



Emerging Drug Threats in the United States

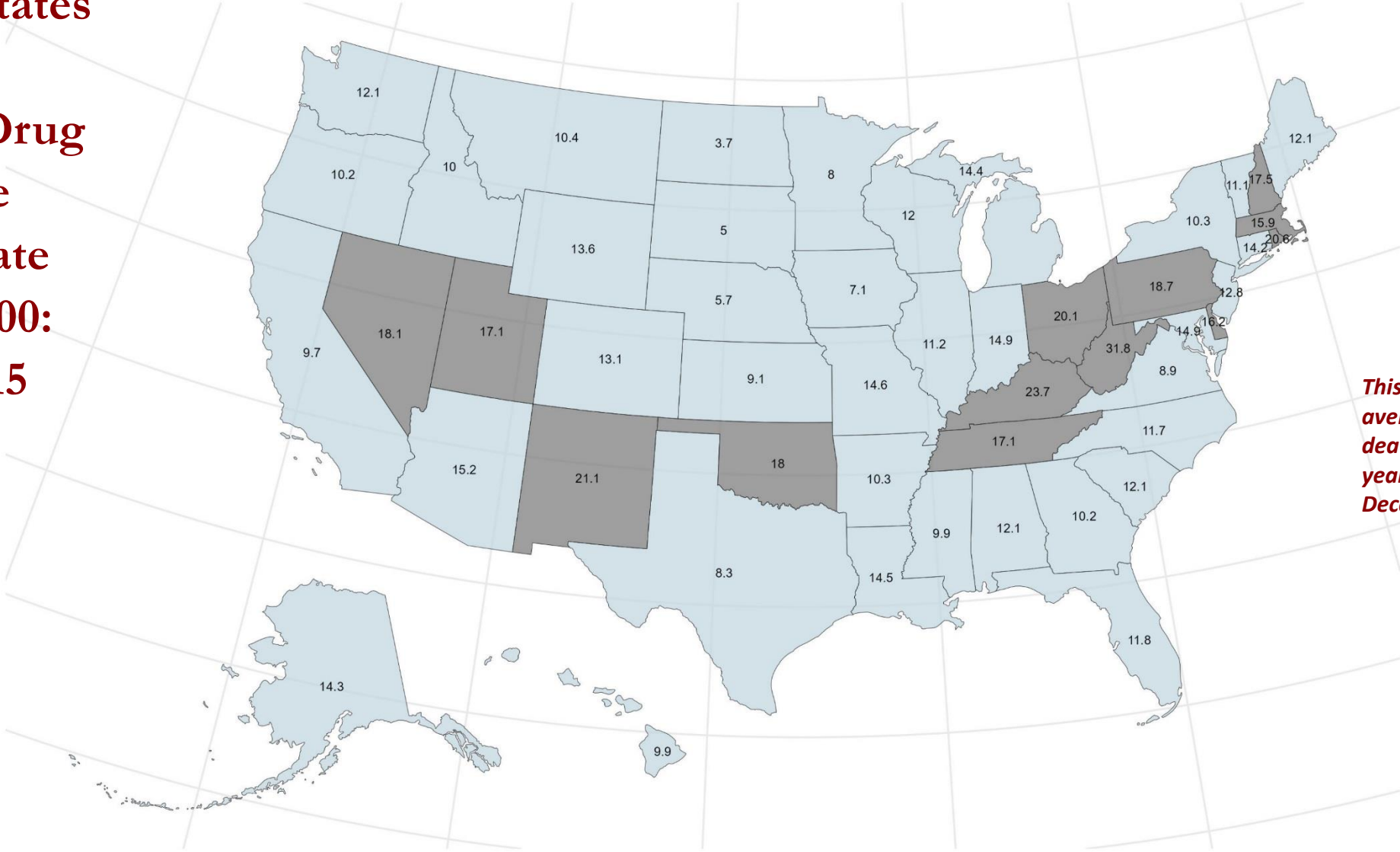
**Harold Rogers PDMP 2022 National Meeting
December 5, 2022**

**Prepared by
The National Emerging Threats Initiative (NETI)
John L Eadie, Public Health Projects Coordinator**

What can Drug Overdose Deaths tell us about Emerging Threats?



**United States
Average
Annual Drug
Overdose
Death Rate
per 100,000:
2011 - 2015**



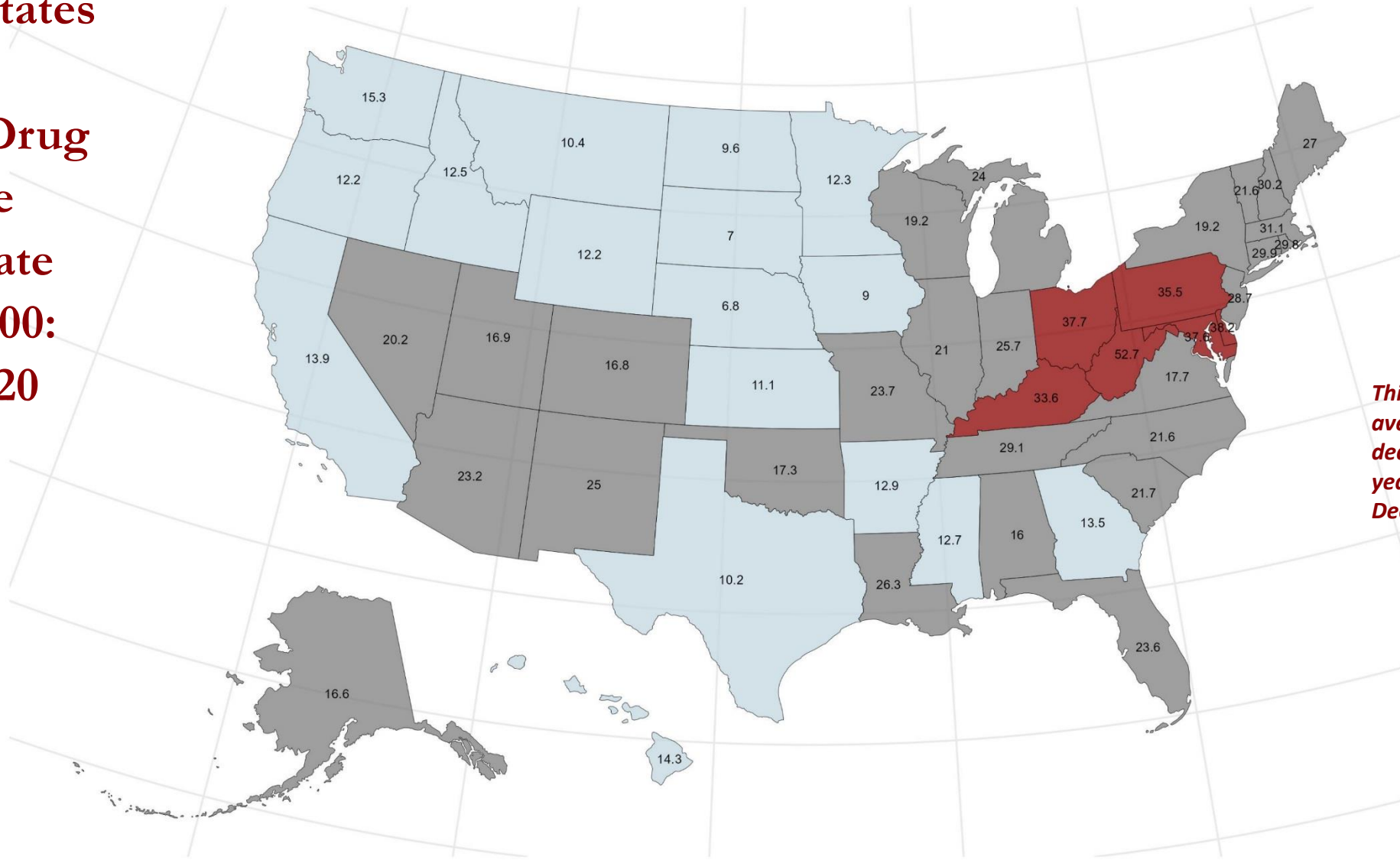
This figure represents the average annual overdose death rate for the five-year period ending December 31, 2015.

Overdose ■ Low ■ Mod ■ High



Data source: National Vital Statistics System, Mortality 1999-2020 on CDC WONDER Online Database, released in 2021.

**United States
Average
Annual Drug
Overdose
Death Rate
per 100,000:
2016 - 2020**



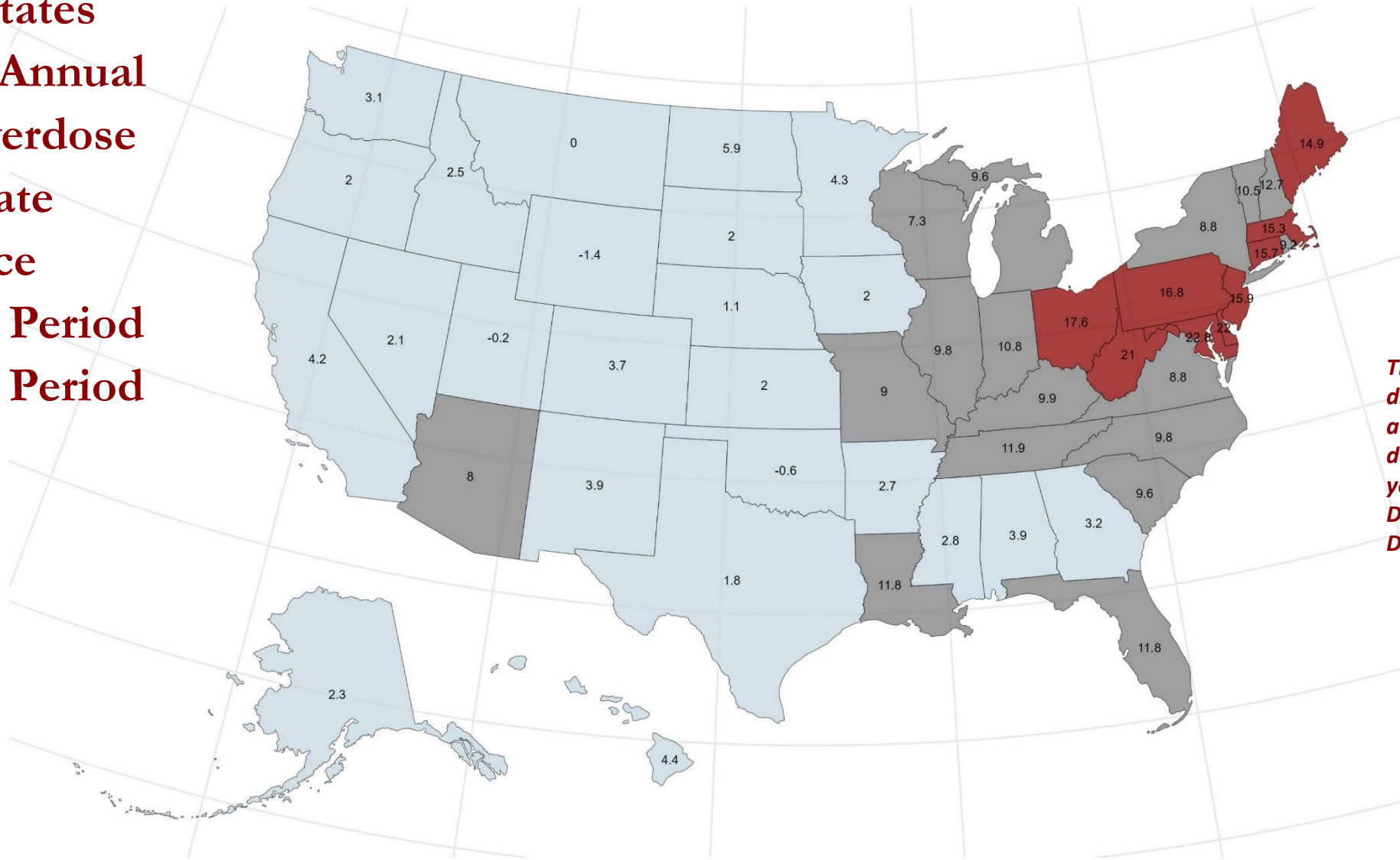
This figure represents the average annual overdose death rate for the five-year period ending December 31, 2020.



Overdose ■ Low ■ Mod ■ High

Data source: National Vital Statistics System, Mortality 1999-2020 on CDC WONDER Online Database, released in 2021.

United States Average Annual Drug Overdose Death Rate Difference Between Period One and Period Two



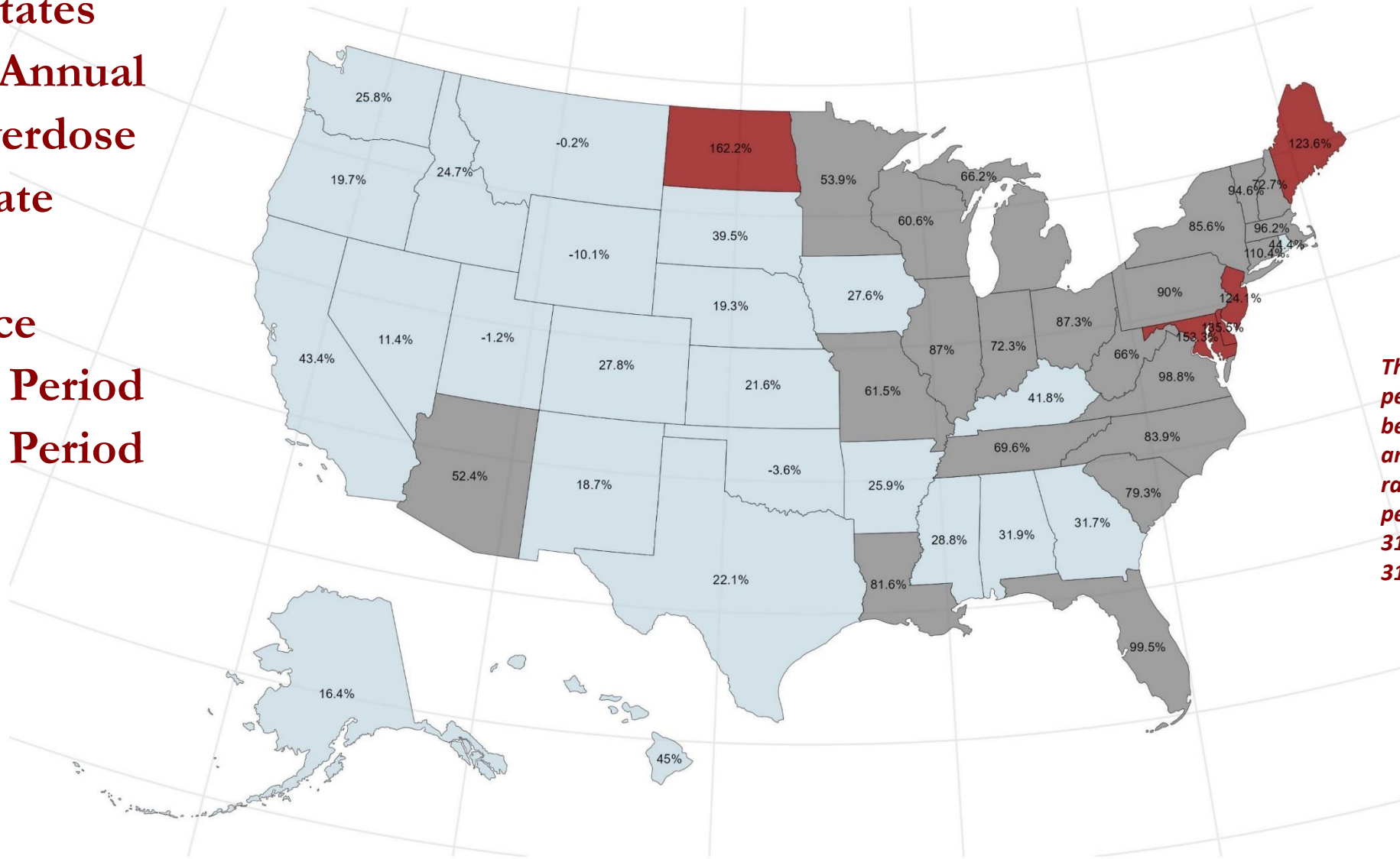
This figure represents the difference between the average annual overdose death rate for the five-year periods ending December 31, 2015, and December 31, 2020.



Overdose [-1.4,6.6] (6.6,13.8] (13.8,29.8]

Data source: National Vital Statistics System, Mortality 1999-2020 on CDC WONDER Online Database, released in 2021.

**United States
Average Annual
Drug Overdose
Death Rate
Percent
Difference
Between Period
One and Period
Two**



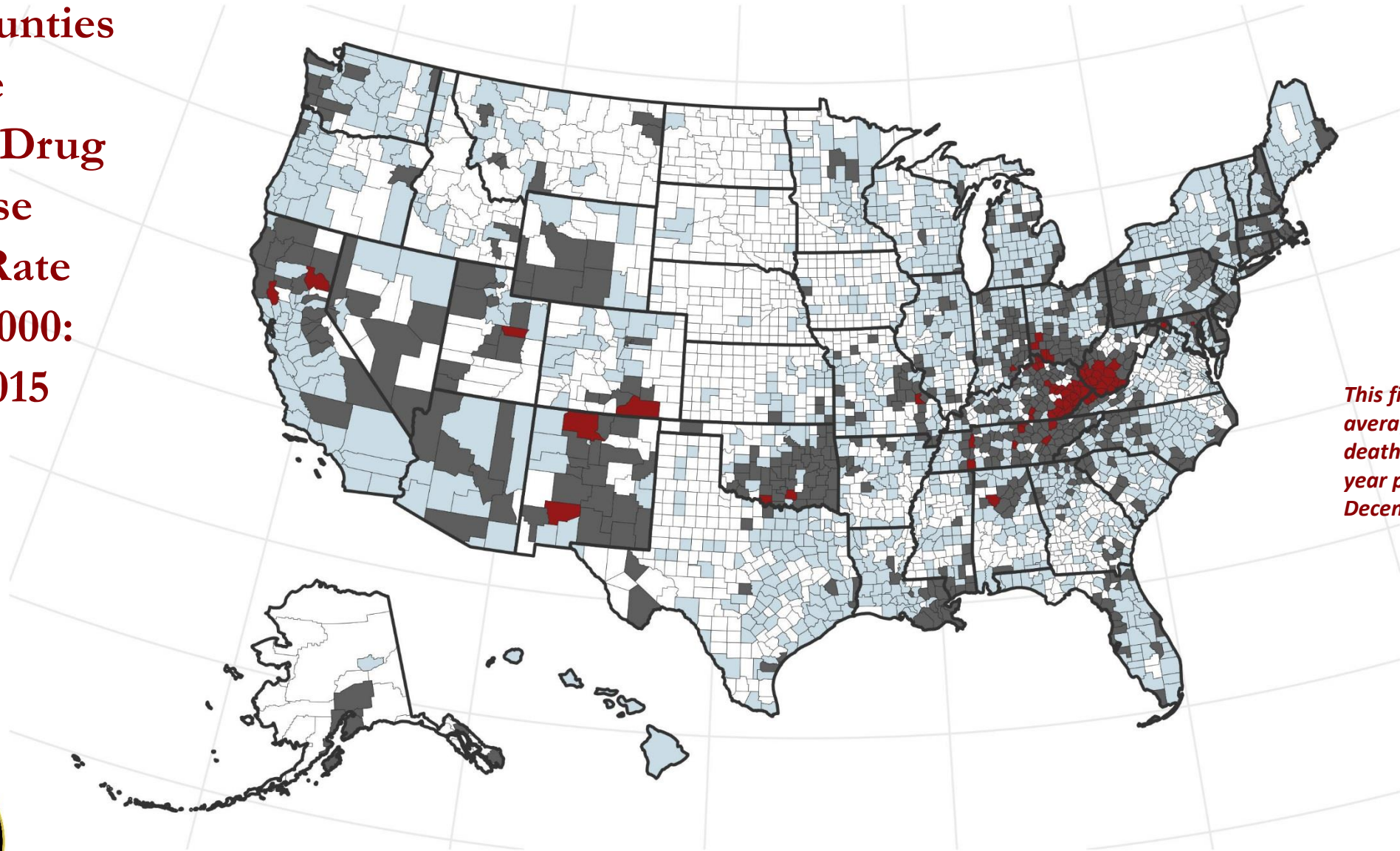
This figure represents the percent difference between the average annual overdose death rate for the five-year periods ending December 31, 2015, and December 31, 2020.

Overdose [-10.1,48.7] (48.7,117] (117,213]



Data source: National Vital Statistics System, Mortality 1999-2020 on CDC WONDER Online Database, released in 2021.

**U.S. Counties
Average
Annual Drug
Overdose
Death Rate
per 100,000:
2011 - 2015**



This figure represents the average annual overdose death rate for the five-year period ending December 31, 2015.

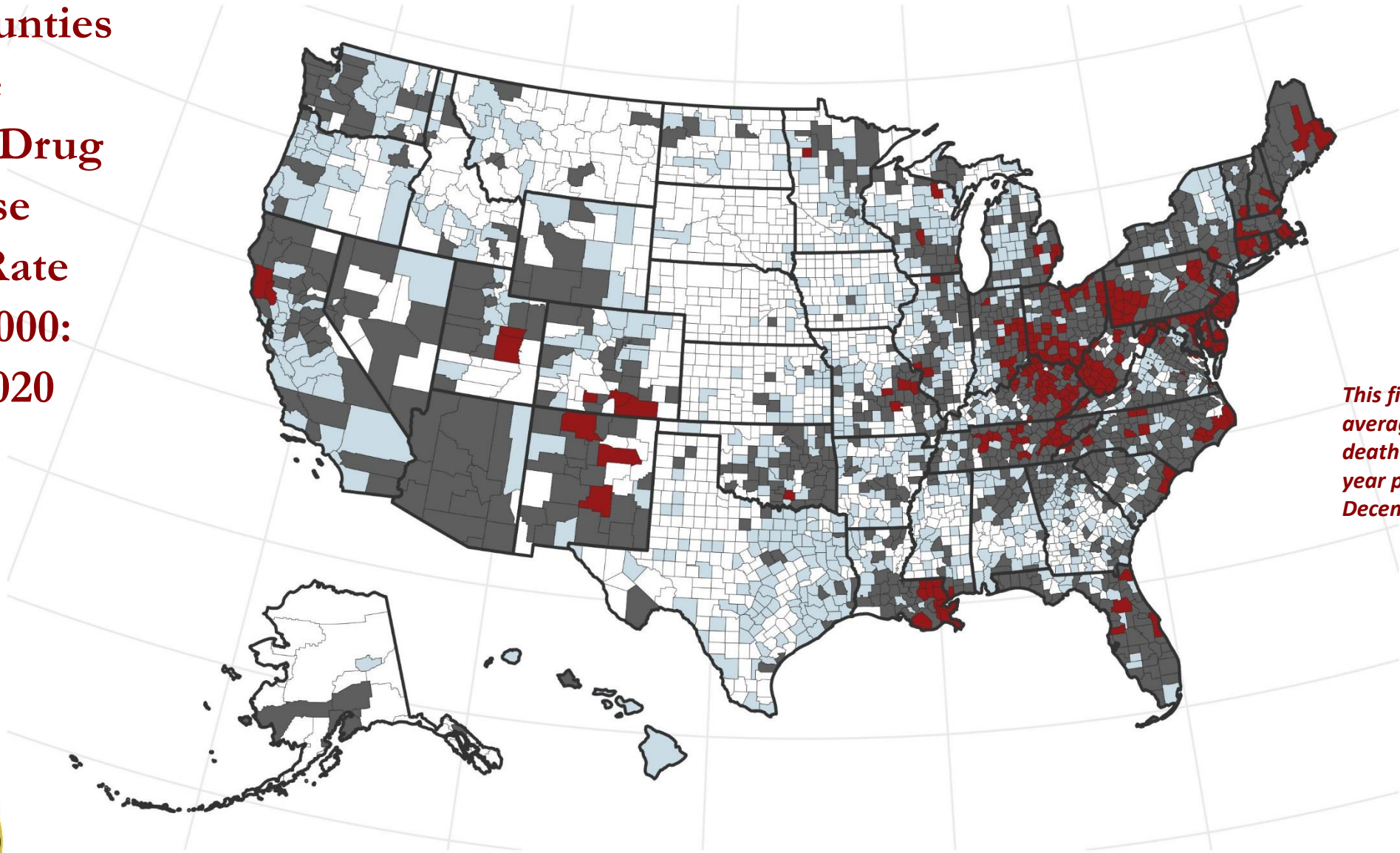


Overdose  Low  Mod  High

Data source: National Vital Statistics System, Mortality 1999-2020 on CDC WONDER Online Database, released in 2021.


Counties with no fill color have fewer than 10 deaths for the reporting period.

**U.S. Counties
Average
Annual Drug
Overdose
Death Rate
per 100,000:
2016 - 2020**



This figure represents the average annual overdose death rate for the five-year period ending December 31, 2020.

