

# Understanding Changes in the US 'Heroin' Market: Notes from the Field

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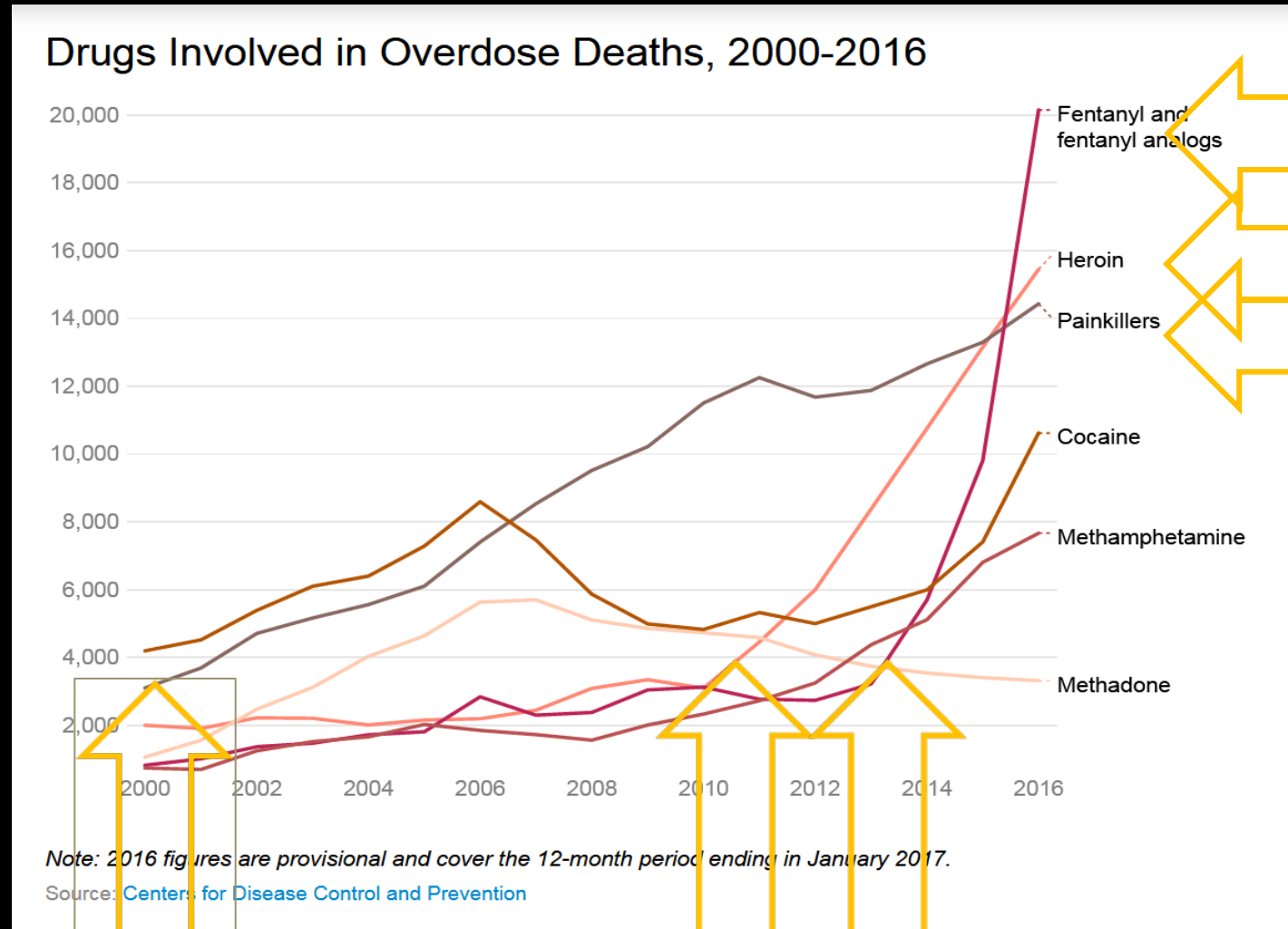
# DISCLOSURES

- No financial disclosures

# HEROIN IN TRANSITION (“HIT”) STUDY

- NIH: National Institute of Drug Abuse
  - DA037820
- Multi-methodological study: quantitative and qualitative aims
  - Supply changes > medical consequences – overdose
  - New drug forms > user perceptions, adaptation, etc.

# THE TRIPLE WAVE EPIDEMIC



Source: Julia Lurie, Mother Jones, 9.6.2017

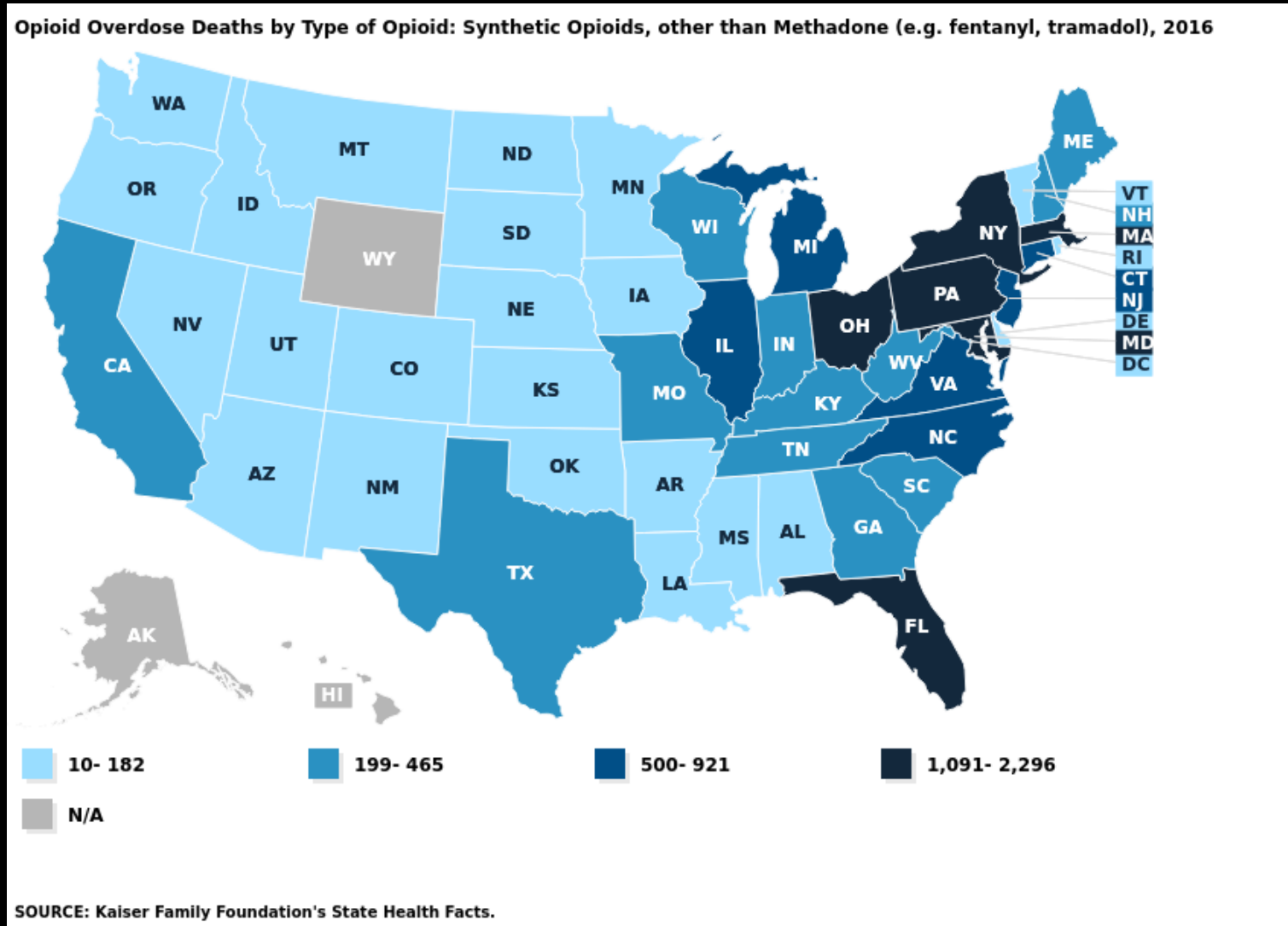
<http://www.motherjones.com/politics/2017/09/the-latest-jaw-dropping-numbers-from-the-opioid-crisis/>





