Modeling the impacts of increasing criminal penalties for fentanyl possession

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Yale School of Public Health
Funding

Funding: National Institute on Drug Abuse

- K01DA051684
  - PI: Joshua Barocas

- DP2DA051864
  - PI: Joshua Barocas-Avenir Award for HIV/AIDS Research

- 1DP2DA049282-01
  - PI: Gregg Gonsalves-Avenir Award for HIV/AIDS Research

- 5R37DA015612-17
  - PI: Douglas Owens, Stanford
Outline/Objectives

❖ Background: Drug Criminalization and Opioid Epidemic
  • Trends in Fatal Opioid Overdose
  • How has opioid overdose been addressed?
  • History of Felonizing Drug Possession
  • House Bill 22-1326

❖ Modeling Fentanyl Felonization
Background on drug criminalization and the opioid epidemic
Trends in Fatal Opioid Overdose
United States vs. Colorado
How Overdoses Have Been Addressed

Systems-Level Demand Side Interventions

❖ **Opioid Agonist Therapy (OAT)**
  • Buprenorphine, methadone
  • Work to prevent withdrawal, reduce opioid cravings, and decrease overdose risk

❖ **Good Samaritan Laws**
  • Provide immunity from investigation about possession of drugs for persons who call 911 while having or witnessing an overdose

❖ **Syringe Service Programs (SSPs)**
  • Provide harm reduction
  • Can facilitate linkage to substance use treatment
  • Education on overdose prevention and response

❖ **Naloxone Distribution**
  • Distribution to people who use drugs, community members, and first responders
  • Standing orders for pharmacists and state-wide
How Overdoses Have Been Addressed

Systems-Level Supply Side Interventions

❖ State-Level Drug Monitoring Programs (PDMPs)
   • Require pharmacies to submit prescribing information on controlled substances to health departments

❖ Opioid Prescribing Policies
   • Patient review and restriction (PRR) programs require people suspected of drug misuse to obtain prescriptions from specified prescribers and/or pharmacies

❖ Iron Law of Prohibition
   • When drugs are prohibited, more powerful, dangerous forms of those drugs are produced

❖ Possession Laws/Penalties
   • Felonization laws that attempt to reduce supply of opioids in the community
Landscape of Possession Laws in the United States

- As of 2021, 18 states classified possession of less than 4g of certain controlled substances as a felony (blue)
  - In 2022, Colorado became 19th state (HB-1326)
  - All other states: misdemeanor classifications or misdemeanor + felony classifications for possession (grey)
- Oregon: Low quantities of any scheduled drug is $100 fine or mandatory health assessment (red)
History of Felonizing Drug Possession

Associated Health Consequences

❖ **Influence on Drug Use Behaviors**
  • People who use drugs (PWID) engage in hurried injection behaviors, to share syringes more often, and/or to inject in more high-risk environments
  • Up to 40x increased risk of death from drug overdose in the first two weeks of release from prison

❖ **Racial Disparities**
  • Drug arrest rates in two decades following 1980
    • White Individuals
      • Increased from 350 to 463 per 100,000 persons
    • Black Individuals
      • Increased from 650 to 2,907 per 100,000 persons
  • Socio-economic forces and dynamics influence both the propensity to use serious drugs in destructive ways and the likelihood of detection, thereby shaping arrest outcomes

❖ **Growing Prison Populations and Corrections Spending**
  • >320% increase in US prison population since 1980
  • >280% increase in corrections spending since 1980
House Bill 22-1326
Content and Background

❖ Prior to July 2022
  • Up to 4g by weight, containing any amount of fentanyl, resulted in misdemeanor

❖ After July 2022
  • >1g by weight, containing any amount of fentanyl, results in level 4 felony
  • Requires jails to offer medication for Opioid Use Disorder (MOUD) for opiate withdrawal (unfunded)
  • $40 million in additional funding
    • Opiate Antagonist distribution (e.g. Narcan)
    • OUD treatment options
    • Fentanyl Test Strips
    • 3-year Education Program
Modeling fentanyl felonization
Overview

What is a model and why is it useful?

Fentanyl Felonization Policy Model

Model data

Results

Key Takeaways
Overview

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Key Takeaways
What is a model?
Why use a model?

