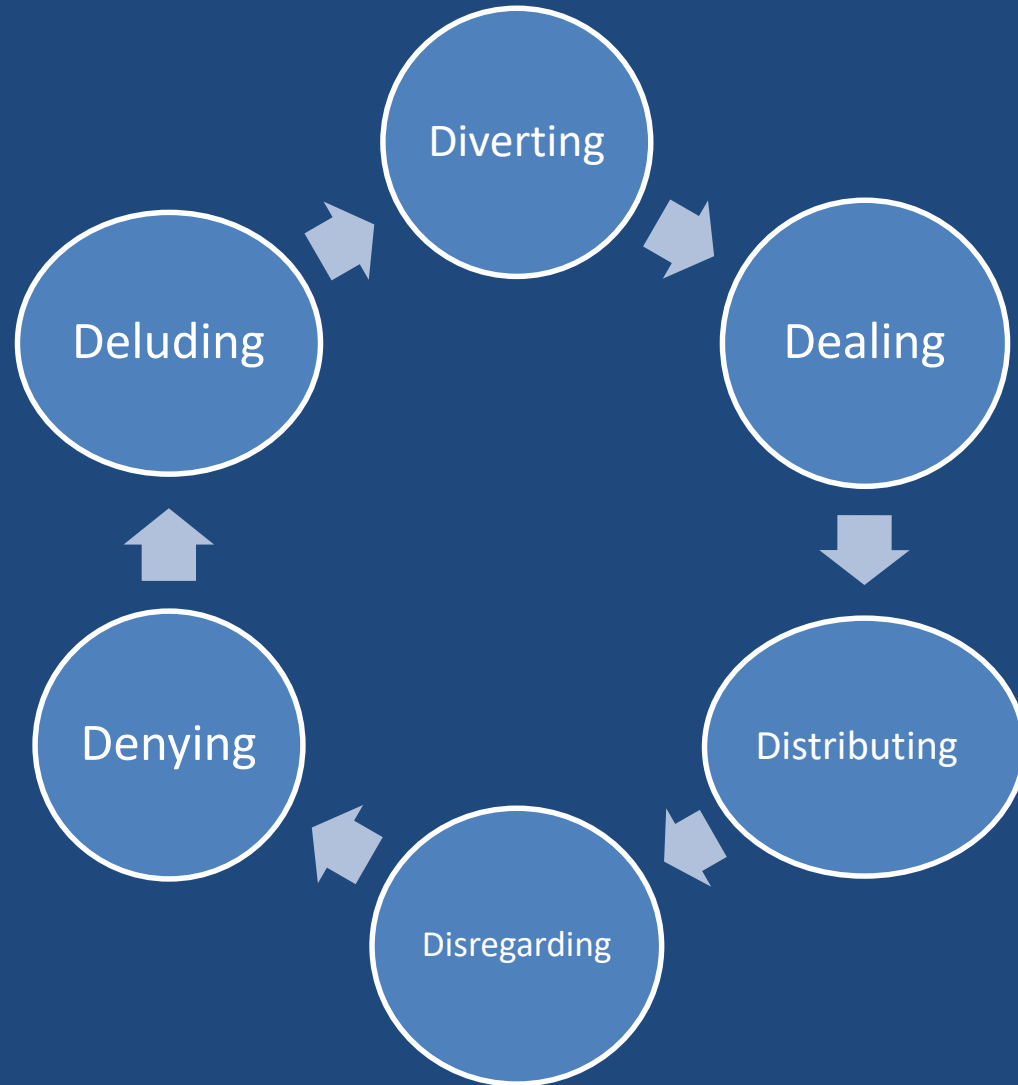




# The Heroin Grim Reaper



# Avoid the Dirty “D’s”



# National Safety Council (NSC)

Google:

<https://stopeverydaykillers.nsc.org/video>

Watch the “Prescribed to death” video.

Prepare to be shocked, awed and scared.

# The Opioid Issue by the Numbers

# The Opioid Issue by the Numbers

In 2017, US drug overdose deaths were 70,237.

- Opioids were involved in 47,600 overdose deaths.
- Opioids were 67.8% of all drug overdose deaths.



In 2018, US drug overdose deaths were 68,557.



Decrease was 2.4%, but the numbers are still incredibly high.



Opioids, mostly synthetic opioids, are the main driver of drug overdose deaths.

# Recent Numbers

Between 2016  
and 2018:

Overall  
overdose death  
rate increased  
21.5%.

Opioid  
overdose death  
rate was more  
than 2X.

Cocaine-related  
death  
increased by  
52.4%.

Heroin-related  
death rate  
increased by  
19.5%.

Largest  
increase: 25 to  
44 year-old  
males.

# CDC: National Vital Statistics System

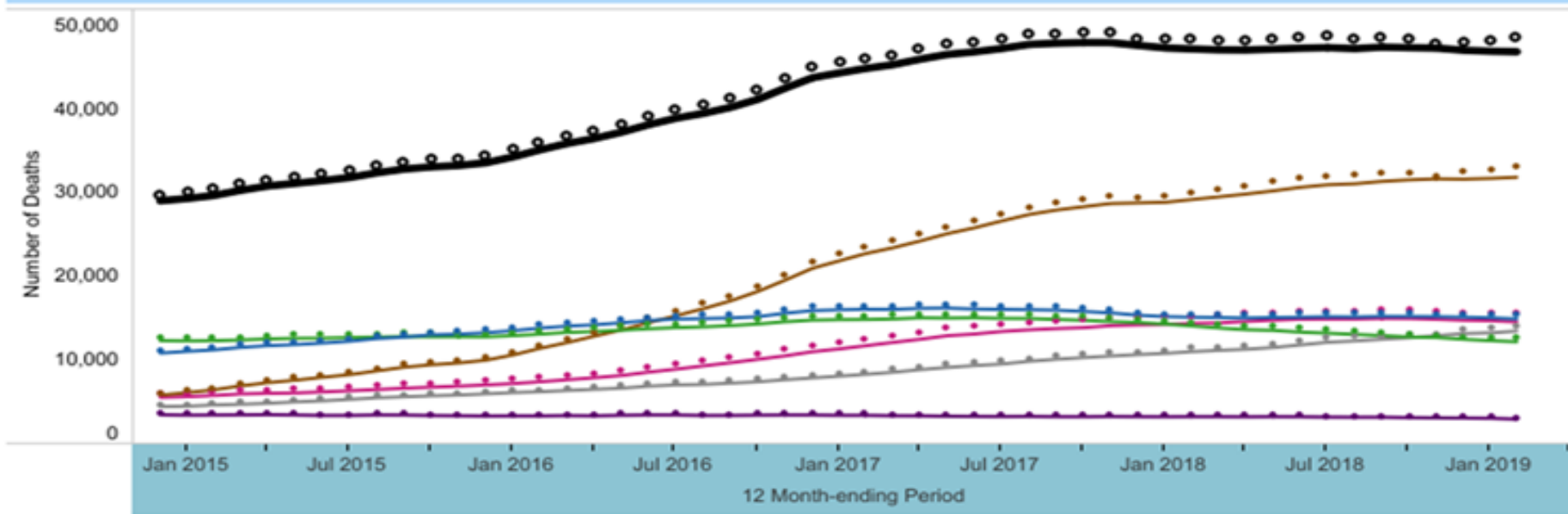
Based on data available for analysis on:

10/6/2019

Select Jurisdiction  
United States

Select specific drugs or drug classes  
Multiple values

Figure 2. 12 Month-ending Provisional Number of Drug Overdose Deaths by Drug or Drug Class: United States



Legend for Drug or Drug Class

Opioids (T40.0-T40.4, T40.6)

Heroin (T40.1)

Natural & semi-synthetic opioids (T40.2)

Methadone (T40.3)

Synthetic opioids, excl. methadone (T40.4)

