Discussion of “The Downward Spiral,” by Greenwood, Guner, & Kopecky

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Deaths due to overdoses are not abating

Annual fatal overdoses have steadily risen for two decades. More than 100,000 Americans per year are dying.

Source: Centers for Disease Control & Prevention

PAUL WALDMAN / THE WASHINGTON POST
The three deadly waves of the opioid epidemic

As prescription pills dwindled, addicted users turned to heroin and fentanyl, driving historic numbers of overdose deaths.

Note: 2022 death data is provisional

Source: CDC mortality data

STEVEN RICH / THE WASHINGTON POST
Greenwood, Guner, & Kopecky’s Model

Pain-Free Nonuser, n

Pain/Prescription, p

Abuser, b
Work/don’t work

Disorder/Addicts, a
Work/don’t work

Death, d

1 - σ_{np} - σ_{nb}

σ_{np}

σ_{pn}

σ_{nb}

σ_{bn}

1 - σ_{pn} - σ_{pb}

σ_{an}

σ_{ba}

1 - σ_{bn} - σ_{ba}

σ_{ad}

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Nice Features of the Model

- Model captures dynamics of addiction that reasonably approximate prior economic models and also how addiction experts think about addiction
  - Previous use increases marginal utility of current consumption;
    “Addiction” state characterized by $\text{pr}(\text{death})>0$ and utility loss from opioid consumption
- Supply side showing up through changes in prices and “misinformation”
Some Challenges for the Model

- Limited data to set and calibrate model parameters
- “At the apex of my addiction, all moments were the present moment. ... Future rewards or adverse consequences were not salient.” (Kristen Smith, J Subs Abuse Treatment 2022)
- Fentanyl is increasing mortality due to misuse, even without addiction
- Misinformation about addiction risk – what else is this parameter capturing?
- Cross-state validation check might be overstating mortality predictions
Price Elasticity Too High?

• Prices matter a lot in the model, since it’s calibrated to a price elasticity of -0.95.
  - Mixed evidence on effects of Medicare Part D:
    • Increases in overall prescriptions, and <65 opioid deaths (Powell, et al 2020), increase in opioid use among >65 (Soni 2018)
    • No effect on opioid use among elderly (Sabety et al. 2021)
  - No evidence that Medicaid expansions led to increases in:
    • Opioid use (Baicker et al. 2017)
    • Opioid deaths (Averett et al., 2019, Goodman-Bacon & Sandoe 2017, Kravitz-Wertz et al. 2020)
Illegal Market Prices

Figure 6: Price of Illegal Opioids. Source: *Economic Report of the President, 2020.*
Where is Race?


Source: CDC 2022
What Should We Do to End the Opioid Crisis?

• Broad agreement among addiction experts: a suite of policy changes are needed
  - Promote non-opioid pain treatment alternatives
  - Increased funding and regulations to support better access to treatment
  - Harm reduction policies, e.g., Naloxone availability
  - Targeting the fentanyl supply chain

• Also strong bipartisan public support for policies like addiction treatment centers and broad Naloxone availability
How Should Economists Engage on Opioid Crisis?

• Dilemmas abound in choices around opioids; the model is helpful for illuminating trade-offs of different options
• Set up models to inform key features of current policy debates, e.g., access to addiction treatment
• My experience: language and labels matter a lot
  - Perhaps avoid “Abuser” and “Addict”
• Talk to decision scientists in public health with similar methods
Thank you!