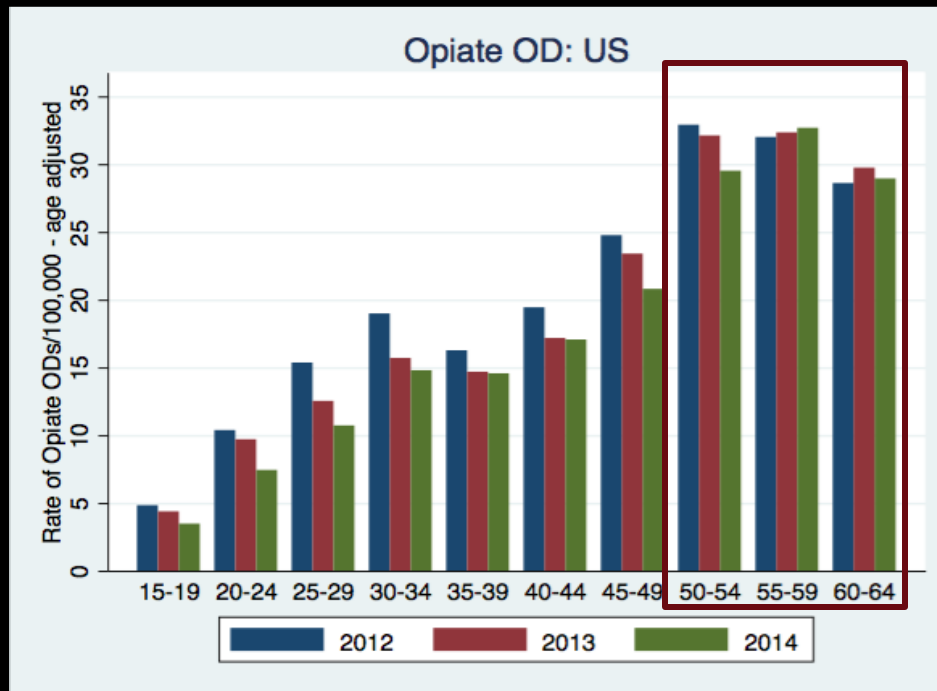
Photo: D. Ciccarone

# SYNTHETIC OPIOIDS: REGIONAL PROBLEM

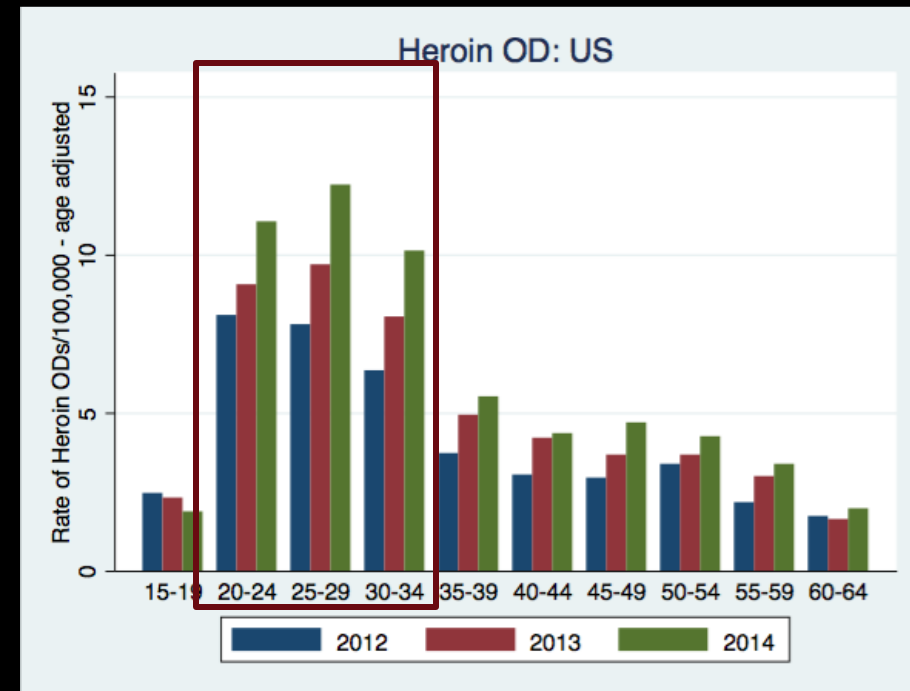


# NIS: US OVERDOSE RATES (2012-2014) BY AGE GROUP:

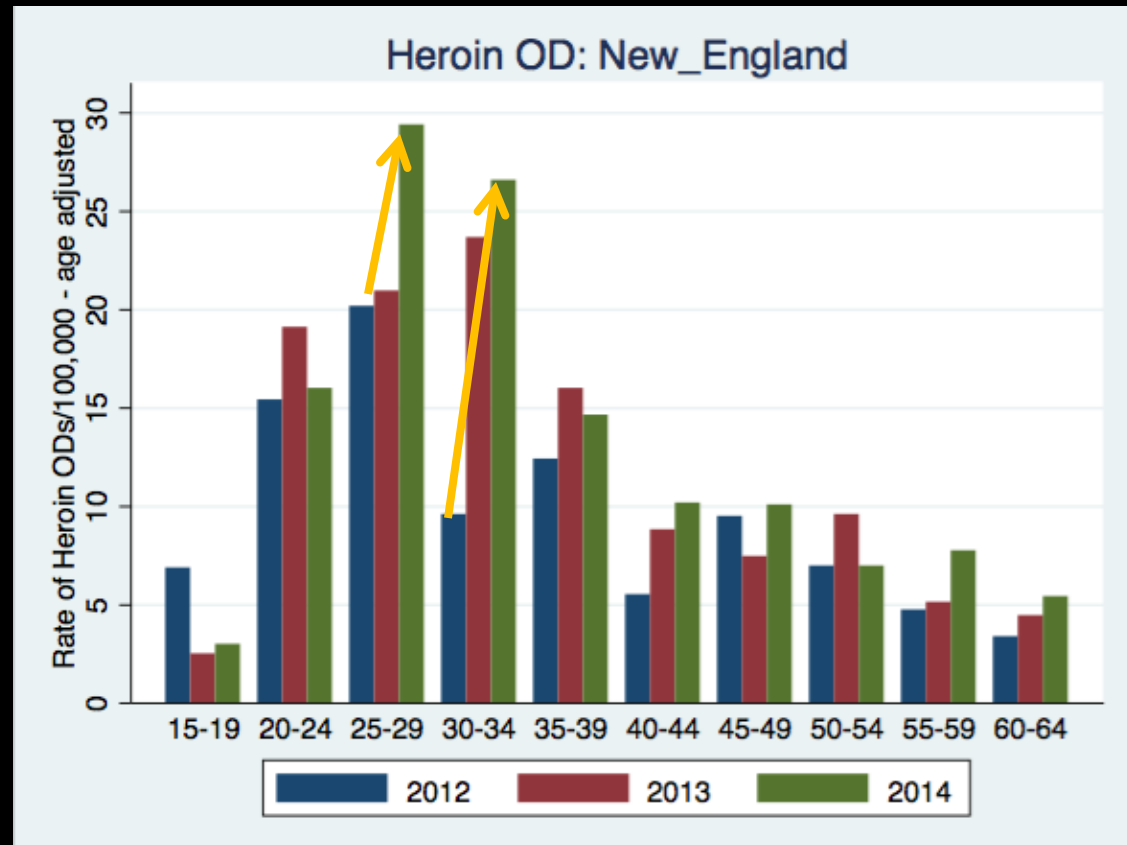
## Opioid overdose



## Heroin overdose



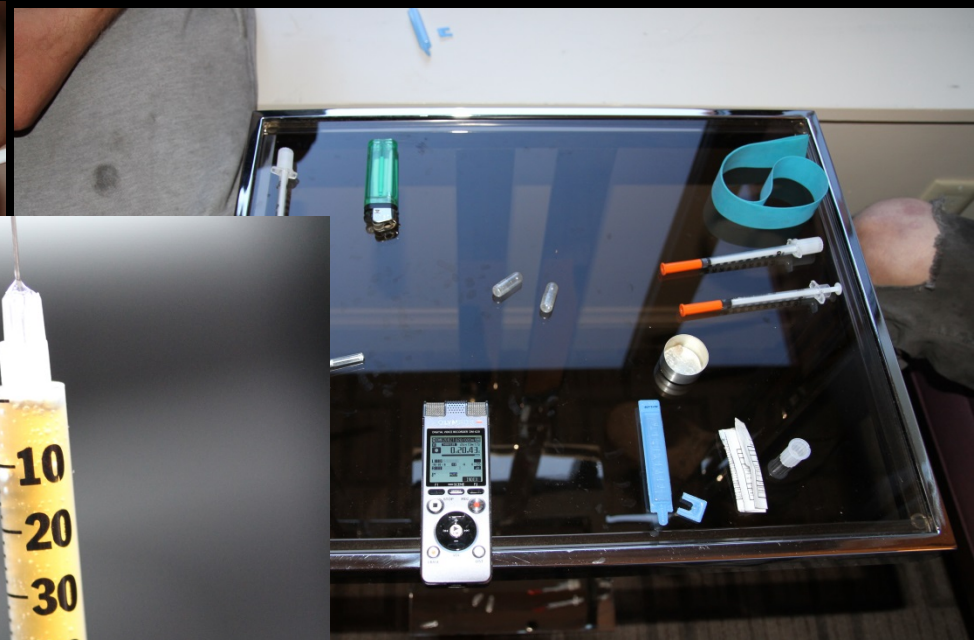
New England: Large increases in heroin OD hospitalizations for 25-35 yo.