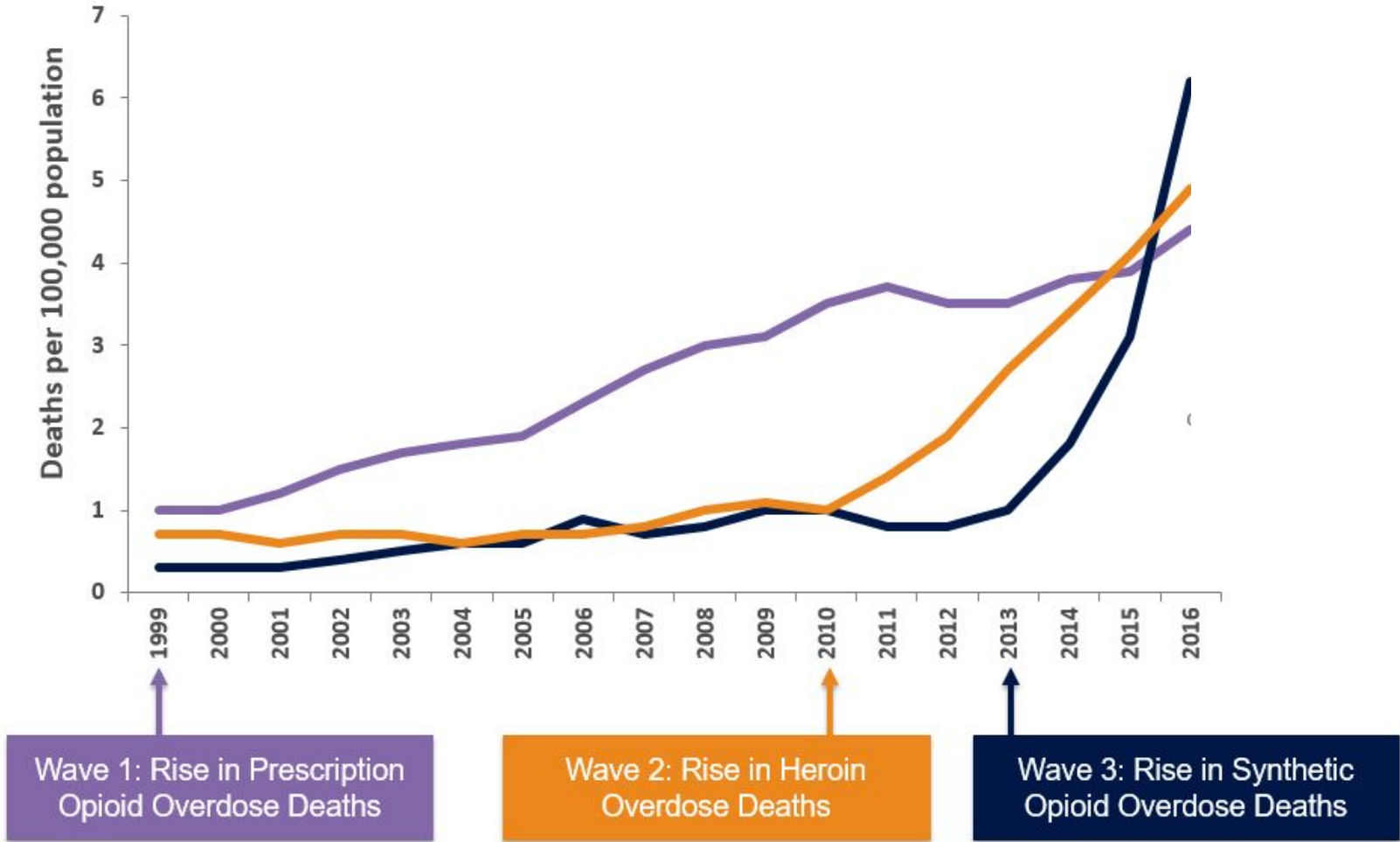
Cocaine (T40.5)

Psychostimulants with abuse potential (T43.6)

---- Reported Value

○ Predicted Value

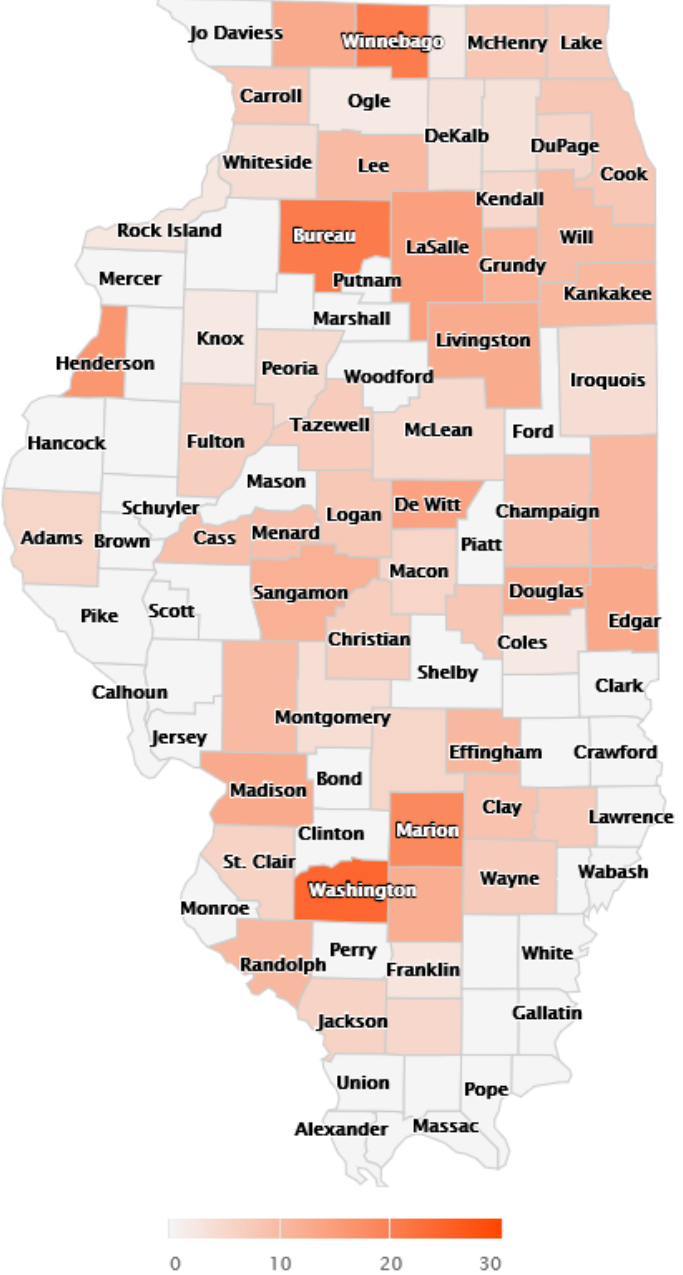
### 3 Waves of the Rise in Opioid Overdose Deaths



SOURCE: National Vital Statistics System Mortality File.