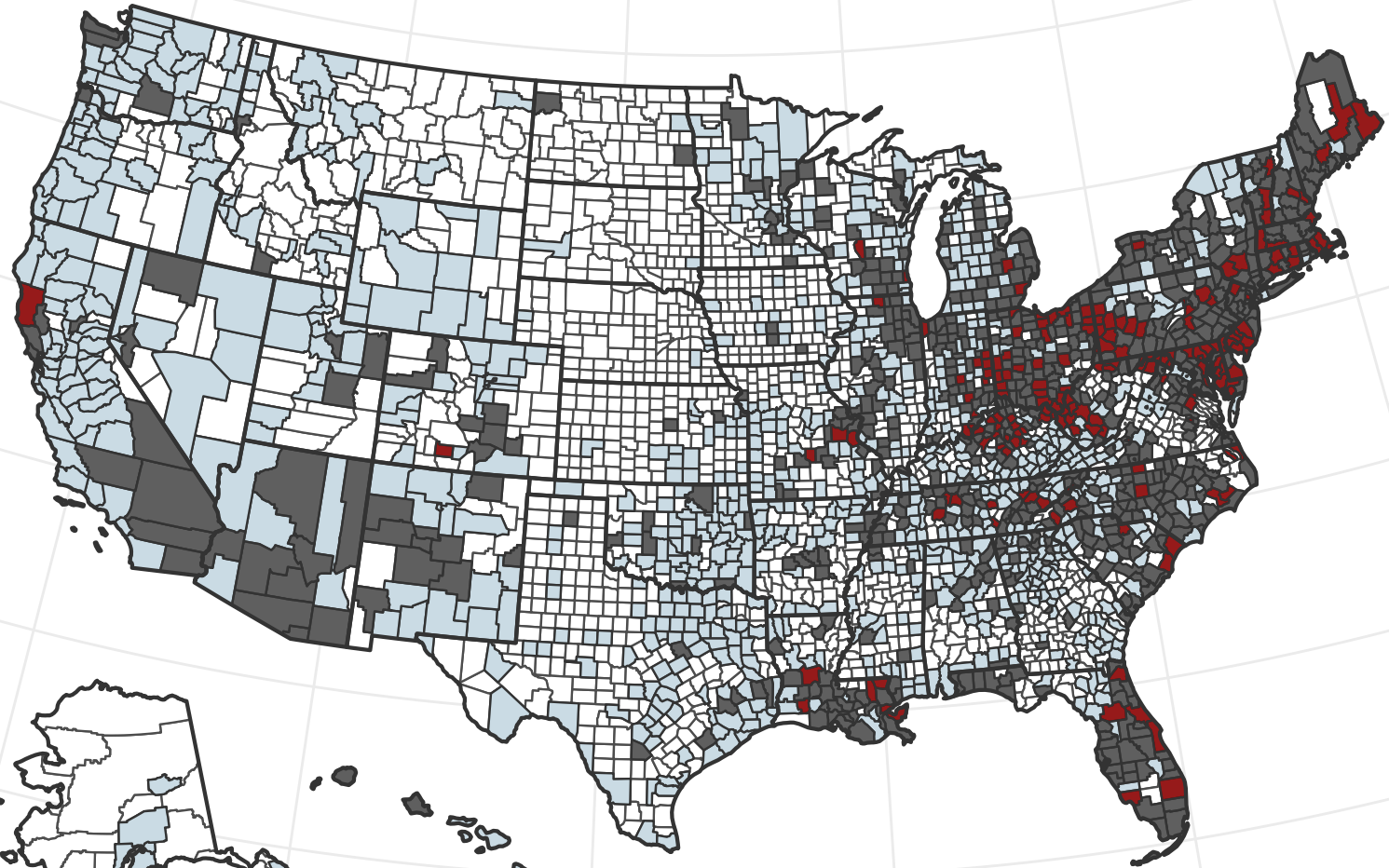


Overdose  Low  Mod  High

Data source: National Vital Statistics System, Mortality 1999-2020 on CDC WONDER Online Database, released in 2021.

Counties with no fill color have fewer than 10 deaths for the reporting period.

U.S. Counties Average Annual Drug Overdose Death Rate Difference Between Period One and Period Two



This figure represents the difference between the average annual overdose death rate for the five-year periods ending December 31, 2015, and December 31, 2020.

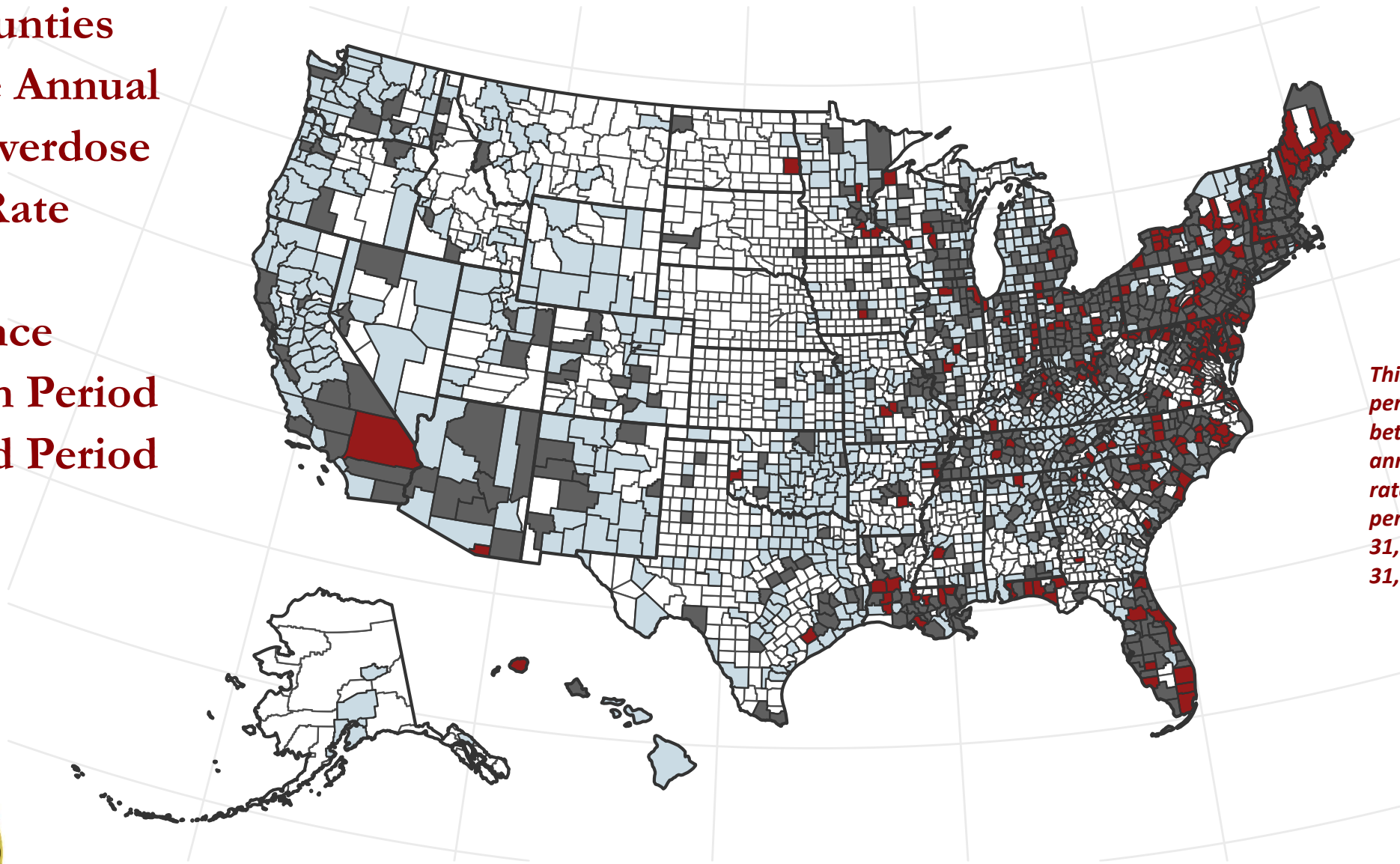


Overdose [-33.4,5.12] (5.12,17.4] (17.4,72.8]

Data source: National Vital Statistics System, Mortality 1999-2020 on CDC WONDER Online Database, released in 2021.




Counties with no fill color have fewer than 10 deaths for the reporting period.

**U.S. Counties
Average Annual
Drug Overdose
Death Rate
Percent
Difference
Between Period
One and Period
Two**



This figure represents the percent difference between the average annual overdose death rate for the five-year periods ending December 31, 2015, and December 31, 2020.



Overdose  [-58.8,41.1]  (41.1,120]  (120,607]

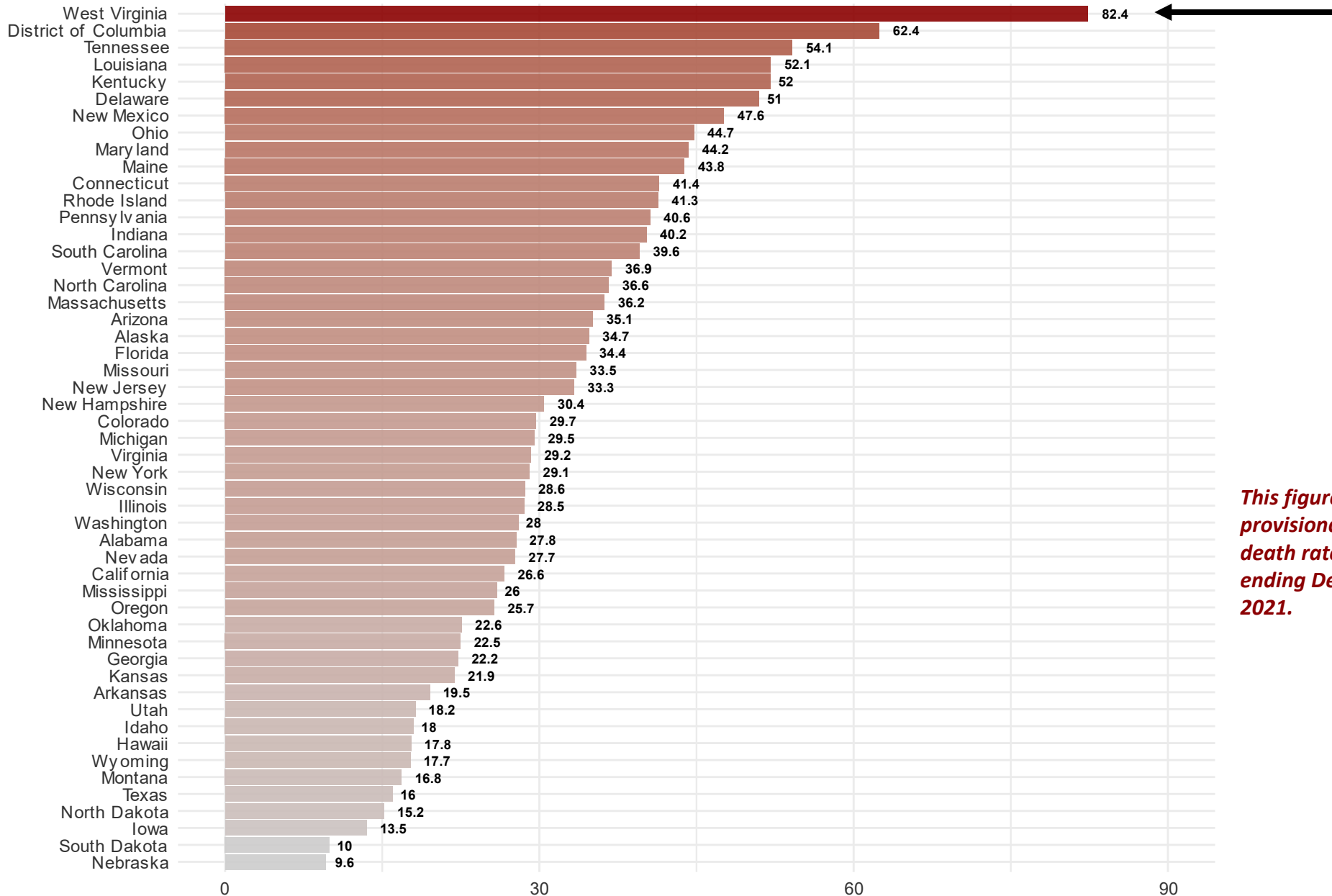
Data source: National Vital Statistics System, Mortality 1999-2020 on CDC WONDER Online Database, released in 2021.

Counties with no fill color have fewer than 10 deaths for the reporting period.

Can we identify Drug Overdose Deaths by State?



Provisional Drug Overdose Deaths Per 100,000 Population By State - 2021

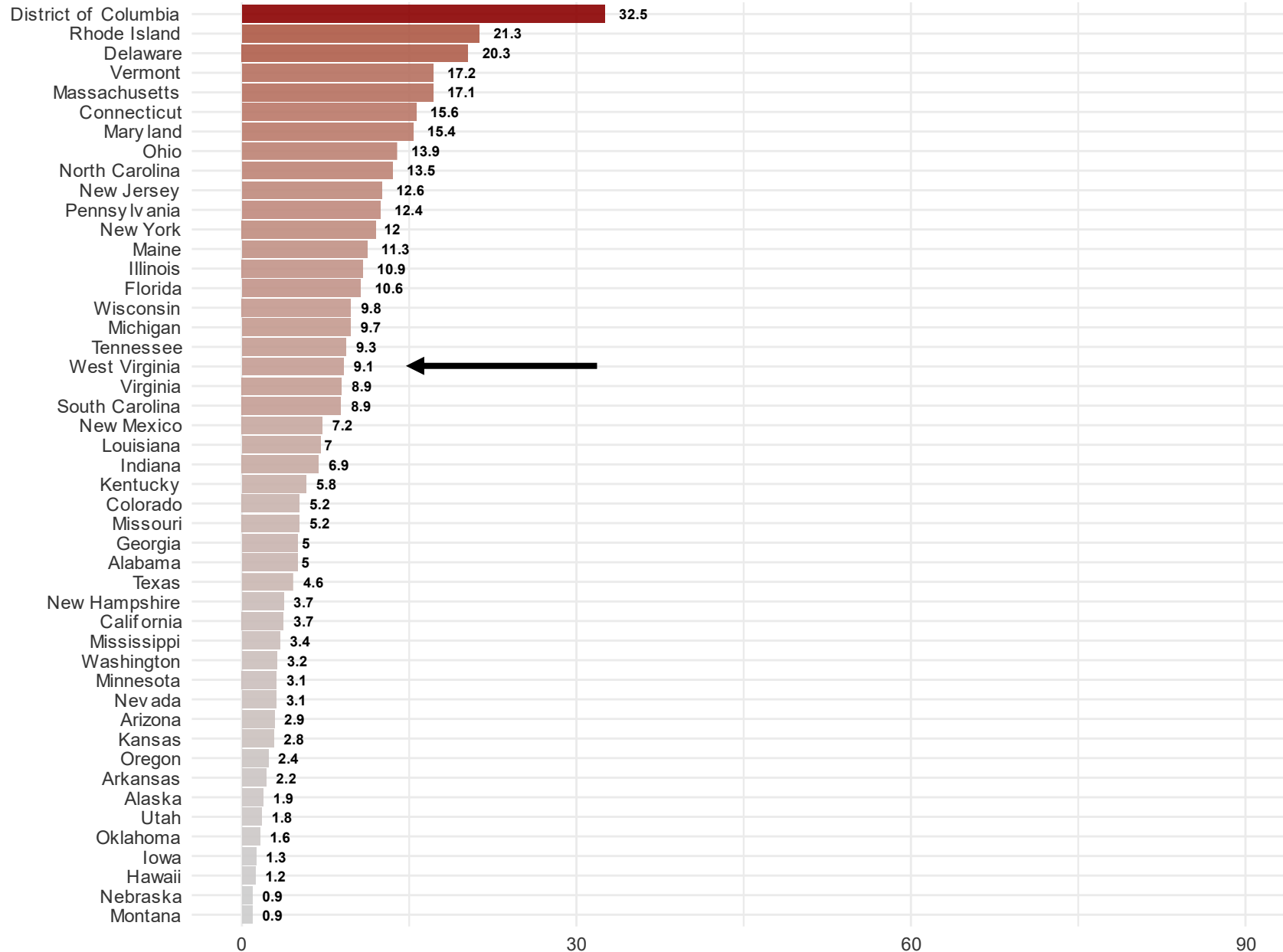


This figure represents the provisional drug overdose death rate for the year ending December 31, 2021.

Data source: National Vital Statistics System, Mortality 1999-2021 on CDC WONDER Online Database.



Provisional Cocaine Overdose Deaths Per 100,000 Population By State - 2021

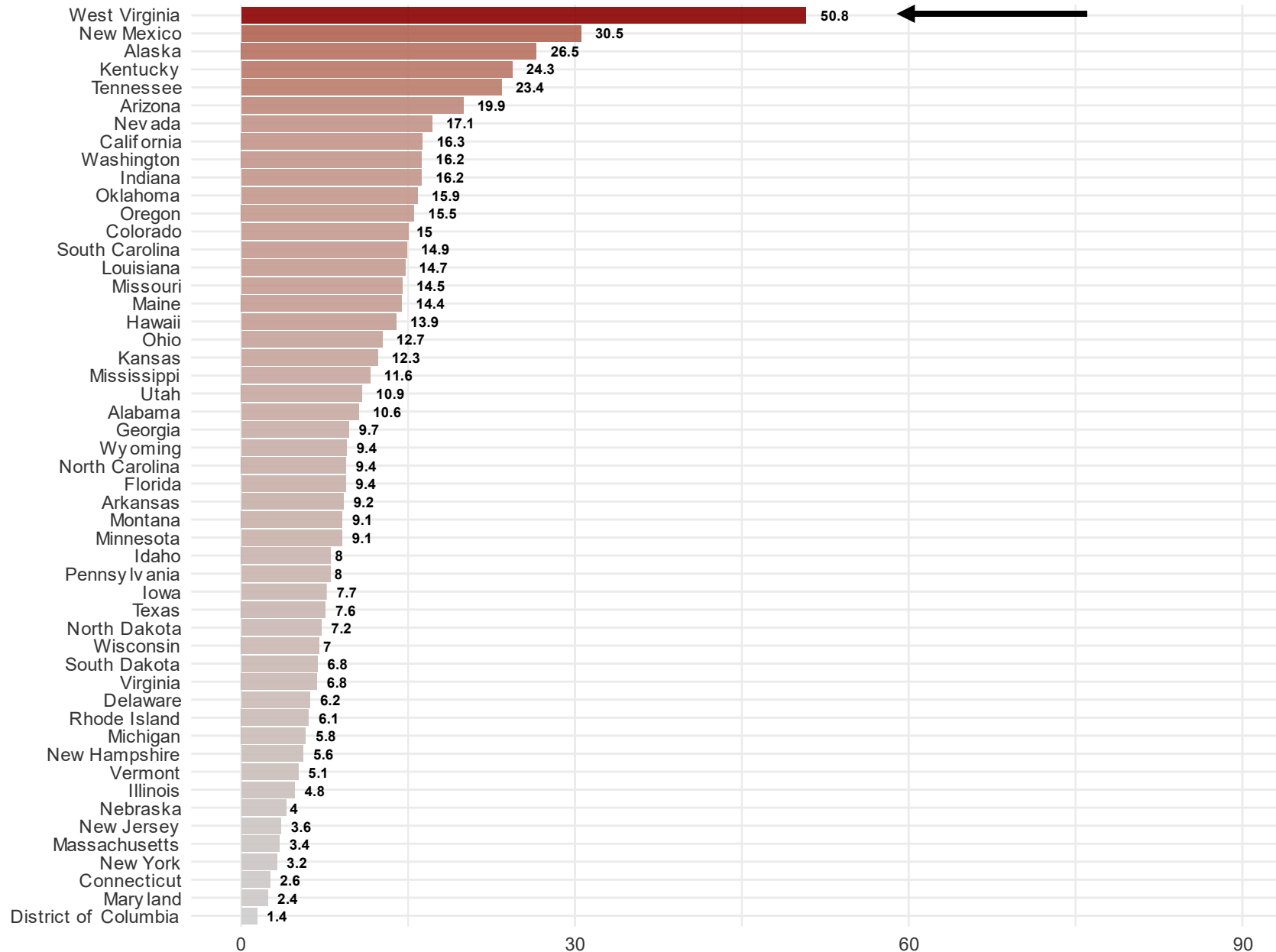


Data source: National Vital Statistics System, Mortality 1999-2021 on CDC WONDER Online Database.



This figure represents the provisional cocaine overdose death rate for the year ending December 31, 2021.

Provisional Psychostimulant Overdose Deaths Per 100,000 Population By State - 2021

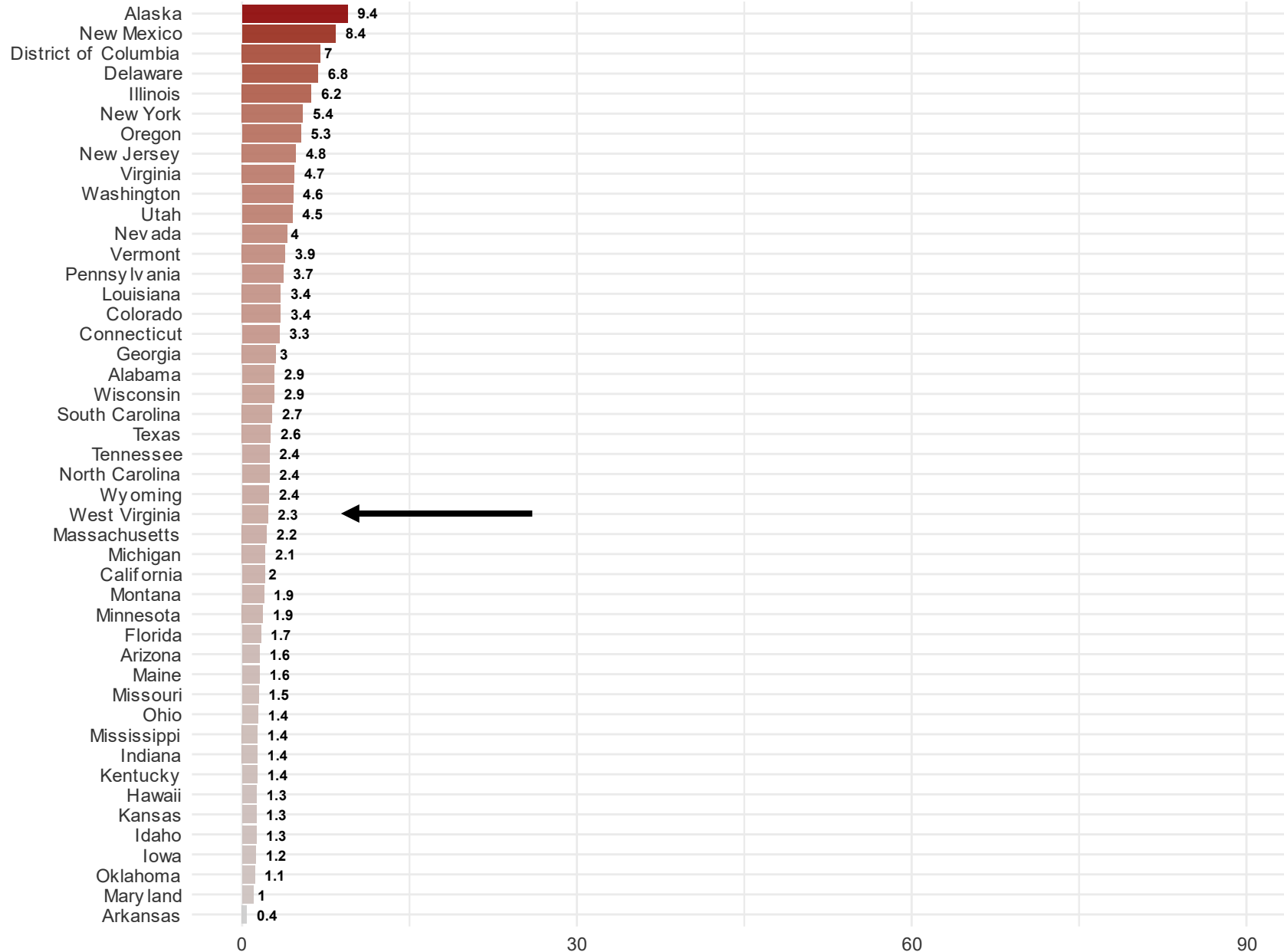


This figure represents the provisional psychostimulant overdose death rate for the year ending December 31, 2021.

Data source: National Vital Statistics System, Mortality 1999-2021 on CDC WONDER Online Database.



