

Title: Trends in Characteristics of Opioid-Related Poisonings Among Older Adults in the United States, 2015-2021

Belicia Ding, Nicholas Wu, Benjamin Han, Jennifer S. Jewell, Joseph J. Palamar

INTRODUCTION

- A quarter of Medicare beneficiaries received an opioid in 2021.
- Opioid-related overdose deaths continue to increase in older adults.
- Little is known about trends and characteristics of opioid-related poisonings in older adults.

METHODS

- We used National Poison Control data of reported exposures to prescription opioids and fentanyl from 2015 to 2021 among adults age ≥ 60 .
- Examined trends by year among subgroups with Joinpoint Regression. Logistic regression was performed to estimate whether there were linear changes by time. We also aggregated the data to examine medical outcomes stratified by specific opioid-involved and co-use with other drugs.

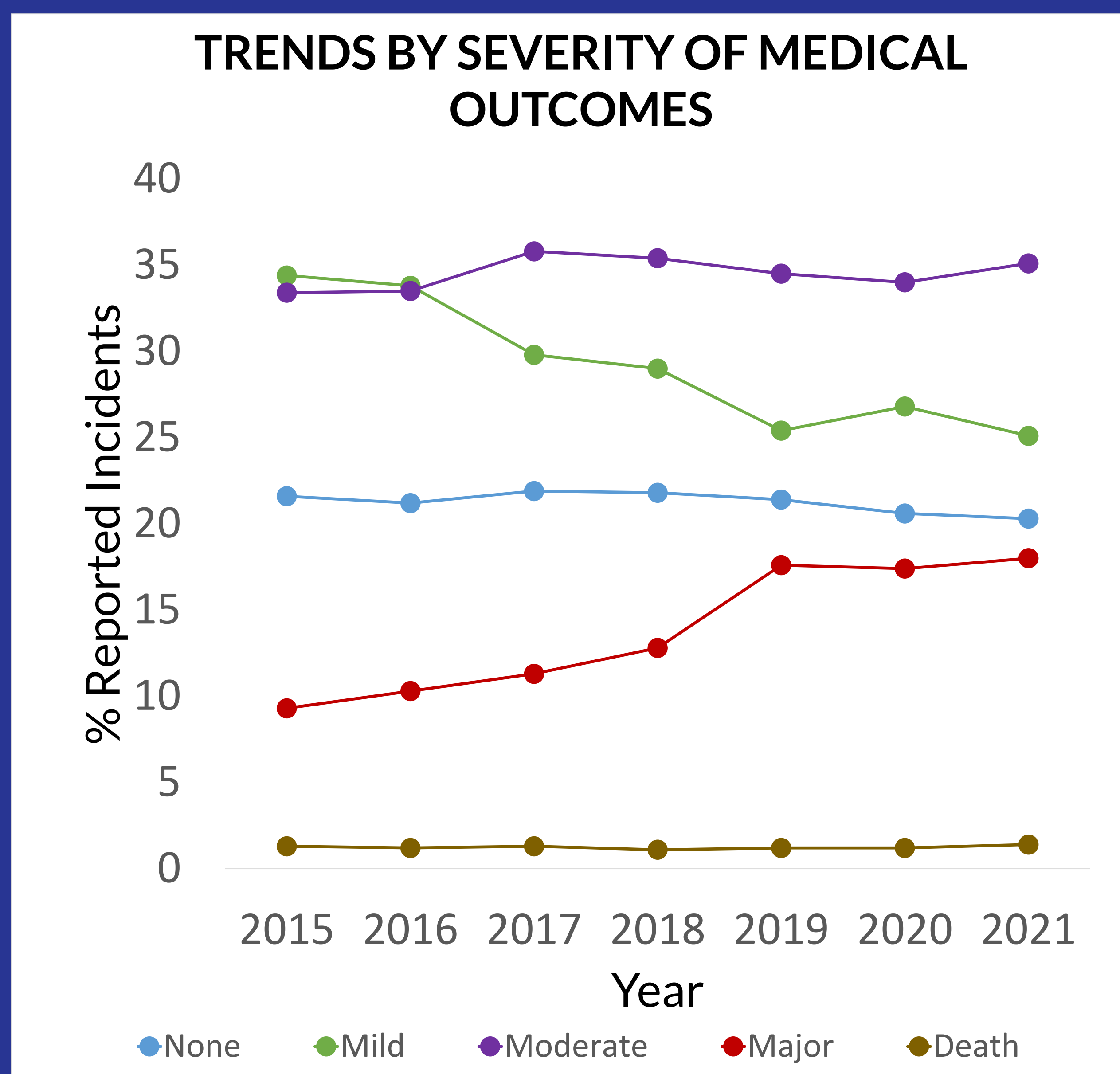
RESULTS

- Overall decrease in opioid exposures from 7,706 (2015) to 7,337 (2021), **4.8% decrease (p=0.04)**.
- Proportion of opioid exposures increased 14.0% among adults aged 70-79, "Abuse" of opioid increased by 63.3% (p<0.001).
- Decrease in hydromorphone by 23.3%, decrease in morphine by 22%, increase in buprenorphine by 216.6% (p<0.001).
- Increase co-use of cocaine by 488.9%, decrease in co-use of benzodiazepines by 25.5% (p<0.001), and increase co-use methamphetamine by 220.0% (p=0.02).
- Proportion of major medical outcomes increased by 98.9% (p<0.001).