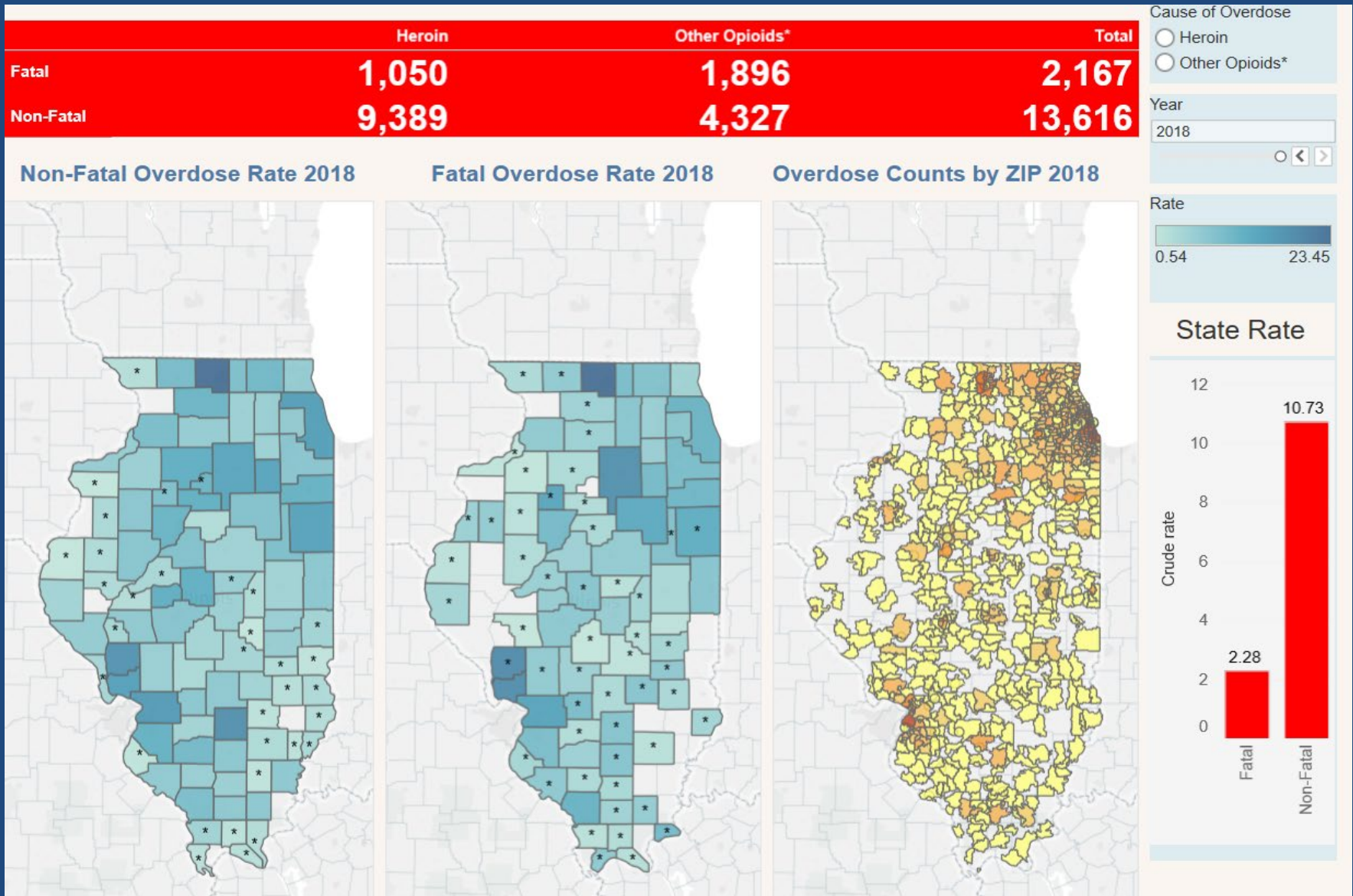


# Heroin-Related Overdose Deaths (HROD) and Heroin Use in Illinois (IDPH 2016)



- Between 2013 and 2014, Illinois HROD increased 22 % from 583 to 711/year.
- Between 2010 and 2014, Cook County, HROD increased 331 % (149 to 642/year).
- Between 2007 and 2012, heroin use more than doubled in Peoria (16%) and C-U (13 %).
- Between 2007 and 2012, heroin users increased from 3% to 23 % in the Decatur area.

# Illinois Dept. of Public Health (IDPH) Opioid Data Dashboard



# Illionois Data 2019

In September 2019, the Director of IDPH Strategic Opioid Initiatives Division stated:

- In 2018, number of opioid overdose deaths (OOD) decreased for the first time in 5 years.
- In 2018, Illinois OOD were 2,167.
- In 2017, Illinois OOD were 2,202 (-1.6%).
- Decline mostly among non-hispanic whites.
- **Rate** has *increased* in blacks and hispanics.
- The budget is \$11.5M (\$1.6M state, rest federal)

## Fatal opioid overdose rates in each state and the District of Columbia for 2017 (the most recent data available), per 100,000 individuals:

1. West Virginia — 49.6
2. Ohio — 39.2
3. District of Columbia — 34.7
4. New Hampshire — 34
5. Maryland — 32.2
6. Maine — 29.9
7. Massachusetts — 28.2
8. Kentucky — 27.9
9. Delaware — 27.8
10. Connecticut — 27.7
11. Rhode Island — 26.9
12. New Jersey — 22
13. Michigan — 21.2
13. Pennsylvania — 21.2
15. Vermont — 20
16. North Carolina — 19.8
17. Tennessee — 19.3
18. Indiana — 18.8
19. Illinois — 17.2
20. Wisconsin — 16.9
21. New Mexico — 16.7
22. Missouri — 16.5
23. Florida — 16.3
24. New York — 16.1
25. South Carolina — 15.5
25. Utah — 15.5
27. Virginia — 14.8
28. Alaska — 13.9
29. Arizona — 13.5
30. Nevada — 13.3
31. Oklahoma — 10.2
32. Colorado — 10
33. Georgia — 9.7
34. Washington — 9.6
35. Louisiana — 9.3
36. Alabama — 9
37. Wyoming — 8.7
38. Oregon — 8.1
39. Minnesota — 7.8
40. Iowa — 6.9
41. Arkansas — 6.5
42. Mississippi — 6.4
43. Idaho — 6.2
44. California — 5.3
45. Kansas — 5.1
45. Texas — 5.1
47. North Dakota — 4.8
48. South Dakota — 4.0
49. Montana — 3.6
50. Hawaii — 3.4
51. Nebraska — 3.1



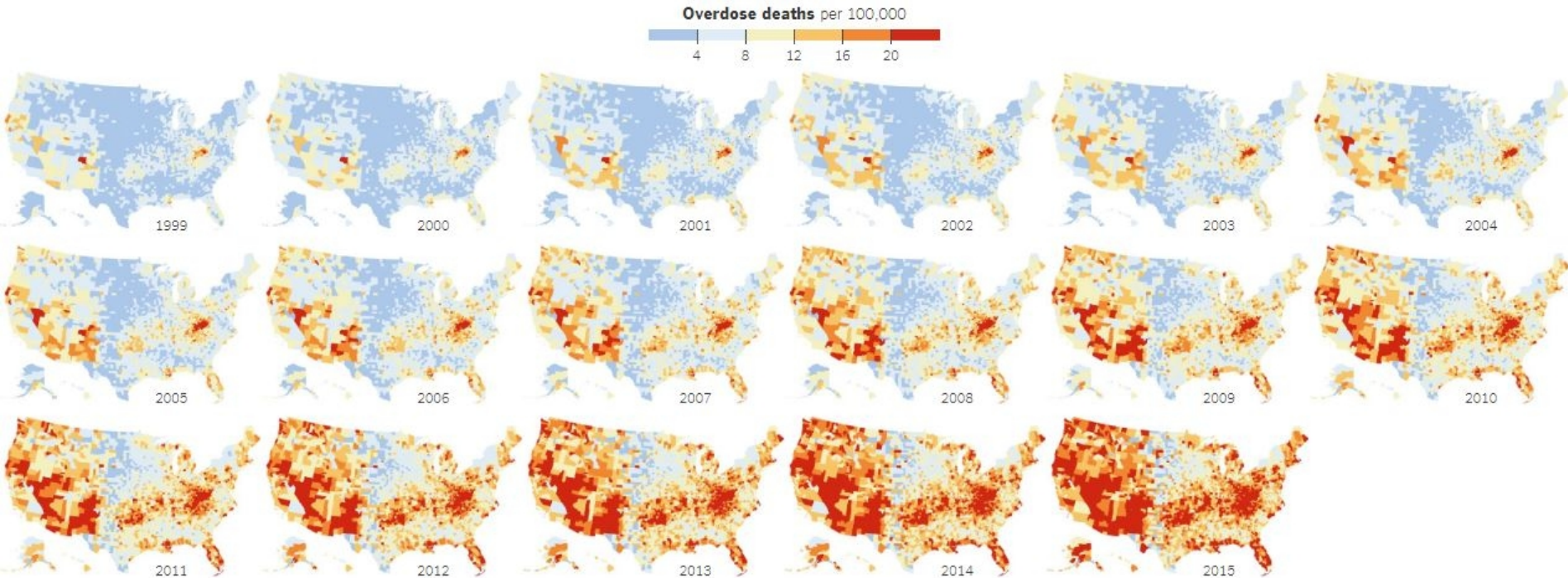
# It Started with the pills...



# Deaths per 100,000 population (1999-2015)

## How the Epidemic of Drug Overdose Deaths Rippled Across America

By HAEYOUN PARK and MATTHEW BLOCH JAN. 19, 2016



UPDATE The number of overdose deaths reached 64,000 people in 2016, but county data is not yet available.