Provisional Heroin Overdose Deaths Per 100,000 Population By State - 2021

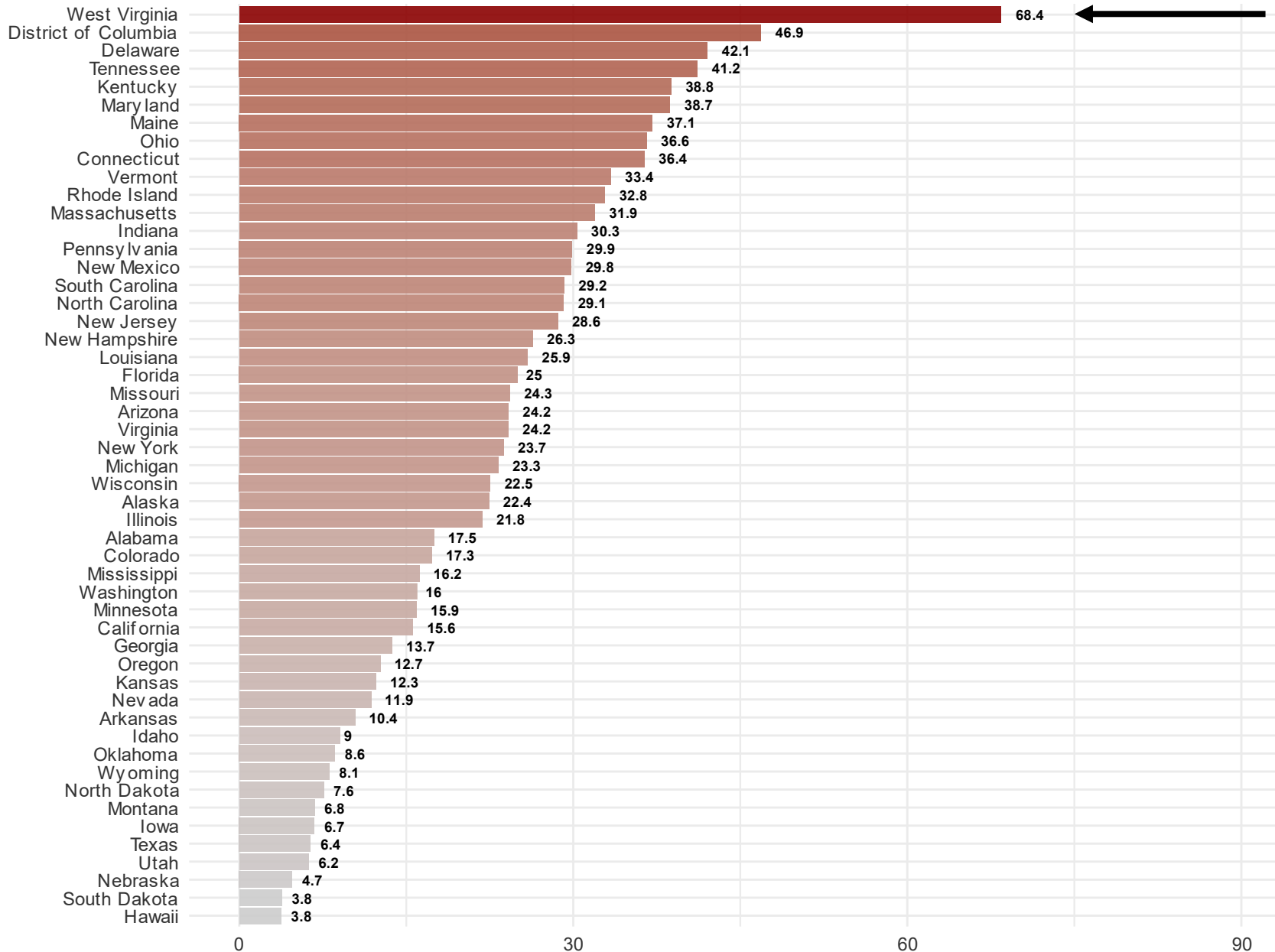


This figure represents the provisional heroin overdose death rate for the year ending December 31, 2021.

Data source: National Vital Statistics System, Mortality 1999-2021 on CDC WONDER Online Database.



Provisional Fentanyl Overdose Deaths Per 100,000 Population By State - 2021



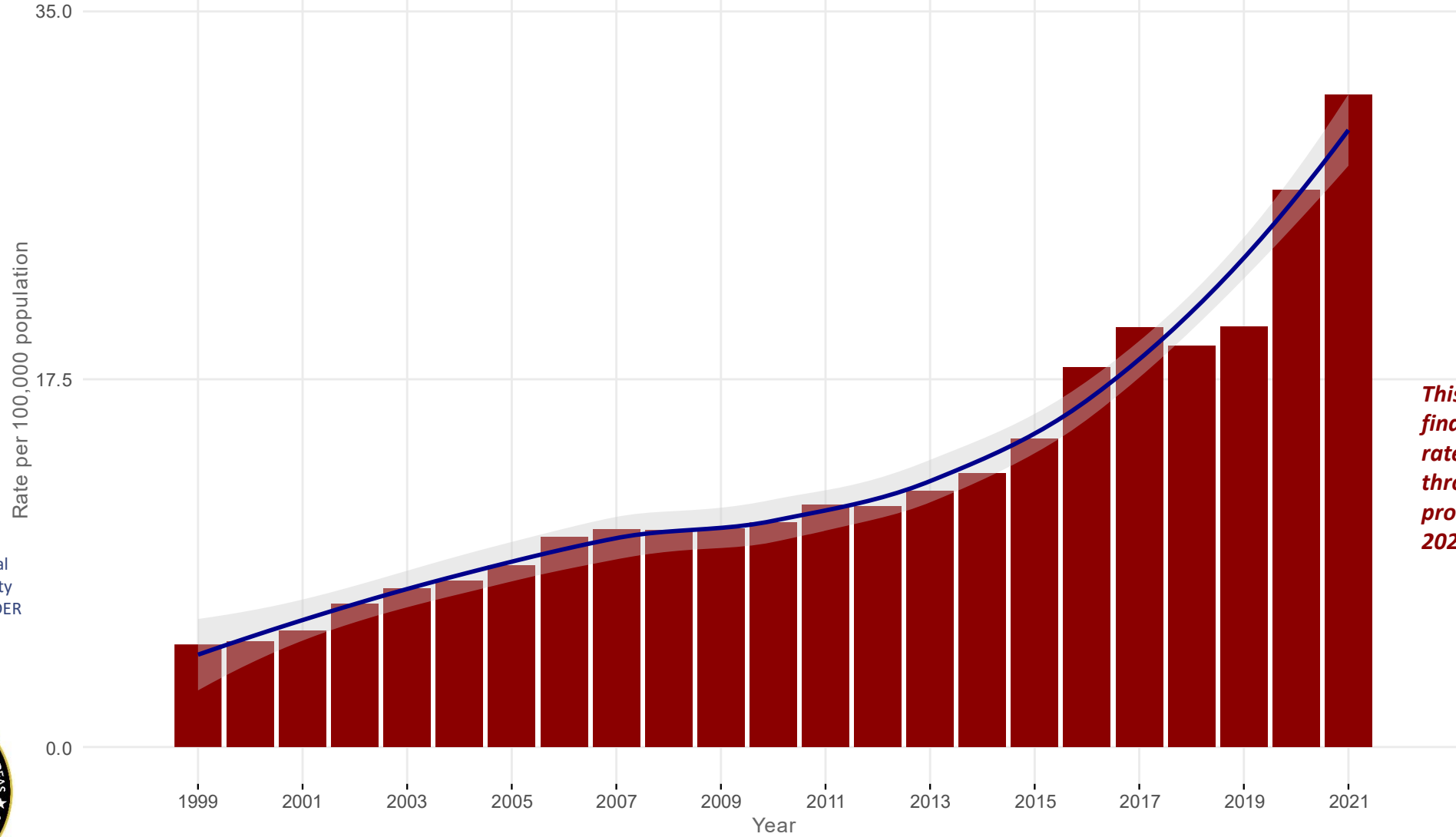
This figure represents the provisional fentanyl overdose death rate for the year ending December 31, 2021.

Data source: National Vital Statistics System, Mortality 1999-2021 on CDC WONDER Online Database.



Total U.S. Overdose Death Rate per 100,000

1999 - 2021



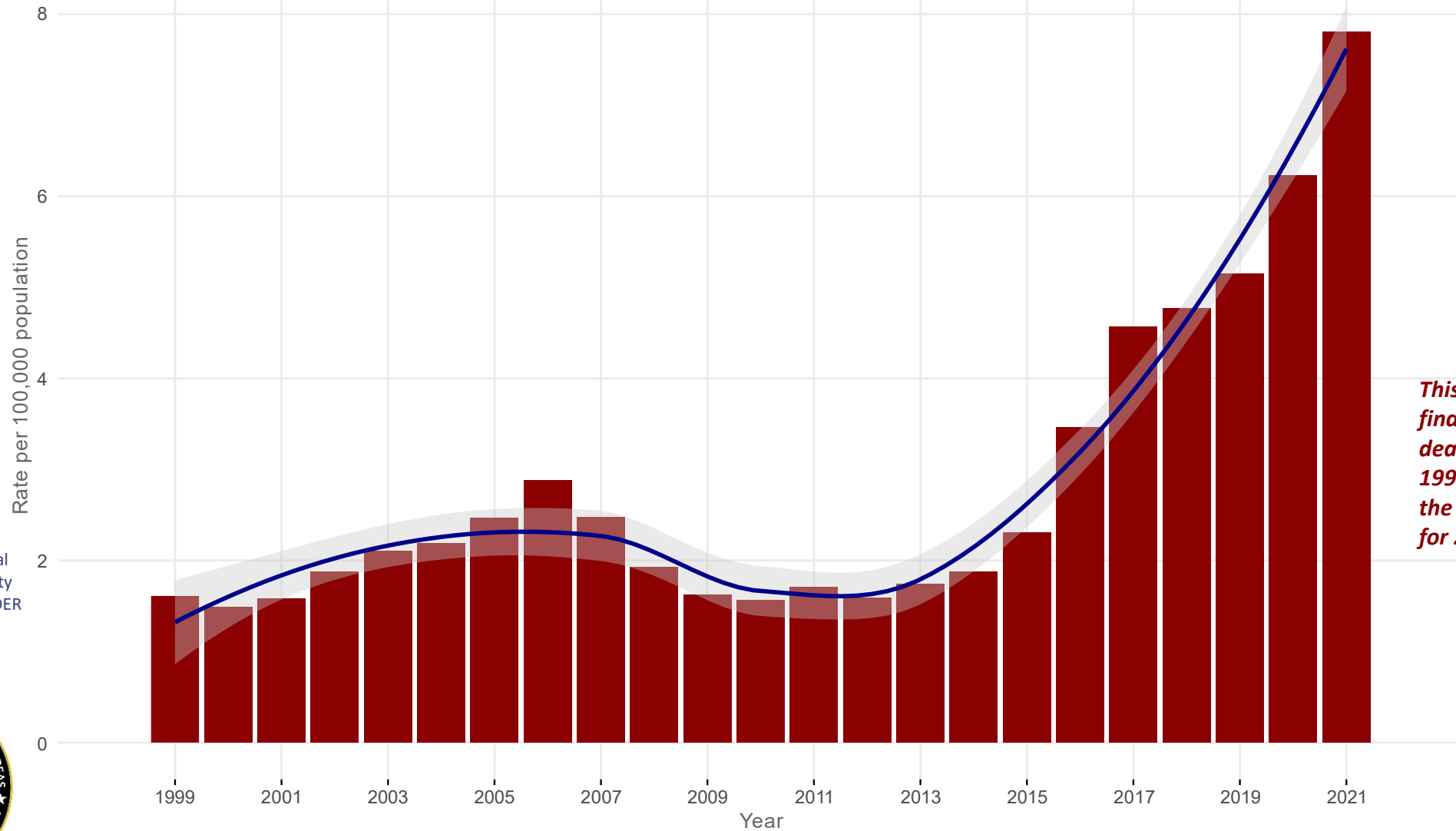
This figure represents the final drug overdose death rate for the years 1999 through 2020 and the provisional death rate for 2021.

Data source: National Vital Statistics System, Mortality 1999-2021 on CDC WONDER Online Database.



U.S. Cocaine Overdose Death Rate per 100,000

1999 - 2021



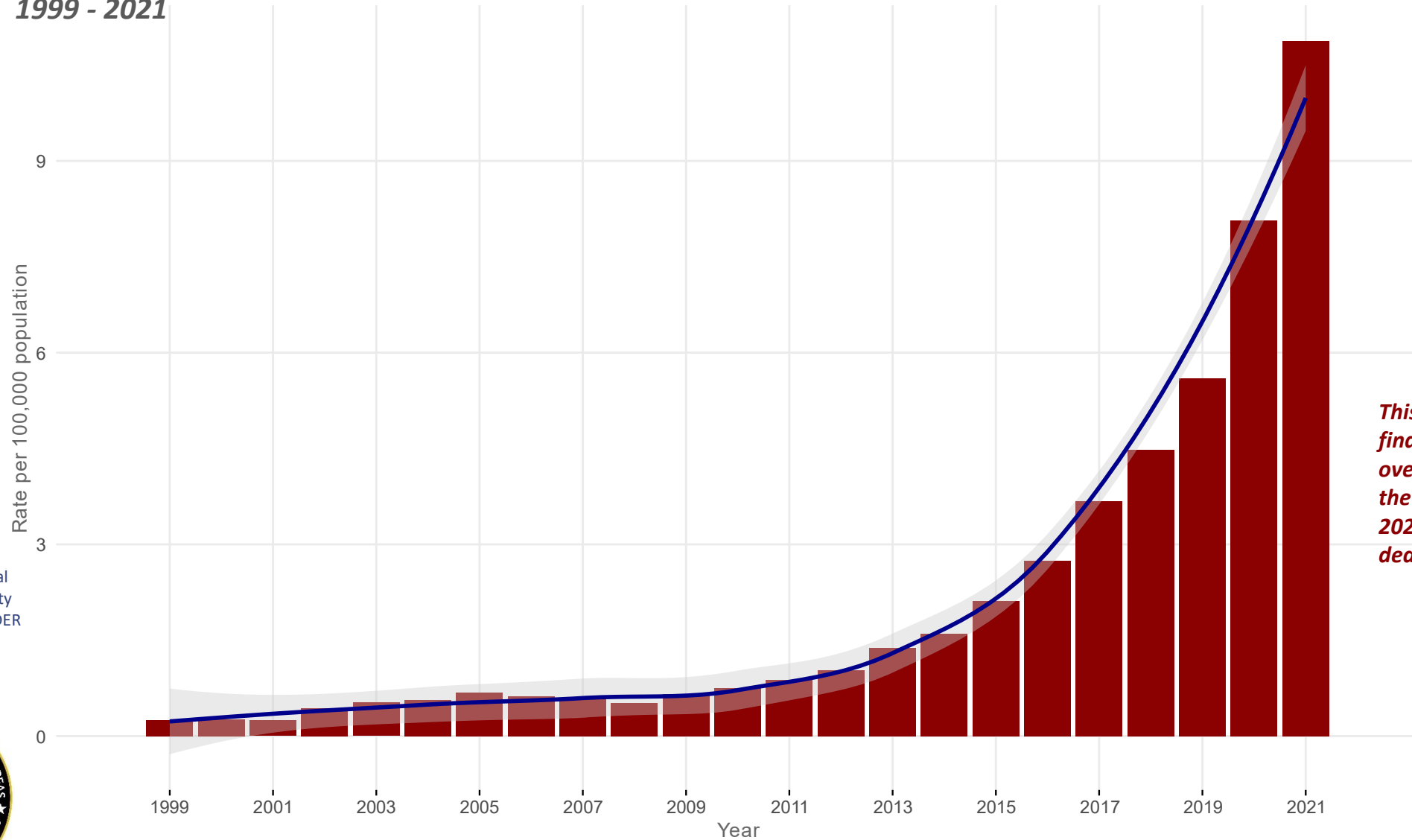
This figure represents the final cocaine overdose death rate for the years 1999 through 2020 and the provisional death rate for 2021.

Data source: National Vital Statistics System, Mortality 1999-2021 on CDC WONDER Online Database.



U.S. Psychostimulant Overdose Death Rate per 100,000

1999 - 2021



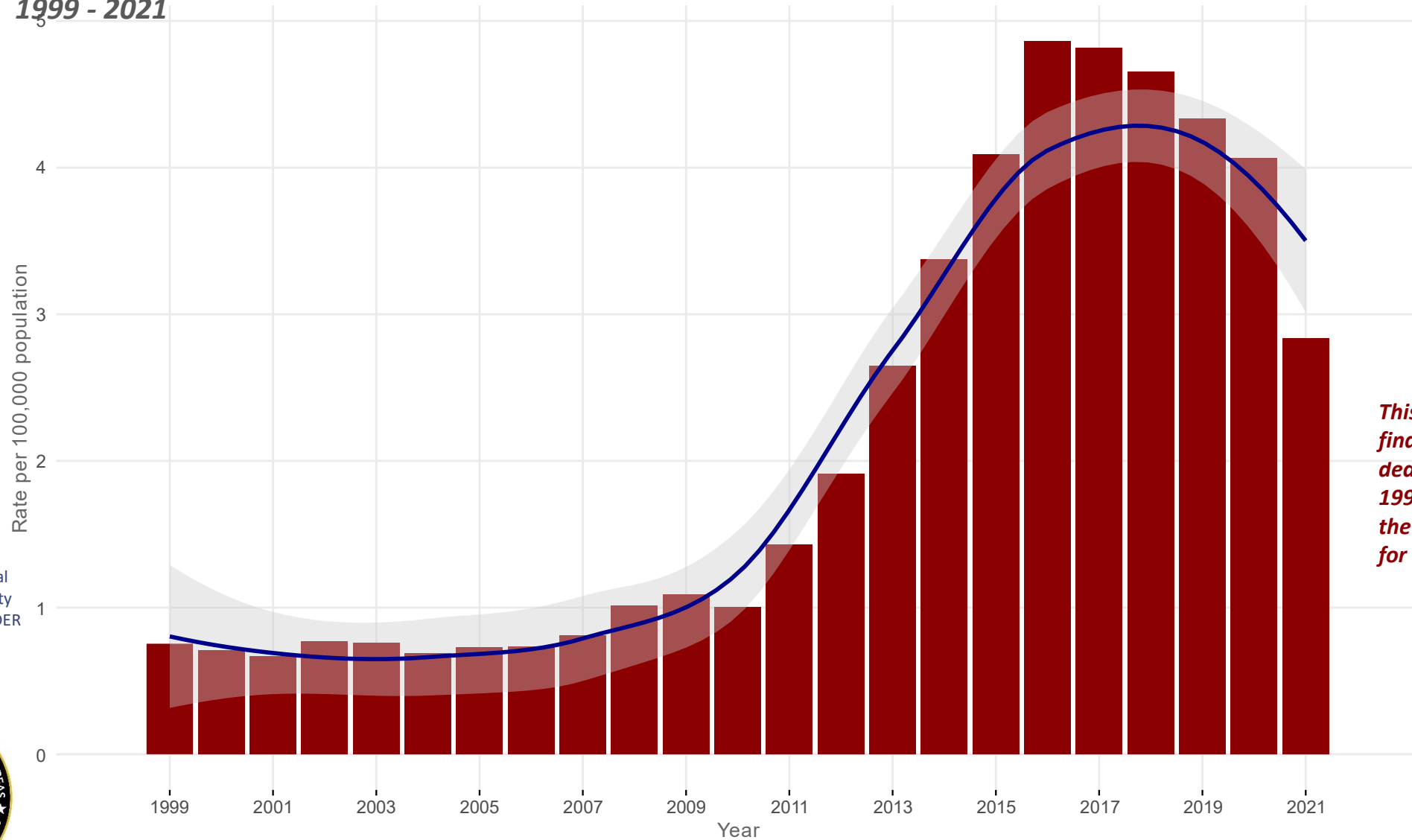
This figure represents the final psychostimulant overdose death rate for the years 1999 through 2020 and the provisional death rate for 2021.

Data source: National Vital Statistics System, Mortality 1999-2021 on CDC WONDER Online Database.



U.S. Heroin Overdose Death Rate per 100,000

1999 - 2021



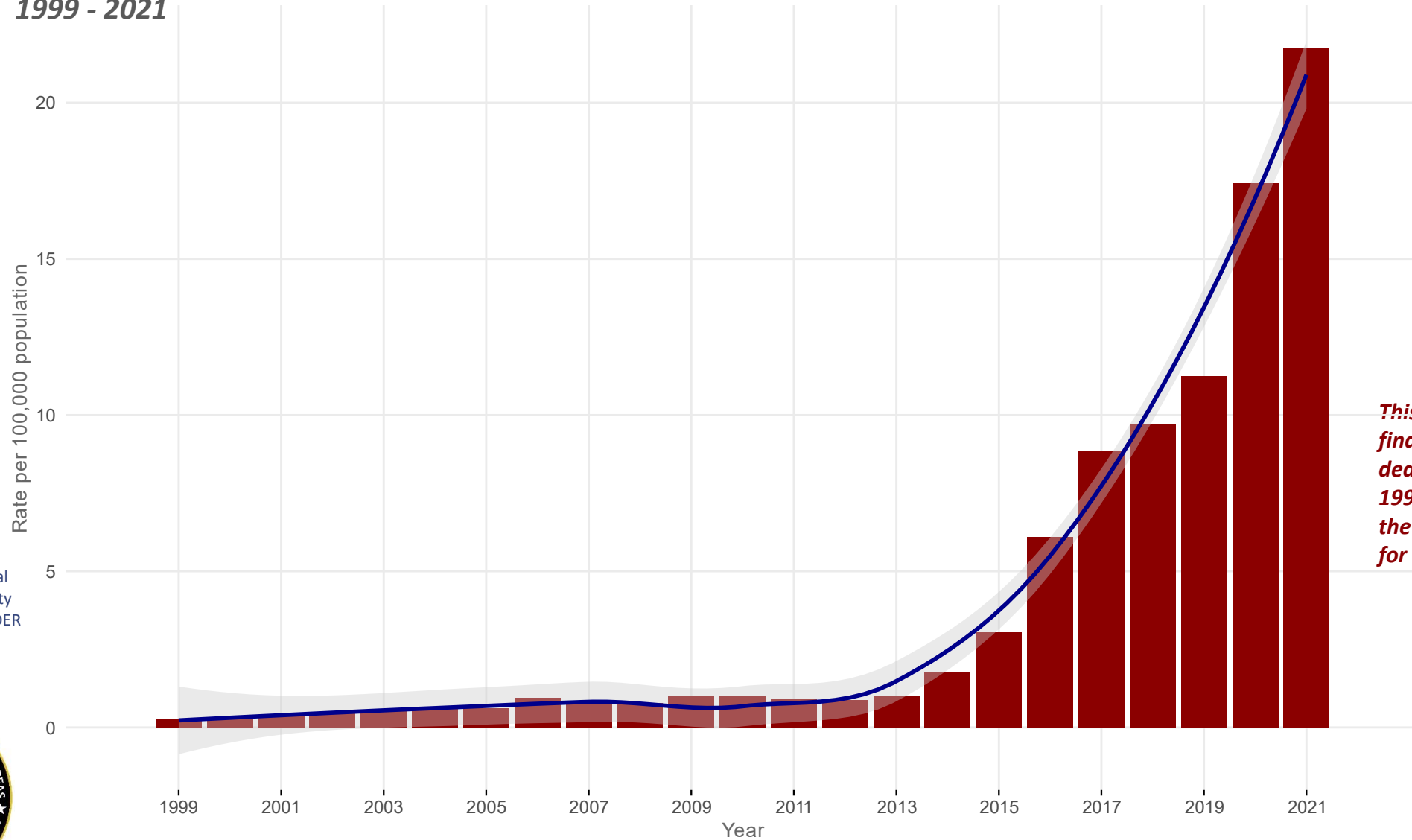
This figure represents the final heroin overdose death rate for the years 1999 through 2020 and the provisional death rate for 2021.

Data source: National Vital Statistics System, Mortality 1999-2021 on CDC WONDER Online Database.



U.S. Fentanyl Overdose Death Rate per 100,000

1999 - 2021



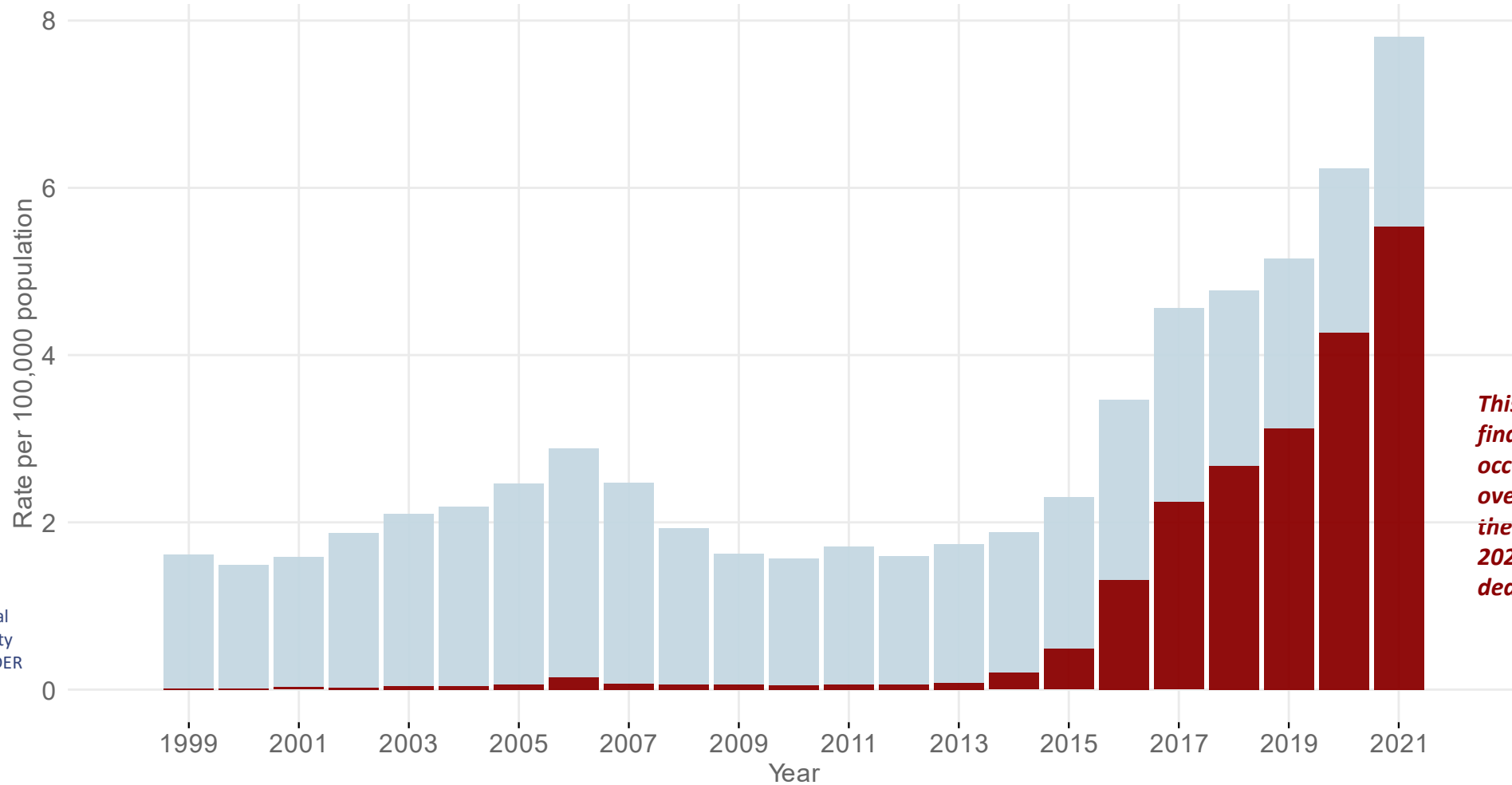
This figure represents the final fentanyl overdose death rate for the years 1999 through 2020 and the provisional death rate for 2021.

