Drug overdose statistics from the National Vital Statistics System

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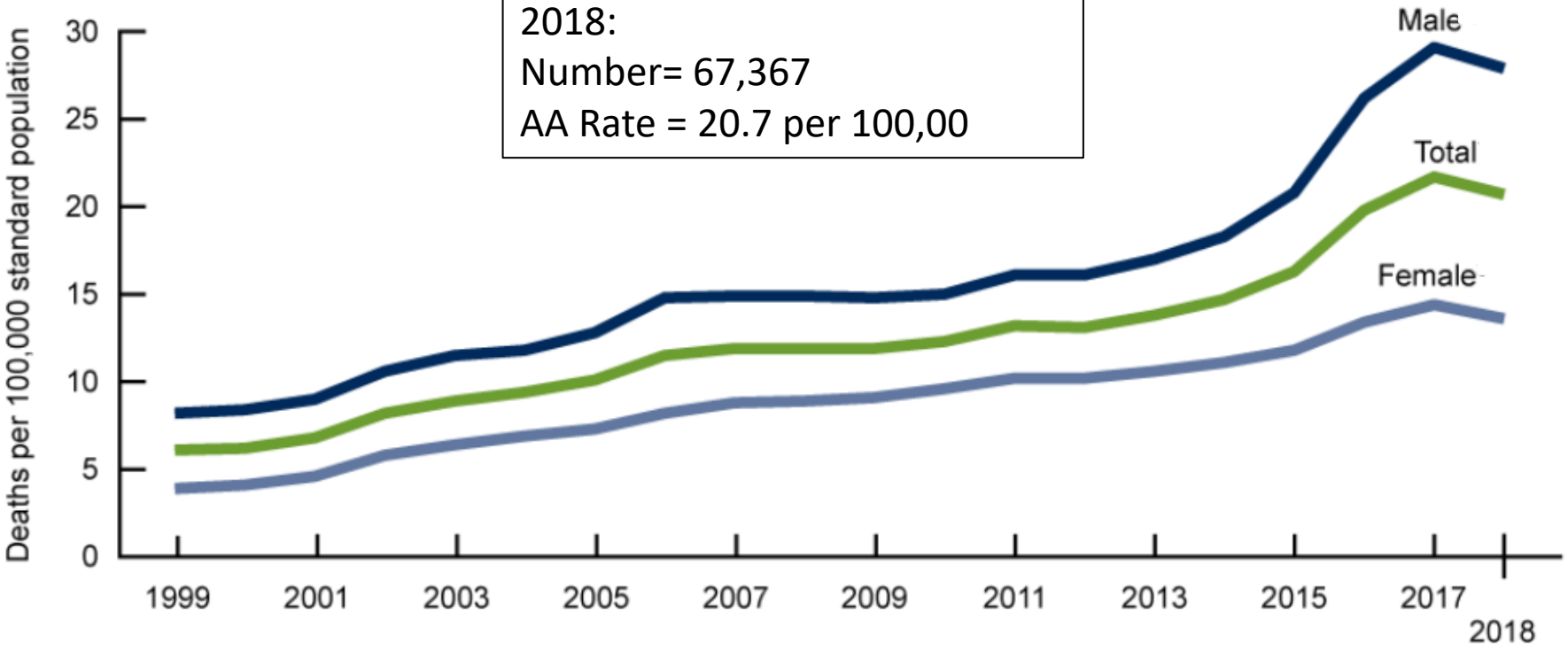
RADARS System 14th Annual Scientific Virtual Meeting

May 12, 2020

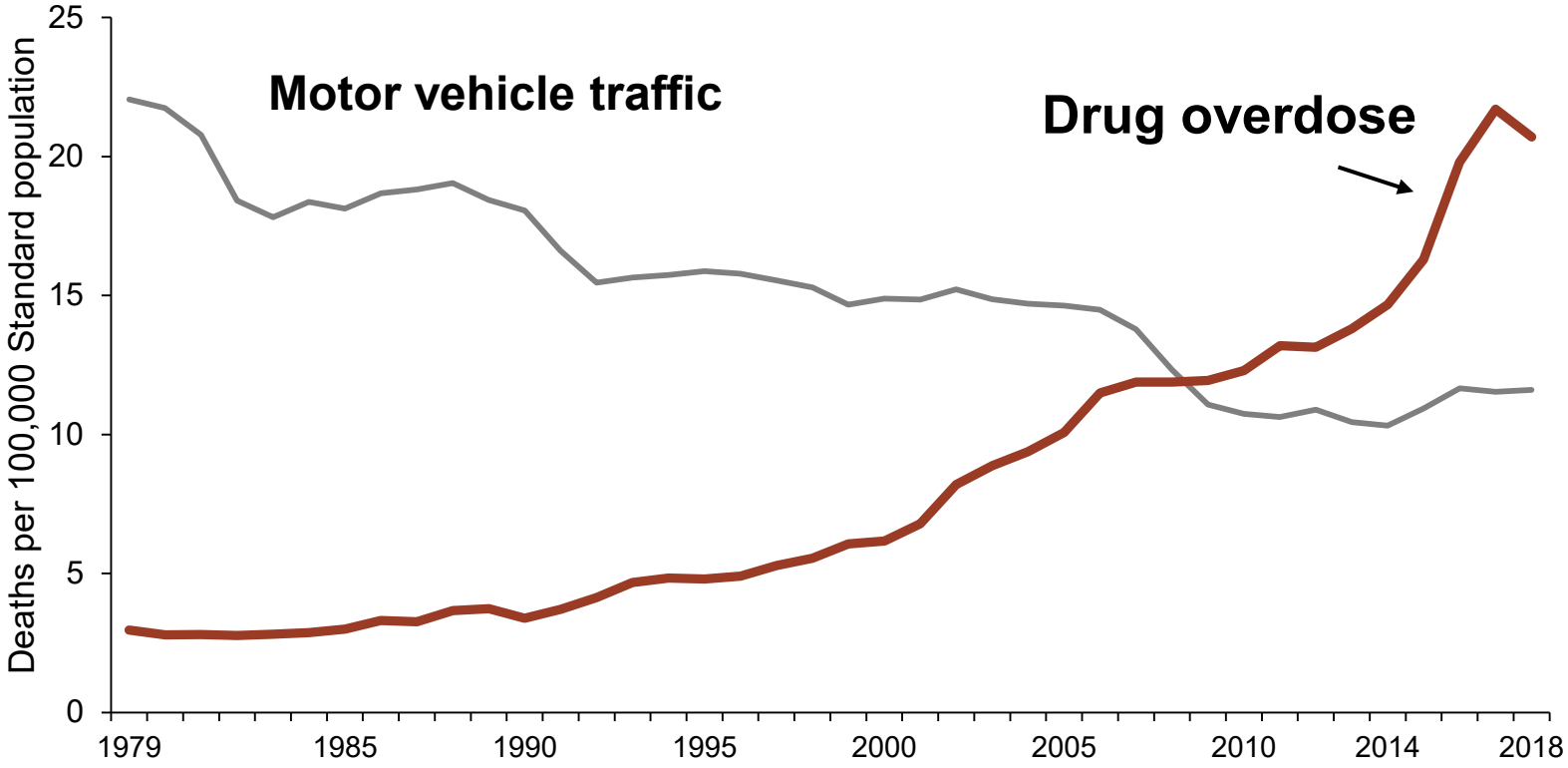
Age-adjusted drug overdose death rates, by sex