# ARCOS Release in 2019

- America's largest drug companies saturated the country with 76 billion oxycodone and hydrocodone pain pills from 2006 through 2012.
- The government made a public release of the Automation of Reports and Consolidated Order System database (ARCOS) from the DEA.
- The drug companies argued that the release of the “transactional data” could give competitors an unfair advantage in the marketplace.
- The Justice Department argued that the release of the information could compromise ongoing DEA investigations.

## 10 biggest prescription opioid manufacturers, 2006-2012

MANUFACTURER	NUMBER OF PILLS	MARKET SHARE
SpecGx	28,863,435,081	37.7%
Actavis Pharma	26,476,395,830	34.6%
Par Pharmaceutical	11,996,780,871	15.7%
Purdue Pharma	2,492,496,319	3.3%
Amneal Pharmaceuticals	2,257,973,121	2.9%
Teva Pharmaceuticals USA	686,276,053	0.9%
KVK Tech	580,825,207	0.8%
West-Ward Pharmaceuticals	384,200,988	0.5%
Kaiser Foundation Hospitals	366,492,050	0.5%
Endo Pharmaceuticals	297,306,324	0.4%



## 10 biggest prescription opioid distributors, 2006-2012

DISTRIBUTOR	NUMBER OF PILLS	MARKET SHARE
McKesson Corp.	14,107,192,480	18.4%
Walgreens	12,636,815,170	16.5%
Cardinal Health	10,709,959,627	14.0%
AmerisourceBergen	8,952,844,625	11.7%
CVS	5,909,410,160	7.7%
Walmart	5,255,663,660	6.9%
Smith Drug Co.	1,348,619,950	1.8%
Rite Aid	1,314,386,010	1.7%
Kroger	1,231,379,170	1.6%
H. D. Smith	1,142,193,715	1.5%

# The West Virginia Story

20.8 M pills of Vicodin & Oxycontin went to two pharmacies in Williamson, WV, population 2,900 (3,517 ppp) between 2006 and 2016.

5.7 M pills of Vicodin & Oxycontin went to one pharmacy in Kermit WV, population 400 (5,624 ppp) between 2005 and 2011.

One doctor in the area wrote 40% of the prescriptions.

West Virginia had the highest drug overdose death rate in the nation: more than 880 dead of overdoses in 2016.

ppp = pills per person

# Origins of the Opioid Epidemic

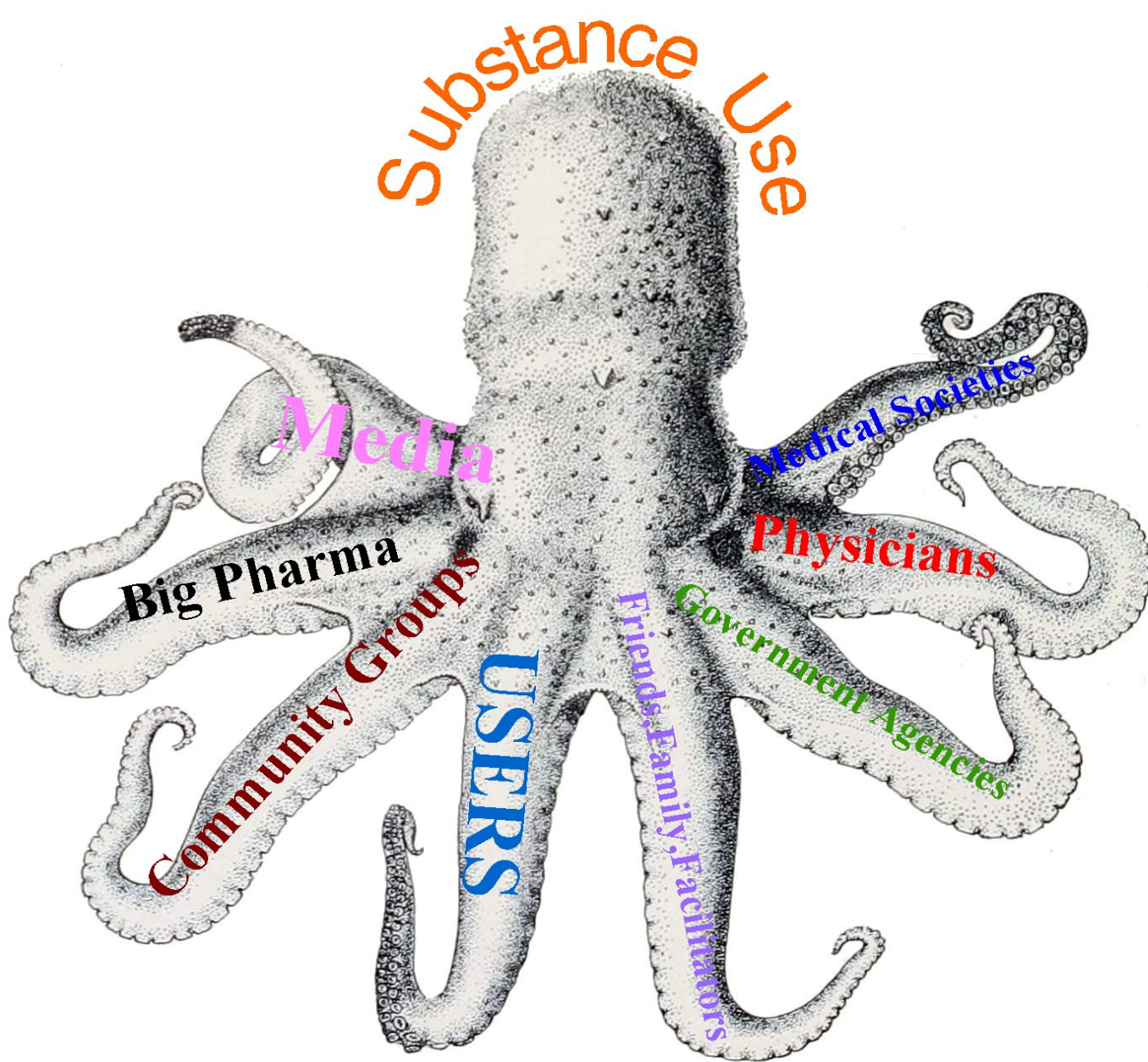
# Why Do People Use Opioids?

They have pain, acute or chronic and opioids are the fastest, easiest, cheapest route (?)

They have become dependent or addicted to the feeling of euphoria (“high or rush”).

Drug need becomes stronger and more frequent.

As prescriptions are limited, heroin, fentanyl-laced pills and cheaper drugs are easy to get.



Opioid  
Use  
Disorder:  
Involved  
Parties

# How Did We Get Here? <sup>(1)</sup>

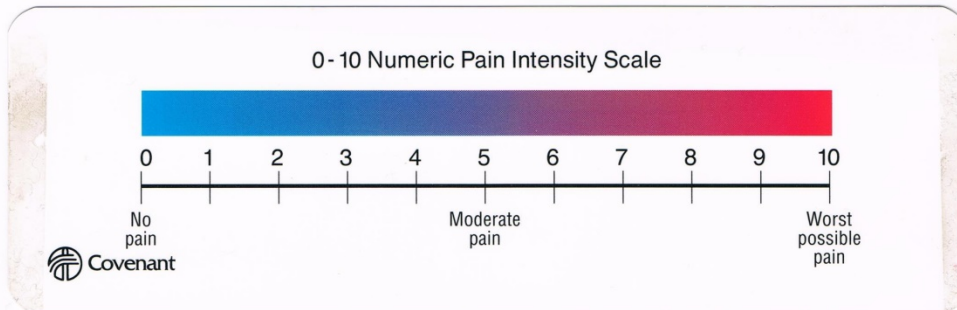
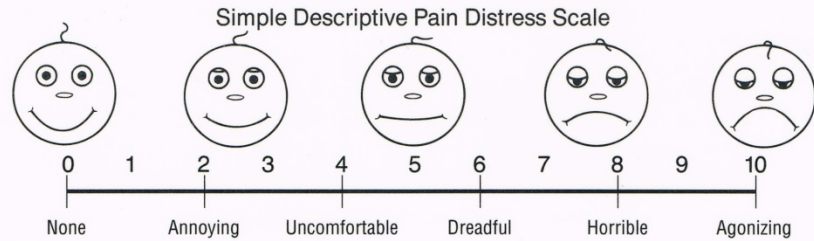
- 1986: World Health Organization recommends a 3-step ladder for treatment of patients with pain of CANCER or terminal illnesses.
- 1986: Dr. Russell Portenoy wrote an article (based on 38 patients) that touted opiate treatment of chronic NON-CANCER pain as “safe, salutary and more humane”.
- Tells physicians to lose their “opiophobia”.