Data source: National Vital Statistics System, Mortality 1999-2021 on CDC WONDER Online Database.



Cocaine Overdose Deaths Co-occurring with Fentanyl by Year

1999 - 2021



This figure represents the final cocaine and co-occurring with fentanyl overdose death rates for the years 1999 through 2020 and the provisional death rate for 2021.

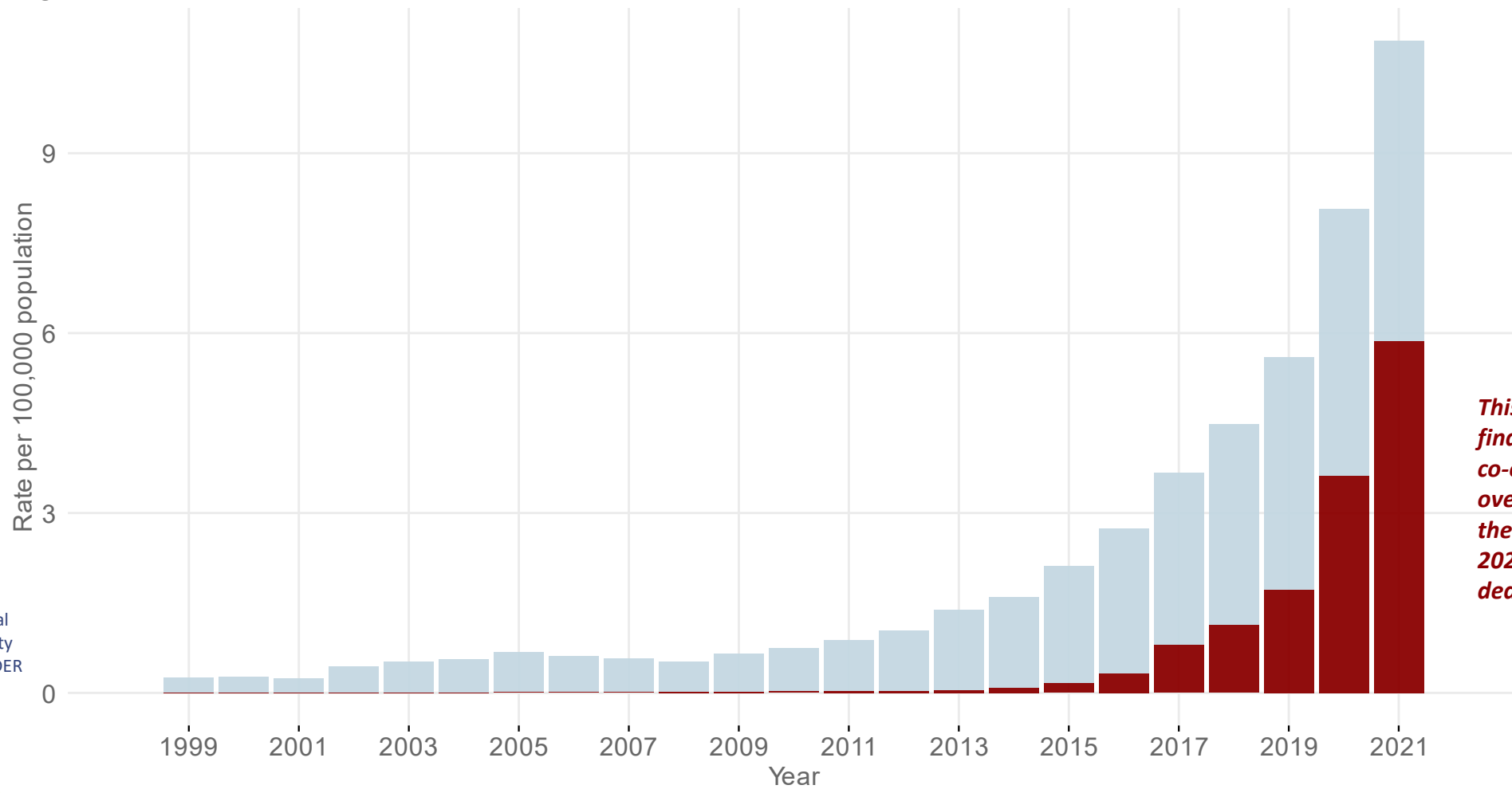
Data source: National Vital Statistics System, Mortality 1999-2021 on CDC WONDER Online Database.



Cocaine Cocaine with Fentanyl

Psychostimulant Overdose Deaths Co-occurring with Fentanyl by Year

1999 - 2021



This figure represents the final psychostimulant and co-occurring with fentanyl overdose death rates for the years 1999 through 2020 and the provisional death rate for 2021.

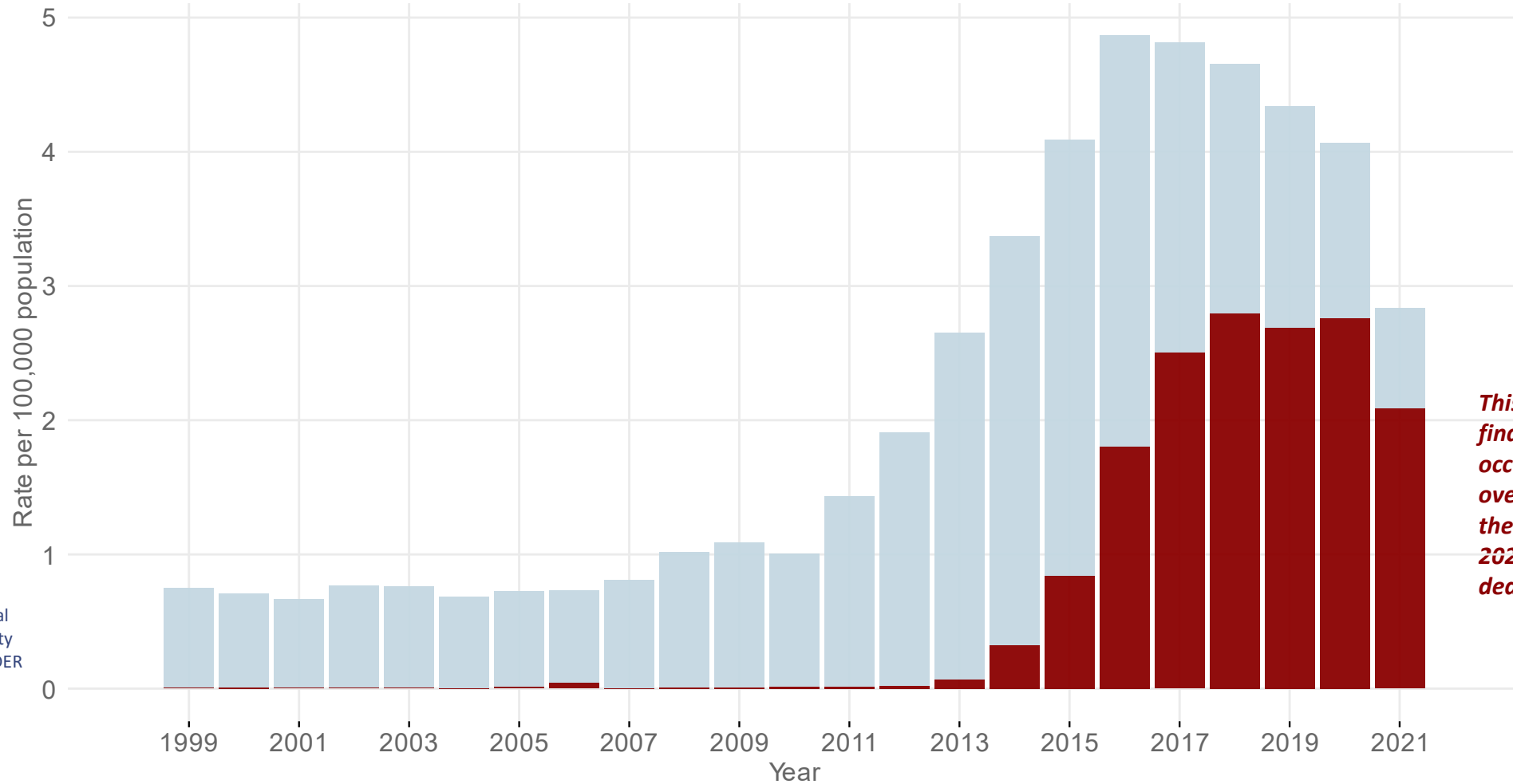
Data source: National Vital Statistics System, Mortality 1999-2021 on CDC WONDER Online Database.



Stimulants Stimulants with Fentanyl

Heroin Overdose Deaths Co-occurring with Fentanyl by Year

1999 - 2021



This figure represents the final heroin and co-occurring with fentanyl overdose death rates for the years 1999 through 2020 and the provisional death rate for 2021.

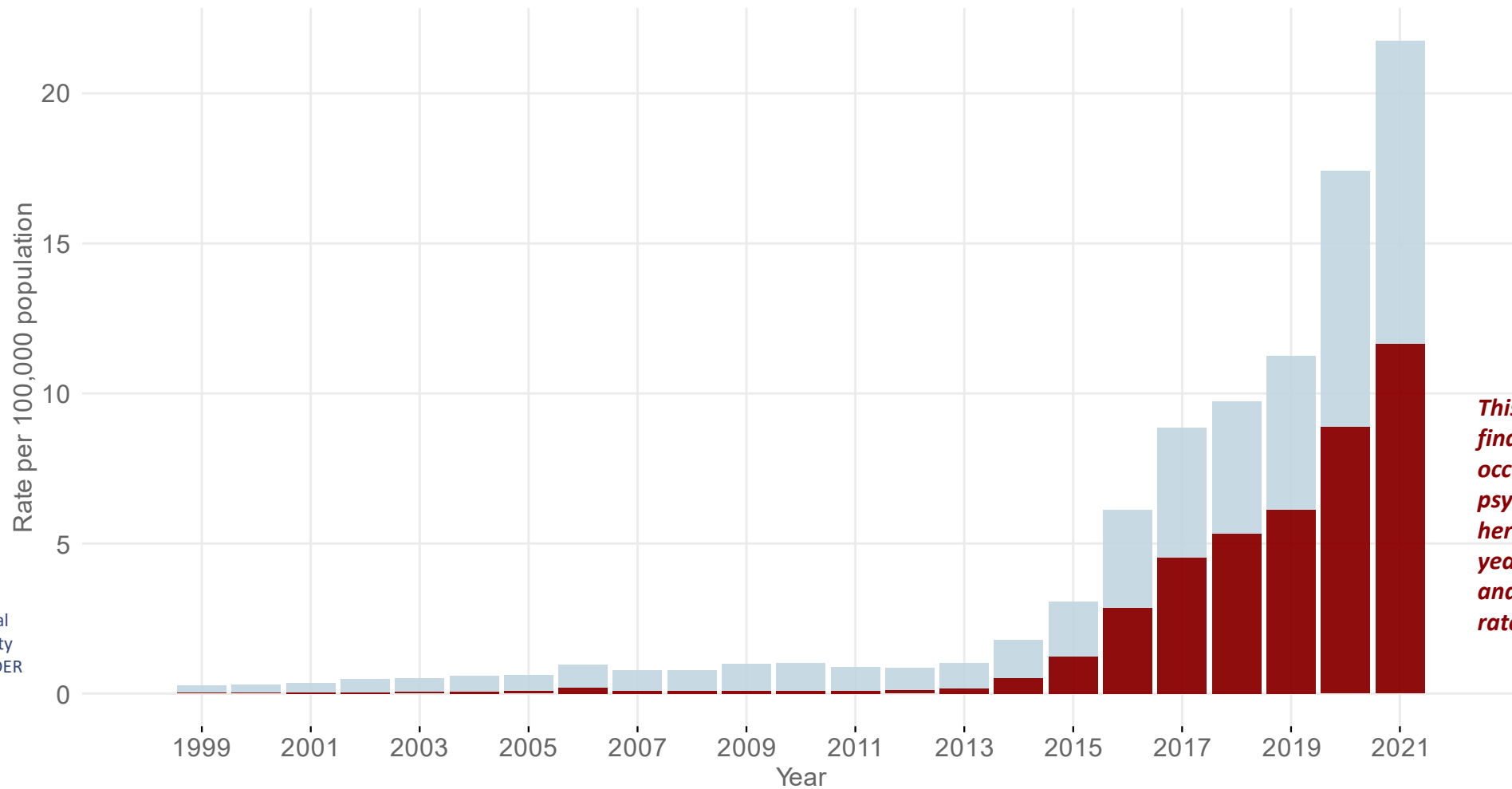
Data source: National Vital Statistics System, Mortality 1999-2021 on CDC WONDER Online Database.



Heroin Heroin with Fentanyl

Fentanyl Overdose Deaths Co-occurring with Cocaine, Psychostimulants, or Heroin by Year

1999 - 2021



This figure represents the final fentanyl and co-occurring with cocaine, psychostimulant, and heroin death rates for the years 1999 through 2020 and the provisional death rate for 2021.

Data source: National Vital Statistics System, Mortality 1999-2021 on CDC WONDER Online Database.

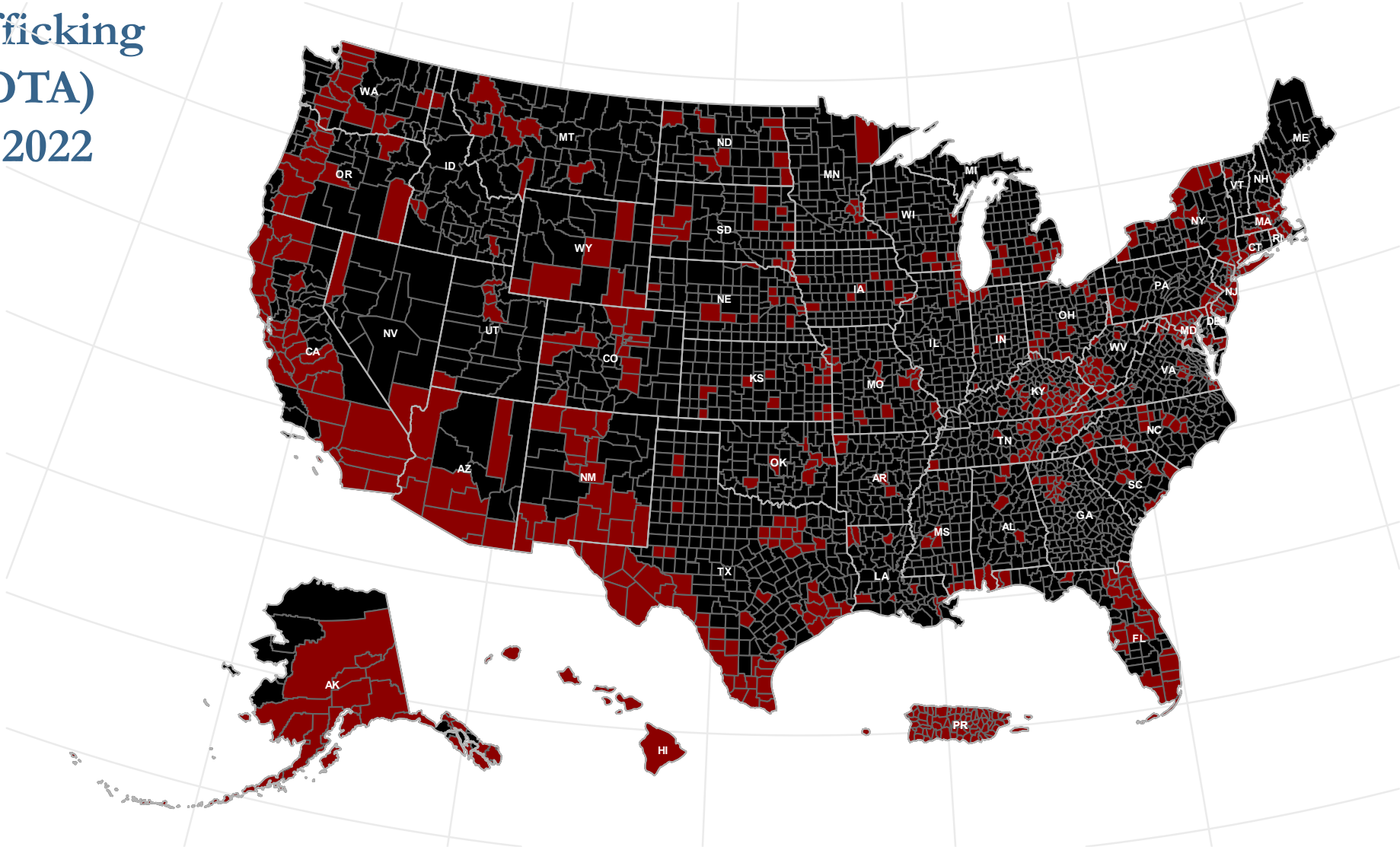


■ Fentanyl ■ Fentanyl W/ Cocaine, Stims, Heroin

What are the Apex Drug Seizures in High Intensity Drug Trafficking Areas 2011 – 2021?



High Intensity Drug Trafficking Area (HIDTA) Counties, 2022



Why Convert Seizure Kilograms to Estimated Doses?

- To compare HIDTAs' seizures across time, they must be on a standard scale.
- Seizures are most frequently reported in kilograms and doses.
- Doses reflect how drugs are sold on the street.
- Doses bypass the problem that the pharmacological effect of 1 kg of one drug can vary 100 times 1 kg of another drug.
- *Doses better reflect the life-saving value of each seizure.*



Conversion Factor - Kilograms to Estimated Dosage Units Converted by Selected Drugs – 2022

| Drug Category | Amount in Kilograms | Converted with Formula | Dosage Amount |
|-----------------|---------------------|------------------------|---------------|
| Cocaine | 1 | = | 5,556 |
| Heroin | 1 | = | 142,857 |
| Methamphetamine | 1 | = | 9,700 |
| Fentanyl | 1 | = | 672,619 |

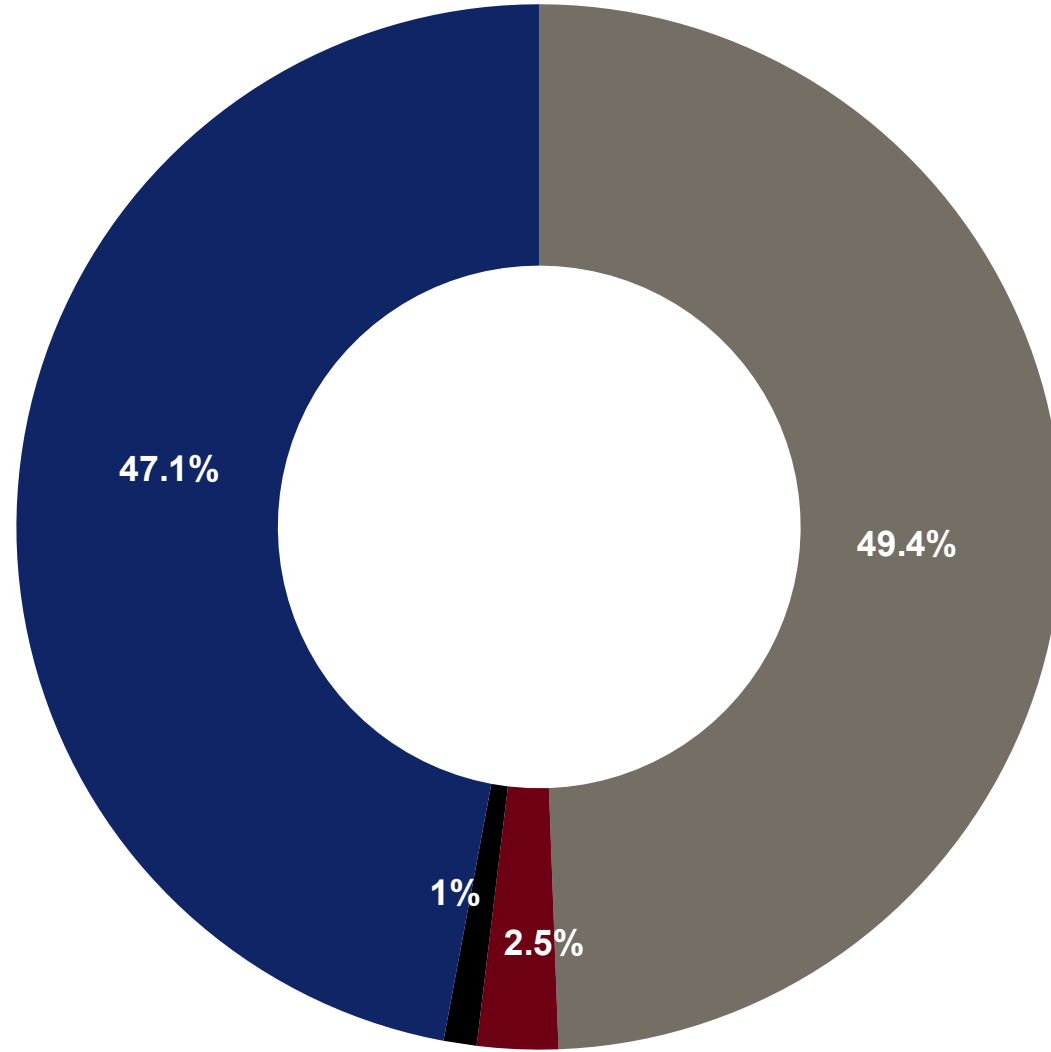


Conversions based on 1) expert witness estimates, and 2) U.S. Department of Homeland Security, U.S. Customs and Border Protection; The National Impact of Drugs: From Dollars to Doses; Product Number INB-SIA-2289046; July 14, 2021; UNCLASSIFIED//SENSITIVE BUT UNCLASSIFIED//LAW ENFORCEMENT SENSITIVE

2021 Seizures in Kilograms

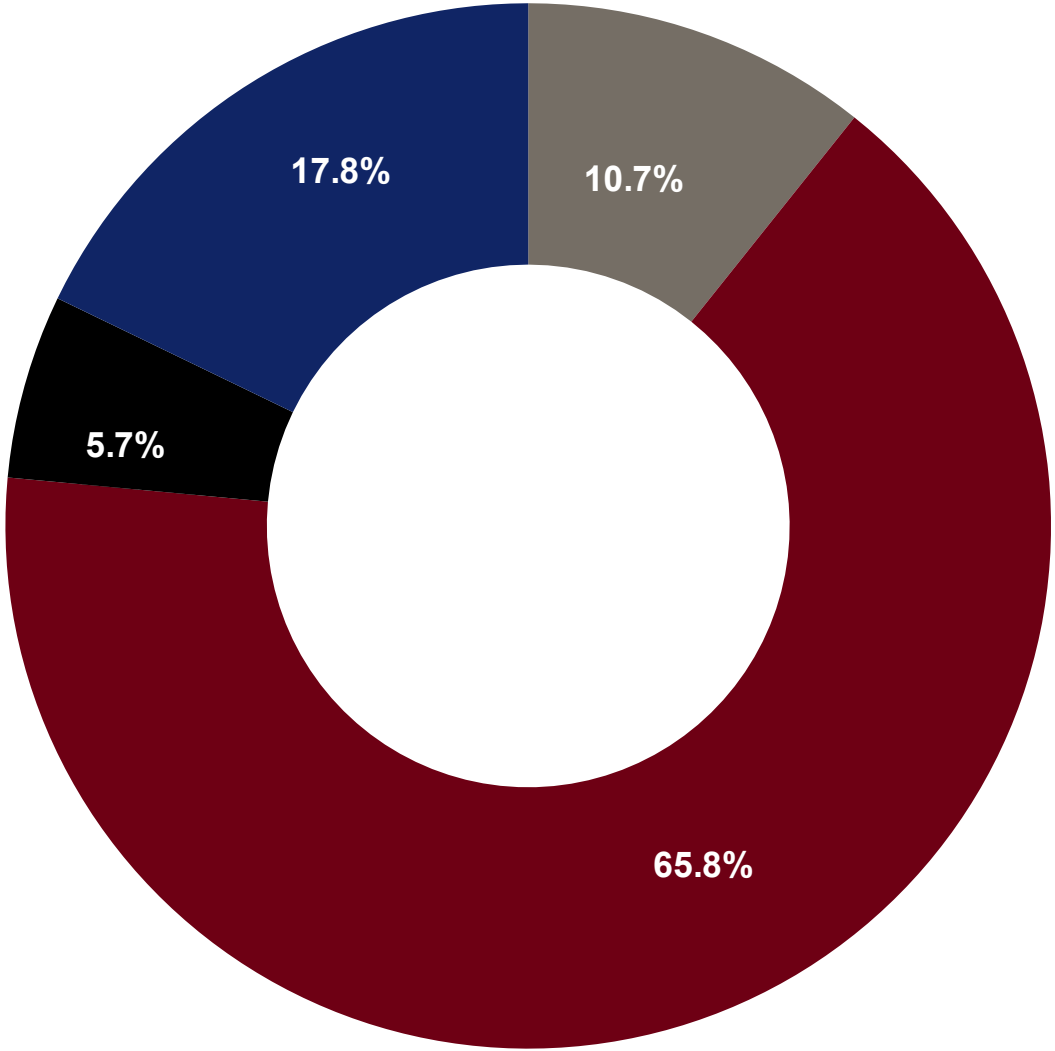
High Intensity Drug
Trafficking Area Drug Seizure
Data: November 18, 2022