**PREDICT...**

Outcomes of **NEW** policies

**LONG-TERM** outcomes of implemented policies

**GOAL?**

Not an exact answer- ballpark estimates to help guide decision-makers when data isn’t (yet) available.
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Model

Potential outcomes of increasingly strict laws surrounding fentanyl possession
Objectives

Model
Potential outcomes of increasingly strict laws surrounding fentanyl possession

Evaluate
Changes in number of incarceration and deaths
**Objectives**

- **Model**: Potential outcomes of increasingly strict laws surrounding fentanyl possession
- **Evaluate**: Changes in number of incarceration and deaths
- **Estimate**: Costs associated with stricter possession laws
Objectives

Model
Potential outcomes of increasingly strict laws surrounding fentanyl possession

Evaluate
Changes in incarcerations and deaths

Estimate
Costs associated with stricter possession laws

Old felony
>4g of drugs in possession with any amount fentanyl

New felony
>1g of drugs in possession with any amount fentanyl

Future?
Any amount of drugs in possession with any amount fentanyl
Start by simulating a person
In our model, this person possesses illicit drugs
The person can die
Or the person can be arrested
If arrested, the person can be let go
Or if the person possesses enough drugs for a felony offense, they are incarcerated.
Eventually he is released from incarceration
Post-incarceration, he can once again die or be arrested and incarcerated, but now with higher risk.
Our model simulates a lot of people all at once - a cohort who move through the model.
When drug policies become stricter, more people are incarcerated.
When drug policies become stricter, more people are incarcerated
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What is a model and why is it useful?

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Key Takeaways
# Cohort

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<tbody>
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<td>139,867</td>
<td>NSDUH 2019-2020</td>
</tr>
<tr>
<td></td>
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<td>Krawczyk 2022</td>
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<tr>
<td>Percent of drug supply with fentanyl</td>
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<td>Percent of people who unknowingly possess fentanyl</td>
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<td>Macmadu et al. 2017</td>
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<td>Standard</td>
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<td>Low policing</td>
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<td>Cost of incarceration, 6 months</td>
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<td>Vera, 2015</td>
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<td>Cost of overdose death</td>
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<td>Healthcare costs only</td>
<td>$5,500</td>
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<td>$1.4 million</td>
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Key Takeaways
Both deaths and incarcerations increase with new fentanyl felony law

>4 grams felony

One Year

502

616
Both deaths and incarcerations increase with new fentanyl felony law

- **>4 grams felony**
  - One Year: 502 deaths, 616 incarcerations

- **>1 gram felony**
  - One Year: 1,035 deaths, 646 incarcerations
Both deaths and incarcerations increase with new fentanyl felony law

- >1 gram felony
  - One Year: 1,035
  - Incarcerations: 646
  - Total Incarcerations: 533

- >4 grams felony
  - One Year: 502
Both deaths and incarcerations increase with new fentanyl felony law

- >4 grams felony
  - One Year: 502 (Deaths), 616 (Incarcerations)

- >1 gram felony
  - One Year: 1,035 (Deaths), 646 (Incarcerations)

30 Deaths
With stricter laws, deaths and incarcerations may increase more.

- **>1 gram felony**
  - One Year: 1,035
  - One Year: 646

- **Any amount felony**
  - One Year: 2,938
  - One Year: 751
With stricter laws, deaths and incarcerations may increase more.

- **>1 gram felony**
  - One Year: 1,035 Incarcerations
  - One Year: 646 Incarcerations

- **Any amount felony**
  - One Year: 2,938 Incarcerations
  - One Year: 751 Incarcerations

Total: 1,903 Incarcerations
With stricter laws, deaths and incarcerations may increase more.

<table>
<thead>
<tr>
<th>felony</th>
<th>One Year</th>
<th>105 Deaths</th>
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<tbody>
<tr>
<td>&gt;1 gram felony</td>
<td>1,035</td>
<td>646</td>
</tr>
<tr>
<td>Any amount felony</td>
<td>2,938</td>
<td>751</td>
</tr>
</tbody>
</table>
Over 10 years...

>4 grams felony

| 10 years | 4,898 | 7,188 |
Over 10 years...

- >4 grams felony
- >1g felony
- 10 years
  - +4,283
  - +1,642
Over 10 years...

- >4 grams felony
- 10 years
- 11,019
- >1g felony
- 10 years
- Any amount a felony
- 10 years
- +9,859
- +5,822
Significant increases in drugs and arrests happen amongst those who don’t know they possess fentanyl

<table>
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<tr>
<td>10 years</td>
</tr>
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Significant increases in drugs and arrests happen amongst those who don’t know they possess fentanyl.