# How Did We Get Here? (2)

- 1990's: Portenoy and the American Pain Society (APS) tell doctors that the risk of becoming addicted to opiates is less than 1%.
- 1995: The Joint Commission, APS, Veterans Administration and the National Pharma Council say pain is the 5<sup>th</sup> Vital Sign (P5VS) with HR, BP, Temperature and Respiration.

# Graphic Patient Pain Scales





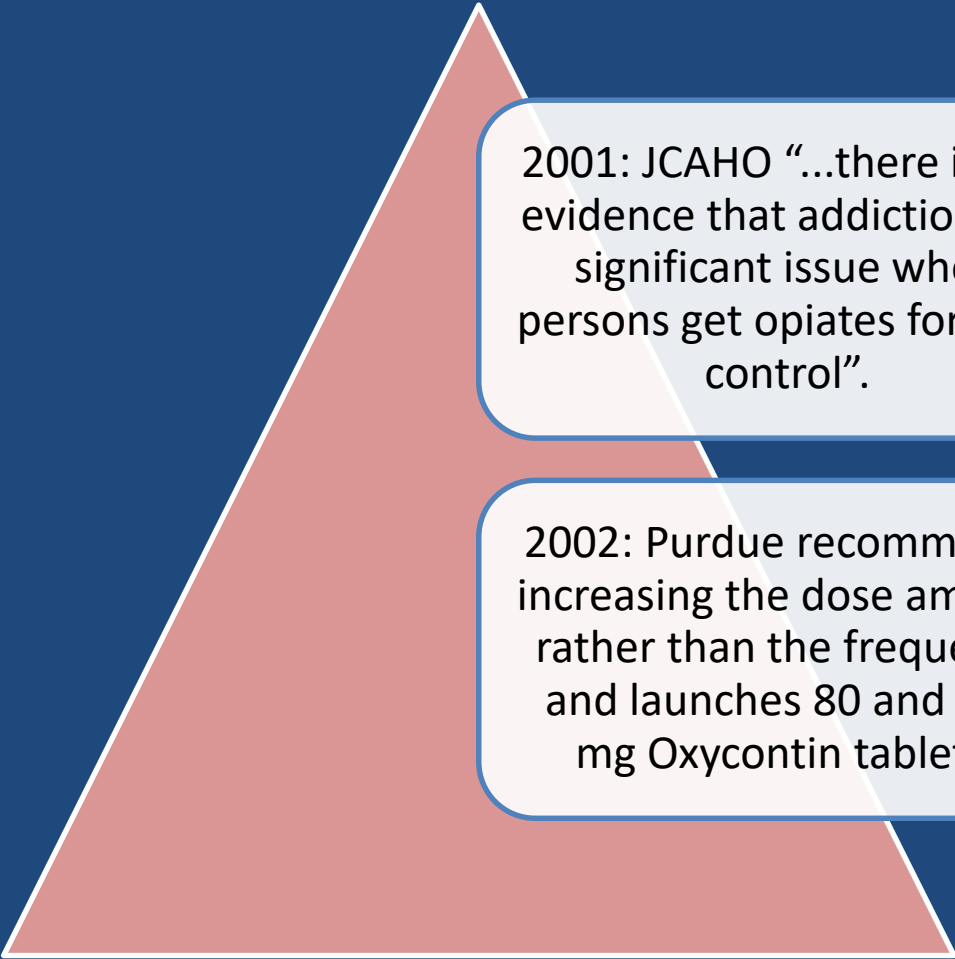
# How Did We Get Here? <sup>(3)</sup>

1996 Purdue Pharma releases Oxycontin in 10, 20 and 40 mg tablets: one pill every 12 hours.

1996 to 2006: Purdue pushes use of Oxycontin for *all* patients with *any* type of pain.

Doctors took the bait, hook, line and sinker!

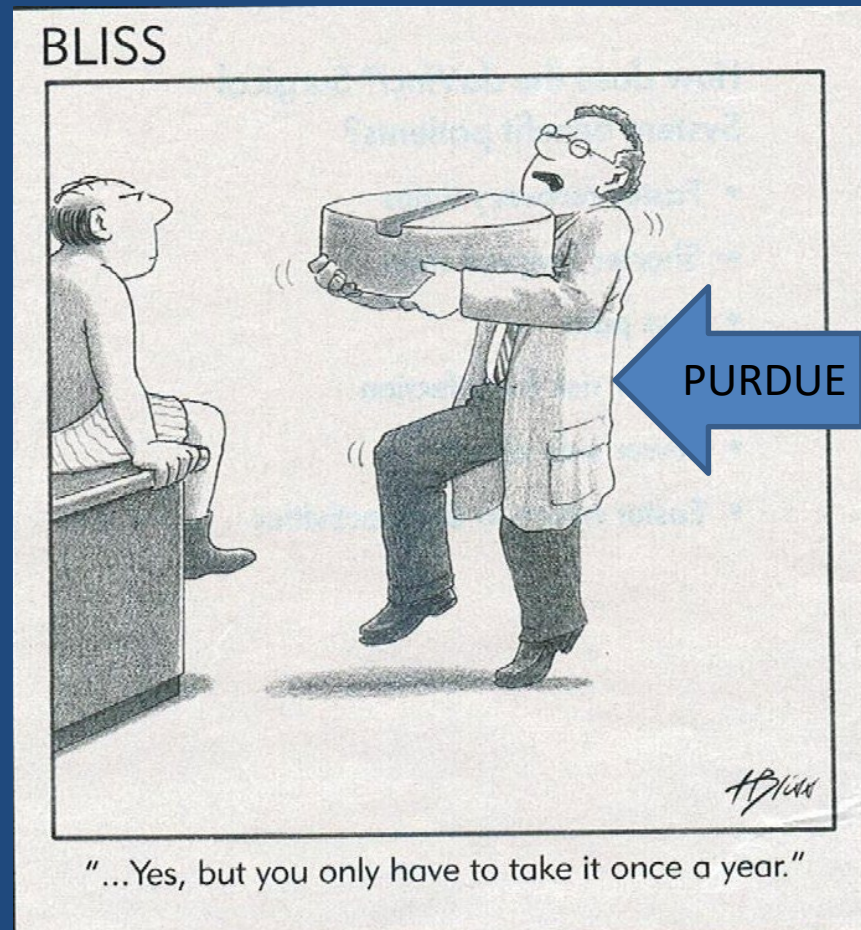
# How Did We Get Here? (4)



2001: JCAHO “...there is NO evidence that addiction is a significant issue when persons get opiates for pain control”.

2002: Purdue recommends increasing the dose amount rather than the frequency and launches 80 and 160 mg Oxycontin tablets.

# Take More, Not More Often



# How Did We Get Here? (5)

- 2003: Purdue says “there is no ceiling on the OxyContin that a patient can be prescribed”.
- 2004: Federation of State Medical Boards says that *undertreating* pain is punishable by revocation of a physician’s Medical license.

# How Did We Get Here? (4)

- Oxycotin promoted as non-addictive, long-acting, without side effects, and therefore, *good* and *safe*.
- Physicians now had a medication to effectively treat ALL their *acute* and *chronic* pain patients.



