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

Drugs Involved in Overdose Deaths, 2000-2016

Source: Julia Lure, Mother Jones, 9.6.2017
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 firsthand the heroin currently being used
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
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
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, National Prescription Audit, 2012-2013

Opioid overdose hospitalizations

Thanks: Wilson Compton, Deputy Director, NIDA

Opioid OD deaths

IMS Health, National Prescription Audit, 2012-2013
Thanks: Wilson Compton, Deputy Director, NIDA
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
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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
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

Unintentional Injury 1999-2012

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

Produced by: National Center for Injury Prevention and Control, CDC
FLOW OF FENTANYLS

1. Fentanyl is in powder form and pill presses are shipped via mail services.
2. The powder fentanyl is processed and mixed with heroin, or sold as heroin, or pressed into pills and sold in the Canadian drug market.
3. Some fentanyl products are smuggled from Canada into the United States for sale, on a smaller scale.
4. The powder fentanyl is cut and diluted for further smuggling, or pressed into counterfeit prescription pills.
5. Diluted powder fentanyl and counterfeit prescription pills containing fentanyl are smuggled from Mexico into the United States.
6. Precursors for manufacturing fentanyl are shipped via mail services.
7. Precursors are used to manufacture fentanyl in clandestine laboratories.
8. Precursors are likely smuggled across the Southwest border into Mexico to manufacture fentanyl.
9. Precursors are likely used to manufacture fentanyl in clandestine laboratories.
NFLIS: Fentanyl

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

Figure 3  NFLIS regional trends in fentanyl reported per 100,000 persons aged 15 or older, January 2009–June 2014
US heroin seizures are up 
~140%, 2010-15

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