UNCLASSIFIED//SENSITIVE
BUT UNCLASSIFIED//LAW
ENFORCEMENT SENSITIVE



Heroin Cocaine Fentanyl Methamphetamine

2021 Seizures in Estimated Doses



High Intensity Drug
Trafficking Area Drug Seizure
Data: November 18, 2022

UNCLASSIFIED//SENSITIVE
BUT UNCLASSIFIED//LAW
ENFORCEMENT SENSITIVE

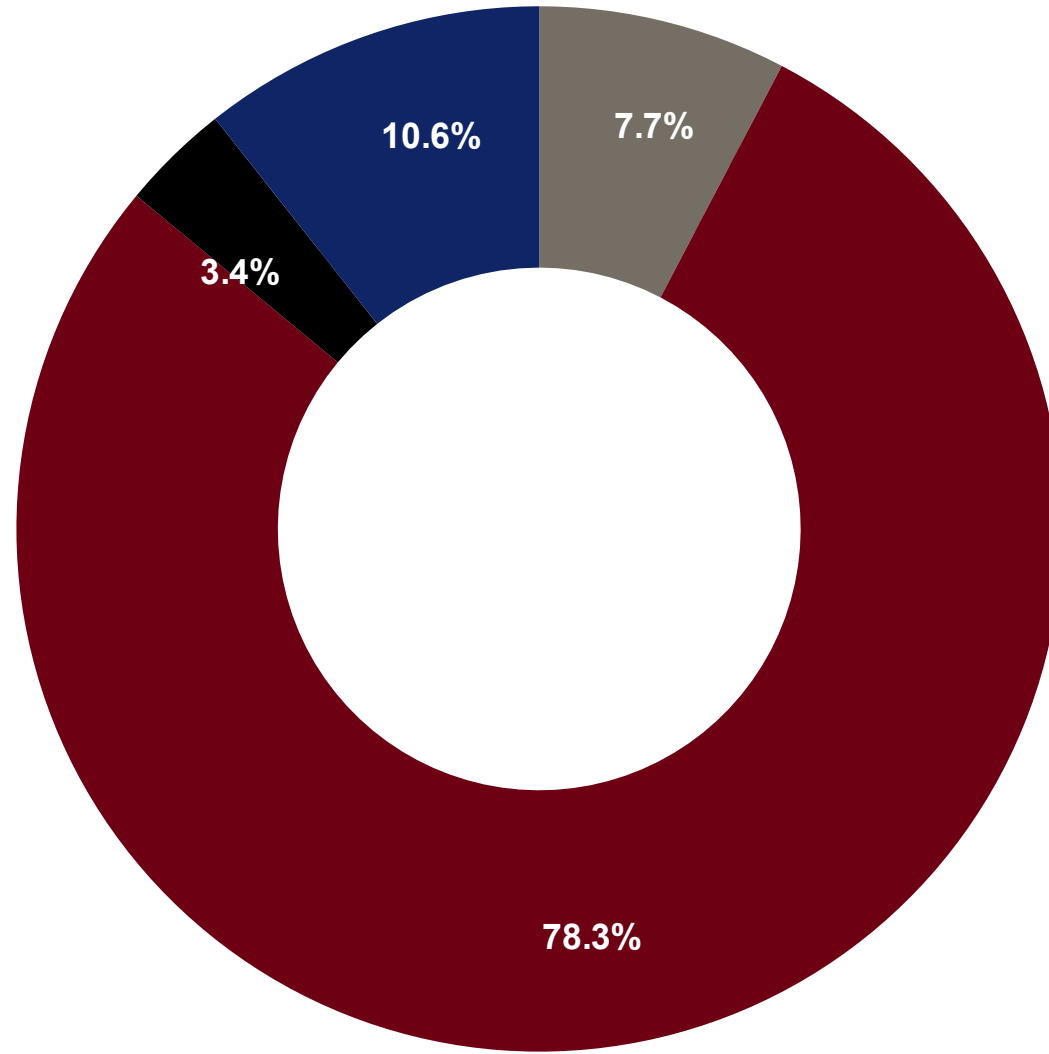


Heroin Cocaine Fentanyl Methamphetamine

2022 Seizures through September in Estimated Doses

High Intensity Drug
Trafficking Area Drug Seizure
Data: November 18, 2022

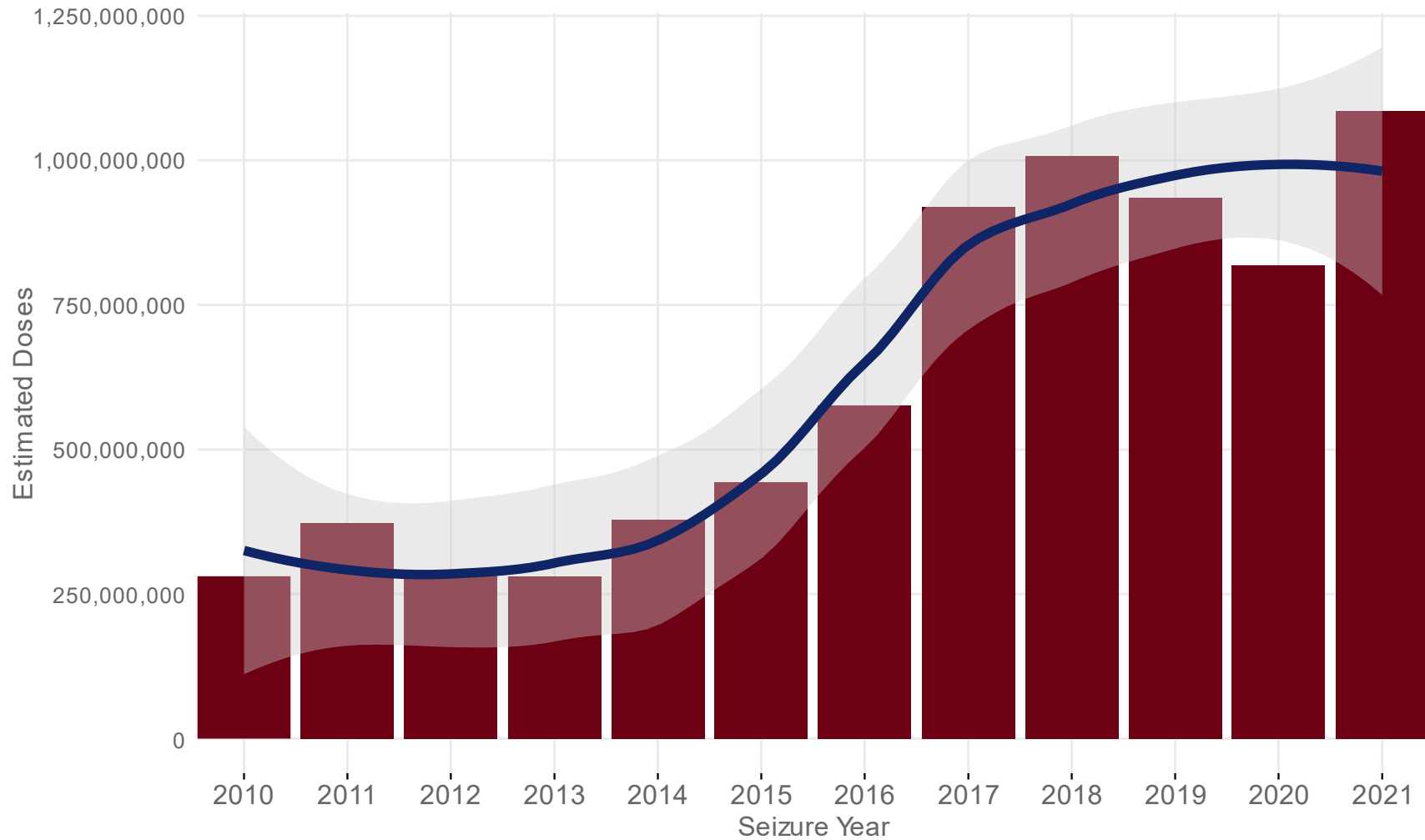
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BUT UNCLASSIFIED//LAW
ENFORCEMENT SENSITIVE



Heroin Cocaine Fentanyl Methamphetamine



Cocaine Seizures by Year in Estimated Doses 2010 - 2021

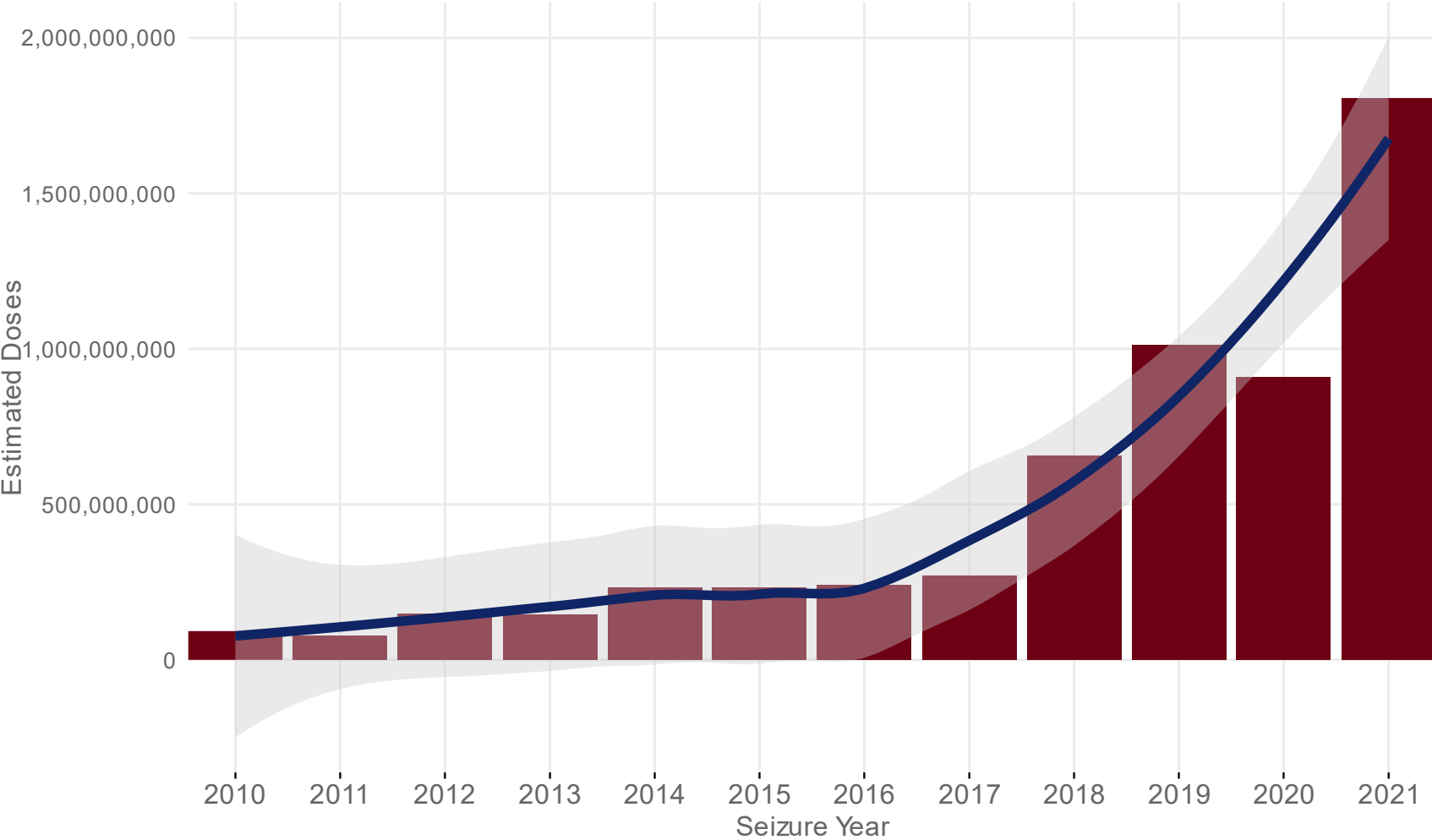


High Intensity Drug
Trafficking Area Drug Seizure
Data: November 18, 2022

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BUT UNCLASSIFIED//LAW
ENFORCEMENT SENSITIVE



Methamphetamine Seizures by Year in Estimated Doses 2010 - 2021

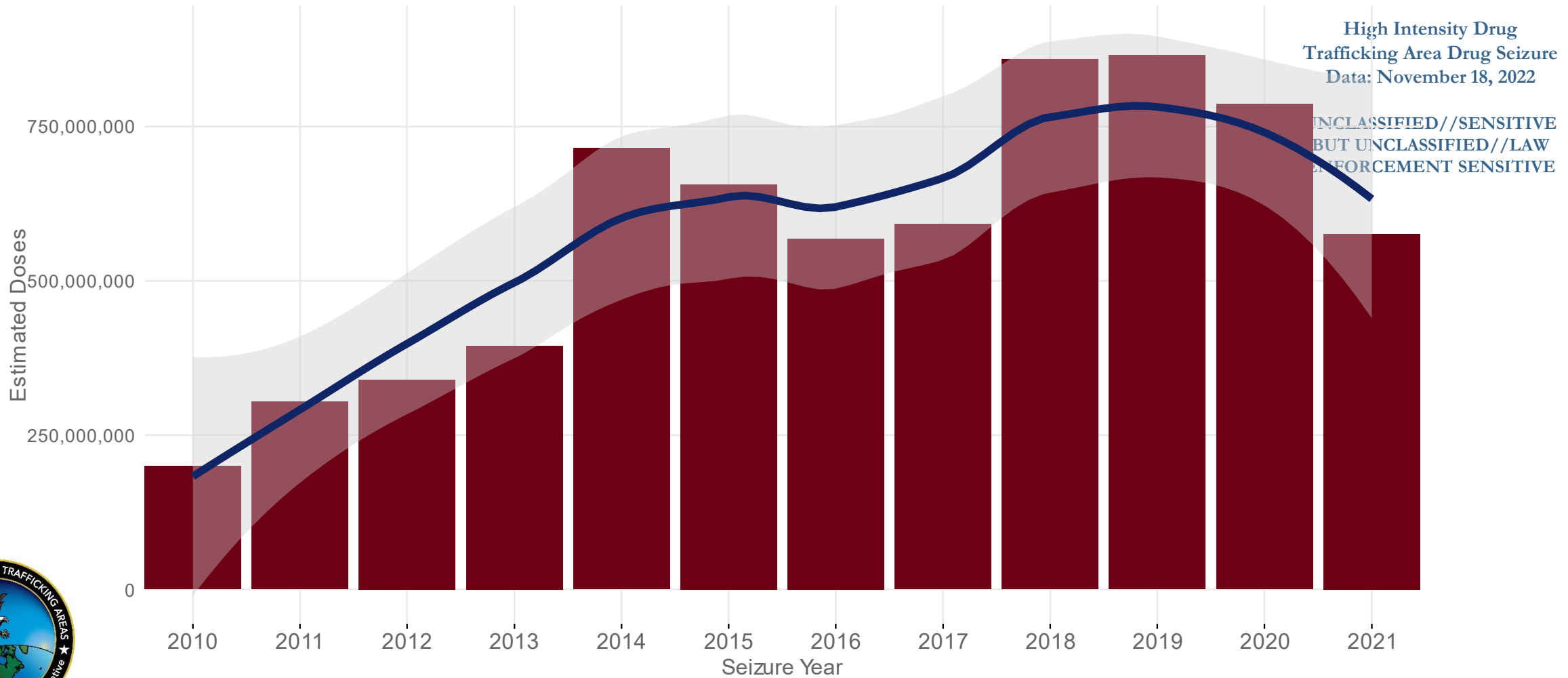


High Intensity Drug
Trafficking Area Drug Seizure
Data: November 18, 2022

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BUT UNCLASSIFIED//LAW
ENFORCEMENT SENSITIVE



Heroin Seizures by Year in Estimated Doses 2010 - 2021



Fentanyl Facts

The Census Bureau on April 26, 2021, released 2020 Count - 331,449,281

2020, an estimated 2.9 billion dosage units were seized by all HIDTAs

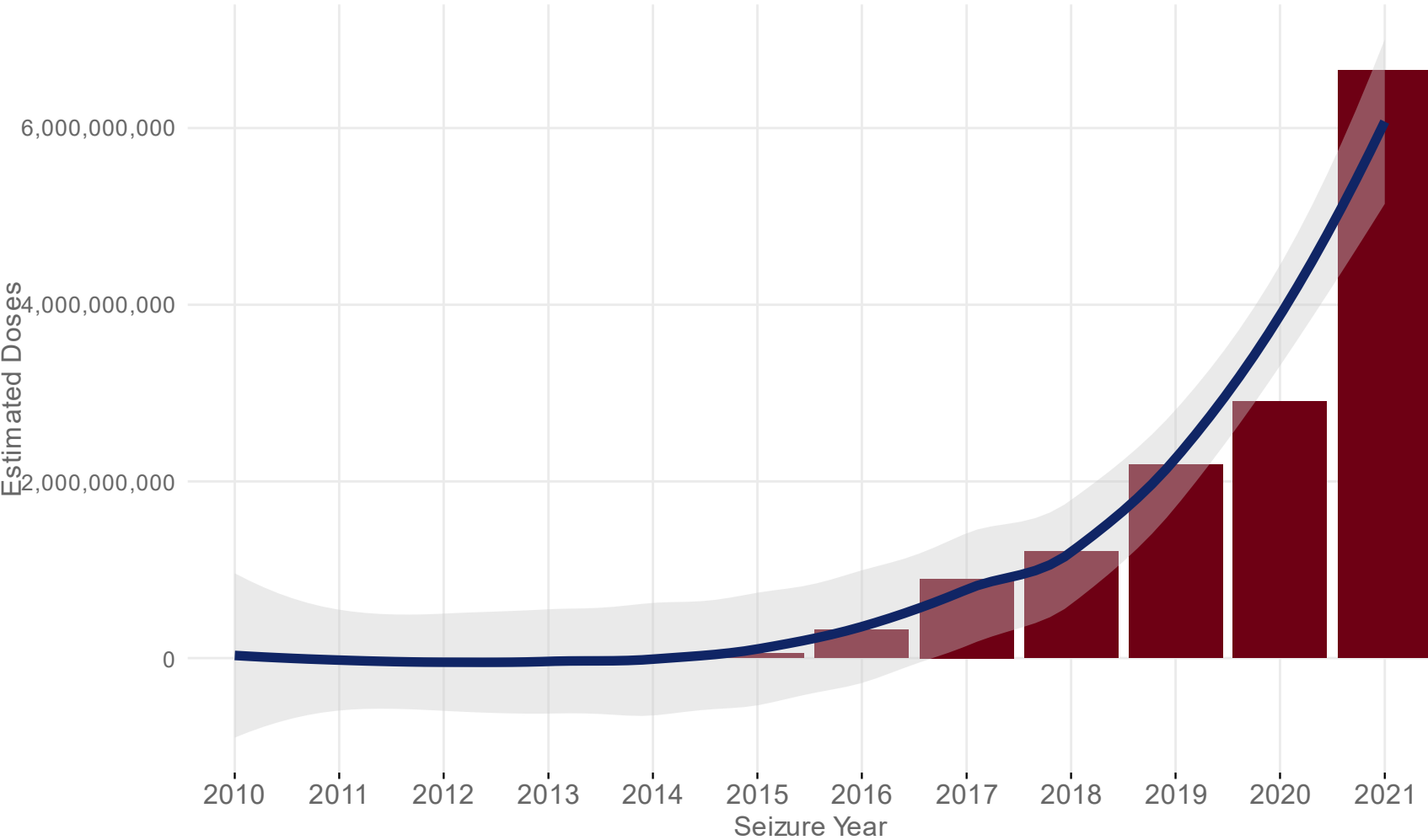
2020, saw almost 9 dosage units for everyone in the US

2021, an estimated 6.6 billion dosage units were seized by all HIDTAs

Forecasted 2021 Doses = almost 20 dosage units for every U.S. citizen



Fentanyl Seizures by Year in Estimated Doses 2010 - 2021



High Intensity Drug
Trafficking Area Drug Seizure
Data: November 18, 2022

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ENFORCEMENT SENSITIVE



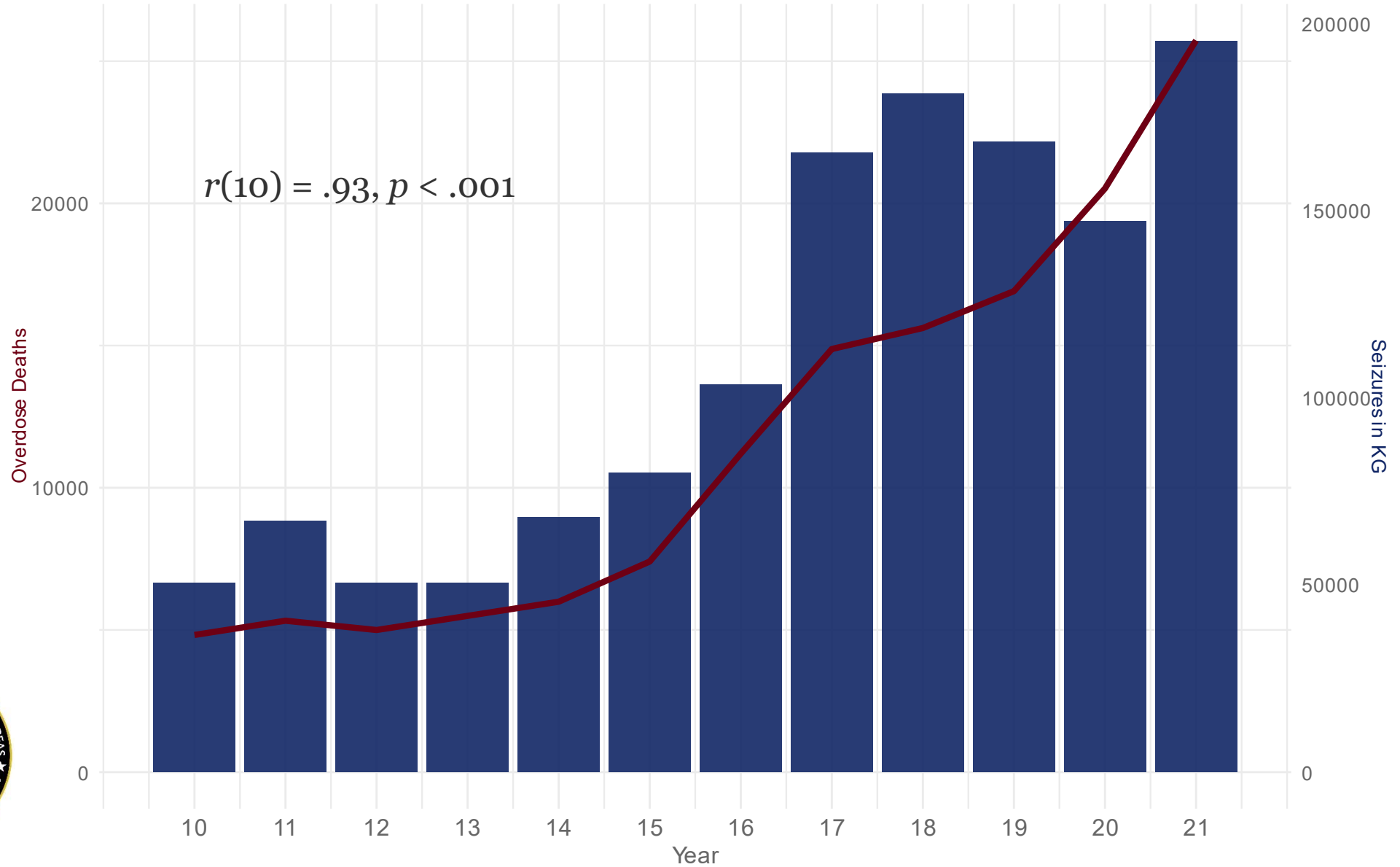
Is there a relationship between Overdose Deaths & Drug Seizures?



U.S. Cocaine Overdose Deaths and Seizures Calendar Years 2010 - 2021

National Vital Statistics System, Mortality 1999-2021 on CDC WONDER Online Database, released in 2021.