2018:
Number= 67,367
AA Rate = 20.7 per 100,00



Source: CDC/NCHS, National Vital Statistics System, Mortality File

Motor vehicle traffic and drug overdose death rates United States, 1979-2018



Source: CDC/NCHS, National Vital Statistics System, Mortality File.

Where do these statistics come from?

- National Center for Health Statistics aggregates data from death certificates across the country through the National Vital Statistics System

National Vital Statistics Reports

NVSS

Volume 68, Number 12 October 25, 2019

Regional Differences in the Drugs Most Frequently Involved in Drug Overdose Deaths: United States, 2017

by Holly Hedegaard, M.D., M.S.P.H., and Brigham A. Bastian, B.S., National Center for Health Statistics; James P. Trinidad, M.P.H., M.S., U.S. Food and Drug Administration; and Merianne Rose Spencer, M.P.H., and Margaret Warner, Ph.D., National Center for Health Statistics

Abstract

Objective—This report describes regional differences in the specific drugs most frequently involved in drug overdose deaths

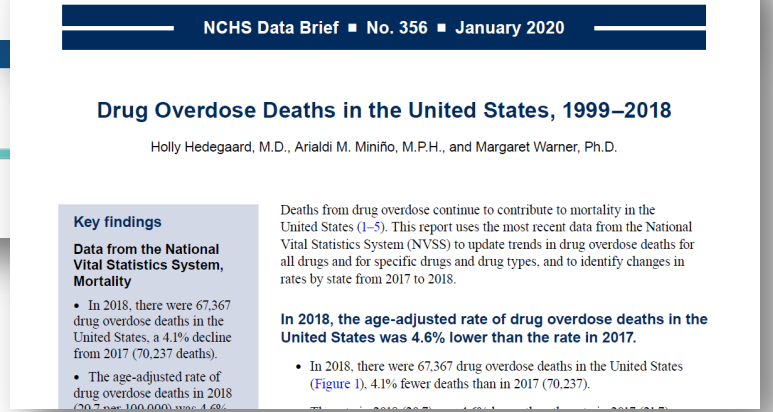
the West. The regional patterns observed did not change after adjustment for differences in the specificity of drug reporting.

Conclusions—The drugs most frequently involved in drug overdose deaths in 2017 varied by HHS region. Understanding

National Center for Health Statistics

NVSS Vital Statistics Rapid Release

Provisional Drug Overdose Death Counts



NCHS Data Brief ■ No. 356 ■ January 2020

Drug Overdose Deaths in the United States, 1999–2018

Holly Hedegaard, M.D., Arialdi M. Miniño, M.P.H., and Margaret Warner, Ph.D.

Key findings

Data from the National Vital Statistics System, Mortality

- In 2018, there were 67,367 drug overdose deaths in the United States, a 4.1% decline from 2017 (70,237 deaths).
- The age-adjusted rate of drug overdose deaths in 2018

Deaths from drug overdose continue to contribute to mortality in the United States (1–5). This report uses the most recent data from the National Vital Statistics System (NVSS) to update trends in drug overdose deaths for all drugs and for specific drugs and drug types, and to identify changes in rates by state from 2017 to 2018.

In 2018, the age-adjusted rate of drug overdose deaths in the United States was 4.6% lower than the rate in 2017.

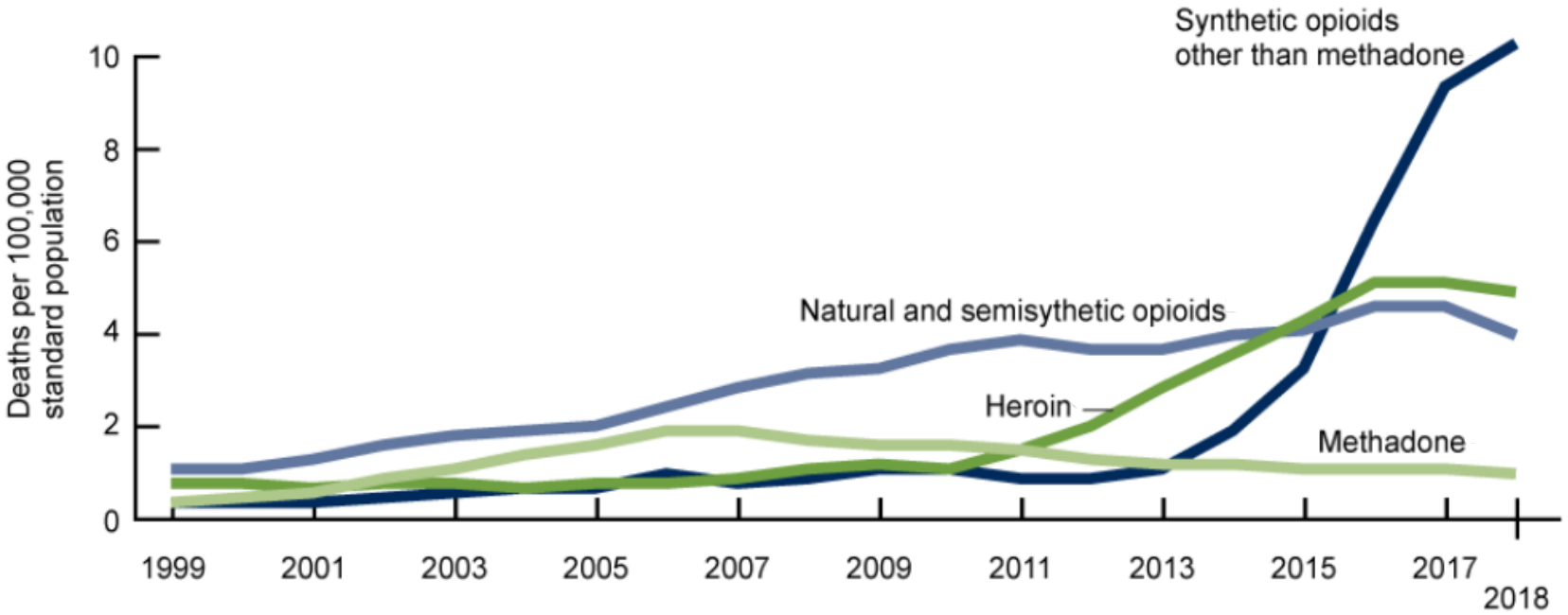
- In 2018, there were 67,367 drug overdose deaths in the United States (Figure 1), 4.1% fewer deaths than in 2017 (70,237).