# QUALITATIVE STUDY AIMS

- “Hotspot study” where our team of researchers goes to visit areas in the country where significant changes in the heroin supply or overdoses have been reported
  - Baltimore, MD; Lawrence and Lowell, MA; Chicago, IL; Charleston, West Virginia
- Our aim is to understand the experiences and beliefs of the users themselves and to observe first hand the heroin currently being used





Photos: D. Ciccarone

# 1. DEVASTATION: 'LIKE A 'COMBAT STATE'

*Now the dope is fentanyl and it's killing people left and right. I have over the years, I've watched friends [die]—but on average, it was three a year. Now the last 3 years it's been an average of 20 [per year]. I feel like I'm back in a combat state and I feel like I'm fighting for my life right now.*

Jerry, Lowell, aged 46, using on and off for the  
last 20 years







# ARS QUESTION 1

## 2. CHANGES IN 'HEROIN'

- Users reported and our ethnographers observed rapid changes in the appearance of and effects due to substances sold as 'heroin'
- Supply not demand driven changes:
  - Users surprised and dismayed
  - Range of desirability
  - No cultural idioms
  - Dealers even surprised

*We're supposedly buying dope that doesn't have any fentanyl in it, but when I started showing up dirty with heroin, I started showing up dirty with fentanyl... When we cut the dope, we don't use fentanyl. The problem was that we were buying the dope already dirty with that and we didn't know it.*

Hector, aged 42, using heroin for 26 years

Lawrence, MA



# ARS QUESTION 2

### 3. VARIATION AND UNPREDICTABILITY

- 'Heroin' varied by:
  - Color: powder and solution
  - Intensity of onset or 'rush'
  - Intensity of effect
  - Duration of effect (from 45 minutes to 12 hours)
  - Types of effect eg sleepy or stimulating

# HEROIN SOURCE-FORMS

"Black Tar" Heroin: Mexican



Brown powder Heroin:  
Colombian/SWA

White powder Heroin: SEA









Living  
2 Pray  
4 Wisdom  
2 Love myself  
2 Know 2 Love  
U-Living 2 Learn  
The Music 2 express  
My Love 4 U 2 U  
UR the 1 right here  
that I AM 2 Love  
There is no greater  
Purpose  
I can conceive  
Come N2 my Love  
May we Create  
The Spirit of Peace  
give Peace 2 the World  
it all goes back  
to GOD

Siddha Sila  
93



## 4. DESIRABILITY

*The high is wonderful. It's splendidly wonderful. It's magnified heroin feeling by a great number.*

- Tim, aged 45, using heroin for 25 years, Baltimore

*I know a couple of people have done died from that, with fentanyl, yeah. [...] And I have a lot of associates that are letting me know, "Don't go to that place because they selling fentanyl".*

- Montana, 39 year old woman using for 21 years, Baltimore



## 5. DISCERNMENT

- Hierarchy:
  - Physiological >
  - Taste on the tongue >
  - Solution color >
  - Powder color

*When you add the water to it and pull it back it's almost like clear. Heroin's dark and brown. It's brown. ...but the fentanyl is like, like water kinda, like a little bit yellowish... The regular heroin ...it can be dark brown or light brown but it's never yellow like that.*

Kristin, 19 years old, using heroin for 5 years,

Lowell, MA

## 6. GENERATIONAL CHANGES

- 50 yo African American male, Englewood Chicago about violence in Chicago and the increase in homicides:
- A: *A lot of guys are older now, like me. I'm 50 years old. My gang banging days have been over a long time ago. So you got a lot of people with a lot of rank they're going to jail and they ain't getting out no time soon.*
- Q: *So the youngsters take over?*
- A: *So the young, so yeah they're trying to recruit younger guys and these younger guys they're recruiting they're putting guns in their hand and they just going buck wild. They're not following the rules or the laws of the gang that they're in, they're trying to rewrite the laws and do what they want to do.*

## 7. TAKING PRECAUTIONS

*Like when I get stuff I don't know what it is I do a little bit before I do something that I feel. Like I want to kind of scale out how much I want to do. Because I don't want to die. But these people are just doing a gram shot and just... my friend just died two days ago.*

Liz, in her 20s, using heroin for 1.5 years

Lawrence, MA

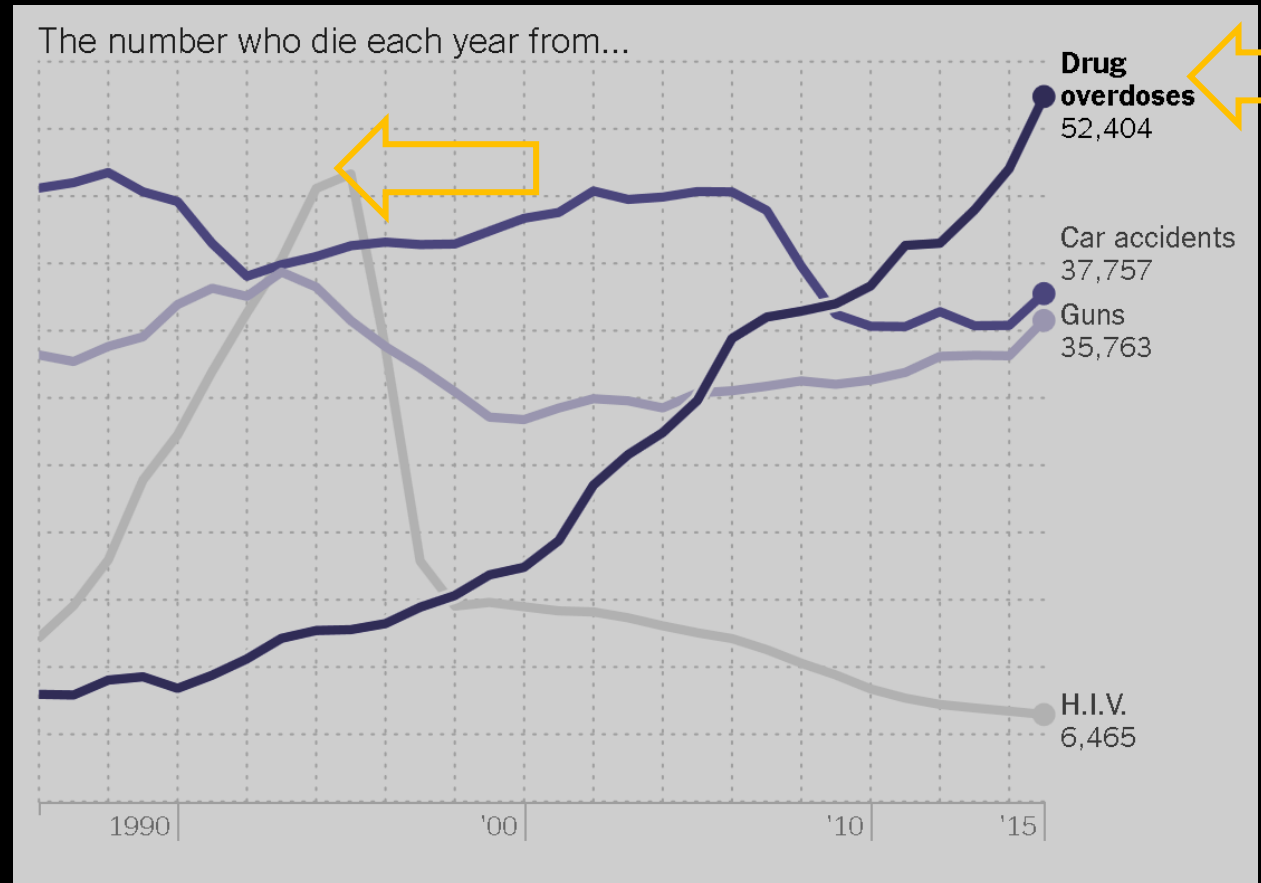
# SUMMARY

- Devastation is rampant: individual, social, cultural
- Changes in heroin: supply driven
- Variation in potency, compounded by fentanyl: 'Russian roulette'
- Mixed desirability for fentanyl
- Some degree of discernment
- A new generation needs risk reduction guidance
- Some organic harm reduction > pay attention to this!



## An Epidemic of Crisis Proportion

- Crisis with Epic Opportunity
- Treatment and Prevention can work!



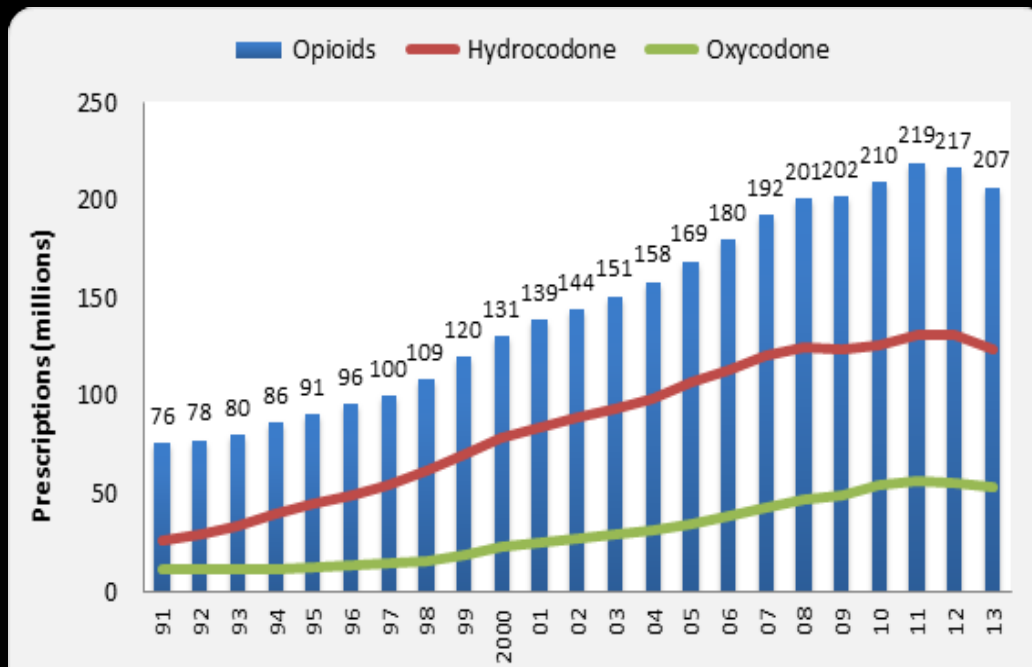
Source: New York Times, The Upshot; Josh Katz; April 14, 2017

# CRISIS RESPONSE

- **Triple wave epidemic is unprecedented**
  - Prescription pills **≠** Heroin/fentanyl:
    - Unique supply drivers
    - Problems more than just overdose
      - HIV/HCV
    - Increasing numbers of heroin users starting with heroin not pills
    - Differences in population at risk: **Youth!**
      - Geography