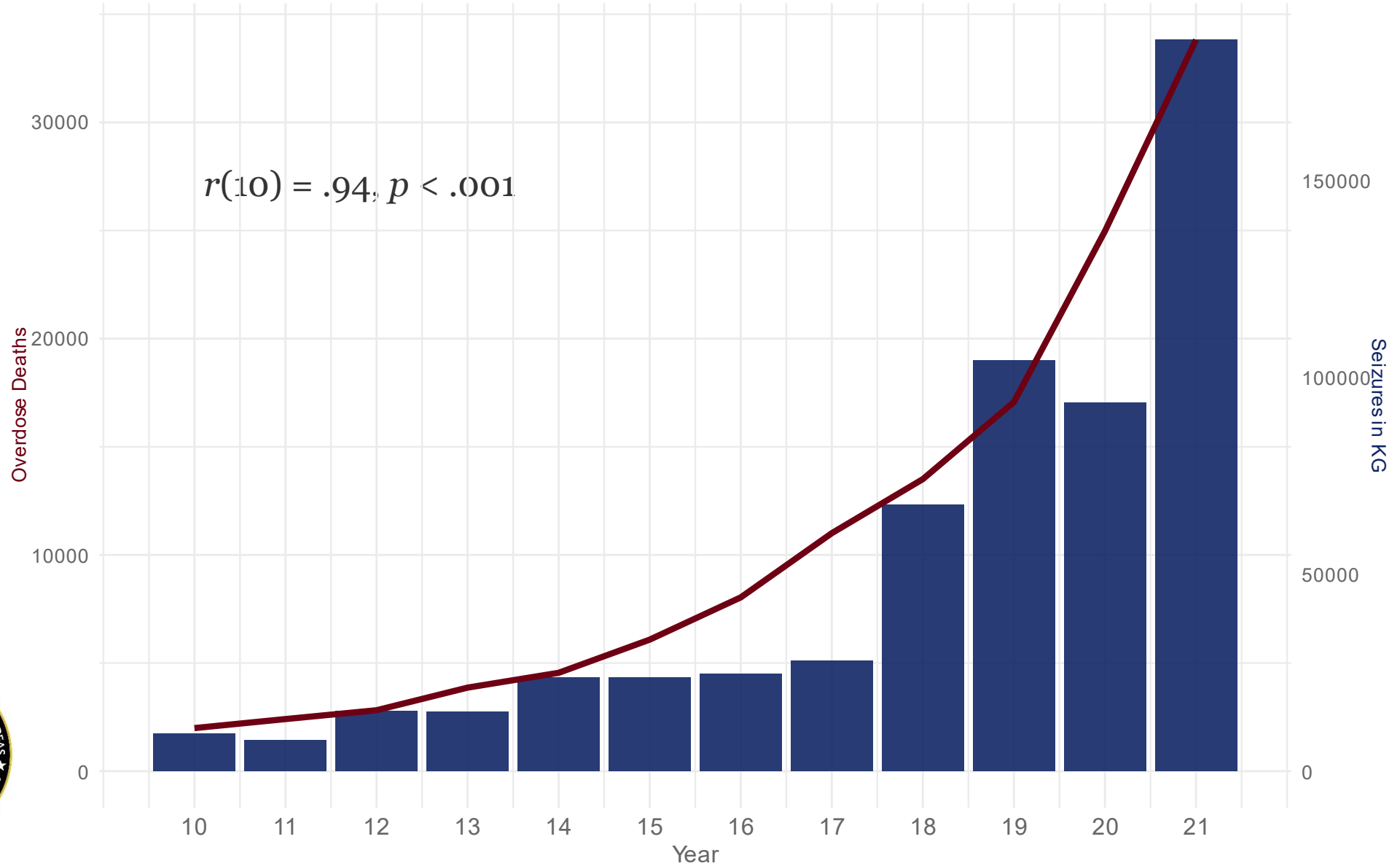
High Intensity Drug Trafficking Area Drug Seizure Data: October 11, 2022



U.S. Psychostimulant Overdose Deaths and Seizures Calendar Years 2010 - 2021

National Vital Statistics System, Mortality 1999-2021 on CDC WONDER Online Database, released in 2021.

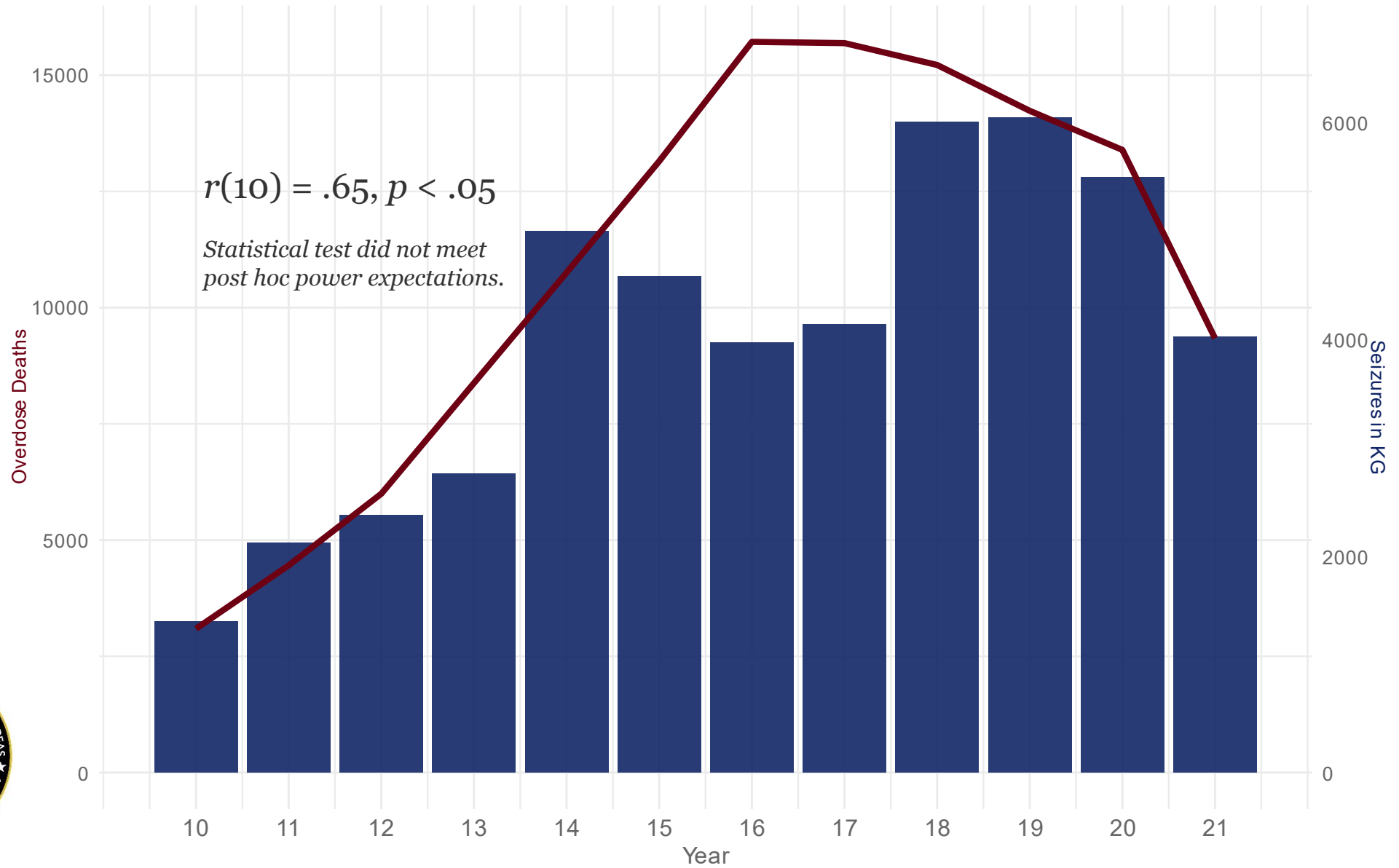
High Intensity Drug Trafficking Area Drug Seizure Data: October 11, 2022



U.S. Heroin Overdose Deaths and Seizures Calendar Years 2010 - 2021

National Vital Statistics System, Mortality 1999-2021 on CDC WONDER Online Database, released in 2021.

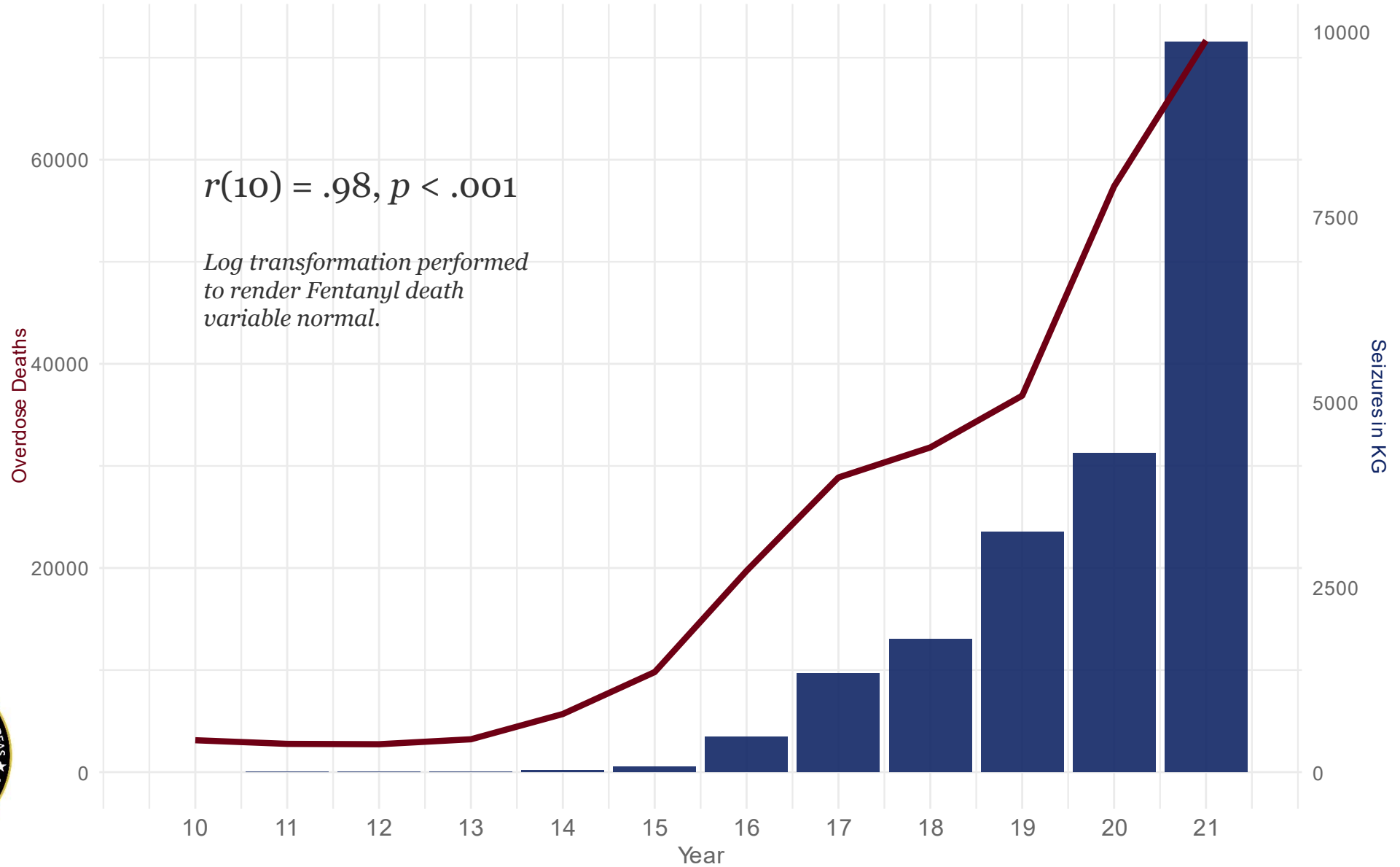
High Intensity Drug Trafficking Area Drug Seizure Data: October 11, 2022



U.S. Fentanyl Overdose Deaths and Seizures Calendar Years 2010 - 2021

National Vital Statistics System, Mortality 1999-2021 on CDC WONDER Online Database, released in 2021.

High Intensity Drug Trafficking Area Drug Seizure Data: October 11, 2022



What do we know about Prescription Drugs and Emerging Threats?

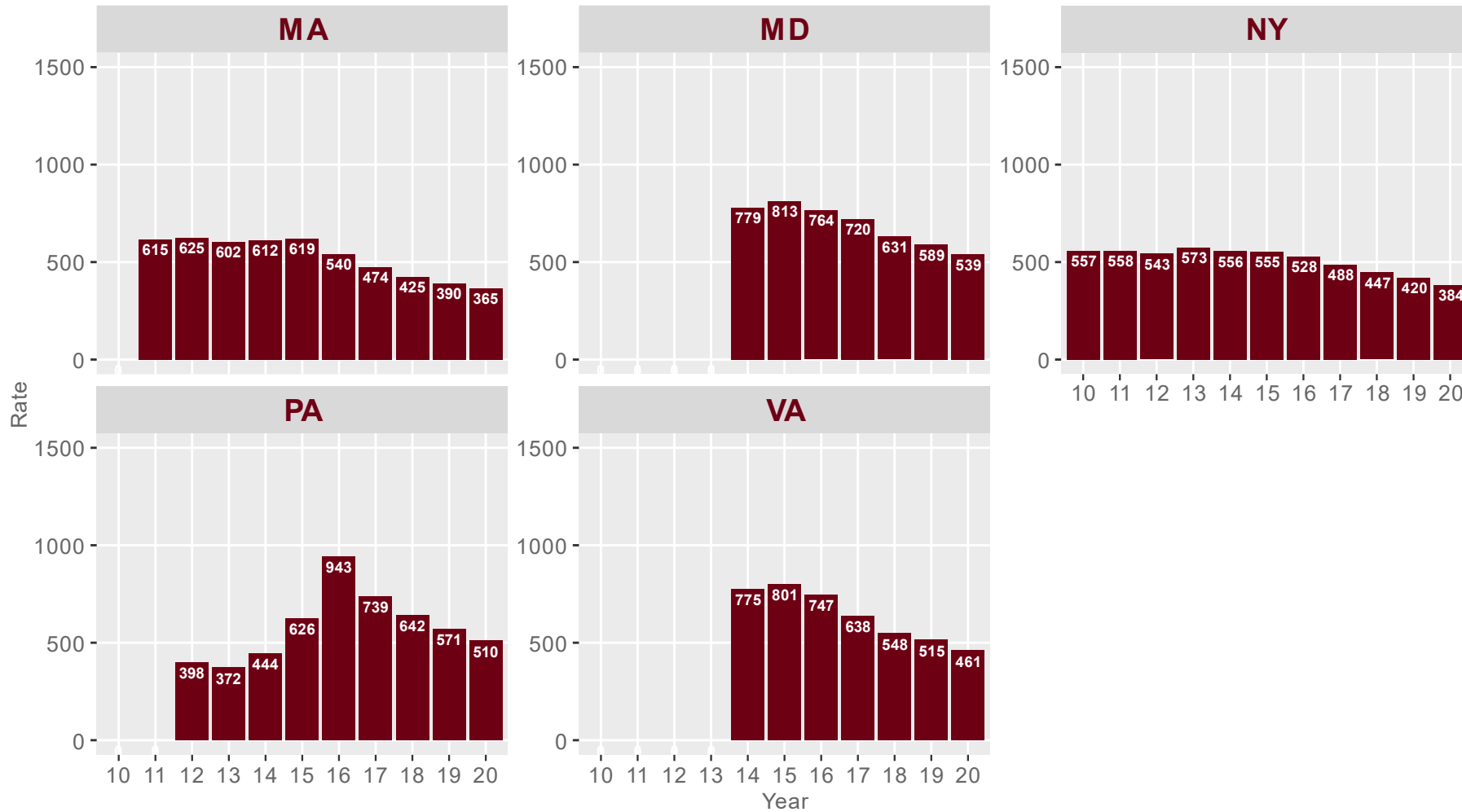


Prescription Drug Monitoring Program Data

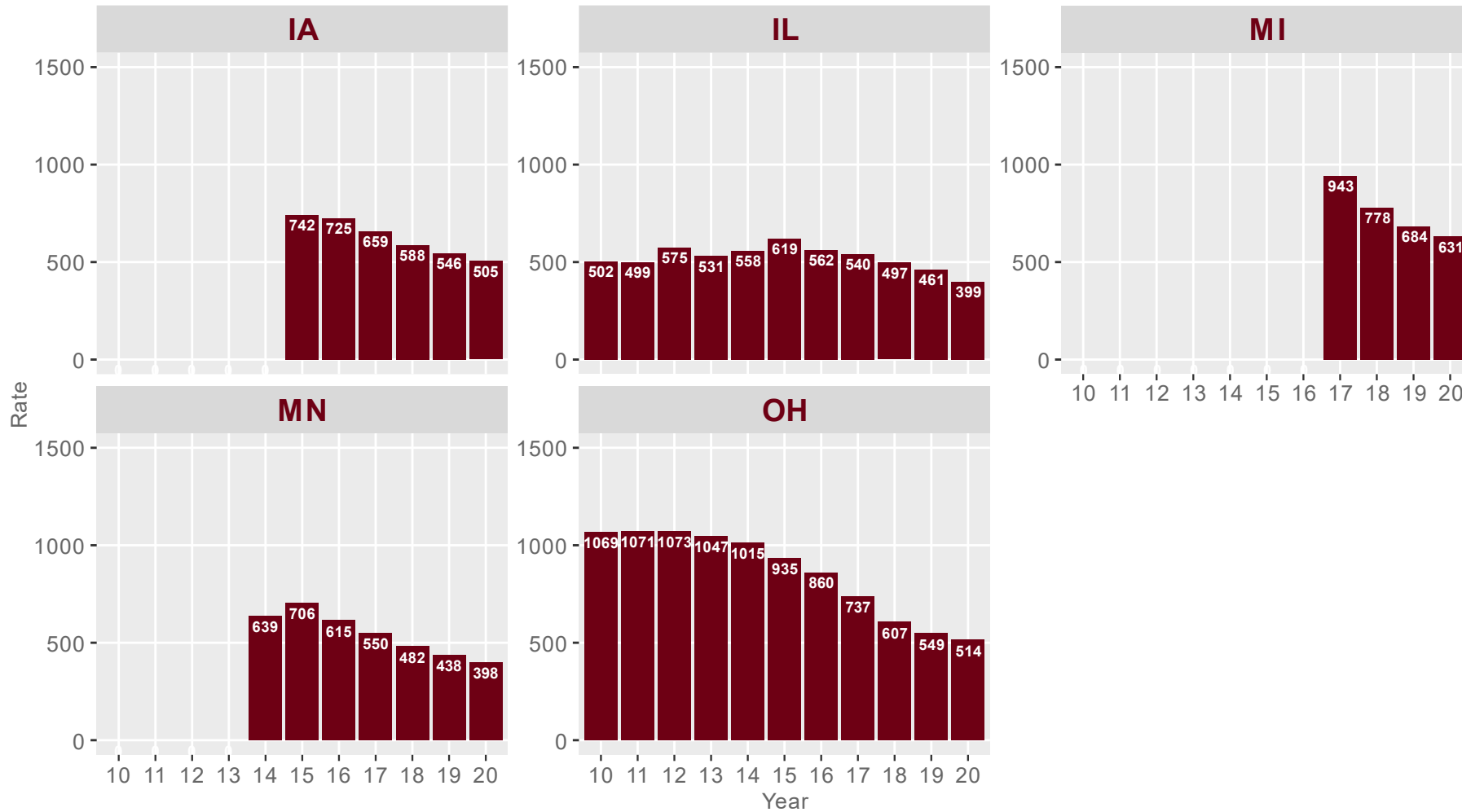
- Prescription Drug Monitoring Programs provided the number of prescriptions used to develop this presentation.
- Federal Census Bureau data were used to calculate the rates of prescriptions per 1,000 population in each state.
- These rates make it possible to compare prescribing levels between states.



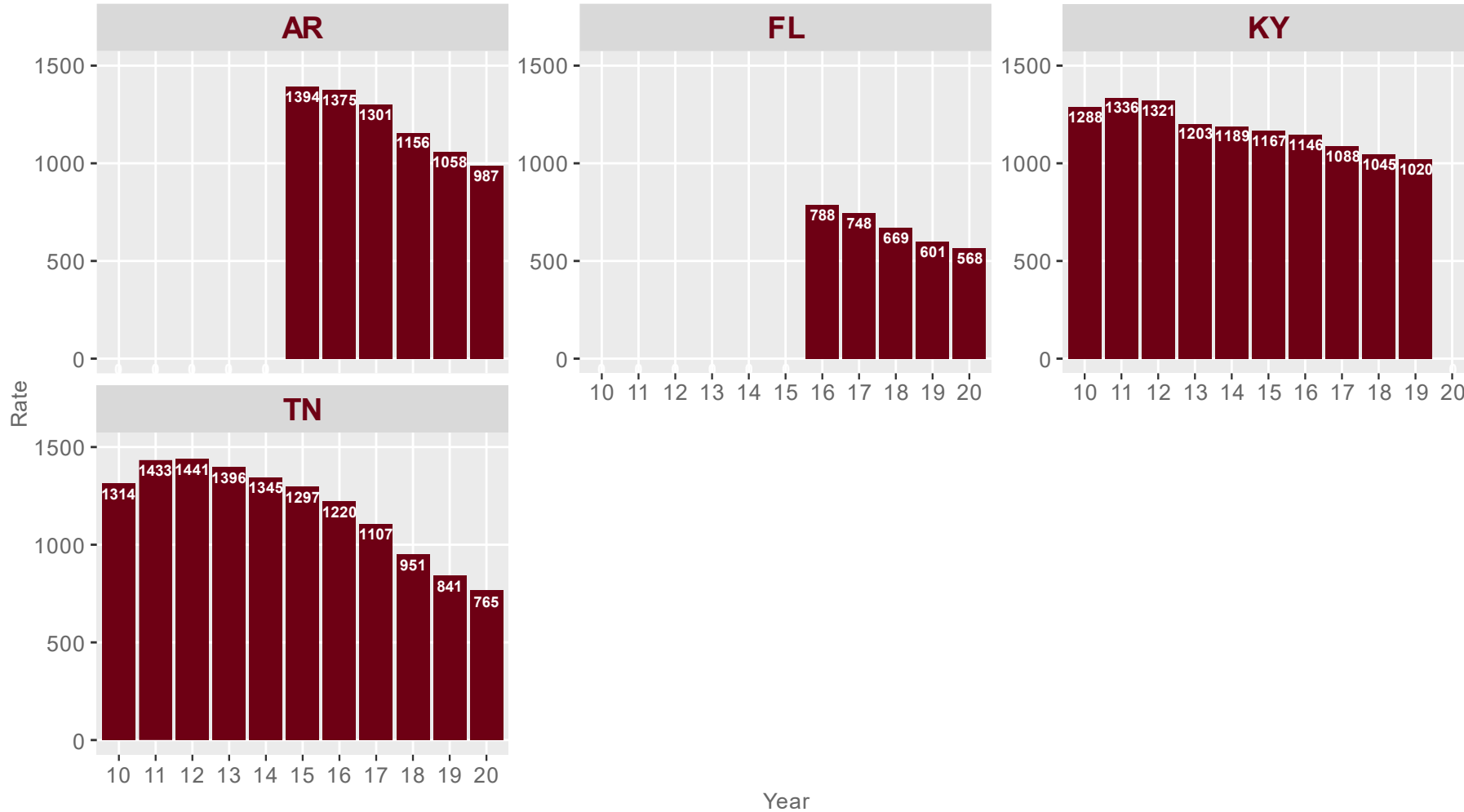
Opioid Prescription Rates per 1,000 Population for Northeast Region States from 2010 - 2020



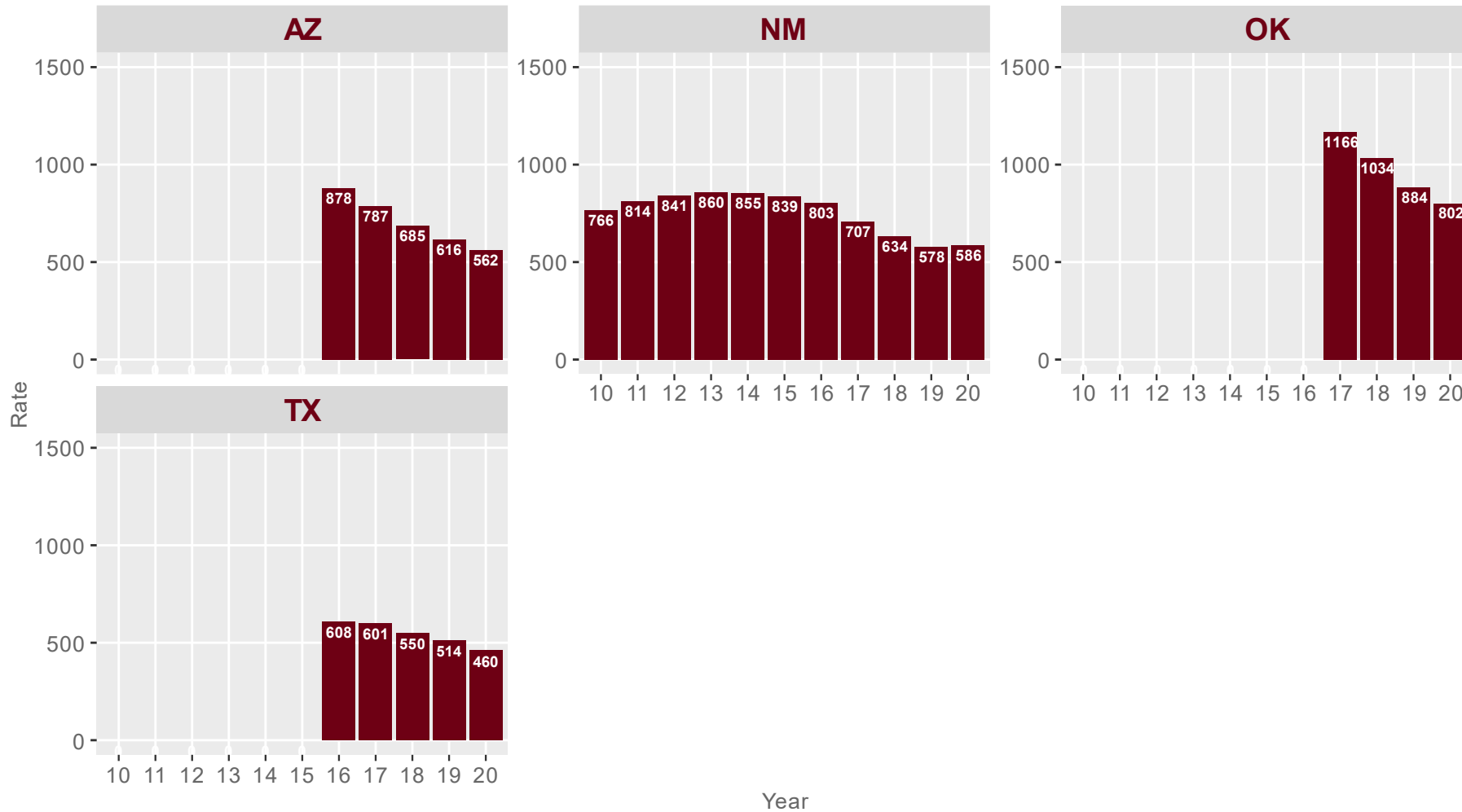
Opioid Prescription Rates per 1,000 Population for Midwest Region States from 2010 - 2020