Vital Statistics Mortality Data*

- Based on information from all death certificates filed in the States and Territories
- Data include:
  - Demographic information such as age, sex, race, geographic
  - Disposition information
  - Causes of death coded using the *International Classification of Diseases, Tenth Revision* (ICD-10)
- States provide data to CDC National Center for Health Statistics though the Vital Statistics Cooperative Agreement

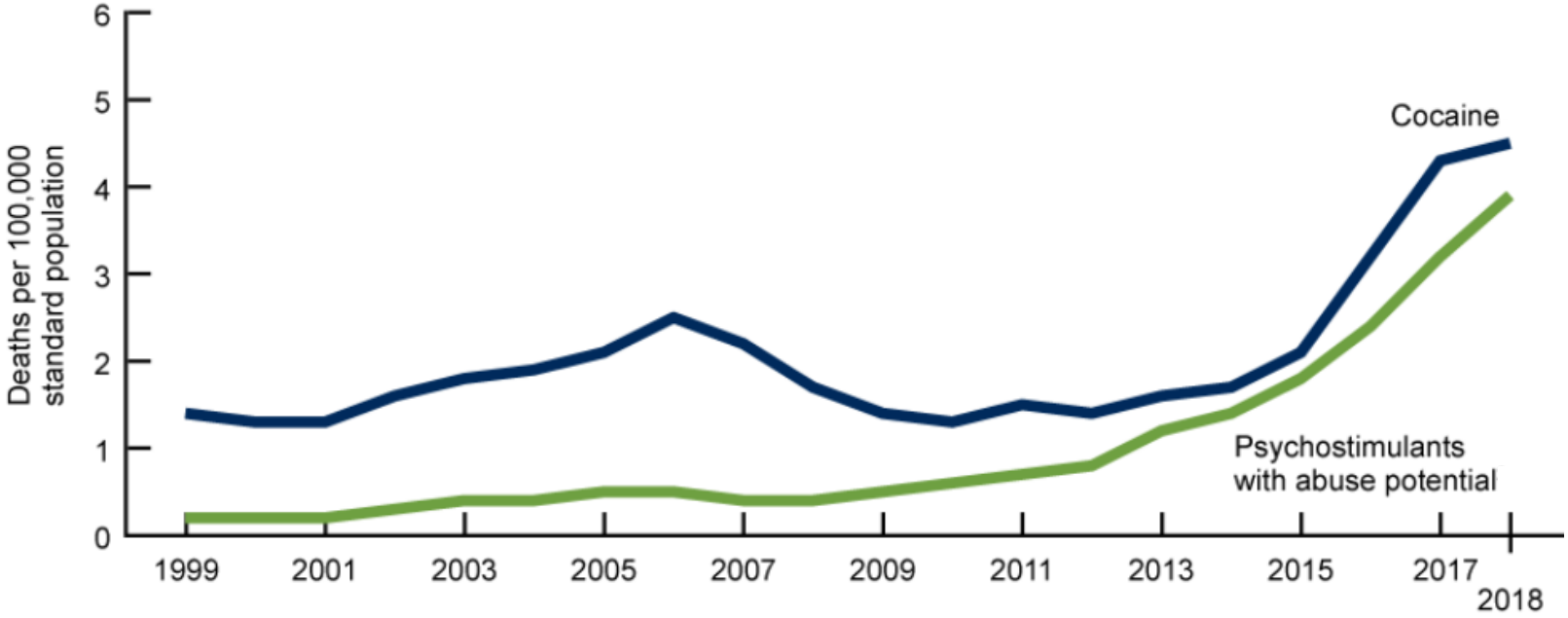
*AKA CDC Death Certificate Data, Vital statistics mortality data, WONDER, WISQARS