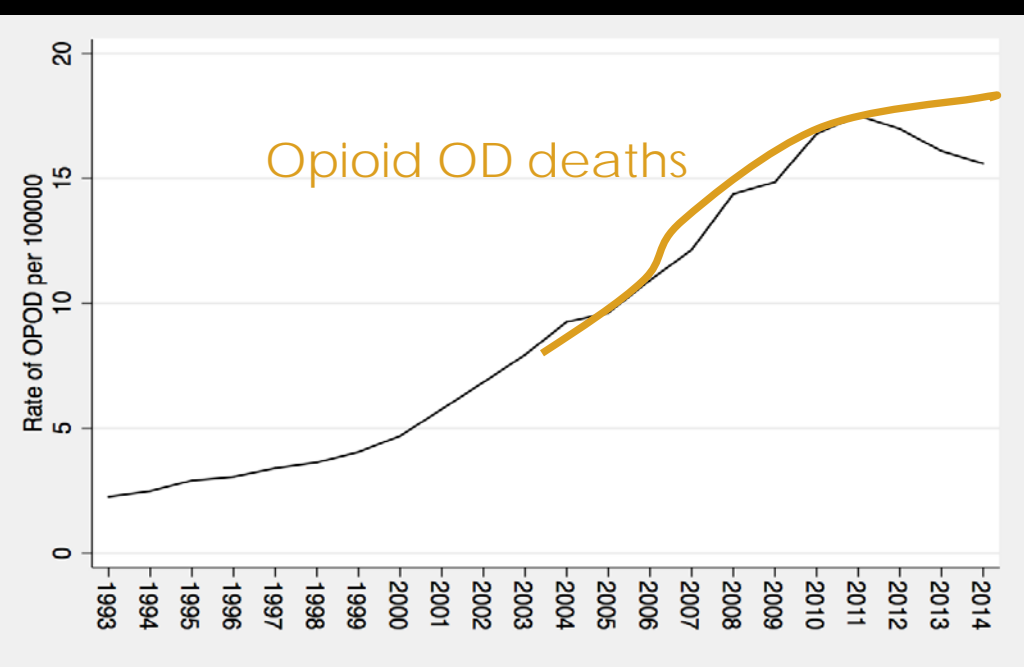
# OPIOID SUPPLY

## Opioid prescriptions



IMS Health, Vector One®: National, 1991-2011  
IMS Health, National Prescription Audit, 2012-2013  
Thanks: Wilson Compton, Deputy Director, NIDA

## Opioid overdose hospitalizations



# CRISIS RESPONSE

- Better surveillance is needed
  - Fentanyl as poisoning epidemic
- More evidence-based treatment
- Faster responses to overdose

# CRISIS RESPONSE

- Stigma remains our biggest enemy
- Harm reduction saves lives, is cost-effective and can bridge people into treatment



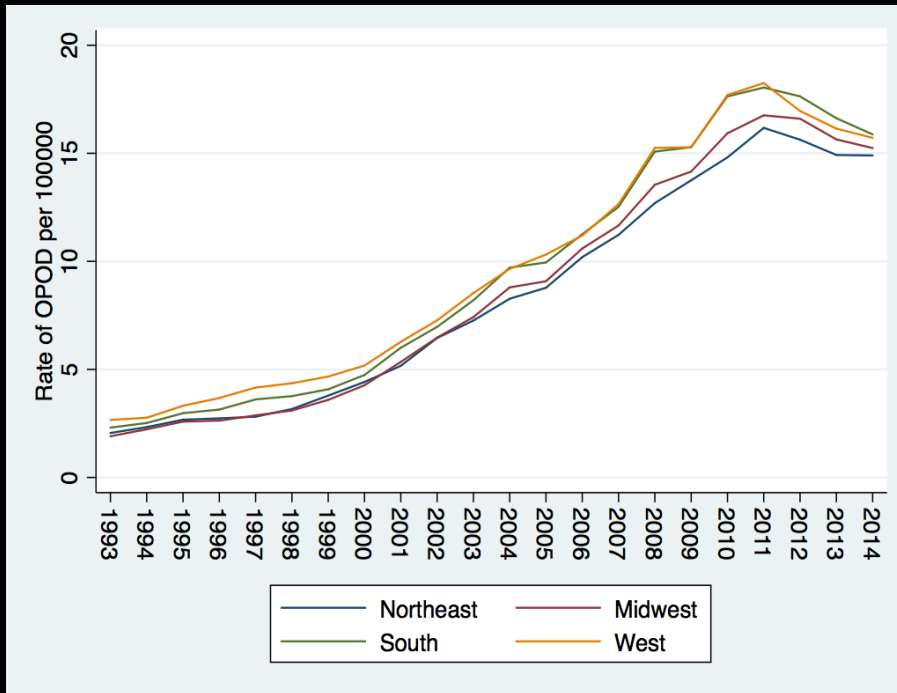
# ACKNOWLEDGEMENTS

- 👉 Heroin in Transition study:
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  - 👉 NIH/NIDA funding: R01DA037820
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- 👉 Jon E. Zibbell
- 👉 Participants!
- 👉 Photo credits: Dan Ciccarone, Fernando Castillo

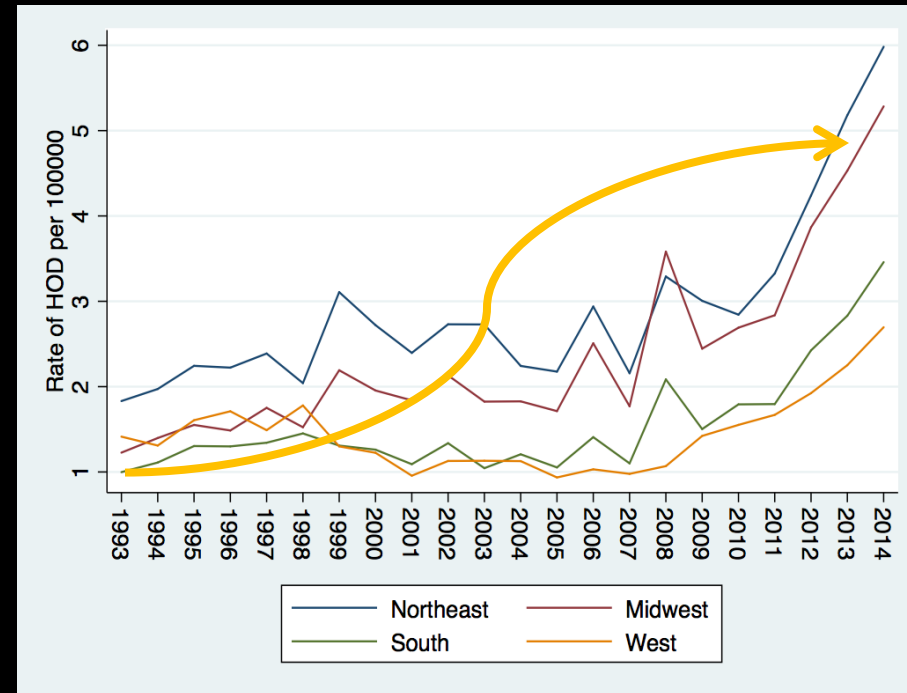


# NIS: OVERDOSE RATES (1993-2014) BY GEOGRAPHIC REGION:

OPOD: Even –



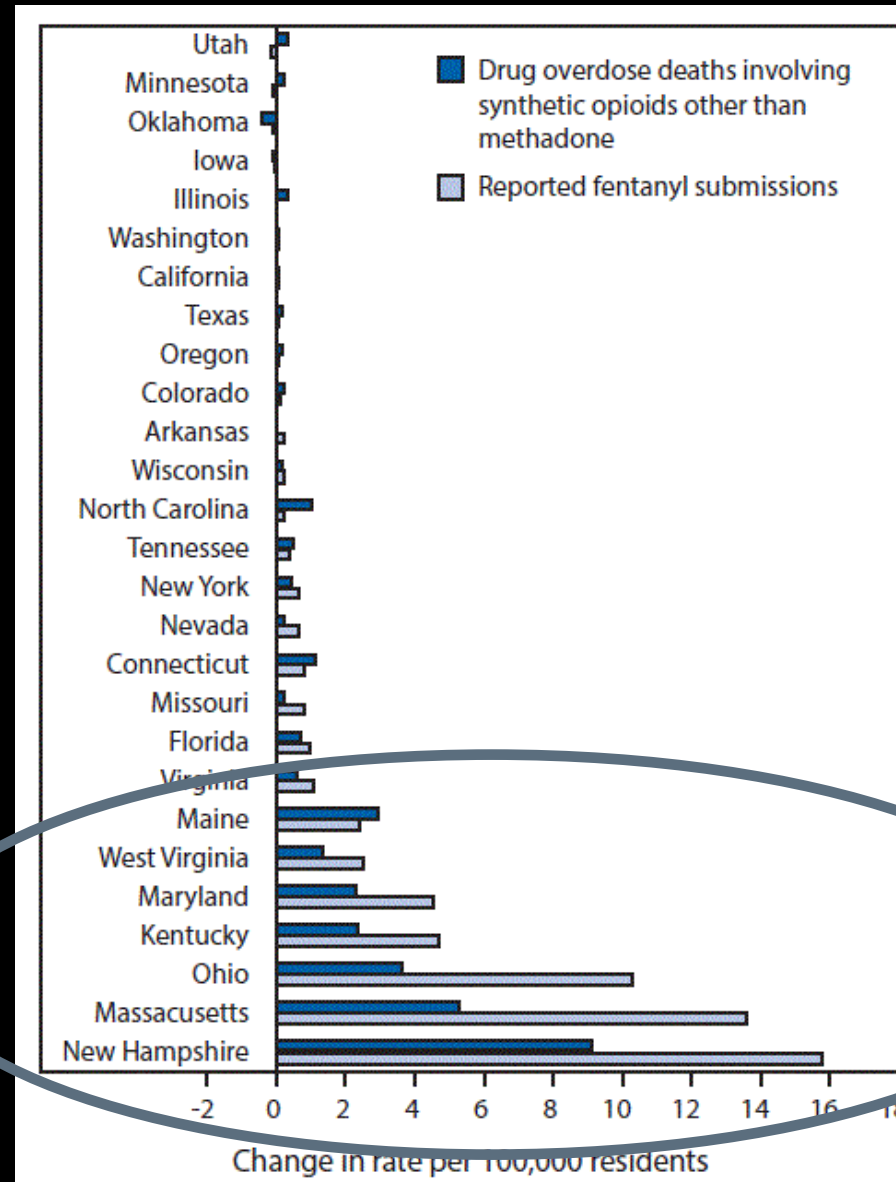
HOD: Northeast and Midwest!





