Deaths of Despair

Econ 43565
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Introduction

- Long term secular decline in mortality
- Especially pronounced for minorities
- Starting in late 1990s, mortality rates started to climb for middle-aged whites – particularly low educated males
- Generated from particular deaths
  - Drug poisonings, suicides, alcohol liver disease
  - Case and Deaton: “Deaths of despair”

This class

- Outline the basic trends
  - Trends are scary
  - The declining economics prospects for low-skilled males is a part of the problem
- Two notes
  - Problem is concentrated in a particular group
  - But economics is not the whole story

- Components of the trends
  - Most of the deaths of despair is rising drug deaths
  - Most of drug deaths are opioid/herion
  - Outline the origins of the opioid/heroin/fentanyl crisis
    - Opioid crisis looks to be started by OxyContin
    - Heroin crisis started by the reformulation of Oxy
    - Fentanyl crisis piggy-back on the heroin crisis
White 25-29: 82% increase
Black 25-29: 8% decline
White 30-34: 90% increase
Black 30-34: 12.5% decline
Deaths of Despair and its Components

65% of the increase in the deaths of despair due to drugs

Drug poisonings

Alcohol-related liver mortality

Deaths of despair

Source: National Vital Statistics System; authors' calculations.
Drug Poisonings, 1999-2016

77% of the increase in the drug poisoning rate is heroin/opioid poisonings.

White, non-Hispanics, 25-34

72% of the increase in the death rate is heroin/opioid poisonings.

White, non-Hispanics, 35-44

98% of the increase in the death rate is heroin/opioid poisonings.

White, non-Hispanics, 45-54

56% of the increase in the death rate is heroin/opioid poisonings.
Case and Deaton

- Deaths of despair are a result of the breakdown in institutions: Jobs, earnings, family
- Time trends are easy to establish
- Correlation pronounced
- NOT the whole story


Scatter Plot: ∆ in Marriage Rates vs. ∆ in Drug Poisoning Rate, White non-Hispanic Males, 25-54

Scatter Plot: ∆ in % Workers w/ Low Earnings vs. ∆ in Drug Poisoning Rate, White non-Hispanic Males, 25-54

Real Earnings (2017$) of Full-Time/Full-Year Workers by Race, Males 25-54, 1971-2017, March CPS

Drug Poisonings for Males, 24-54, by Race

How did the opioid crisis come about

- Three distinct crisis
  - Opioid, then heroin, now fentanyl
- All are related
Re-analysis of pain management

- <1990s, opioids mainly used for acute pain
  - Post surgery, cancer
- 1990s movement to use for chronic pain
  - 1996 – Consensus statement of two professional pain societies –
    - “an epidemic of untreated pain”
    - Urged a more general use of opioids
    - <1% of opioid users become addicted
  - 1998 – Federation of State Medical Boards – MDs will not face discipline for heavy use of pain meds
  - 2001 Joint Commission – pain is the “5th vital sign”

Enter OxyContin

- Synthetic drug with similar properties to heroin
- Active ingredient is Oxycodone
  - Been around since 1917
  - Introduced to US in 1935
  - Percodan – Oxycodone and aspirin (1950)
  - Percocet – Oxycodone and acetaminophen (1974)
- OxyContin introduced in 1996
  - Purdue Pharma (Sackler Family)
  - Extended release (ER) drug – high mg content
  - $35 billion in worldwide sales through 2015

Enter OxyContin

- Released at same time as reform taking place
- Purdue actively marketed to doctors
- Originally marketed as “non habit forming”
  - Purdue trained sales force to mislead about addiction
  - Porter and Jick (1980)
Enter OxyContin

- Released at same time as reform taking place
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  - Purdue trained sales force to mislead about addiction
  - Porter and Jick (1980)
  - In 1996, Purdue was allowed to say addiction is rare when appropriately used
  - Forced to stop in 2001
  - 2007 – Paid $600 million in fines to Feds

Opioid Rx’s by Year, CDC

Oxy reformulation

- Purdue Pharma responds to critics by releasing abuse-resistant version
- FDA approves reformulation on April 5, 2010
- New formulation is released without notice on August 10, 2010
- Old drugs immediately pulled from market

Old and New OxyContin crushed
Problem

- Demand for opioids is still there
- The ability to get high is NOT
- Solution: switch to a close substitute
- That alternative: heroin

Heroin markets in US

- Historically – heroin markets divided by the Mississippi River
  - East was white powder heroin from SE Asia
  - West was black tar heroin from Mexico
- Largest markets: NE and MW
- Mexican heroin making larger inroads all across US
  - Taken over Chicago, Philly, DC, NJ, part of NY

New suppliers: Xalisco Boys cartel

- Pioneered new distribution system:
- Cell owner supplies heroin from Mexico
- Cell manager in US city/town
  - receives shipments
  - runs the business
- Telephone operator stays in an apartment all day receiving orders and relays these to drivers
- Drivers meet consumers and sell the heroin

- High focus on product quality and customer service
- When they enter a city they sought out high users
- Now
  - US awash in heroin
  - Amazingly high quality
  - Very low price
Real heroin prices

Dating the switch to heroin

Dating the heroin crisis

- Examine lots of national time series
  - Opioid use/abuse
  - Heroin abuse
- Use a statistical procedure to date a “structural break”
- All series break right after the reformulation of OxyContin
The results

- Reformulation of OxyContin brought about a shift to heroin
- The decline in deaths to opioids was compensated 1-for-1 with deaths from heroin
- Problem: Federal governments’ only solution to the opioid crisis SO FAR has been to encourage abuse-deterrent formulation
- Little likelihood of success as long as heroin is so prevalent

Fentanyl complicates the story some

- ~2013, heroin begins to be laced with fentanyl
- Fentanyl 50 x more potent than morphine
  - Prince died of a fentanyl OD
- DEA suggests Mexican gangs are the supplier
- Heroin is much more fatal now
- Some of post-reform heroin mortality is due to the increased potency of heroin from fentanyl
Amount needed to OD, Heroin and Fentanyl

Synthetic Opioid Death Rate

% Syn. Opioid Deaths with Other Drugs