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<td>3,356</td>
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<td>4,455</td>
<td>+1,139</td>
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</table>
Significant increases in drugs and arrests happen amongst those who don’t know they possess fentanyl.

- **>4 grams felony**: 10 years, 3,356 vs. 4,455
- **>1g felony**: 10 years, +2,866 vs. +1,139
- **Any amount a felony**: 10 years, +6,209 vs. +4,001
Annual cost of incarceration increases by $10 million to $50 million with stricter laws

- >4 grams felony: $9.9 million
- >1 gram felony: $20.4 million
- Any amount a felony: $58.0 million
Annual cost of incarceration increases by $10 million to $50 million with stricter laws.

- >4 grams felony: $9.9 million
- >1 gram felony: $20.4 million
- Any amount a felony: $58.0 million

$10.5 million could provide a year of MOUD for 1,700 people.
Annual cost of incarceration increases by $10 million to $50 million with stricter laws

$48.1 million could provide a year of MOUD for 8,000 people
Over 10 years, incarceration costs increase to nearly a billion dollars

- >4 grams felony: $151.1 million
- >1 gram felony: $321.2 million
- Any amount a felony: $983.8 million
Over 10 years, incarceration costs increase to nearly a billion dollars

- >4 grams felony: $151.1 million
- >1 gram felony: $321.2 million
- Any amount a felony: $983.8 million

$170.1 million could provide 10 years of MOUD for 3,000 people
Over 10 years, incarceration costs increase to nearly a billion dollars

- >4 grams felony: $151.1 million
- >1 gram felony: $321.2 million
- Any amount a felony: $983.8 million

$832.7 million could provide 10 years of MOUD for 13,000 people.
Over 10 years, healthcare costs could double

- >4 grams felony: $39.3 million
- >1 gram felony: $48.2 million
- Any amount: $80.0 million
Overview

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Key Takeaways
Key Limitations

- We do not consider MOUD treatment in jails/prisons. Currently this is not widely available in the Colorado or US prison system.

- We do not consider incarcerations for anything outside of possession of fentanyl.

- We do not consider costs outside of those for incarceration and overdose death, including the cost of non-fatal overdoses to the healthcare system.

- We also do not consider the effects of incarceration on infectious disease rates among those with drug use disorder.

- Our estimates are only as good as the data we have, and some of the information isn’t easily measured.
Key Takeaways

- Stricter drug felony laws could increase incarcerations by 4,000-10,000, especially among those with unknowing fentanyl possession.
- Overdose deaths could increase by 1,500-6,000 over 10 years.
- Increases in incarcerations could cost the state over a billion dollars.
https://savinkina.shinyapps.io/FentanylPolicy

The population that reported illicit drug use (non-marijuana) in Colorado is 196,616, the average cost of a month in prison in Colorado is $3,275. Standard policing leads to an annual arrest rate of 13%.

<table>
<thead>
<tr>
<th>Inputs</th>
<th>Effects of policy felonizing fentanyl possession</th>
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<tbody>
<tr>
<td>State</td>
<td>Colorado</td>
</tr>
<tr>
<td>How much fentanyl is a felony?</td>
<td>Greater than 4g</td>
</tr>
<tr>
<td>Length of simulation?</td>
<td>One year</td>
</tr>
<tr>
<td>Proportion of the illicit drug supply that contains fentanyl</td>
<td>0.8</td>
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<tr>
<td>Policing strategy</td>
<td>Standard Policing</td>
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<tr>
<td>Costs associated with a death</td>
<td>Healthcare costs only</td>
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<tr>
<td>838</td>
<td>Deaths in population with unknown fentanyl possession</td>
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<tr>
<td>549</td>
<td>Deaths in population with known fentanyl possession</td>
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<td>786</td>
<td>Arrests in population with unknown fentanyl possession</td>
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<tr>
<td>$7,579,258</td>
<td>Total costs from death</td>
</tr>
<tr>
<td>$22,294,292</td>
<td>Total costs from arrest</td>
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<td>$29,873,550</td>
<td>Total costs from death and arrest</td>
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Acknowledgments

Cole Jurecka
University of Colorado- Anschutz Medical Campus
References

• SAMHSA, Center for Behavioral Health Statistics and Quality, National Survey on Drug Use and Health, 2019 and Quarters 1 and 4, 2020.