## CDC: 27 states

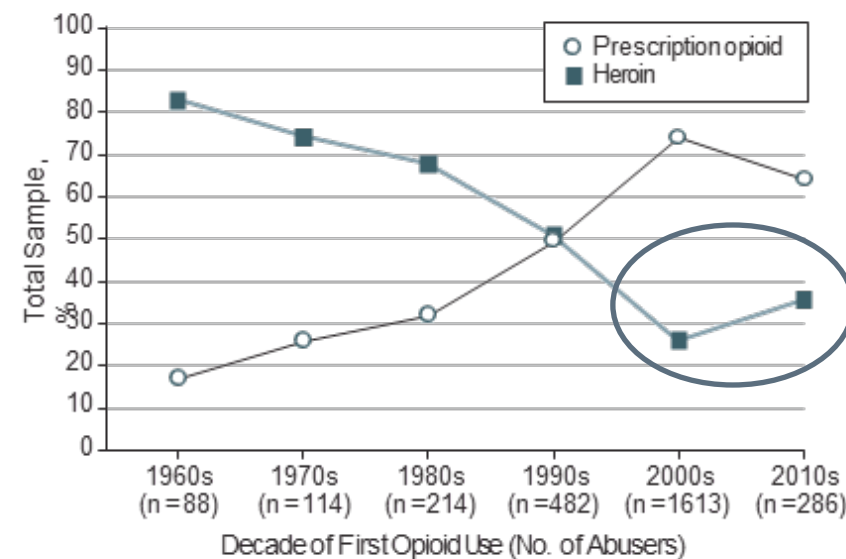
- Increases in synthetic opioid overdose deaths
  - Concentrated in 7 states



Gladden RM, Martinez P, Seth P. Fentanyl Law Enforcement Submissions and Increases in Synthetic Opioid-Involved Overdose Deaths — 27 States, 2013–2014. MMWR

## Heroin treatment: Initial opioid of choice

Figure 1. Percentage of the Total Heroin-Dependent Sample That Used Heroin or a Prescription Opioid as Their First Opioid of Abuse



Data are plotted as a function of the decade in which respondents initiated their opioid abuse.

# A BRIEF HISTORY OF OPIOID “EPIDEMICS”

- **Epidemic**

- Morphine & heroin 1880-1900's
- Heroin (wave 2, illicit, 1920 's)
- Heroin (Jazz era)
- Heroin (Vietnam era)
- Heroin (Colombian-sourced, 1990's)
- Opioid pills (2000's)
- Heroin (late 2000's)
- Synthetics eg fentanyl (2013)

- **Trigger**

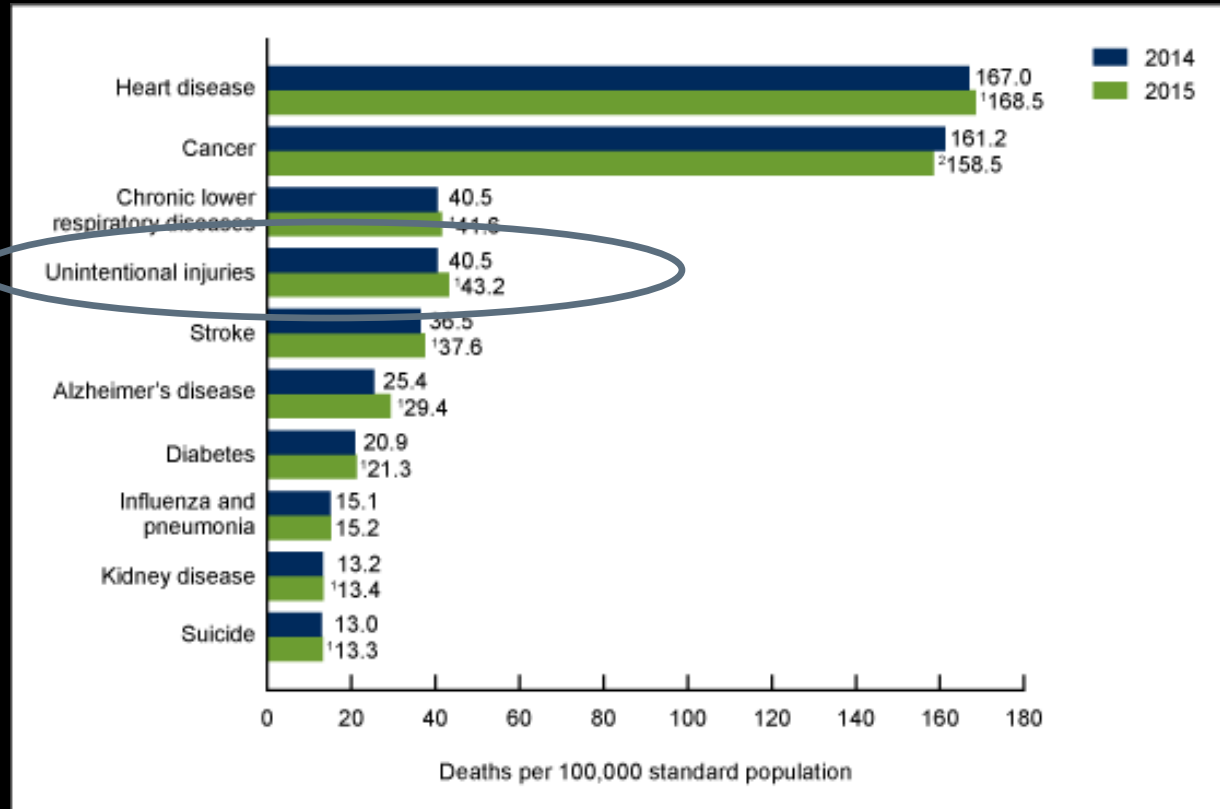
- Novel drug/ Iatrogenic/ technological
- Harrison Act (restriction)? > illicit
- Cultural?
- **New source** & cultural
- **New source**
- Iatrogenic/ novel form/ technological (ER)
- New source-form /restriction
- New source/technological

## OTHER CONSEQUENCES

- Infectious disease
  - Blood borne viruses:
    - Hepatitis C virus
    - HIV – Scott County, IN
  - Bacterial:
    - Endocarditis
    - Skin and soft tissue infections

## Leading Causes of Death

- Age-adjusted death rates for the 10 leading causes of death in 2015

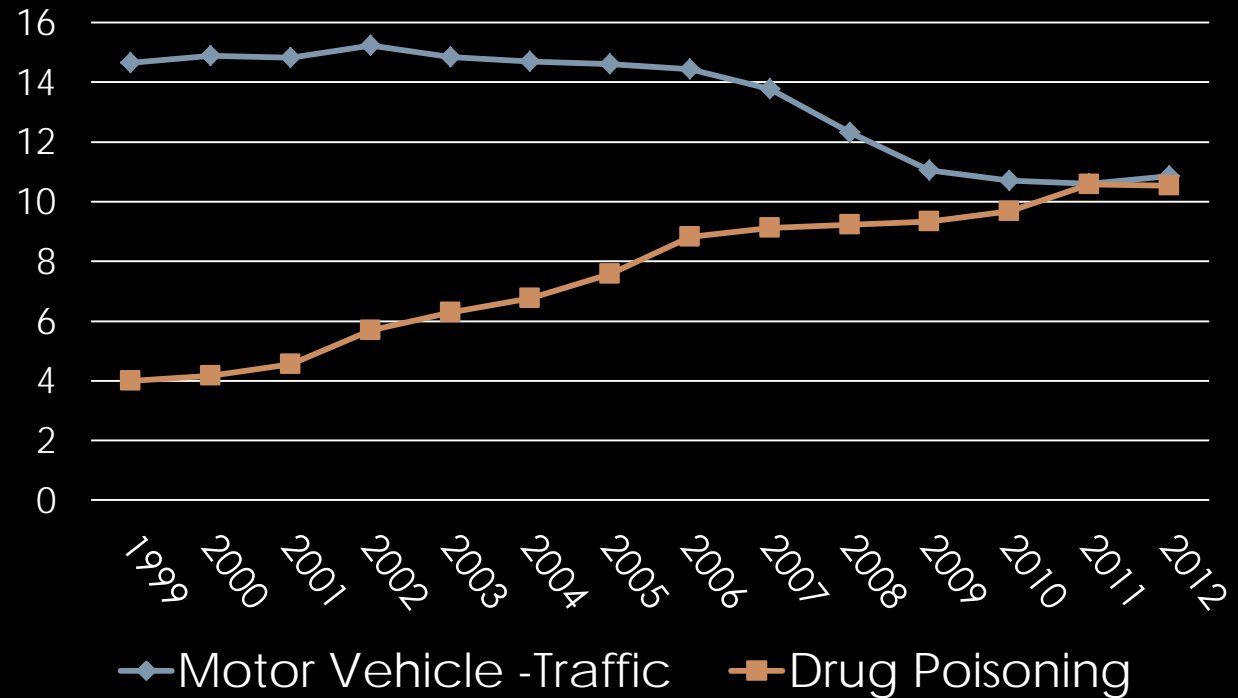


NCHS Data Brief No. 267 December 2016. U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES  
Centers for Disease Control and Prevention. National Center for Health Statistics  
Mortality in the United States, 2015