Age-adjusted drug overdose death rates, by type of opioid



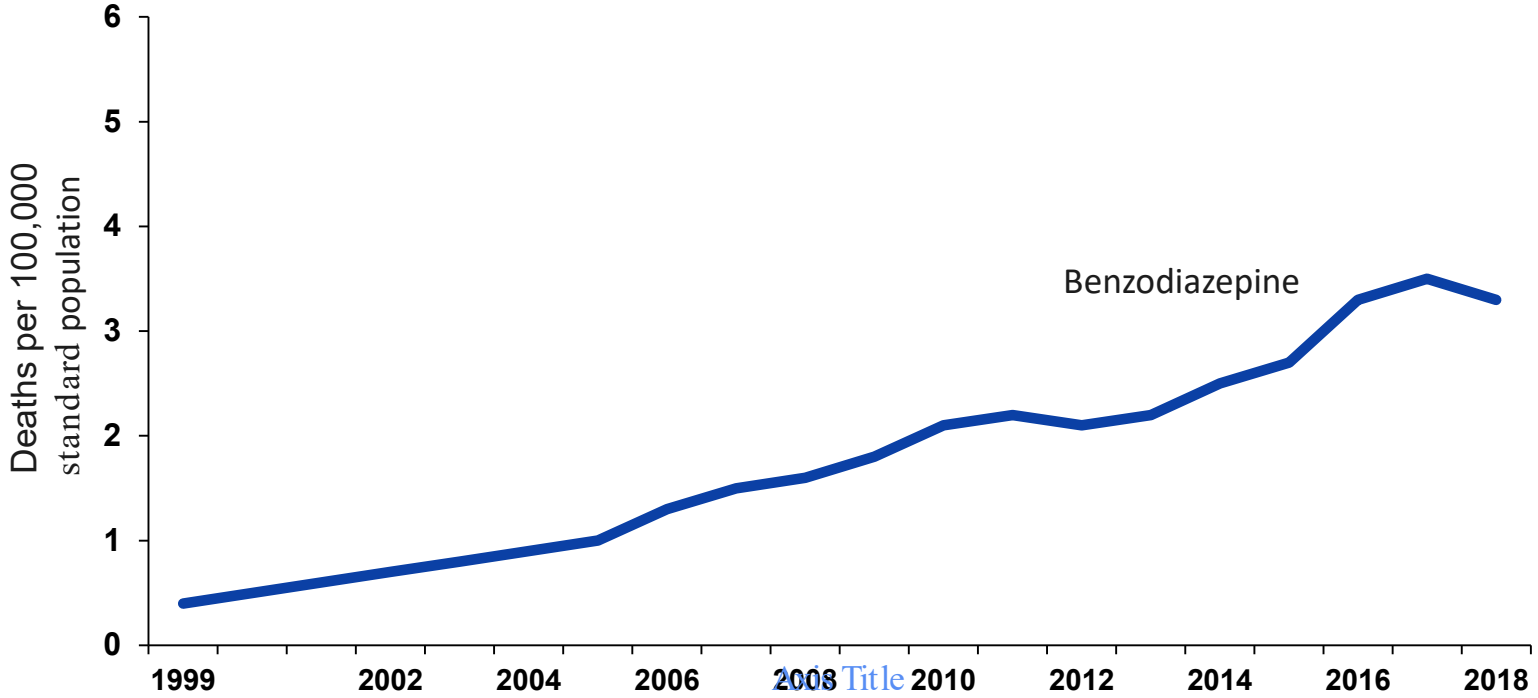
Source: CDC/NCHS, National Vital Statistics System, Mortality File

Age-adjusted drug overdose death rates, by type of stimulant



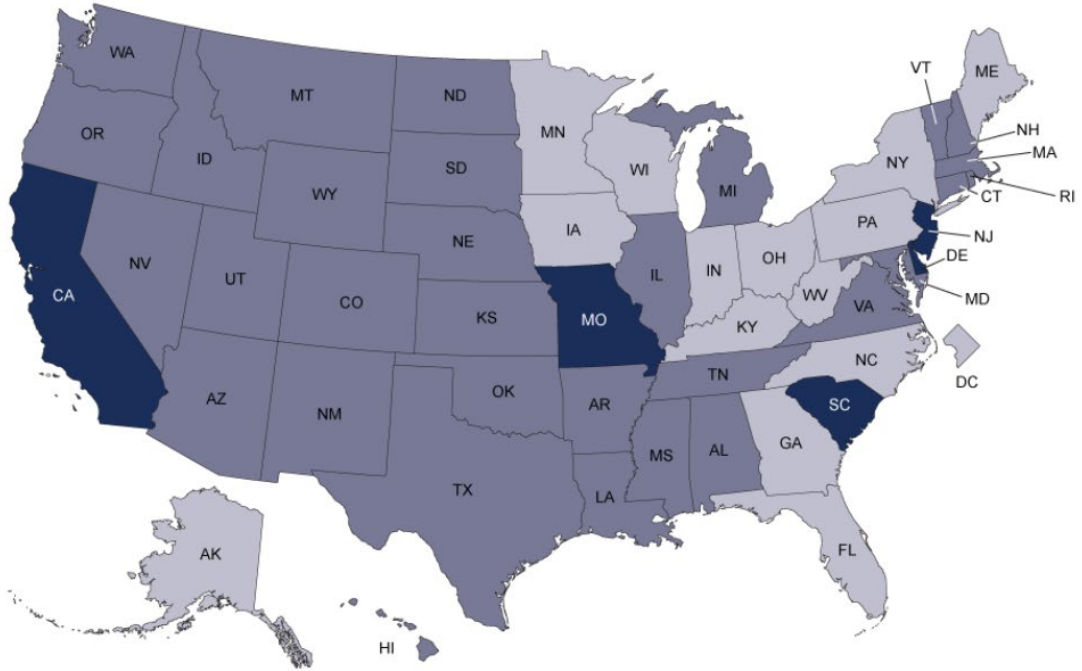
Source: CDC/NCHS, National Vital Statistics System, Mortality File

Age-adjusted drug overdose death rates, benzodiazepine



Source: CDC/NCHS, National Vital Statistics System, Mortality File.