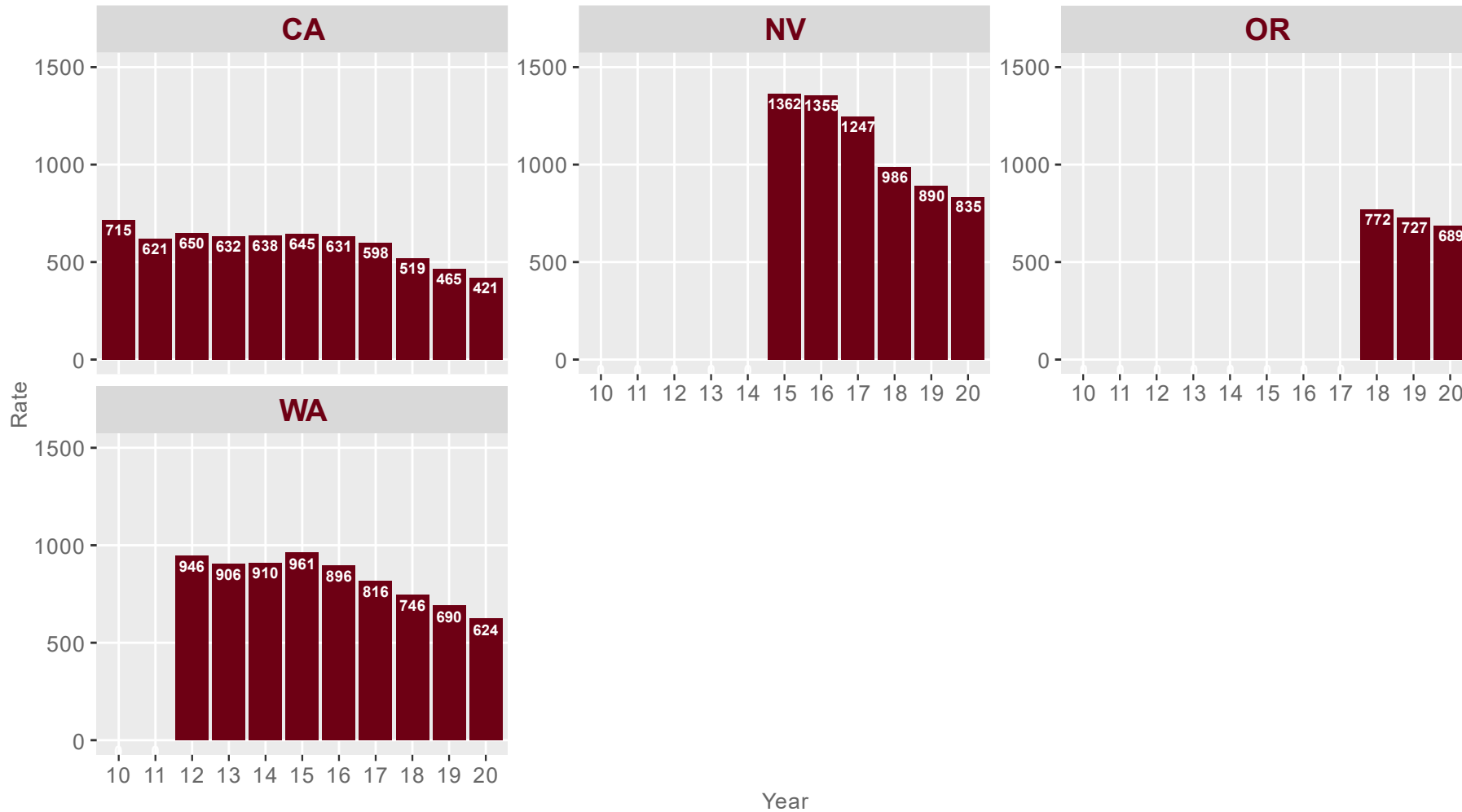
Opioid Prescription Rates per 1,000 Population for Southeast Region States from 2010 - 2020



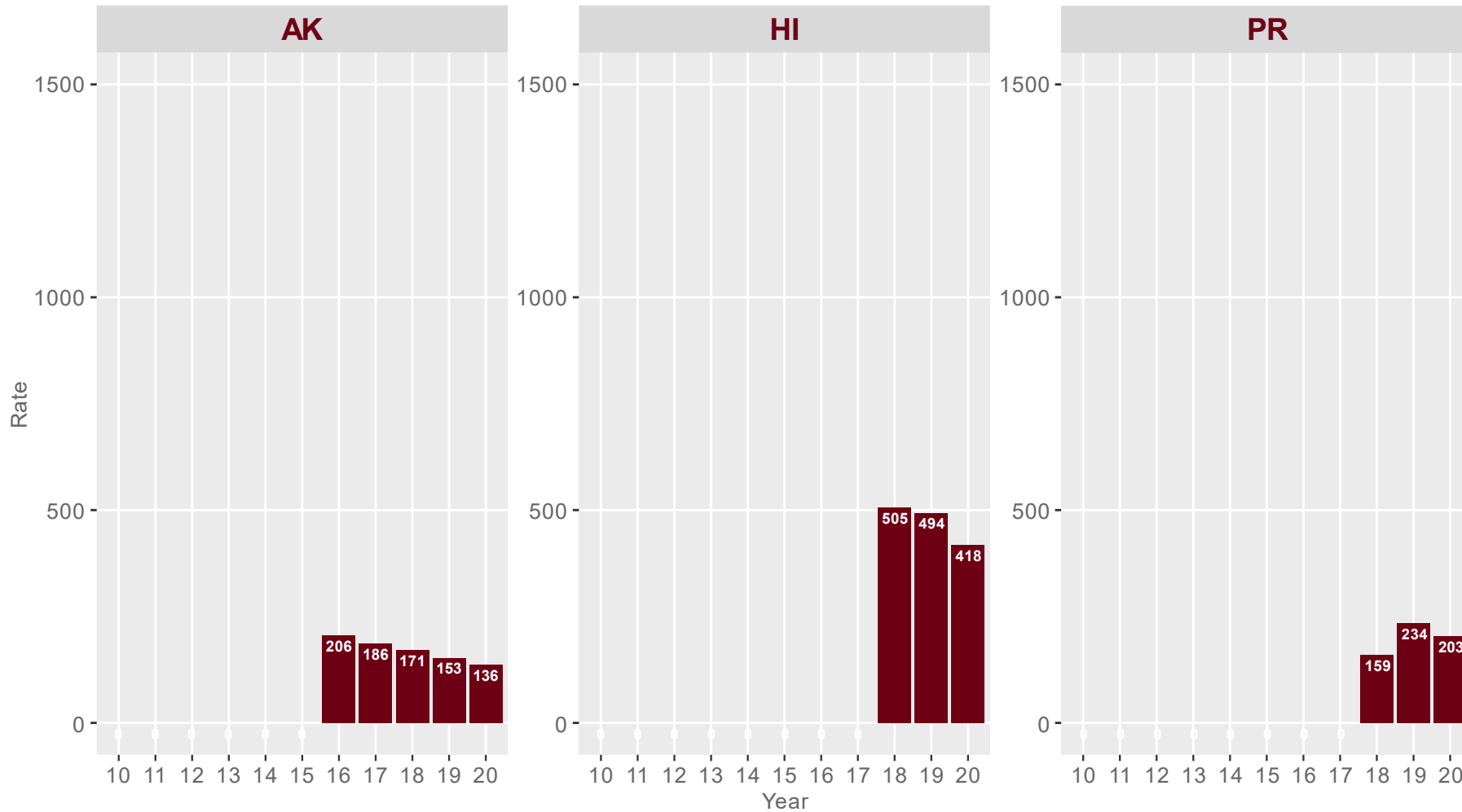
Opioid Prescription Rates per 1,000 Population for Southwest Region States from 2010 - 2020



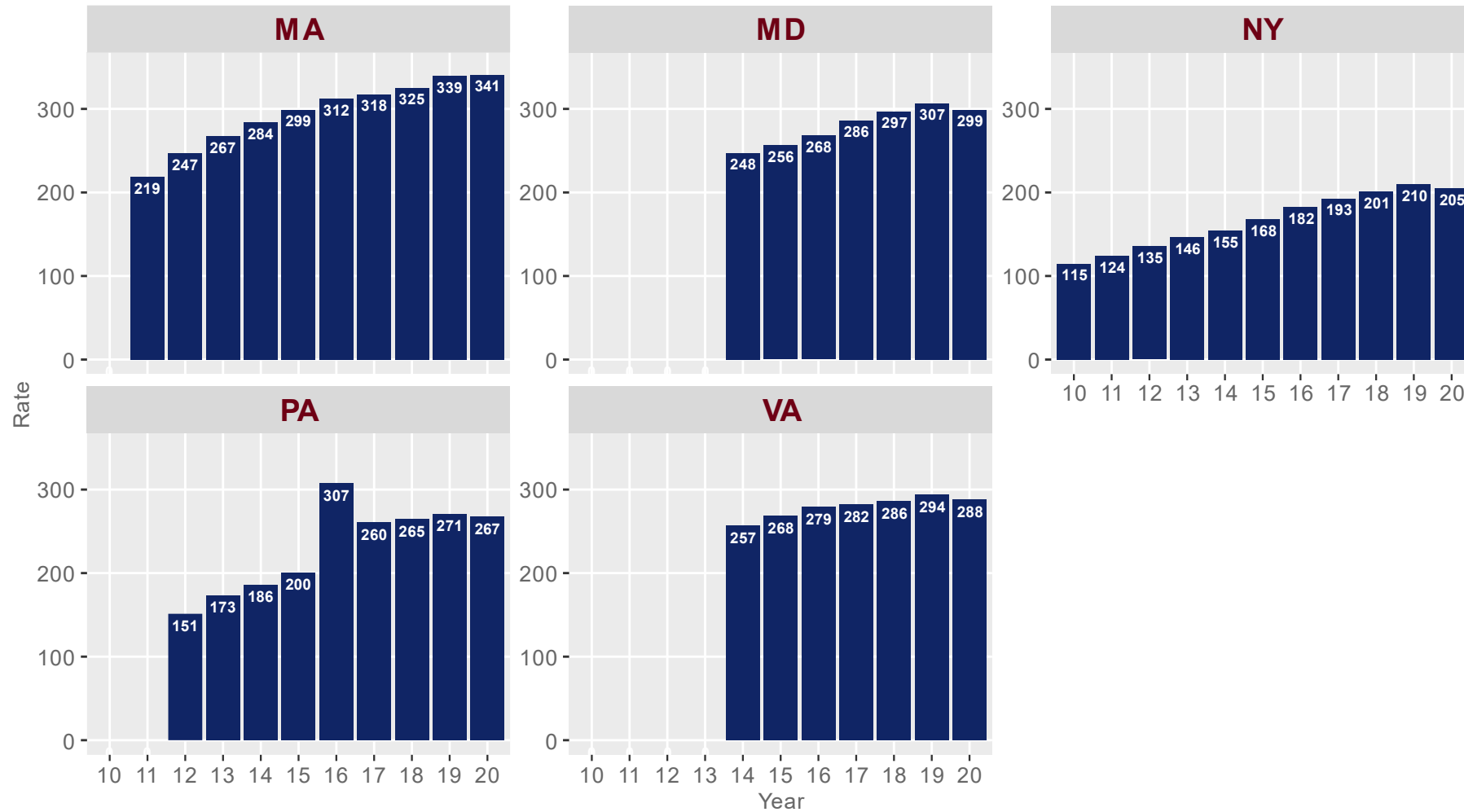
Opioid Prescription Rates per 1,000 Population for Western Region States from 2010 - 2020



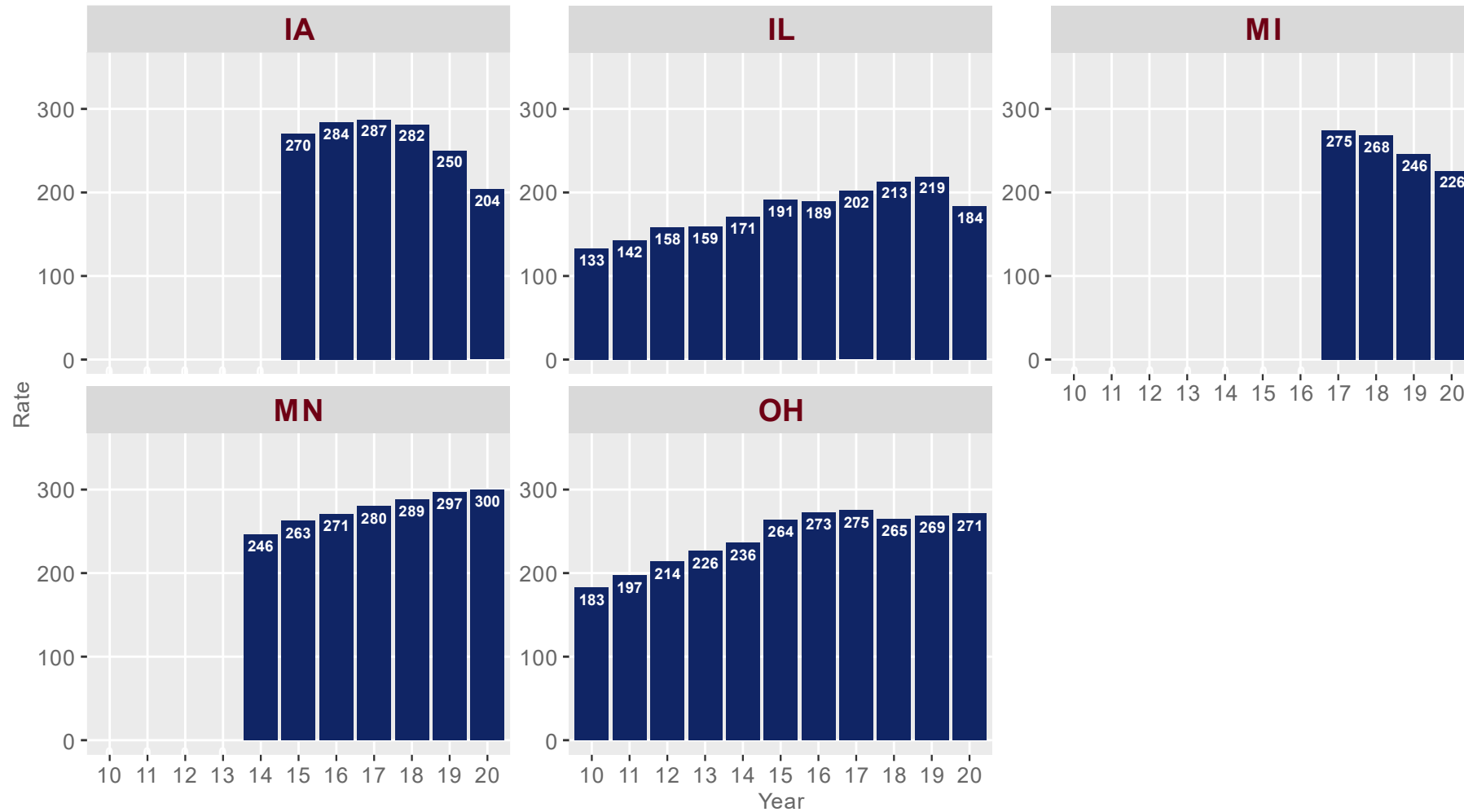
Opioid Prescription Rates per 1,000 Population for Territories and Distant States from 2010 - 2020



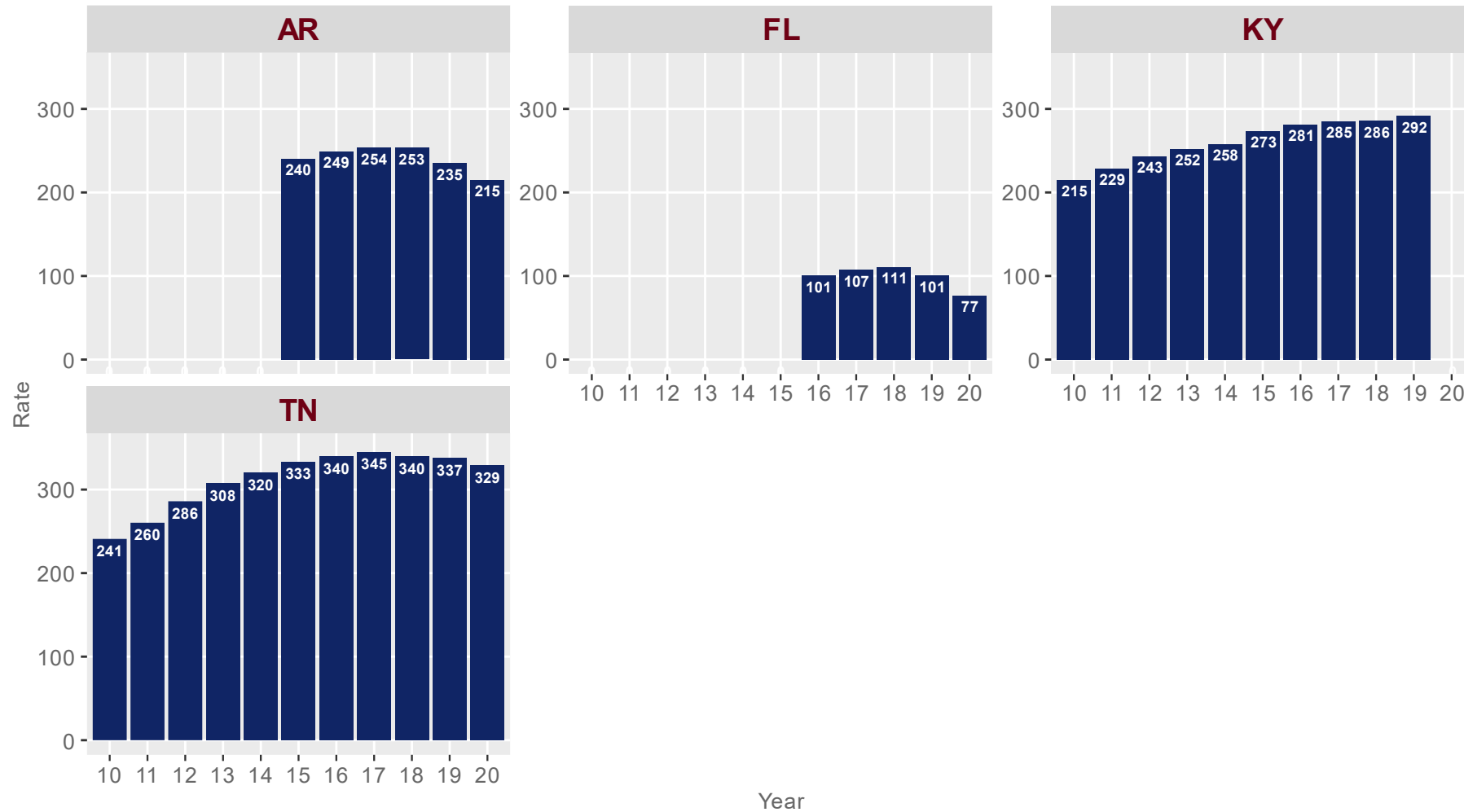
Stimulant Prescription Rates per 1,000 Population for Northeast Region States from 2010 - 2020



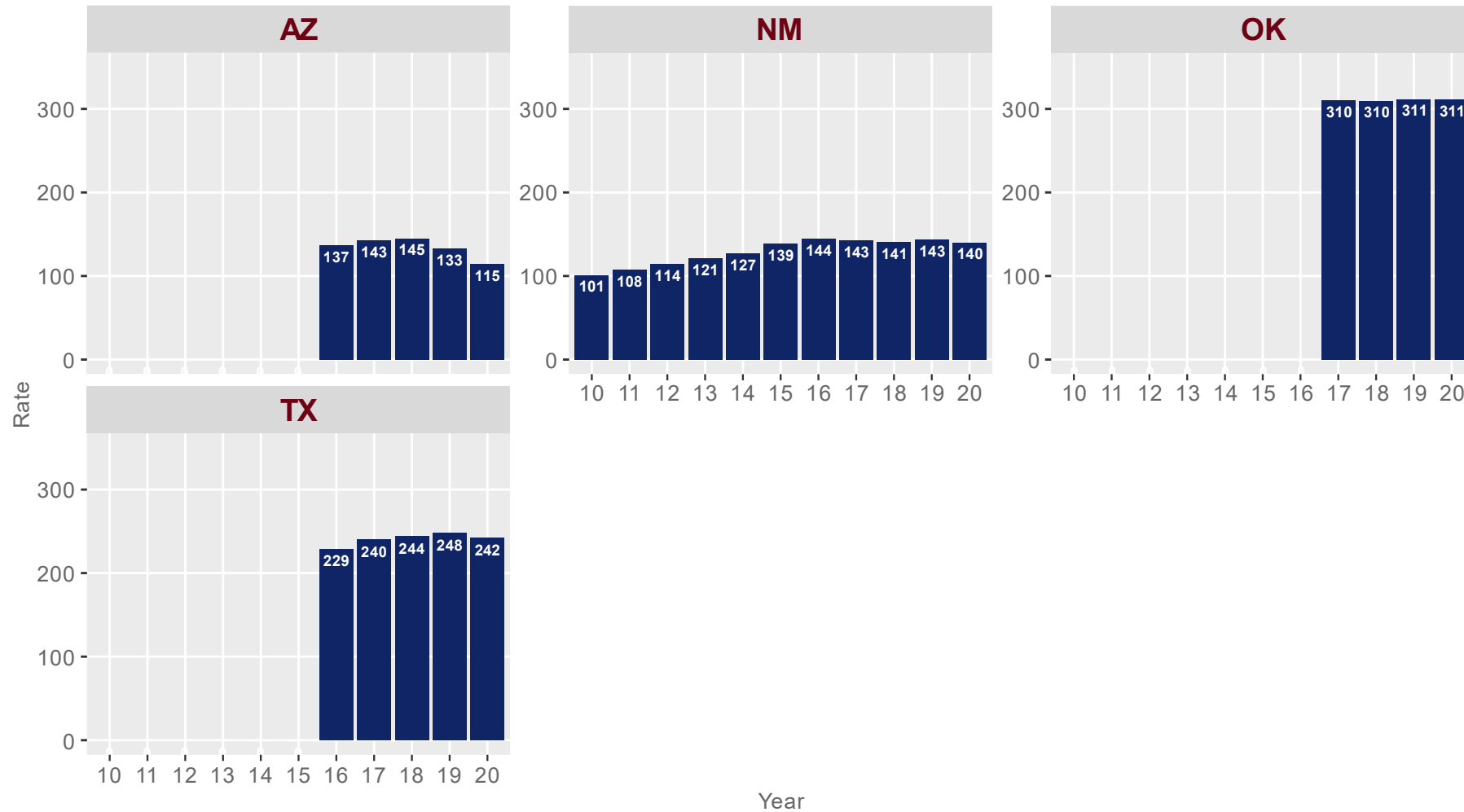
Stimulant Prescription Rates per 1,000 Population for Midwest Region States from 2010 - 2020



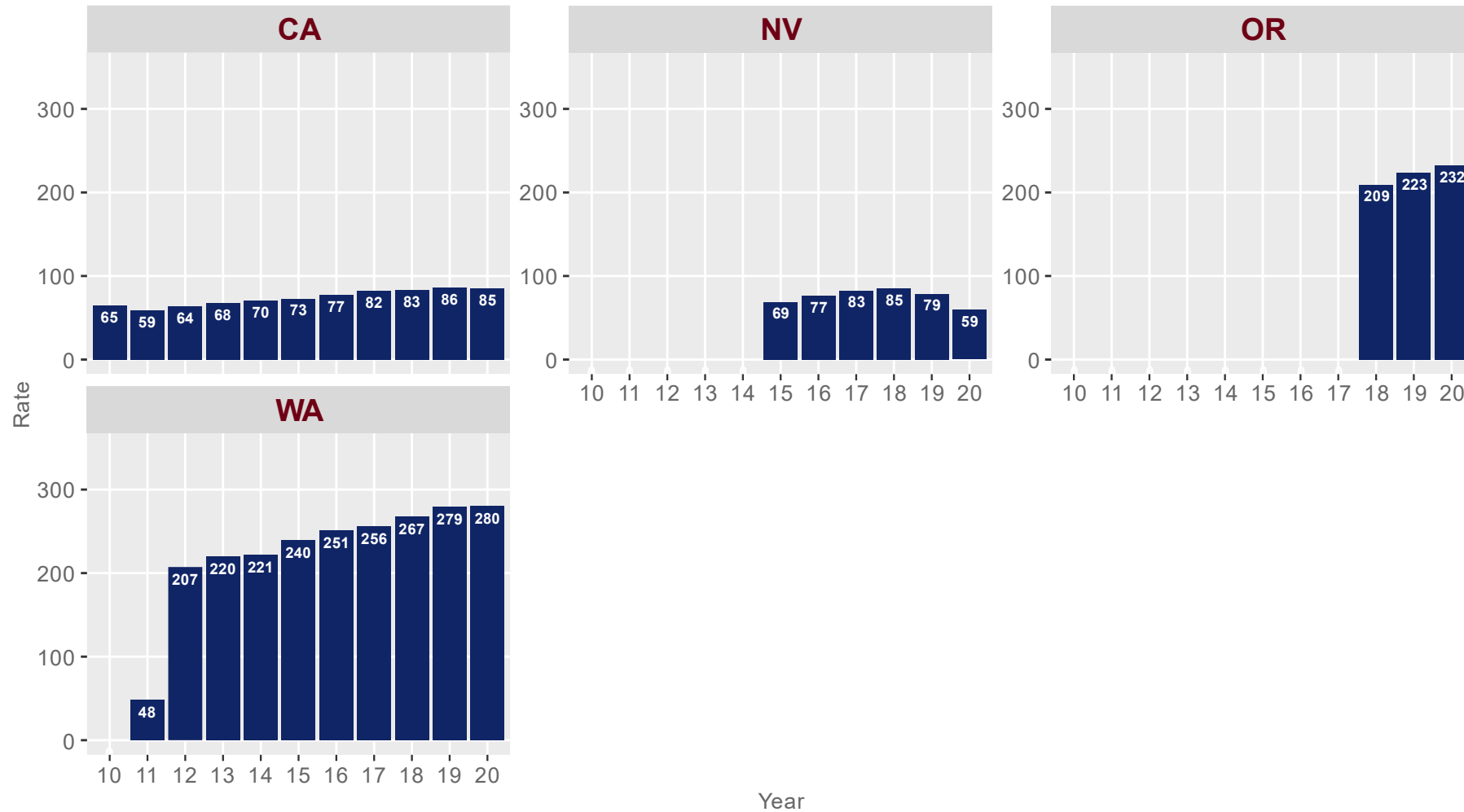
Stimulant Prescription Rates per 1,000 Population for Southeast Region States from 2010 - 2020