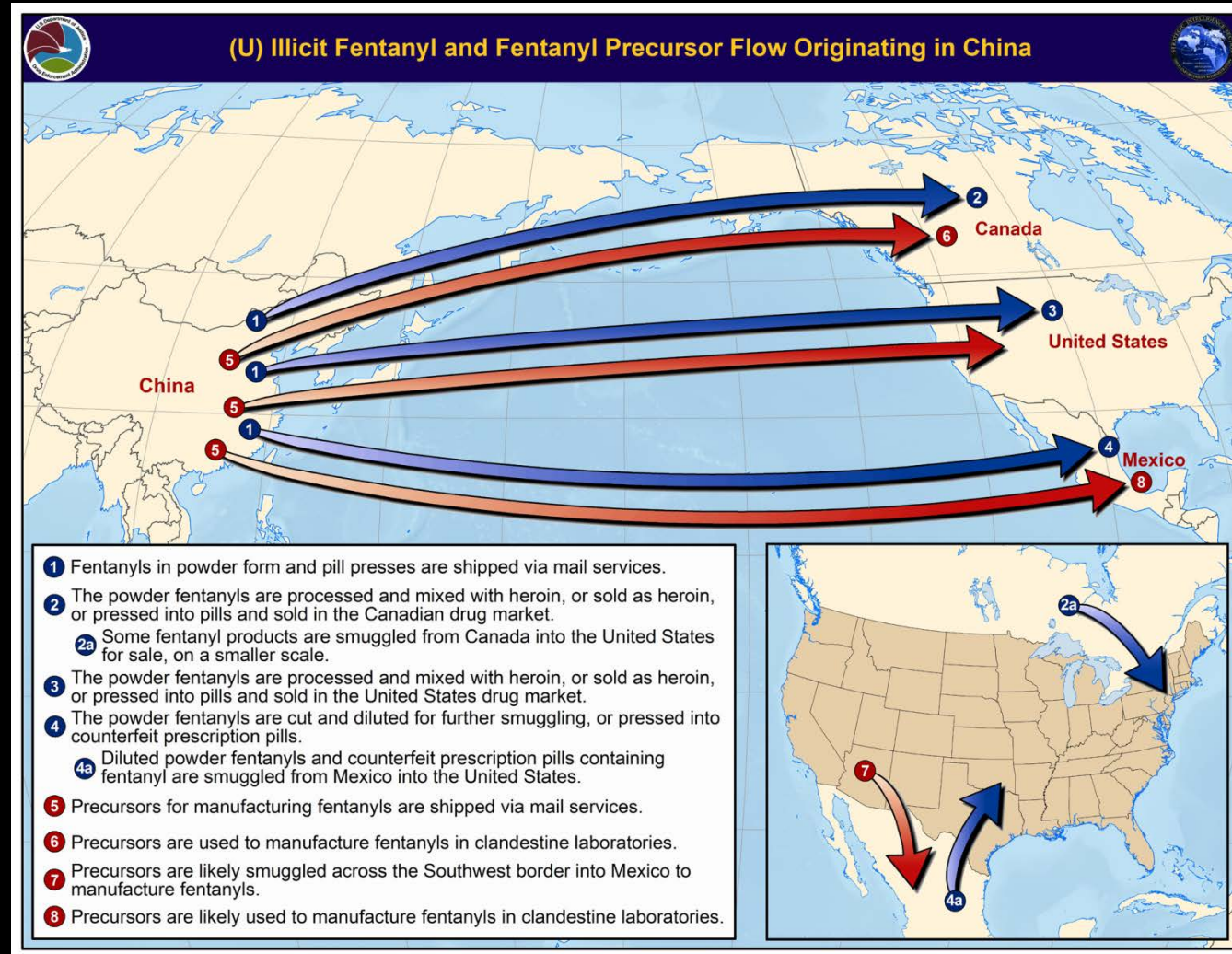
## Unintentional Injury 1999-2012

- Age-adjusted death rates per 100,000 pop.



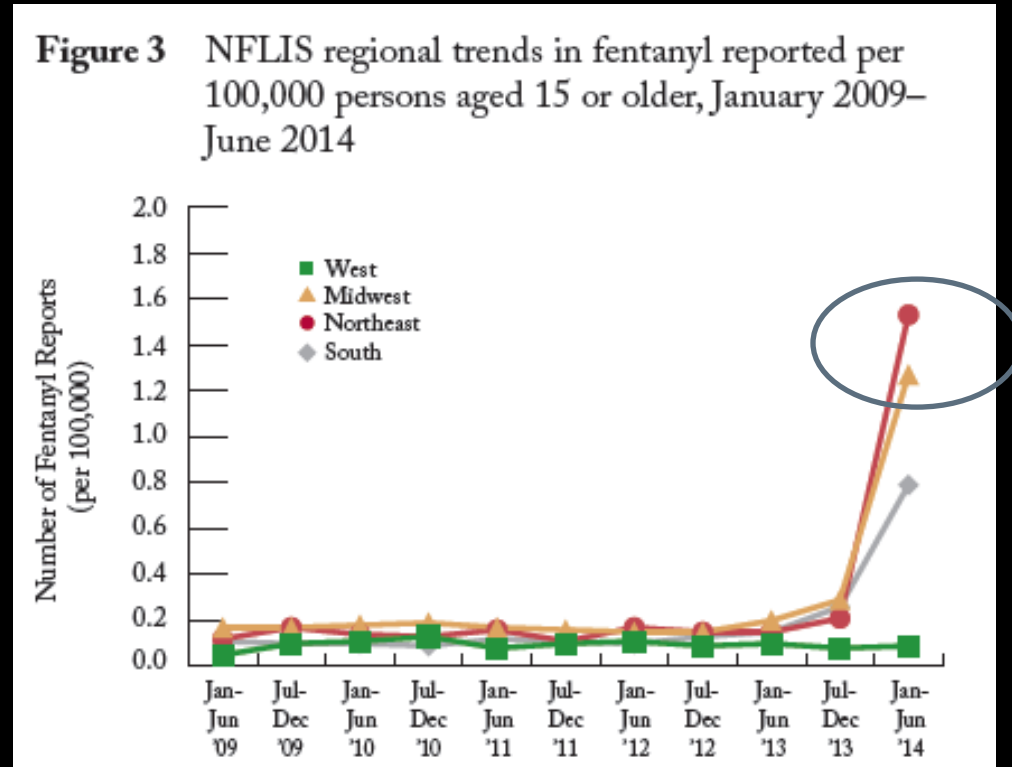
Produced by: National Center for Injury Prevention and Control, CDC  
Data Source: NCHS Vital Statistics System for numbers of deaths. Bureau of Census for population estimates. Accessed: 11.5.14