Age-adjusted drug overdose death rates, Change from 2017 to 2018

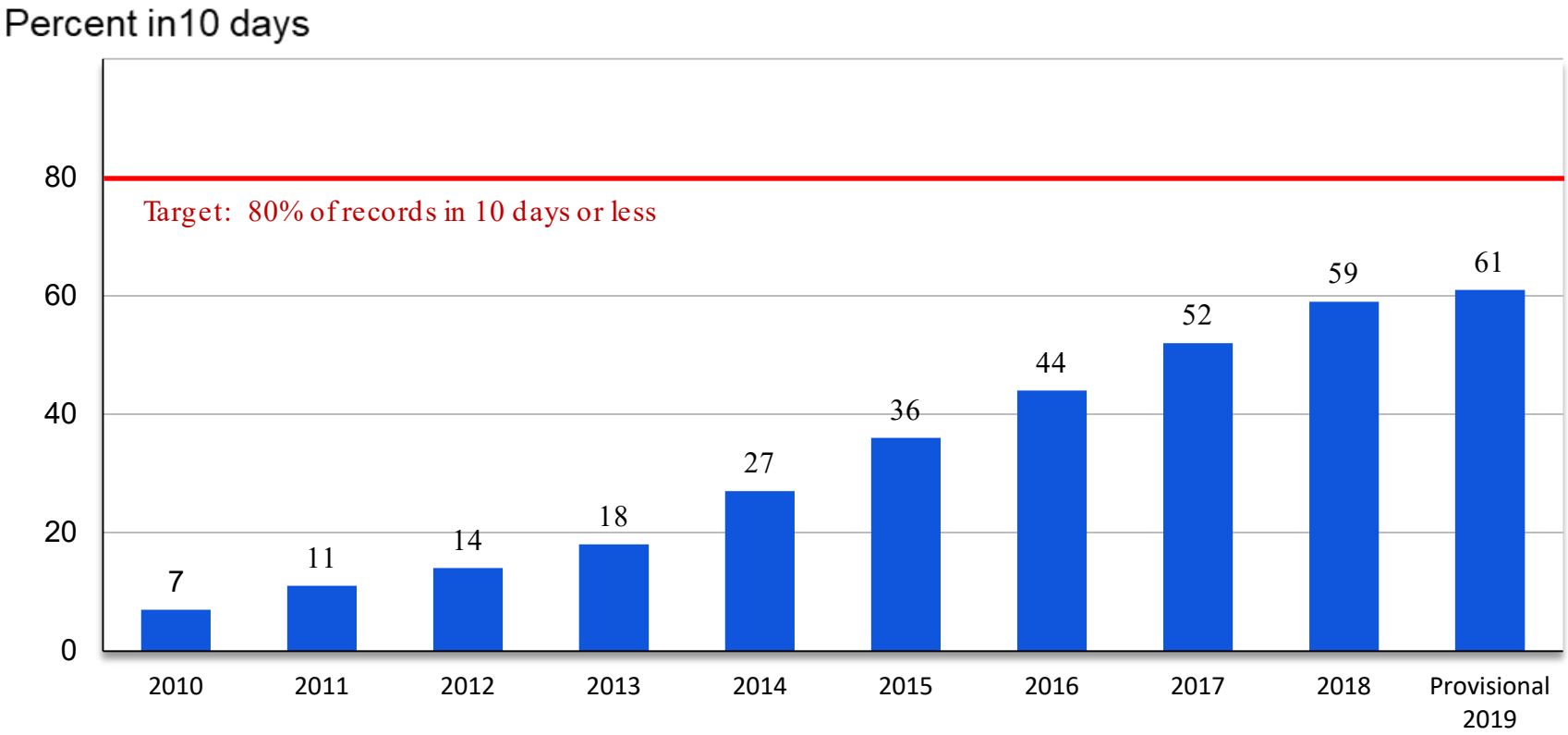


State rate in 2018 is **statistically higher** than state rate in 2017

State rate in 2018 is **statistically similar** to state rate in 2017

State rate in 2018 **statistically lower** than state rate in 2017

Faster data: More records received within 10 days of the date of death

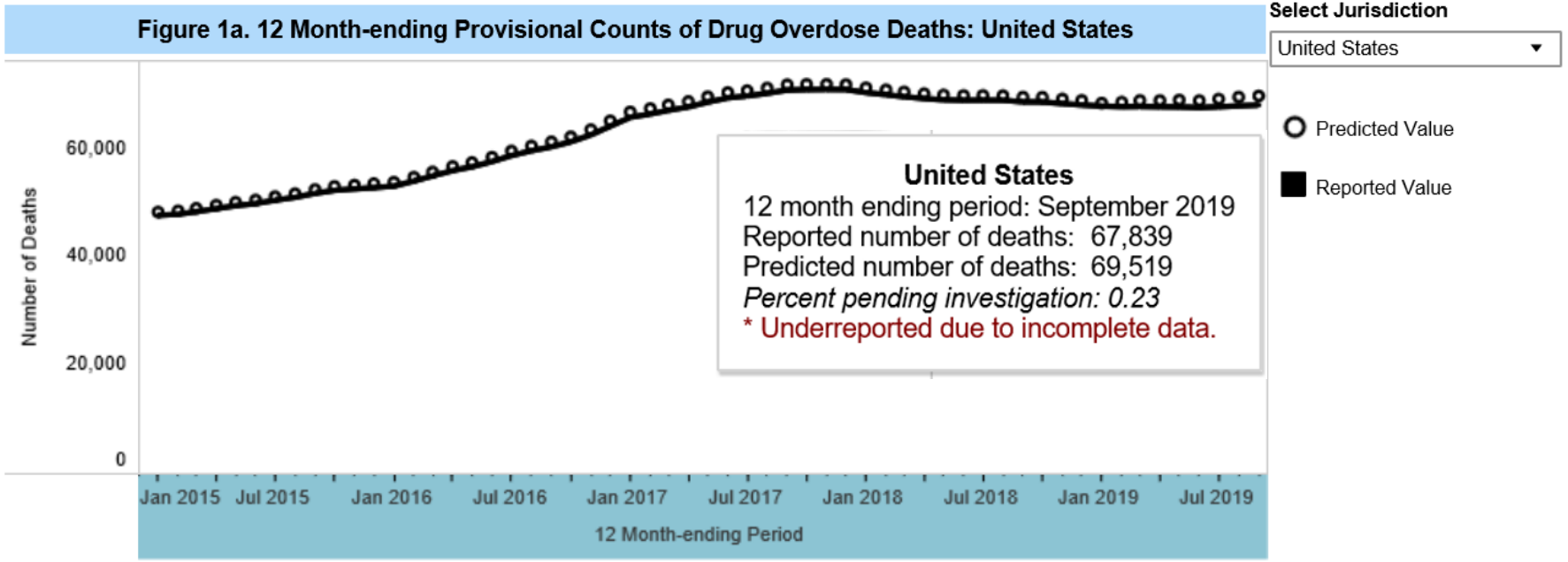


More data releases

- **Provisional data** -- based on a snapshot of vital statistics data received and processed by NCHS as of a specified cutoff date.
  - **Quarterly Provisional Estimates** *include estimated rates of death for selected causes of death.*
  - **Focused surveillance activities** *include Monthly Provisional Drug Overdose Death Counts, and Weekly Pneumonia and Influenza Mortality Surveillance, Coronavirus Disease (COVID-19) Death Data*
  - **Vital Statistics Rapid Release Reports**
- **Final annual data** -- released after NCHS has received all updates from the states and has fully reviewed the data for completeness and quality.