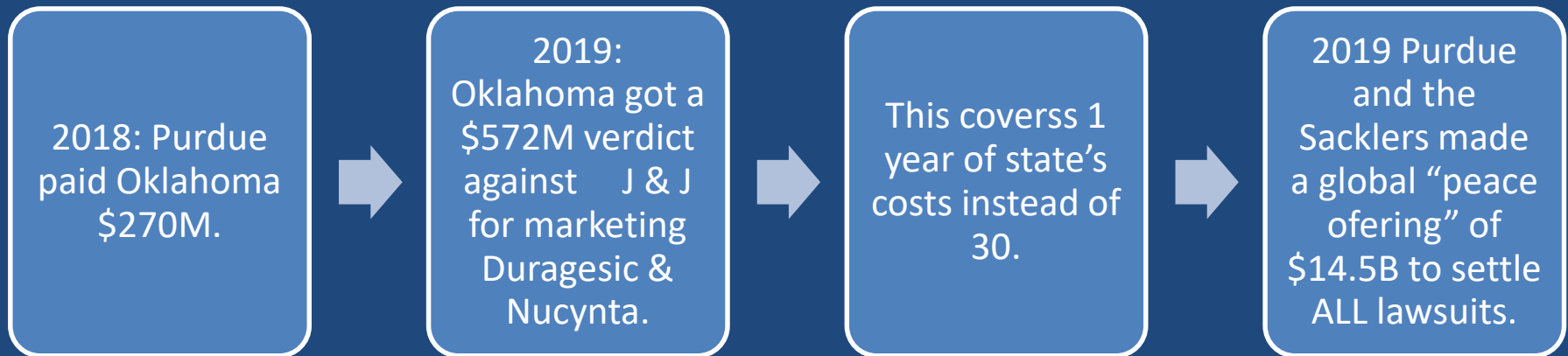
If the only tool you have is a Hammer, everything tends to look like a Nail.

- Repeat prescriptions became the norm.
- Pill mills multiplied.

# How Did We Get Here? (6)

- 2006: Purdue Pharma fined \$635 million.
- 2012: 260 M opioid prescriptions (\$9B/year).
- 2013: Annual opioid overdose deaths exceed:
  - Death by car accidents (4X increase over 2012).
  - AIDS epidemic at its peak.
  - Death toll of the whole Viet Nam war.

# How Did We Get Here? (7)



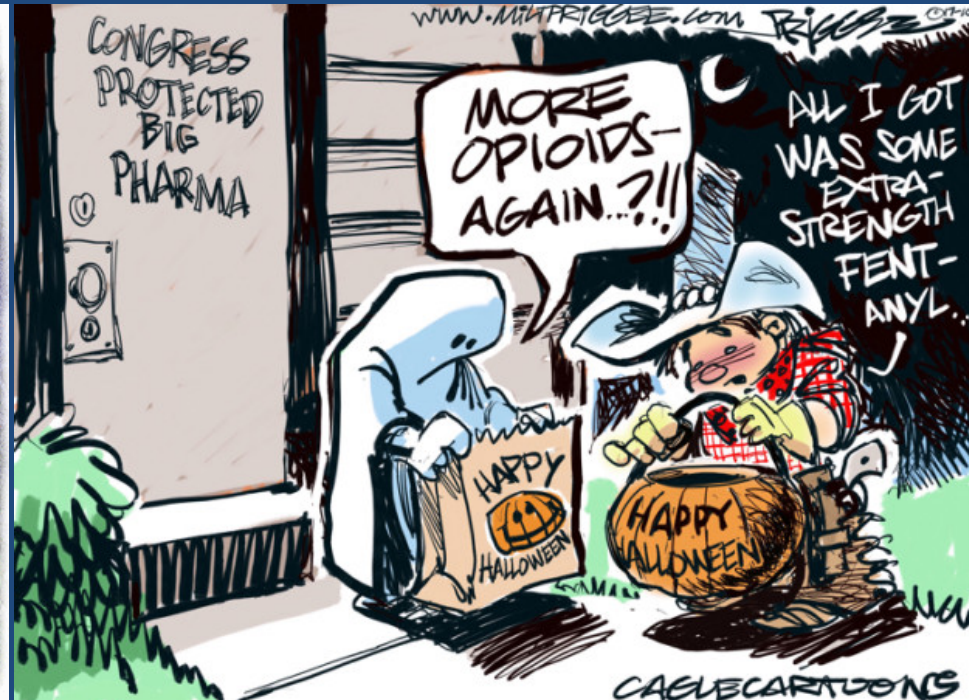
Pain went from being  
undertreated  
to being  
overtreated.



# Effects of Government Intervention (NOT !!!) (1)



# Effects of Government Intervention (NOT !!!) (2)





# Effects of Government Intervention (NOT !!!) (3)



# How Do People Die From Opioids?

- All opioids depress the respiratory center.
- As breathing slows down, oxygen in the blood drops, carbon dioxide rises:
  - ❖ The heart slows down.
  - ❖ Heart and respirations stop altogether.
  - ❖ The person dies within a few minutes.
- Most deaths are caused by heroin or pills laced with Illegally Manufactured Fentanyls (IMF's).
- Many deaths are caused by combining **any** opioid with benzodiazepines, cocaine or alcohol.

A 3D rendering of a computer keyboard. The central focus is a large, bright green key with the word "Solutions" written in white, bold, sans-serif font. Surrounding this key are several other white keys with black characters, including "C", "V", and "F", which are slightly out of focus and positioned in the foreground. The lighting creates soft shadows and highlights on the keys, giving them a three-dimensional appearance.

**Solutions**

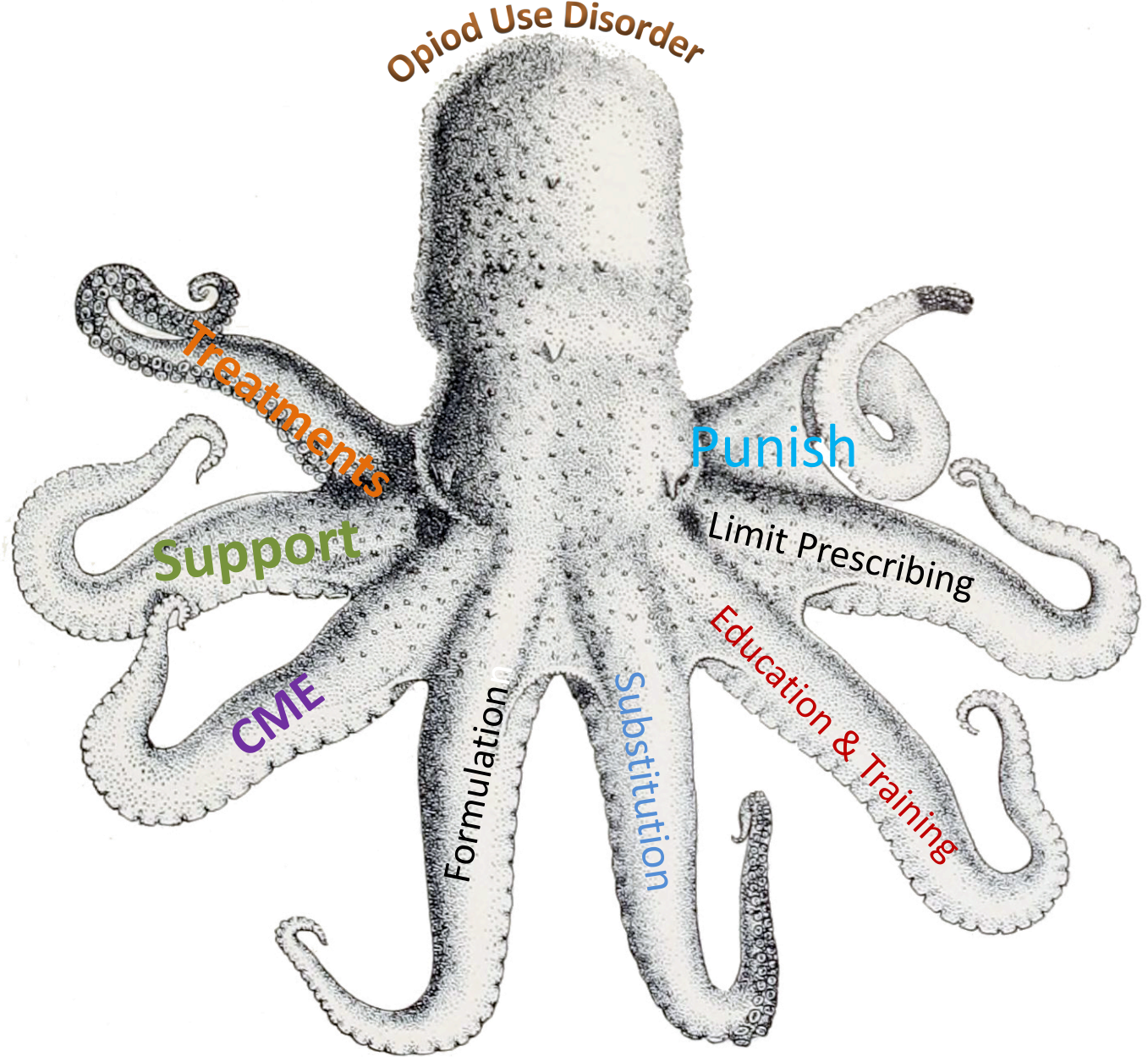


# Solutions ?

- Since the problem does not have a single cause, it does not have a single solution.
- Multiple agencies propose their “solution” and spend taxpayer money to implement it: FDA, CDC, SAMHSA, NIDA, NIH, DAWN, DEA, ONDCP, and many others (“alphabet soup”).
- What we need is better communication and more interaction among all those groups.