# FLOW OF FENTANYLS



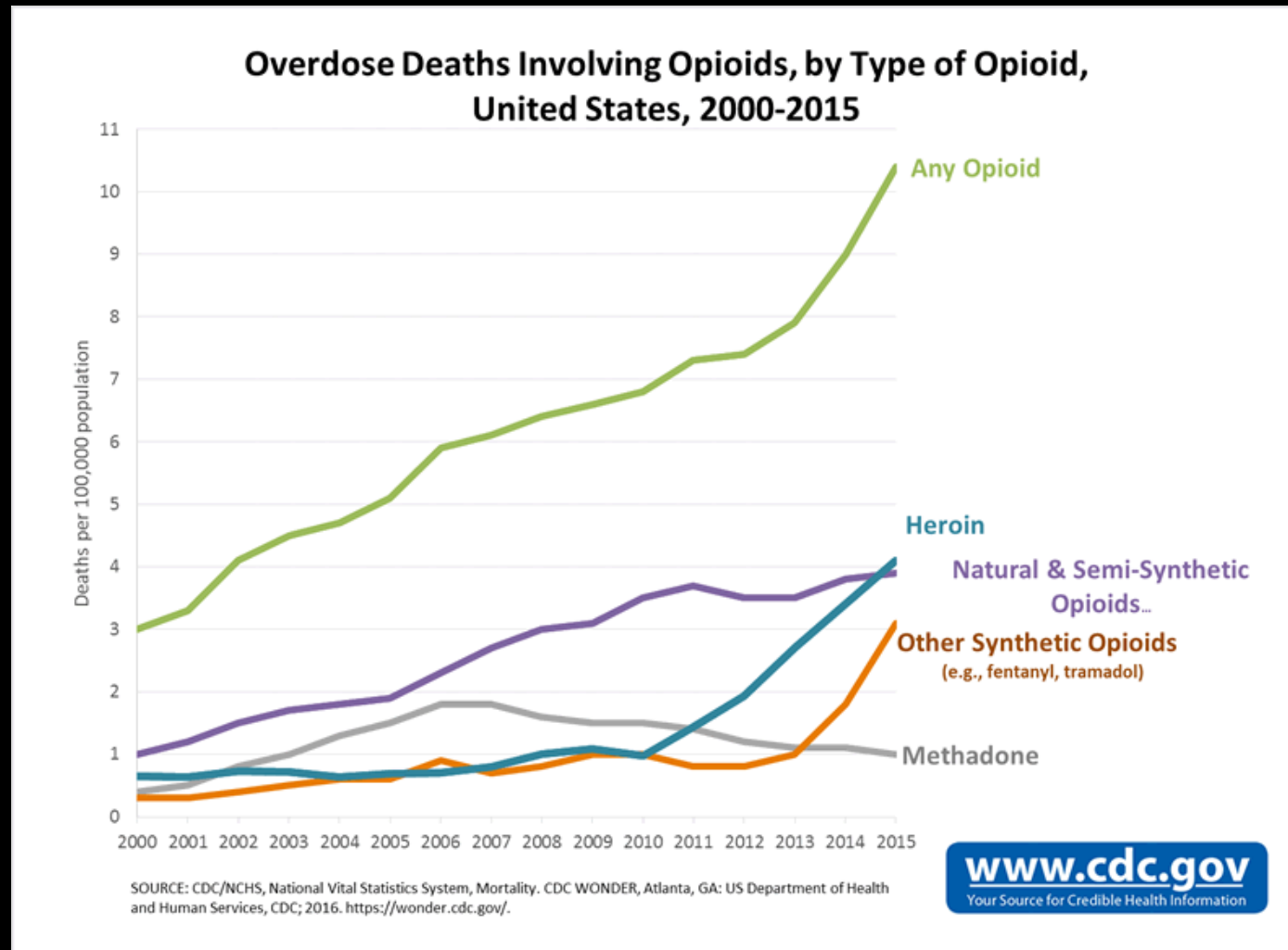
## NFLIS: Fentanyl

- Testing seized drugs
- Highest rise in rates in NE and MW
  - Recent relative to earlier rises in heroin overdose



NATIONAL FORENSIC LABORATORY INFORMATION SYSTEM.  
Special Report: Opiates and Related Drugs Reported in NFLIS, 2009–2014.  
Office of Diversion Control, DOJ, DEA. 2015

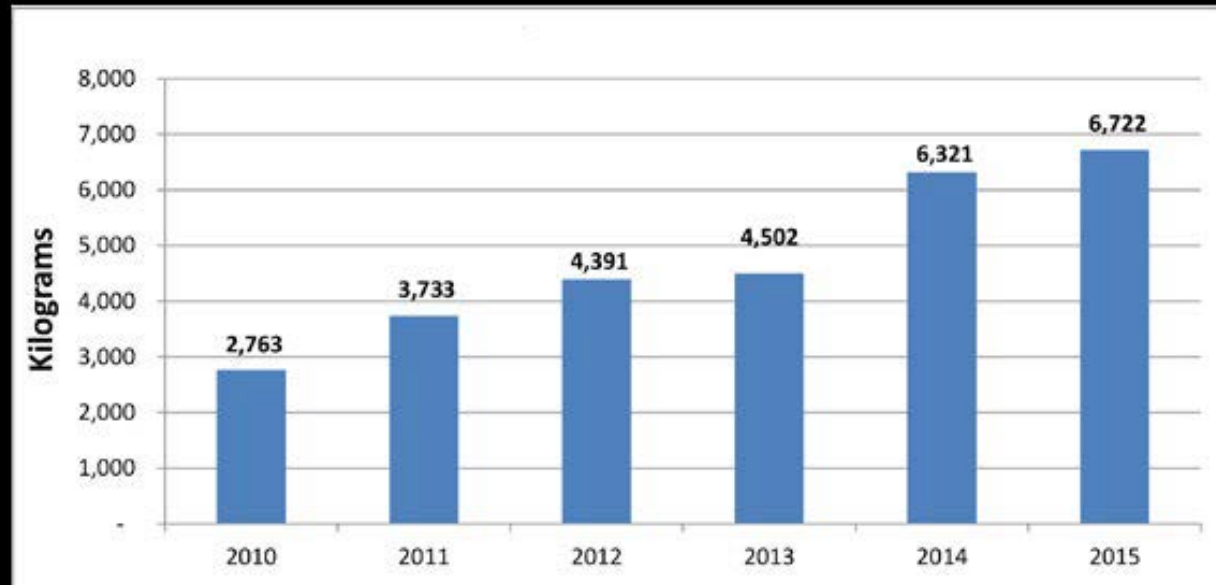
# TRENDS IN MORTALITY – TYPE OF OPIOID





# CHANGES IN THE HEROIN SUPPLY

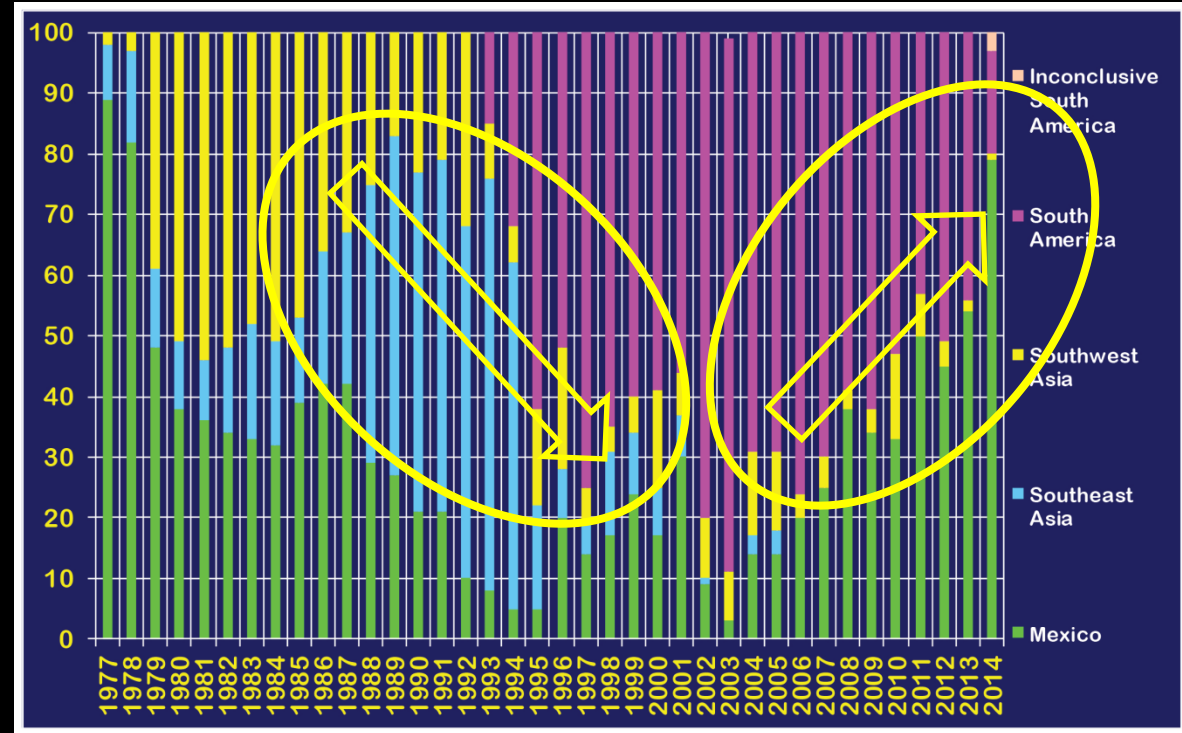
US heroin seizures are up  
~ 140%, 2010-15



Source: National Seizure System. Reported in the 2016 National Heroin Threat Assessment Summary; DOJ, DEA, 2016

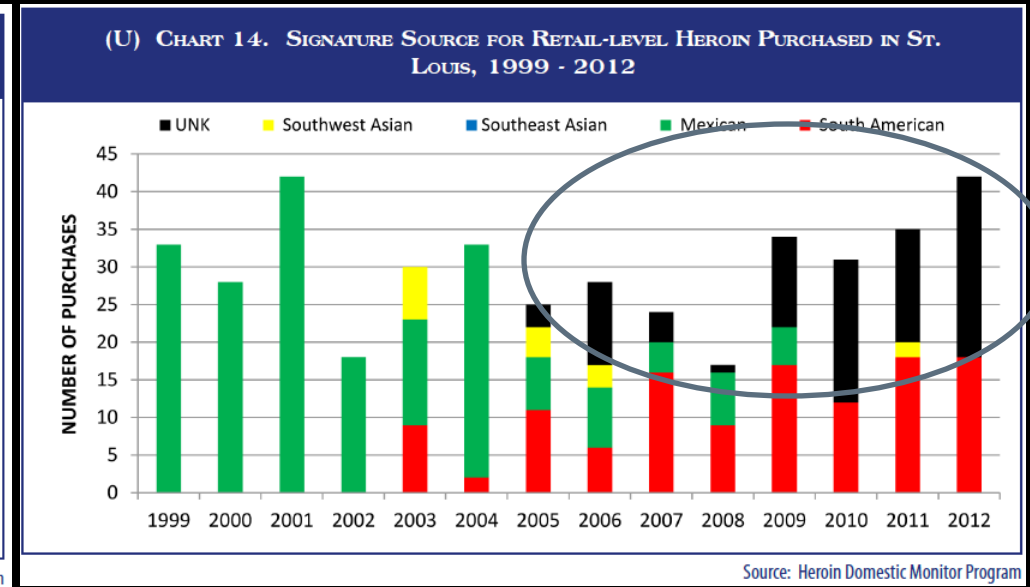
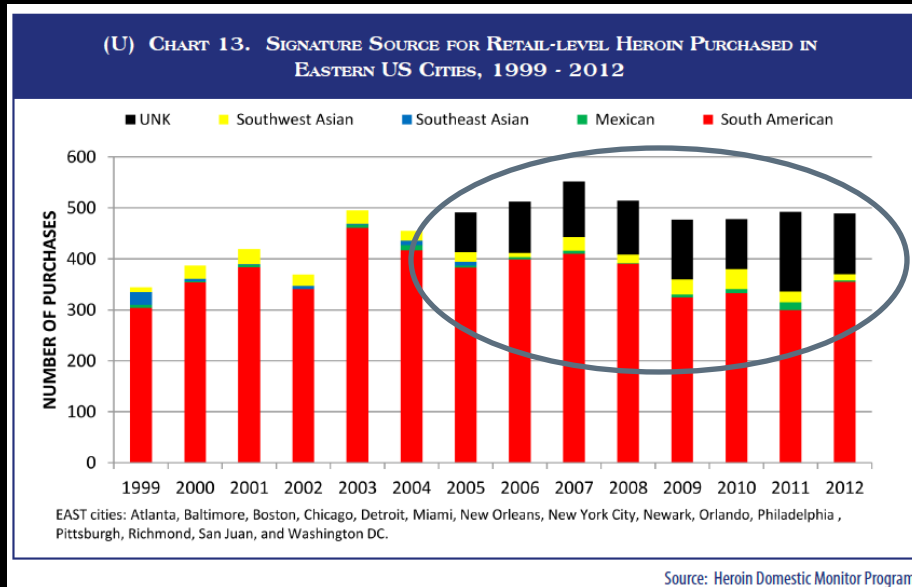
# HEROIN SOURCES OVER TIME