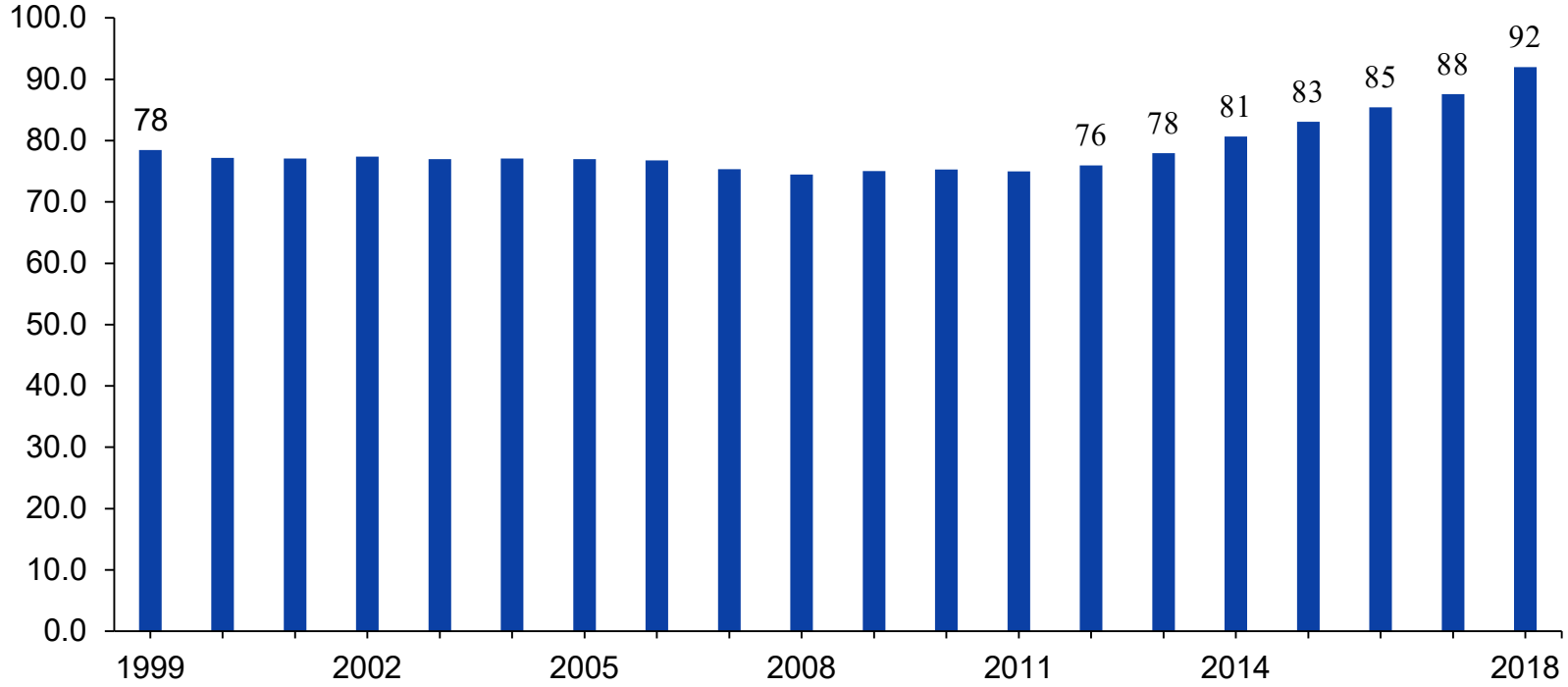
Monthly provisional drug overdose counts

Based on data available for analysis on: 4/5/2020



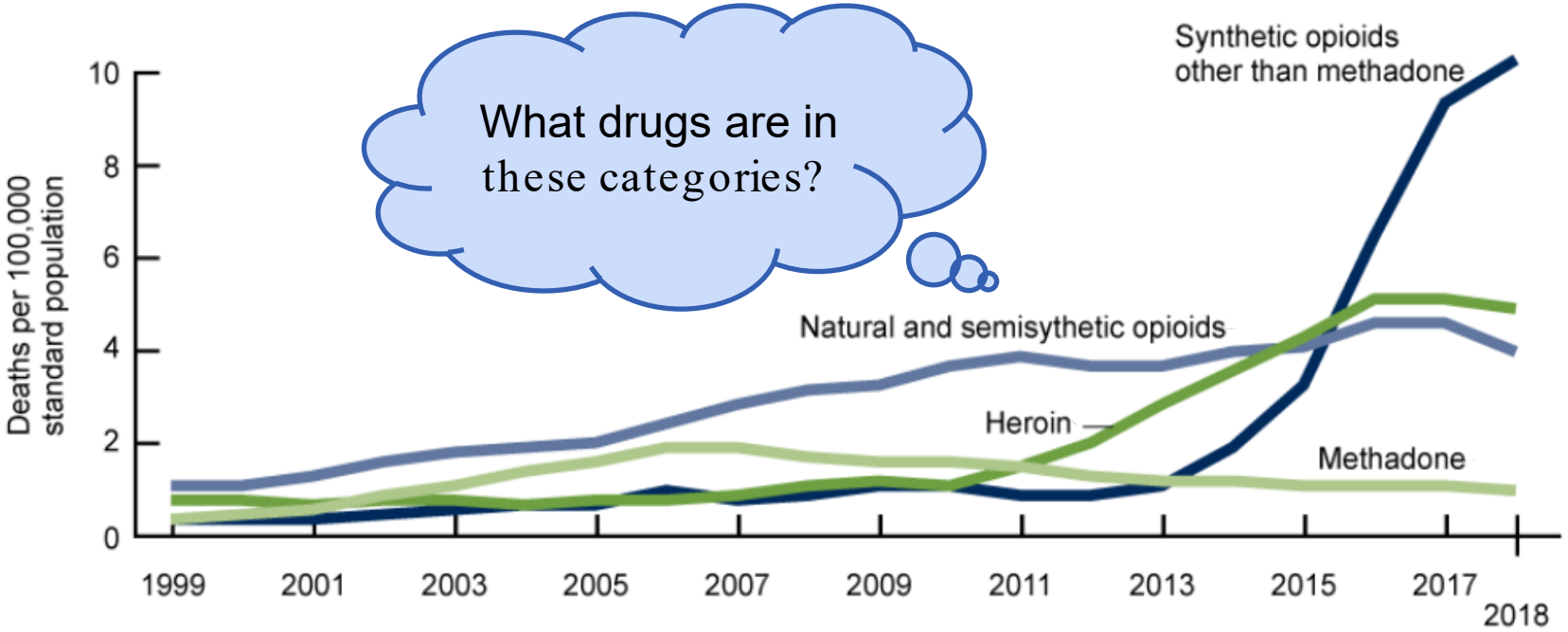
Source: https://www.cdc.gov/nchs/nvss/vsrr/drug-overdose-data.htm

More detail on drugs: Percent of Drug Overdose Deaths with Drugs Specified



Source: CDC/NCHS, National Vital Statistics System, Mortality File.