# Opioid Use Disorder: Solutions?



# Together We Are Stronger



# Naloxone (Narcan) <sup>(1)</sup>

-  Used to reverse opioid overdose.
-  Can be given Intramuscular or intranasal.
-  Can be bought OTC without a prescription.
-  If early, may allow life-saving interventions.
-  No effect if given in the absence of opioids.
-  Some opioids may last longer than Naloxone.
-  Some users may need more than one dose.
-  Reversal is NOT a treatment or solution.

# Naloxone (Narcan) (2)

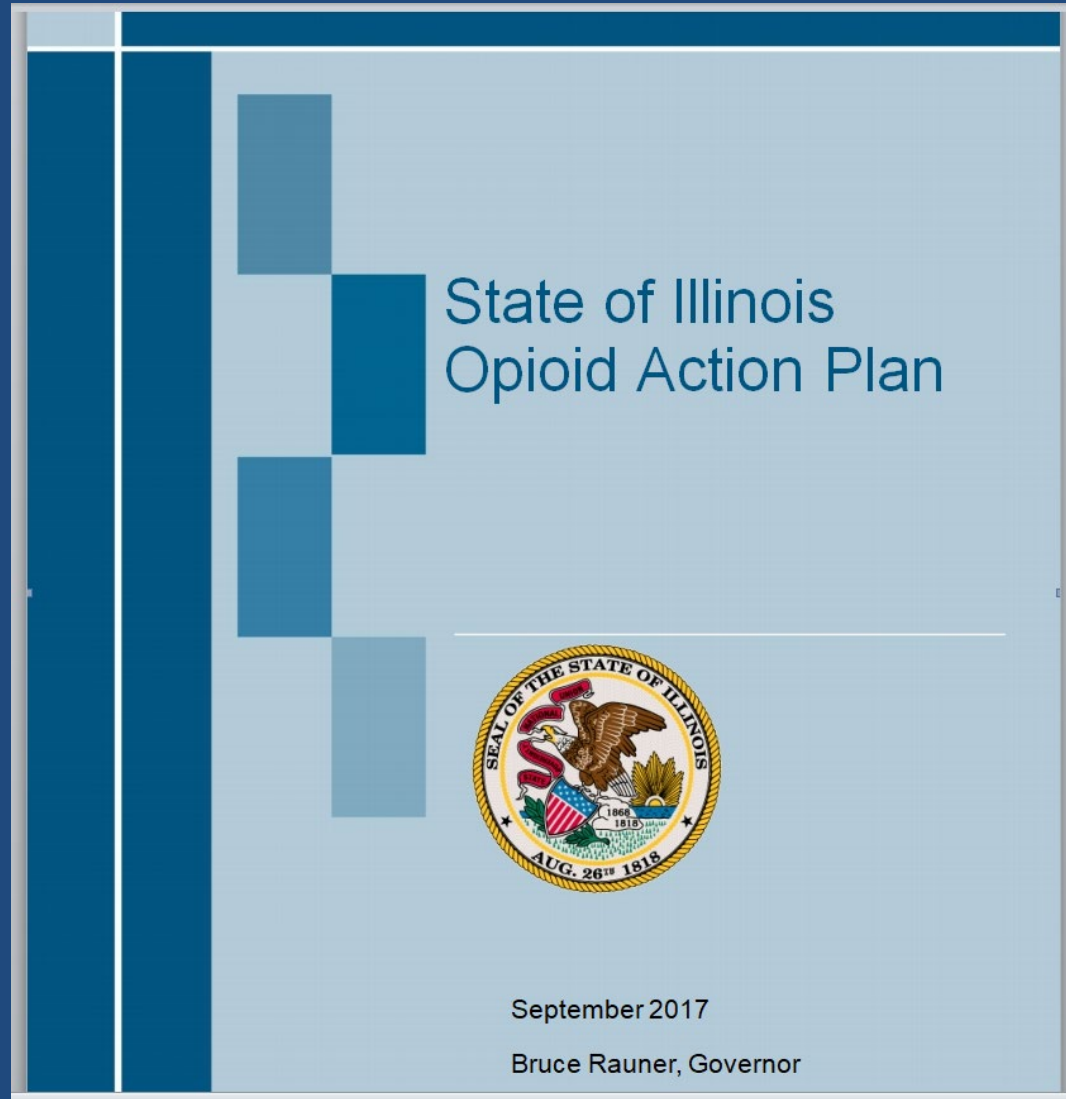
The increased use and demand has made the prices rise astronomically:

Recent and Current Prices for Naloxone.*			
Naloxone Product	Manufacturer	Previous Available Price (yr)	Current Price (2016)
Injectable or intranasal, 1 mg-per-milliliter vial (2 ml) (mucosal atomizer device separate)	Amphastar	\$20.34 (2009)	\$39.60
Injectable			
0.4 mg-per-milliliter vial (10 ml)	Hospira	\$62.29 (2012)	\$142.49
0.4 mg-per-milliliter vial (1 ml)	Mylan	\$23.72 (2014)	\$23.72
0.4 mg-per-milliliter vial (1 ml)	West-Ward	\$20.40 (2015)	\$20.40
Auto-injector, two-pack of single-use prefilled auto-injectors (Evzio)	Kaleo (approved 2014)	\$690.00 (2014)	\$4,500.00
Nasal spray, two-pack of single-use intranasal devices (Narcan)	Adapt (approved 2015)	\$150.00 (2015)	\$150.00

\* Price information was obtained from Medi-Span Price Rx (Wolters Kluwer Clinical Drug Information).