- Four sources down to two
- Colombian dominant to 2010
- Now Mexican dominant: 78% in 2014



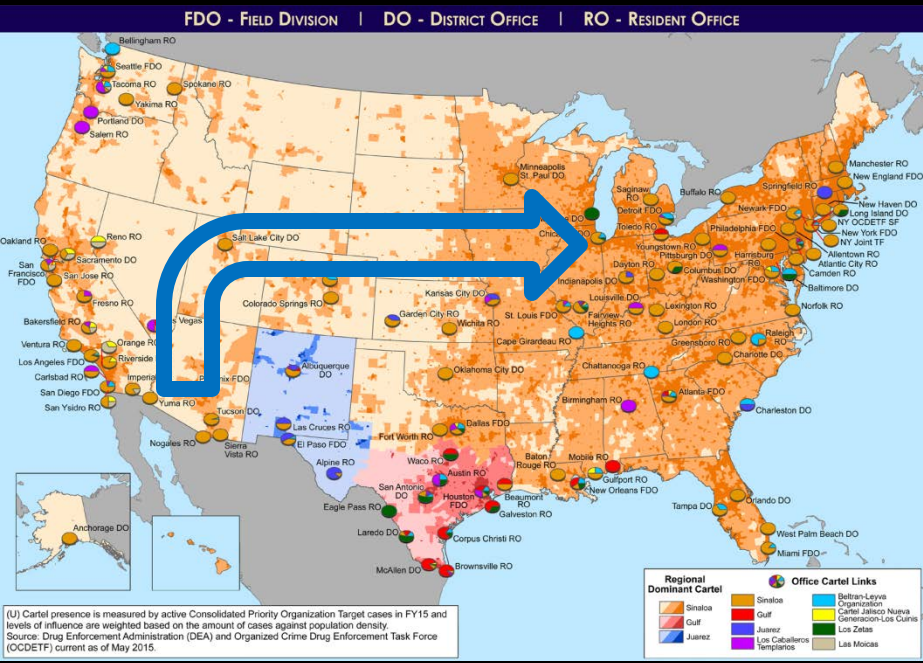
Source: Heroin Signature Program. Reported in the 2015 National Drug Threat Assessment Summary; DOJ, DEA, 2015

# HEROIN OF UNKNOWN SOURCE



Source: Domestic Monitoring Program. Reported in the 2015 National Drug Threat Assessment Summary; DOJ, DEA, 2015

# MEXICAN TCOs: FLOW OF HEROIN TO US





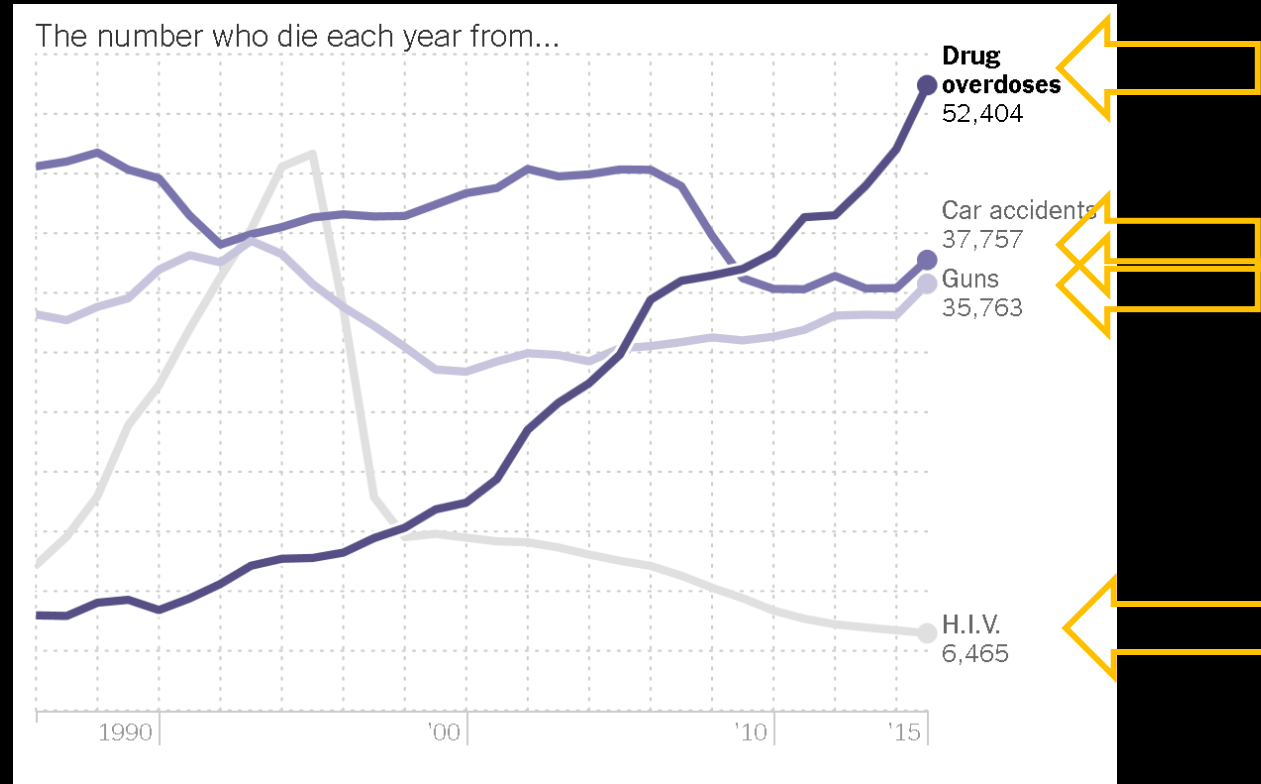
# MEXICAN-SOURCED HEROIN: CHANGES

- Mexican opium/heroin production has grown while Colombian production is down 40%
- Explanations for rising HOD in Midwest (in addition to fentanyl):
  - A more purified product coming from Mexico
    - "Mexican White:" Colombian mimic
      - Traditional Colombian-sourced-heroin retail places
      - Synthetic adulteration > heroin "inconclusive" origin

## An Epidemic of Crisis Proportion

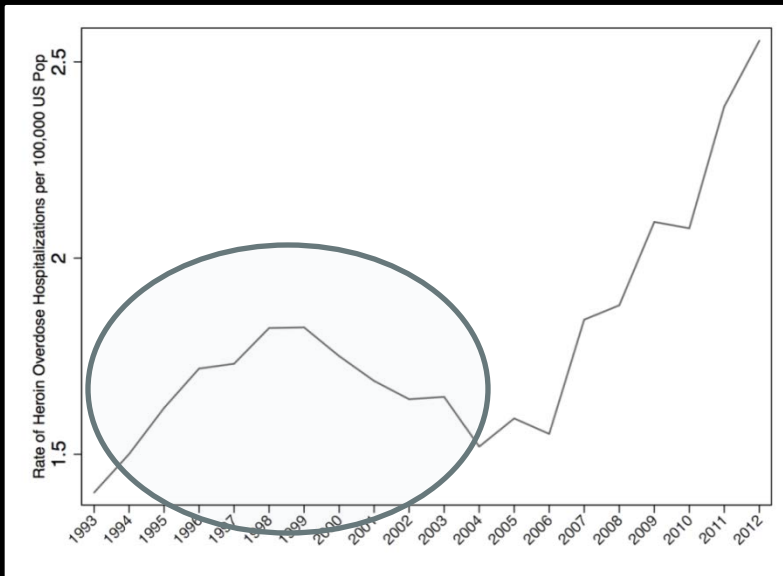
### Numbers of deaths:

- Drug overdose >
- Motor vehicle >
- Gun homicide >
- HIV



Source: New York Times, The Upshot; Josh Katz; April 14, 2017. Data from: Centers for Disease Control and Prevention, National Center for Health Statistics

# SUMMARY: HEROIN IN TRANSITION



- The novel entry of Colombian-sourced heroin increased HOD rates; 1993-1999
- New increases in HOD:
  - Regional!
  - New form of Mexican-sourced heroin
  - (+)Fentanyl adulteration
  - Wider distribution models
  - Young users