Drug overdose death rates, by opioid category: United States, 1999–2018

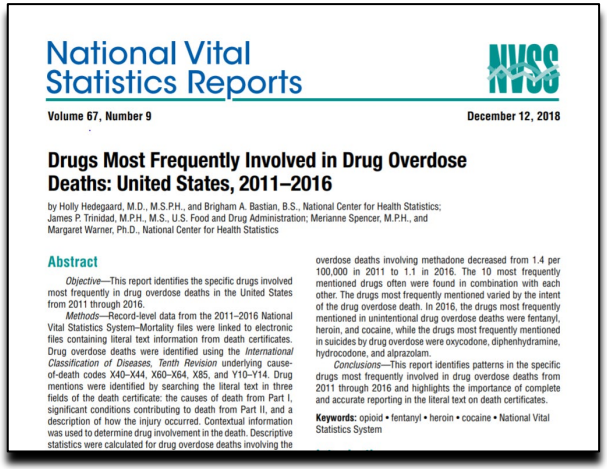


Source: CDC/NCHS, National Vital Statistics System, Mortality File

More detail by looking beyond the ICD-10 codes

Background:

- In ICD-10 drugs are often grouped into categories
- Difficult to identify deaths involving a specific drug



National Vital Statistics Reports

Volume 67, Number 9 — December 12, 2018

Drugs Most Frequently Involved in Drug Overdose Deaths: United States, 2011–2016

by Holly Hedegaard, M.D., M.S.P.H., and Brigham A. Bastian, B.S., National Center for Health Statistics; James P. Trinidad, M.P.H., M.S., U.S. Food and Drug Administration; Merianne Spencer, M.P.H., and Margaret Warner, Ph.D., National Center for Health Statistics

Abstract

Objective—This report identifies the specific drugs involved most frequently in drug overdose deaths in the United States from 2011 through 2016.

Methods—Record-level data from the 2011–2016 National Vital Statistics System–Mortality files were linked to electronic files containing literal text information from death certificates. Drug overdose deaths were identified using the *International Classification of Diseases, Tenth Revision* underlying cause-of-death codes X40–X44, X60–X64, X85, and Y10–Y14. Drug mentions were identified by searching the literal text in three fields of the death certificate: the causes of death from Part I, significant conditions contributing to death from Part II, and a description of how the injury occurred. Contextual information was used to determine drug involvement in the death. Descriptive statistics were calculated for drug overdose deaths involving the overdose deaths involving methadone decreased from 1.4 per 100,000 in 2011 to 1.1 in 2016. The 10 most frequently mentioned drugs often were found in combination with each other. The drugs most frequently mentioned varied by the intent of the drug overdose death. In 2016, the drugs most frequently mentioned in unintentional drug overdose deaths were fentanyl, heroin, and cocaine, while the drugs most frequently mentioned in suicides by drug overdose were oxycodone, diphenhydramine, hydrocodone, and alprazolam.

Conclusions—This report identifies patterns in the specific drugs most frequently involved in drug overdose deaths from 2011 through 2016 and highlights the importance of complete and accurate reporting in the literal text on death certificates.

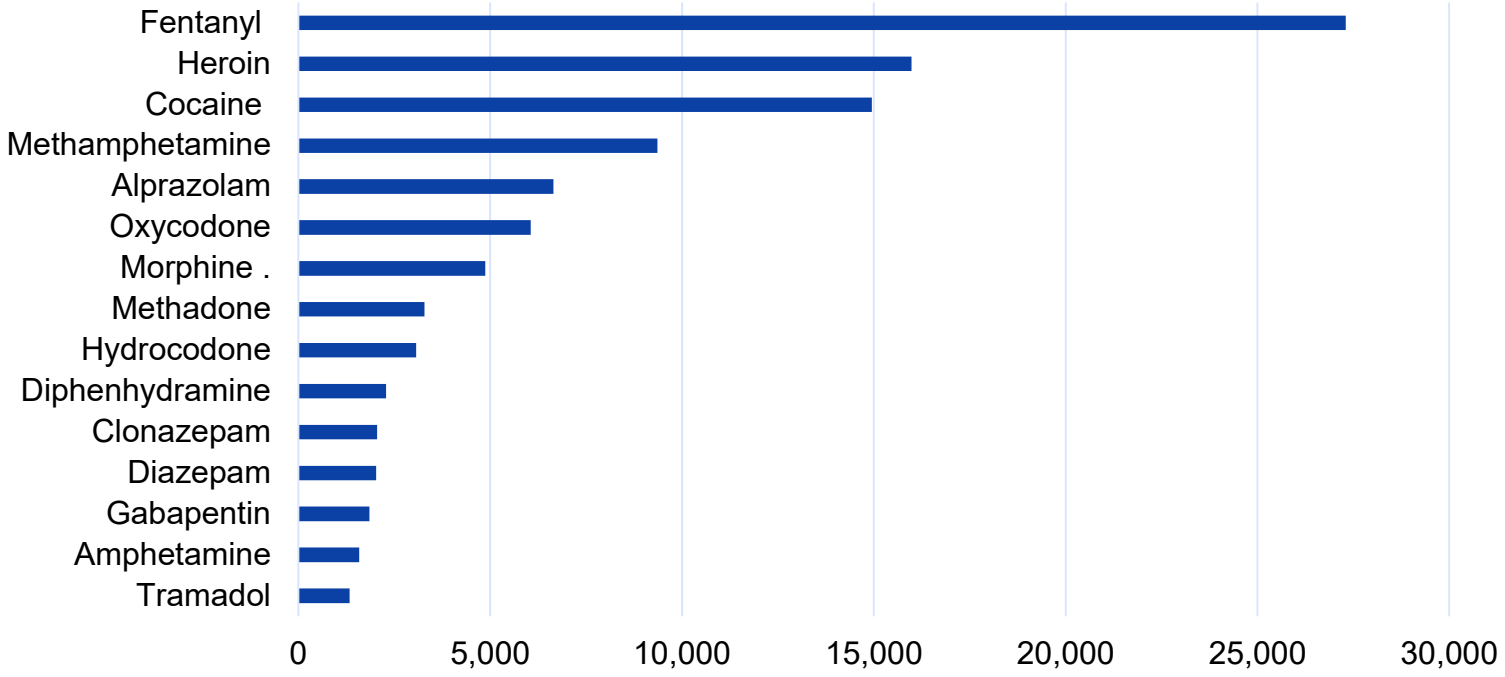
Keywords: opioid • fentanyl • heroin • cocaine • National Vital Statistics System