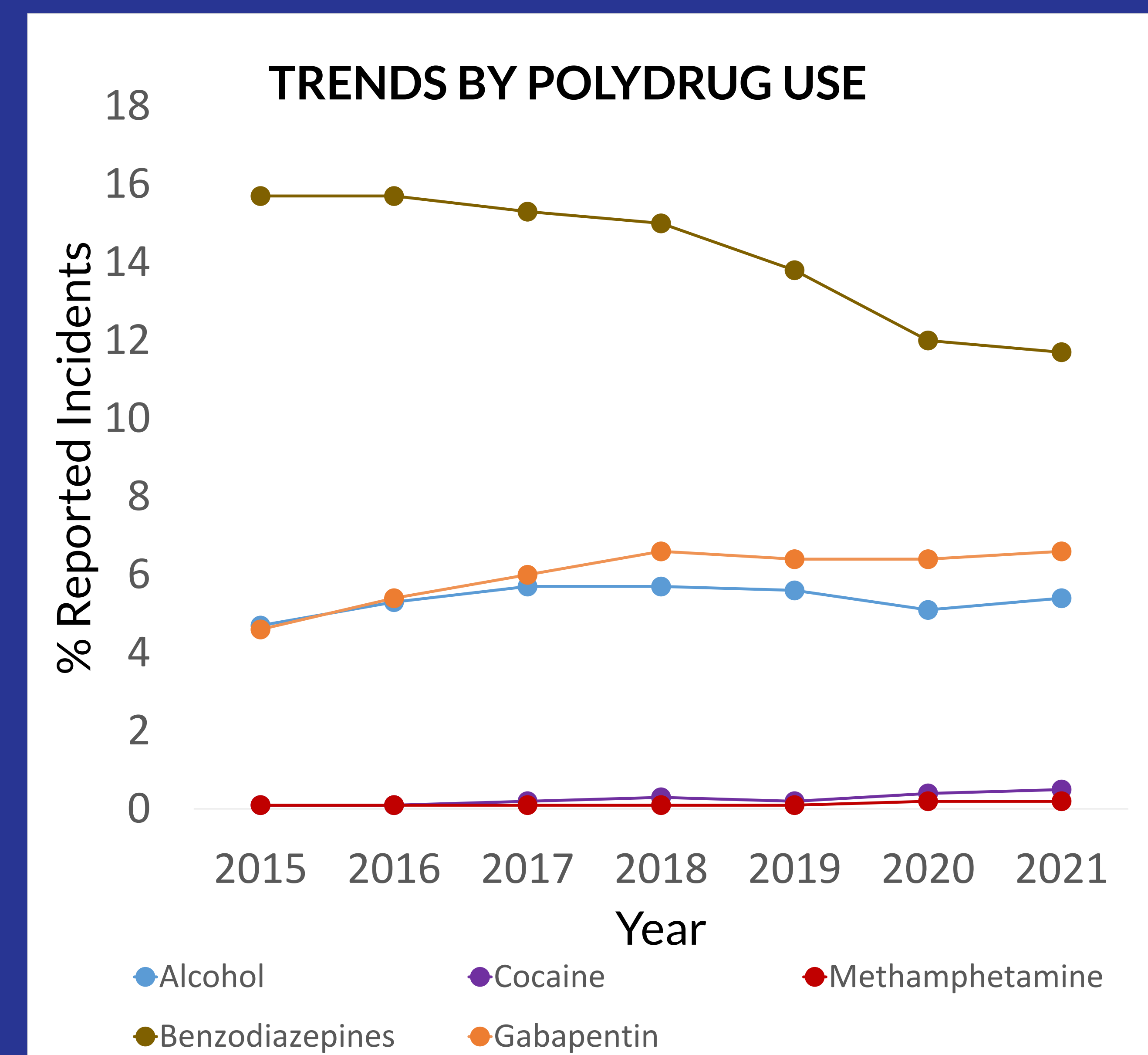
DISCUSSION

- Increase in proportion experiencing major medical outcomes.
- Overall exposure of polydrug use is low but increasing trend for stimulant co-use.
- Decrease trend of benzodiazepine but increase in gabapentin co-use with opioids.
- Results help inform prevention and harm reduction efforts for older adults.

Among older adults, there is a decrease in nationally reported prescription opioid-related poisonings, but an increase in the proportion experiencing life-threatening outcomes and co-use with stimulants



- Mild: minimally bothersome
- Moderate: more pronounced or prolonged
- Major: life-threatening/ permanently disabling



Medical Outcomes by Opioid Type and Polydrug Use (2015-2021)

| | Major, % (n=4,999) | Death, % (n=454) |
|---------------------|--------------------|------------------|
| Opioid Used | | |
| Hydrocodone | 30.9 | 38.6 |
| Oxycodone | 35.5 | 34.8 |
| Tramadol | 14.1 | 13.2 |
| Morphine | 9.8 | 11.2 |
| Methadone | 8.5 | 4.0 |
| Hydromorphone | 2.9 | 2.2 |
| Fentanyl | 6.7 | 5.5 |
| Buprenorphine | 2.9 | 1.5 |
| Oxymorphone | 0.3 | 0.2 |
| Tapentadol | 0.6 | 0.2 |
| Polydrug Use | | |
| Alcohol | 8.1 | 5.3 |
| Cannabis | 0.6 | 0.4 |
| Cocaine | 0.7 | 0.4 |
| Methamphetamine | 0.2 | 0.4 |
| Benzodiazepines | 25.9 | 24.0 |
| Heroin | 1.1 | 0.4 |
| Gabapentin | 7.4 | 6.8 |

LIMITATIONS

- Unknown if opioids were prescribed, unprescribed or illicitly manufactured
- Data limited to self-report to poison centers by patients or healthcare professionals.

Analysis was undertaken by the National Institute on Drug Abuse National Drug Early Warning System with the Researched Abuse, Diversion and Addiction-Related Surveillance (RADARS) System. National Poison Data available from all states other than North Carolina.

FINANCIAL DISCLOSURE

This research was funded by the National Institute on Drug Abuse of the National Institutes of Health, 185 grant numbers: K23DA043651 (Han), R01DA044207 (Palamar), and U01DA051126.