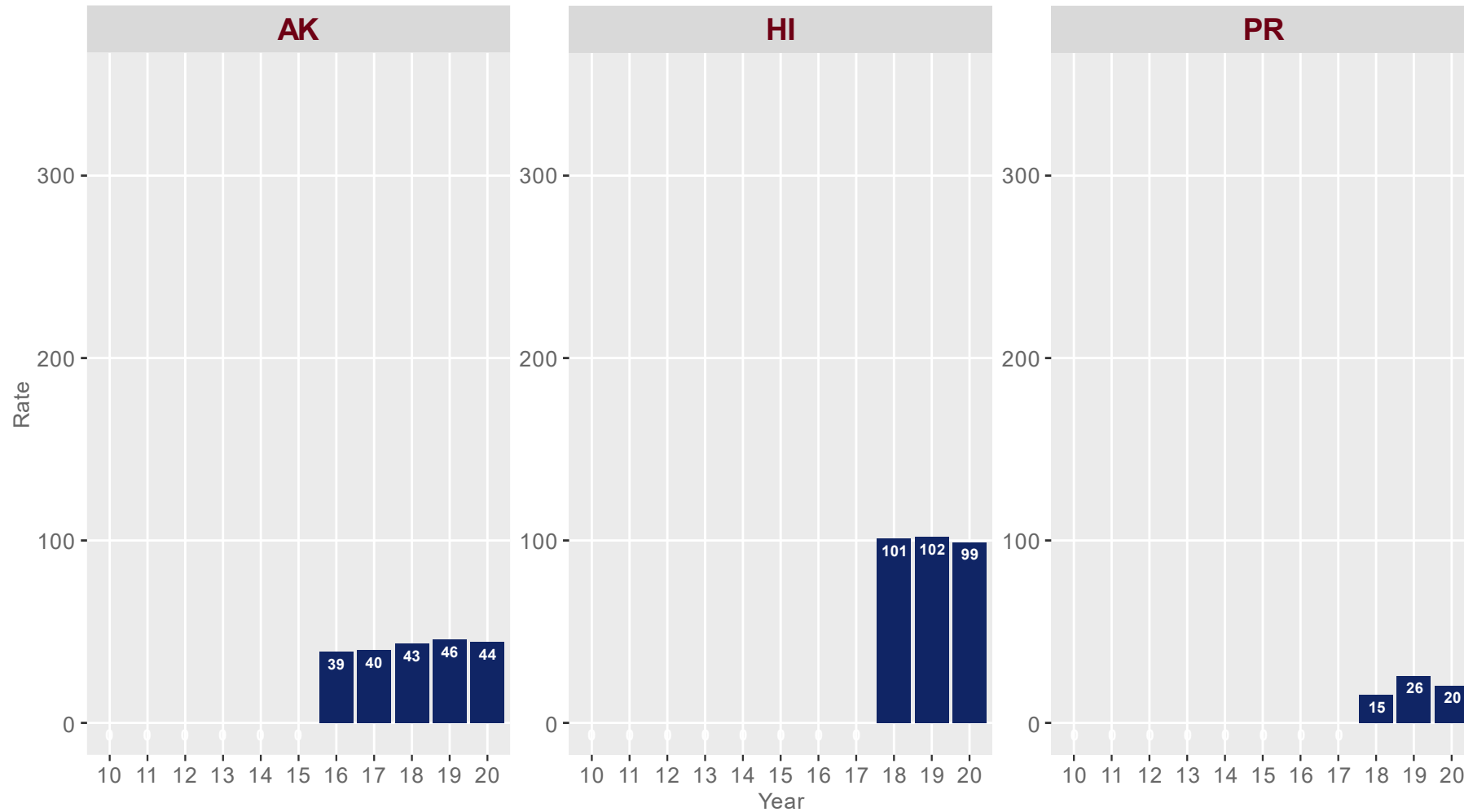
Stimulant Prescription Rates per 1,000 Population for Southwest Region States from 2010 - 2020



Stimulant Prescription Rates per 1,000 Population for Western Region States from 2010 - 2020



Stimulant Prescription Rates per 1,000 Population for Territories and Distant States from 2010 - 2020



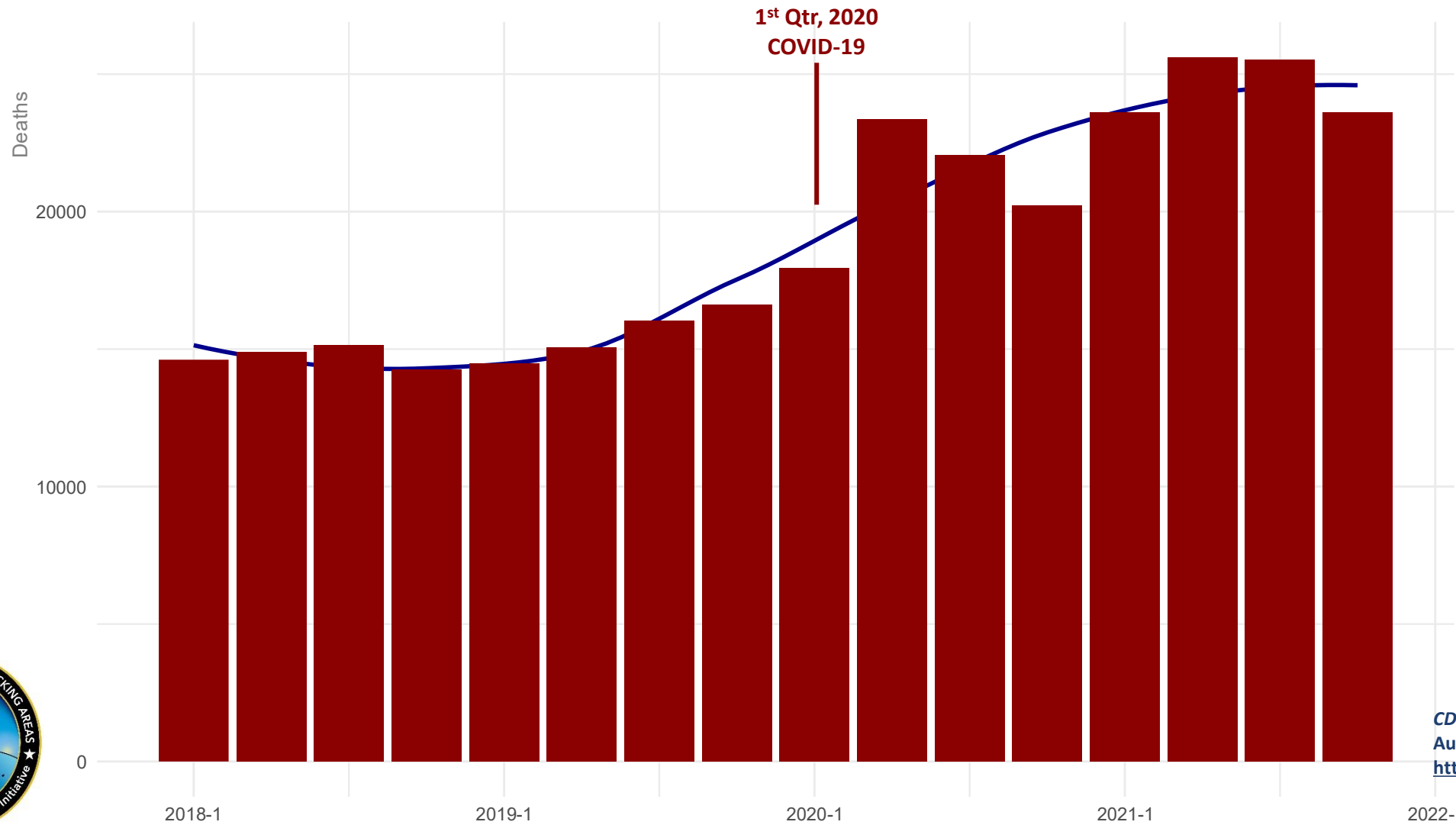
**We need your help to fill in the 2021 and 2022
prescription drug knowledge gaps.**



How did COVID-19 impact Overdose Deaths & Drug Seizures?



January 2018 to December 2021 Overdose Deaths

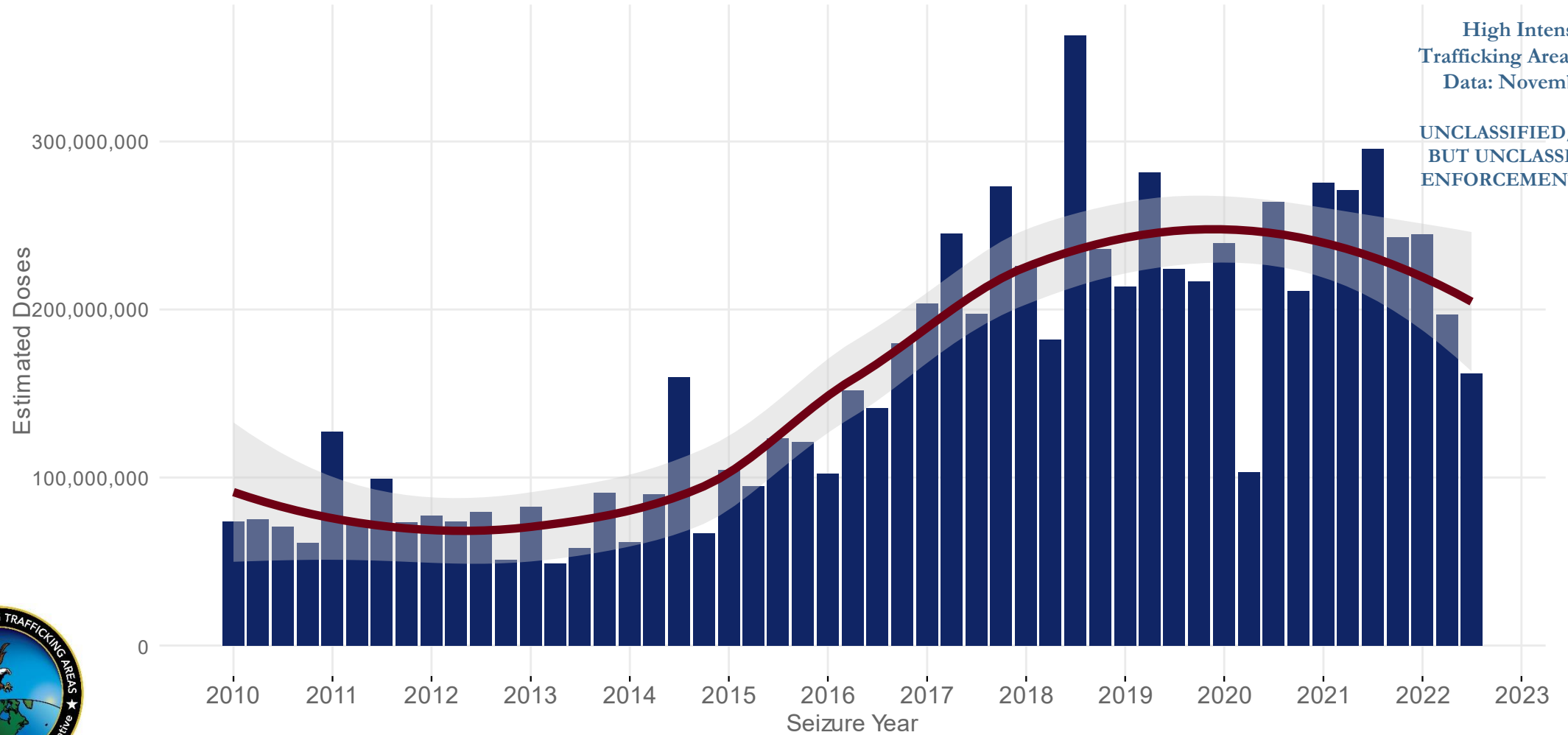


CDC WONDER. (n.d.). Retrieved August 10, 2022, from <https://wonder.cdc.gov/>

Cocaine Seizures by Quarter in Estimated Doses 2010 - 2022

High Intensity Drug
Trafficking Area Drug Seizure
Data: November 18, 2022

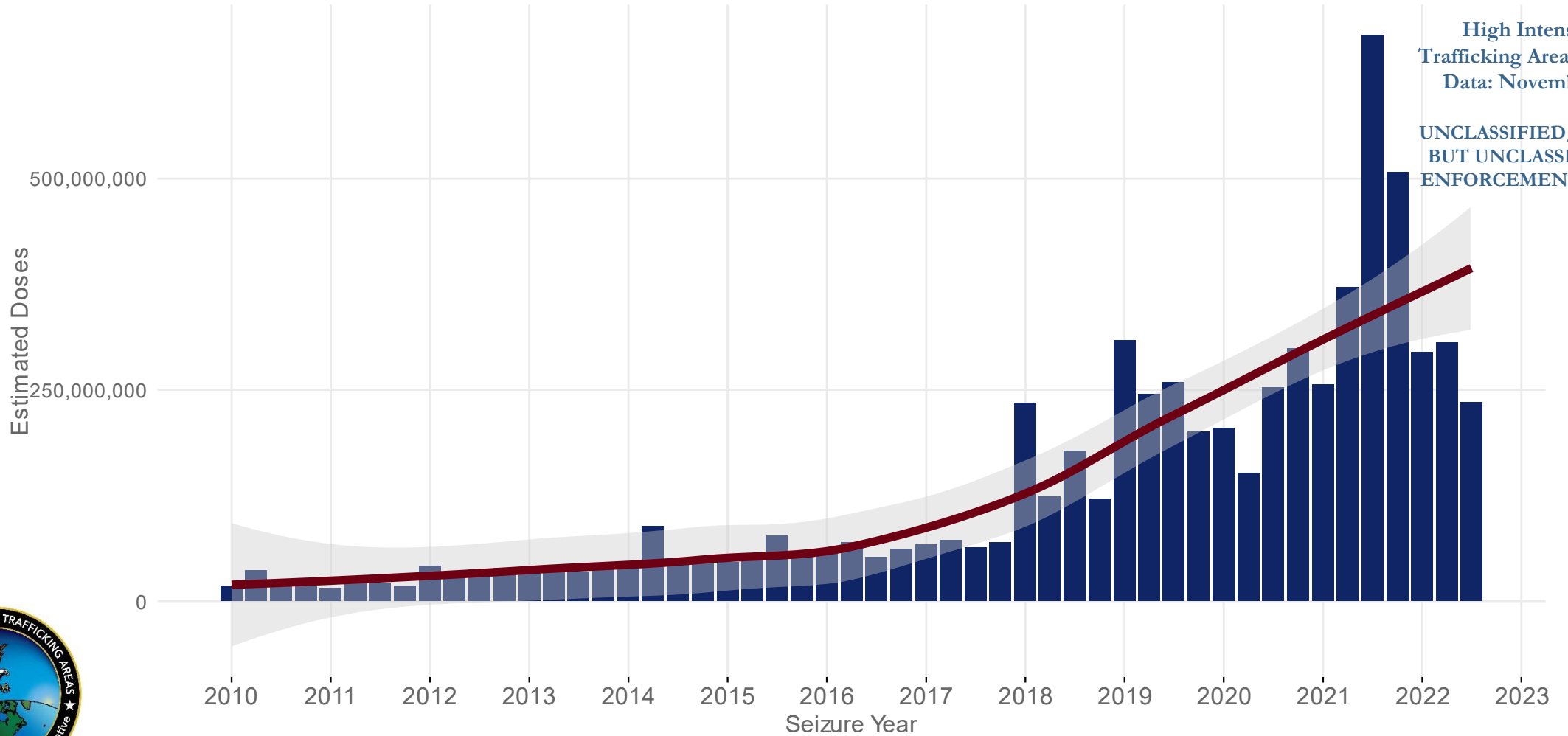
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BUT UNCLASSIFIED//LAW
ENFORCEMENT SENSITIVE



Methamphetamine Seizures by Quarter in Estimated Doses 2010 - 2022

High Intensity Drug
Trafficking Area Drug Seizure
Data: November 18, 2022

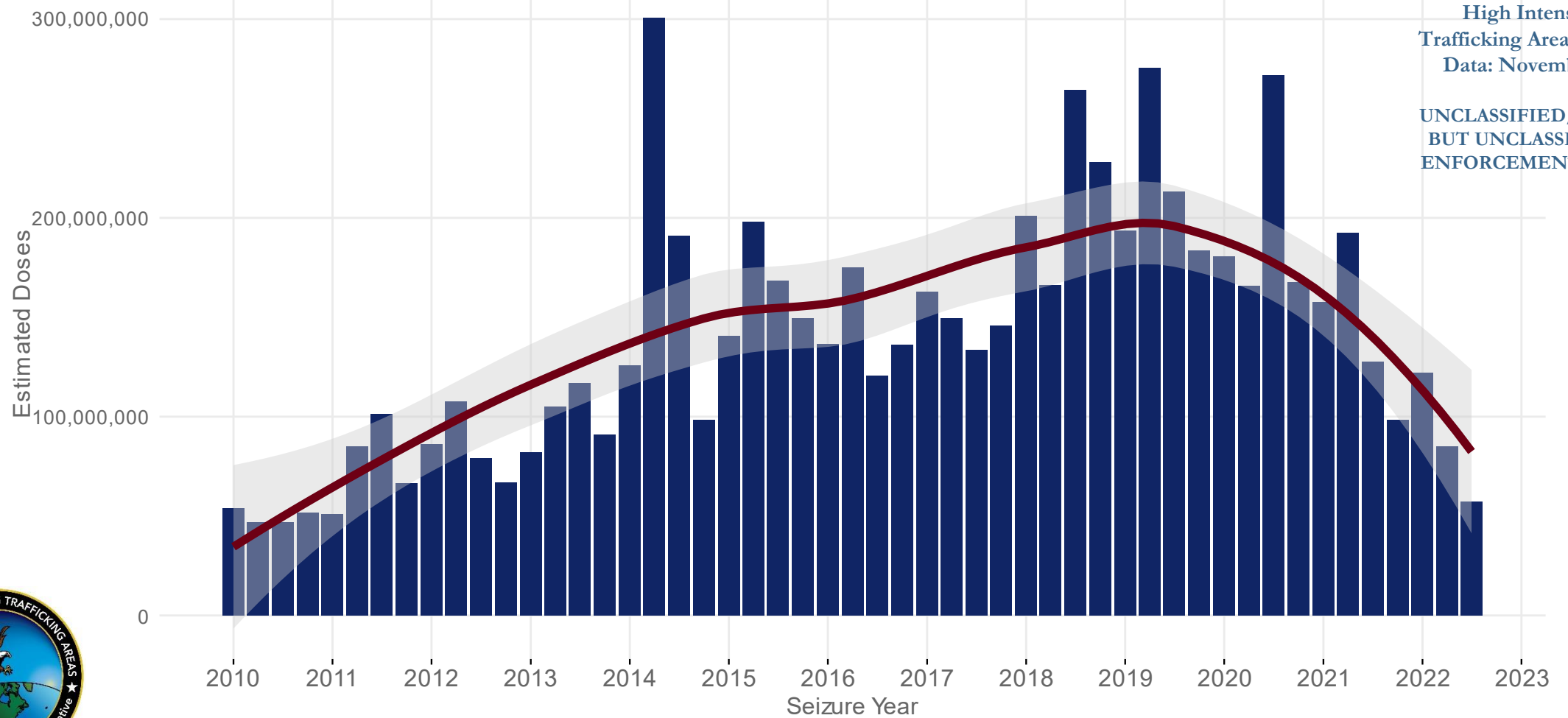
UNCLASSIFIED//SENSITIVE
BUT UNCLASSIFIED//LAW
ENFORCEMENT SENSITIVE



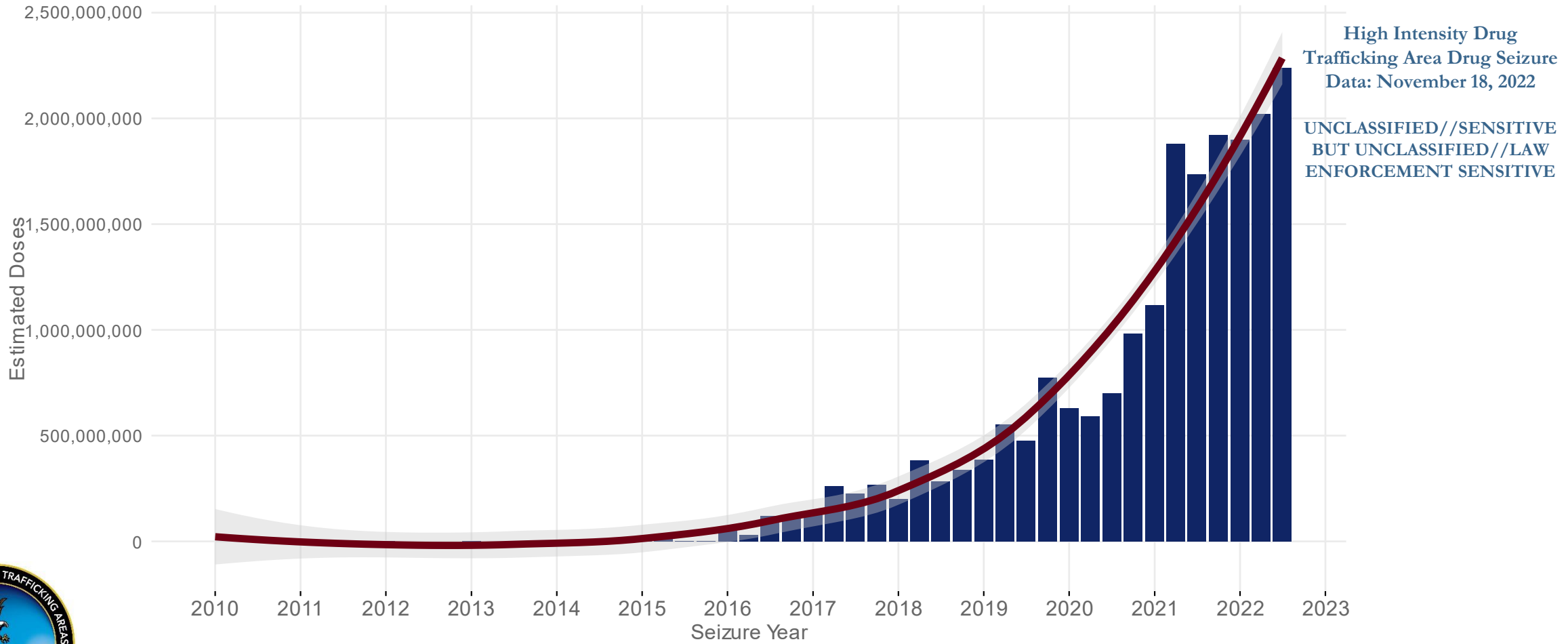
Heroin Seizures by Quarter in Estimated Doses 2010 - 2022

High Intensity Drug
Trafficking Area Drug Seizure
Data: November 18, 2022

UNCLASSIFIED//SENSITIVE
BUT UNCLASSIFIED//LAW
ENFORCEMENT SENSITIVE



Fentanyl Seizures by Quarter in Estimated Doses 2010 - 2022



COVID-19 Impact on Overdose Deaths and Drug Seizures

- During 2020 1st quarter, the COVID-19 pandemic was identified.
- In the 2nd quarter, overdose deaths surged.
- Simultaneously, law enforcement seizures declined, as public contacts were restricted.
- In subsequent quarters, the surge in overdose deaths slowed, while drug seizures increased.



Source: Predicted Values in Vital Statistics Rapid Release, Provisional Drug Overdose Death Counts. National Center for Health Statistics. 2022

Can we identify Emerging Threats in Rural Areas?



NETI Rural Areas Project – Feasibility Study

- Is it possible to identify emerging threats for rural areas?
- If it is possible, can NETI develop a methodology to identify emerging threats for rural counties?



Is it possible to identify emerging drug threats for rural areas?

When adequate data from law enforcement, state public health agencies, and contiguous rural counties is available and properly collated, it is possible to identify most emerging drug threats.



If it is possible can NETI develop a methodology to identify emerging threats for rural counties?

The methodology for identifying rural areas' emerging threats must be applied regionally to each rural area because the drug misuse and abuse patterns in each region may differ from the rest of the state where the rural area is located. Similarly, each rural area may be different than rural areas in other states.



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