Drug Involved Mortality:

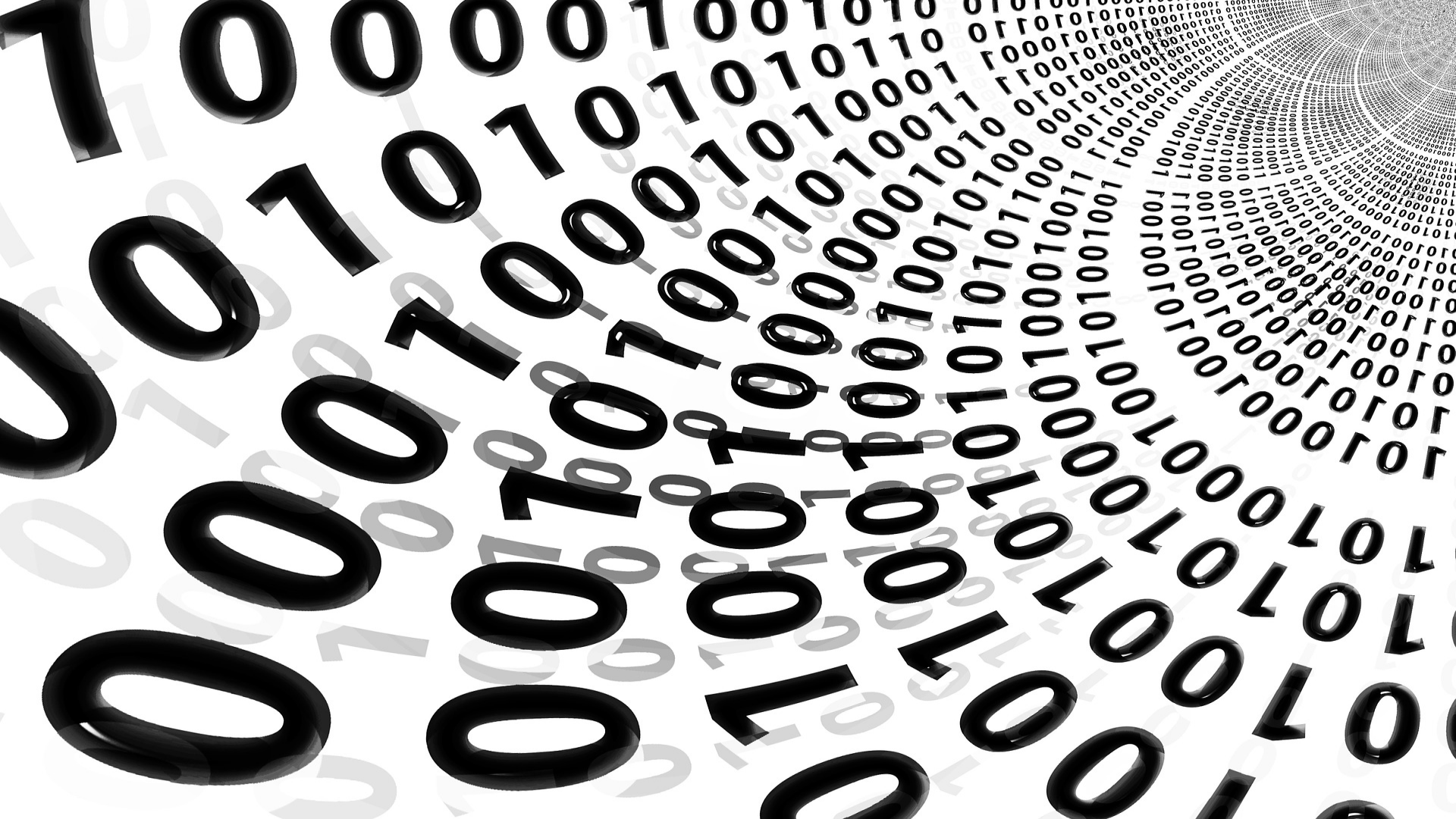
- To characterize drug-involved deaths using **death certificate literal text**
- Identify the drugs most frequently involved in overdose deaths using literal text

Sources: Trinidad JP, Warner M, Bastian BA, et al. Using literal text from the death certificate to enhance mortality statistics: Characterizing drug involvement in deaths. National vital statistics reports; vol 65 no 9. Hyattsville, MD: National Center for Health Statistics. 2016. https://www.cdc.gov/nchs/data/nvsr/nvsr67/nvsr67_09-508.pdf

Top 15 drugs involved in drug overdose deaths, United States, 2017



Source: Hedegaard H, Bastian BA, Trinidad JP, Spencer M, Warner M. Drugs most frequently involved in drug overdose deaths: United States, 2011–2016. National Vital Statistics Reports; vol 67 no 9. Hyattsville, MD: National Center for Health Statistics. 2018. https://www.cdc.gov/nchs/data/nvsr/nvsr67/nvsr67_09-508.pdf



References:

- Hedegaard H, Miniño AM, Warner M. Drug overdose deaths in the United States, 1999–2018. NCHS Data Brief, no 356. Hyattsville, MD: National Center for Health Statistics. 2020. https://www.cdc.gov/nchs/products/databriefs/db356.htm
- Hedegaard H, Bastian BA, Trinidad JP, Spencer MR, Warner M. Regional differences in the drugs most frequently involved in drug overdose deaths: United States, 2017. National Vital Statistics Reports; vol 68 no 12. Hyattsville, MD: National Center for Health Statistics. 2019. https://www.cdc.gov/nchs/data/nvsr/nvsr68/nvsr68_12-508.pdf
- Trinidad JP, Warner M, Bastian BA, et al. Using literal text from the death certificate to enhance mortality statistics: Characterizing drug involvement in deaths. National vital statistics reports; vol 65 no 9. Hyattsville, MD: National Center for Health Statistics. 2016. https://www.cdc.gov/nchs/data/nvsr/nvsr67/nvsr67_09-508.pdf
- WONDER, Multiple Cause of Death Data https://wonder.cdc.gov/mcd.html
- Monthly Provisional Counts of Drug Overdose, Vital Statistics Rapid Release Program, National Vital Statistics Systems https://www.cdc.gov/nchs/nvss/vsrr.htm

Questions?

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