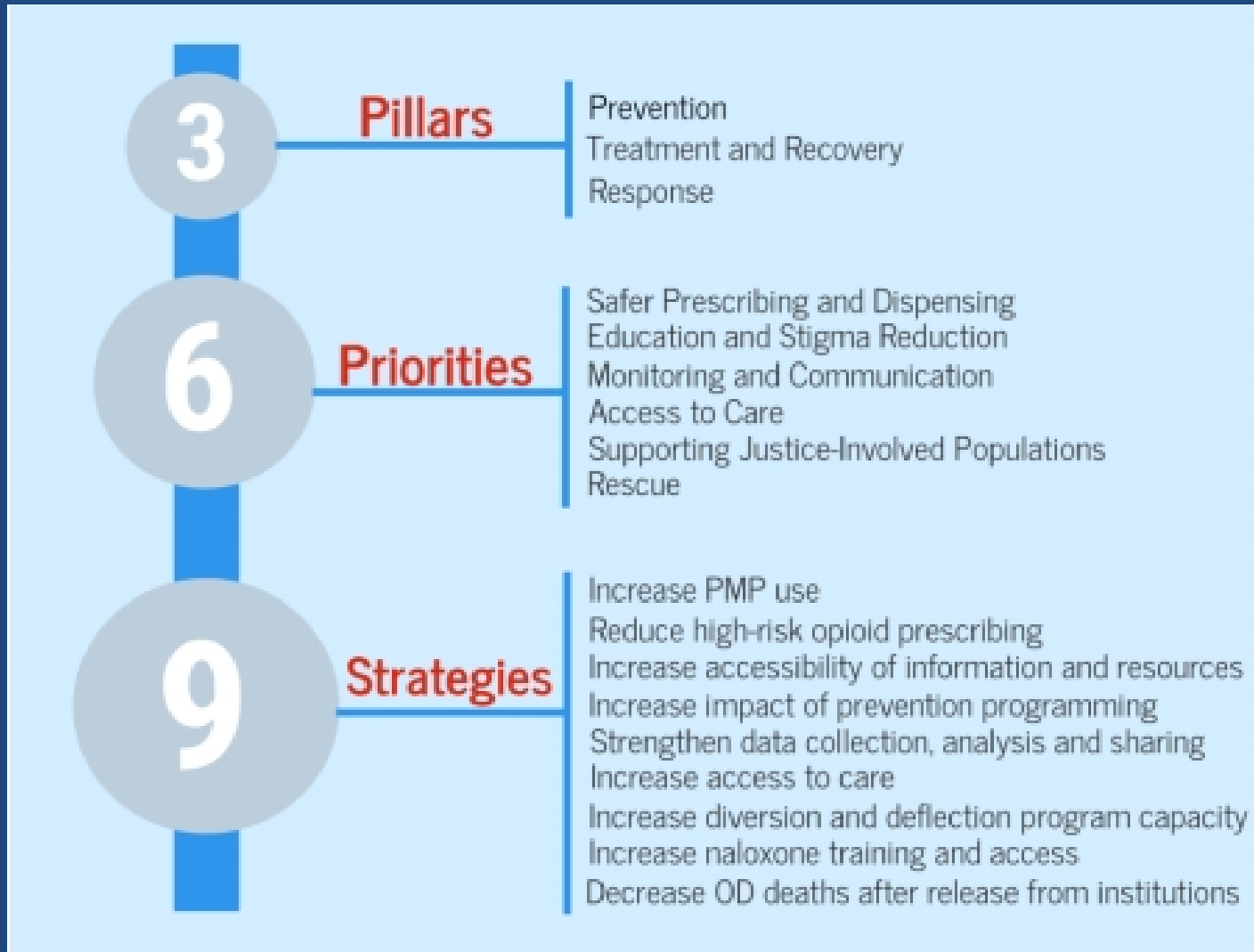


# Governor Rauner's Proposed Solution





# Illinois 3-6-9 PPS Plan



# Illinois's Plan Steps

## Steps in the Right Direction

### Opioid STR Grant (2017)

Provides federal dollars to fund a variety of education, treatment, and prevention programs addressing opioids statewide

### Heroin Crisis Act (2015)

Increases access to naloxone, strengthens the IL PMP, and provides greater access to medication-assisted treatment for opioid use disorder

### Emergency Medical Services Access Law (2012)

IL's "Good Samaritan" law which allows individuals to seek help for overdoses without risking criminal liability for possession

### Drug Overdose Prevention Law (2010)

Empowers family and friends to administer the overdose reversal drug naloxone to prevent a fatal opioid overdose

# Prescription Drug Monitoring Program (PDMP or PMP)

Allows MD's to check on the:

- ❖ Type
- ❖ Location
- ❖ Amount
- ❖ Date

Of opioids prescribed/dispensed to a patient.

- 49 states, DC and Guam have it (Missouri does not).
- Illinois: mandatory since January 1<sup>st</sup> 2018.
- Most PDMP's do not share data with each other.

# Other Solutions ?

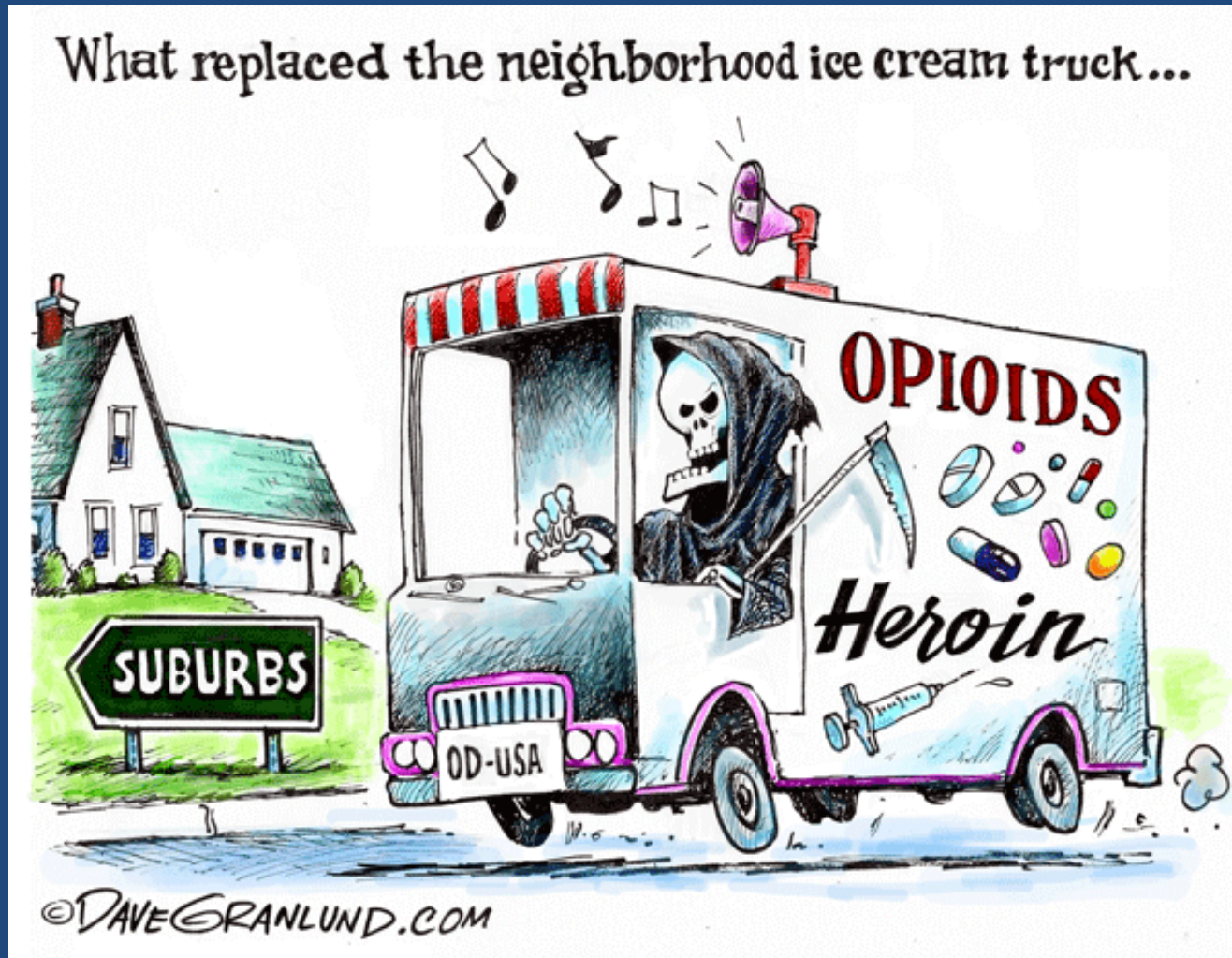
- CDC issued prescription limit *guidelines* (2016).
- Many states:
  - Enacted *Rules* and *Laws* for opioid prescribing limits.
  - Require first responders to carry Naloxone.
  - Want Naloxone in public areas (libraries, schools).
  - Facilitate alternate therapies (PT, cannabis).
- DEA takeback programs.
- Education at all levels (mandated CME, IL 2018).
- Facilitating Medication Assisted Treatment (MAT).
- Funding for better mental health services.

# New Rules





# We Want to Eliminate This..



# We Want This:

Where parents need to stand on drugs...



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Copyright by Signe Wilkinson

**Watch, Monitor, Talk!**

**Speak Up, Be Active, Unite!**

# True Facts (1)

People with chronic pain deserve treatment.

Opioids are **not** indicated for **chronic** pain.

Exceptions: cancer or terminal illness.

Opioids can produce severe addiction.

Use of illegal opioids has seriously increased.

Local governments, families, churches, community groups, schools, law enforcement, service clubs, local government and YOU need to work together.

# TIME Opioid Series

- Go to [TIME.com/opioids](https://www.time.com/opioids) and click on:  
[See Inside the Worst Opioid Addiction Crisis in U.S](#)
- Scroll down several pictures.
- Click on the top right hand side of the screen and watch some dramatic and shocking videos of the opioid epidemic in the USA.
- Be ready to witness people using drugs, overdosing, almost dying and receiving reversal medication.
- See stories of despair, help, support and hope.



# Questions?



# Babies Rule !!!







If you would like a copy of this presentation, feel free to email me at:

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