# Using Death Records for Research
# Overview of the National Vital Statistics System

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**Harold Roger PDMP 2022 National Meeting**

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# Presentation Outline

- Overview of National Center for Health Statistics (NCHS)

- Describe the National Vital Statistics System

- Review ways to access NCHS mortality data and statistics
  - Data briefs and reports
  - CDC WONDER
  - Other sources

- Wrap up and future directions

# Overview and Background

# The National Center for Health Statistics

**The nation's principal health statistics agency since 1960.**

- data collection, analysis and dissemination of nationally-representative health data

**NCHS is one of 13 designated Federal Statistical Agencies as defined by the Office of Management and Budget:**

- bound by OMB standards and policies

- member of the Interagency Council on Statistical Policy

- the collection, compilation, processing, or analysis of information for the description, estimation, or analysis of the characteristics of groups without identifying the individuals or organizations that comprise such groups.

# NCHS Data Systems



**National Vital Statistics System**

**National Health Interview Survey**

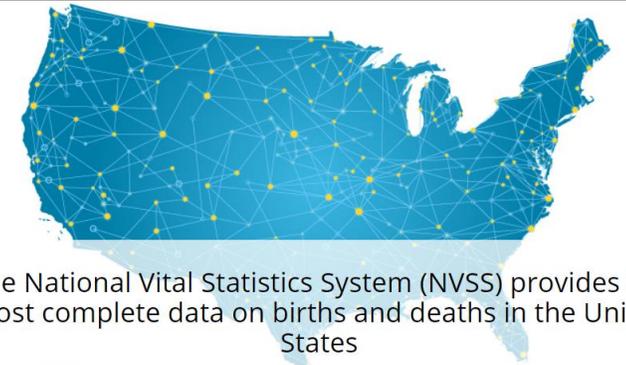**National Health and Nutrition Examination Survey**

**National Health Care Surveys**

# What is the National Vital Statistics System (NVSS)?

- NVSS encompasses the processing and coding of birth and death certificate records from 57 jurisdictions*.

- Cause-of-death (ICD-10 codes) are assigned to death records received by jurisdictions at NCHS.

- Data is coded, processed and then disseminated for health statistics, surveillance and research.

*50 states, New York City, District of Columbia and 5 US territories (American Samoa, Guam, Norther Marianas, Puerto Rico, and Virgin Islands)



The National Vital Statistics System (NVSS) provides the most complete data on births and deaths in the United States

**NVSS Vital Statistics Rapid Release**

Report No. 011 ■ February 2021

**Early Provisional Estimates of Drug Overdose, Suicide, and Transportation-related Deaths: Nowcasting Methods to Account for Reporting Lags**

Lauren M. Rossen, Ph.D., Division of Research and Methodology;
Holly Hedegaard, M.D., Division of Analysis and Epidemiology; Margaret Warner, Ph.D.;
Farida B. Ahmad, M.P.H.

**Abstract**

*Objective*—To describe methods to generate provisional estimates of drug overdose, suicide, and transportation-related deaths...

**NCHS Data Brief ■ No. 428 ■ December 2021**

**Drug Overdose Deaths in the United States, 1999–2020**

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

**Key findings**

**Data from the National Vital Statistics System**

- The age-adjusted rate of drug overdose deaths increased 31% from 2019 (21.6 per 100,000 standard population) to 2020 (28.3).

Deaths from drug overdose continue to contribute to overall mortality and the lowering of life expectancy in the United States (1–4). This report uses the most recent data from the National Vital Statistics System (NVSS) to update statistics on deaths from drug overdose in the United States, showing rates by demographic group and by specific types of drugs involved (such as opioids or stimulants), with a focus on changes from 2019 to 2020.

**In 2020, the age-adjusted rate of drug overdose deaths in the United States was 31% higher than the rate in 2019.**

# Data Source: Death Certificate



**Demographic information**

Completed by the funeral director using information from *the best qualified person*: spouse, parent, child, another relative, or other person who has knowledge of the facts

**Medical information**

For natural causes, completed by attending physician, nurse practitioner, physician's assistant

For sudden and unexplained deaths, completed by medical examiner, coroner, Justice of the Peace

**Demographic information**

# Cause-of-death section of the U.S. standard death certificate

- Part I – Chain of events that directly caused the death

- Part II – Significant conditions contributing to death

- Box 43– Describe how the injury occurred

**Referred to as the <span style="color:red">literal text</span>.**



**CAUSE OF DEATH (See instructions and examples)**

32. **PART I.** Enter the chain of events--diseases, injuries, or complications--that directly caused the death. DO NOT enter terminal events such as cardiac arrest, respiratory arrest, or ventricular fibrillation without showing the etiology. DO NOT ABBREVIATE. Enter only one cause on a line. Add additional lines if necessary.

Approximate interval:
Onset to death

IMMEDIATE CAUSE (Final disease or condition ---------> resulting in death)
a._____ Due to (or as a consequence of):

Sequentially list conditions, if any, leading to the cause listed on line a. Enter the UNDERLYING CAUSE (disease or injury that initiated the events resulting in death) LAST
b._____ Due to (or as a consequence of):
c._____ Due to (or as a consequence of):
d._____

**PART II.** Enter other significant conditions contributing to death but not resulting in the underlying cause given in PART I

33. WAS AN AUTOPSY PERFORMED? ☐ Yes ☐ No
34. WERE AUTOPSY FINDINGS AVAILABLE TO COMPLETE THE CAUSE OF DEATH? ☐ Yes ☐ No

*To Be Completed By: MEDICAL CERTIFIER*

35. DID TOBACCO USE CONTRIBUTE TO DEATH?
☐ Yes ☐ Probably
☐ No ☐ Unknown

36. IF FEMALE:
☐ Not pregnant within past year
☐ Pregnant at time of death
☐ Not pregnant, but pregnant within 42 days of death
☐ Not pregnant, but pregnant 43 days to 1 year before death
☐ Unknown if pregnant within the past year

37. MANNER OF DEATH
☐ Natural ☐ Homicide
☐ Accident ☐ Pending Investigation
☐ Suicide ☐ Could not be determined

38. DATE OF INJURY (Mo/Day/Yr) (Spell Month)
39. TIME OF INJURY
40. PLACE OF INJURY (e.g., Decedent's home; construction site; restaurant; wooded area)
41. INJURY AT WORK? ☐ Yes ☐ No

42. LOCATION OF INJURY: State: City or Town:
Street & Number: Apartment No.: Zip Code:

43. DESCRIBE HOW INJURY OCCURRED:

44. IF TRANSPORTATION INJURY, SPECIFY:
☐ Driver/Operator
☐ Passenger
☐ Pedestrian
☐ Other (Specify)
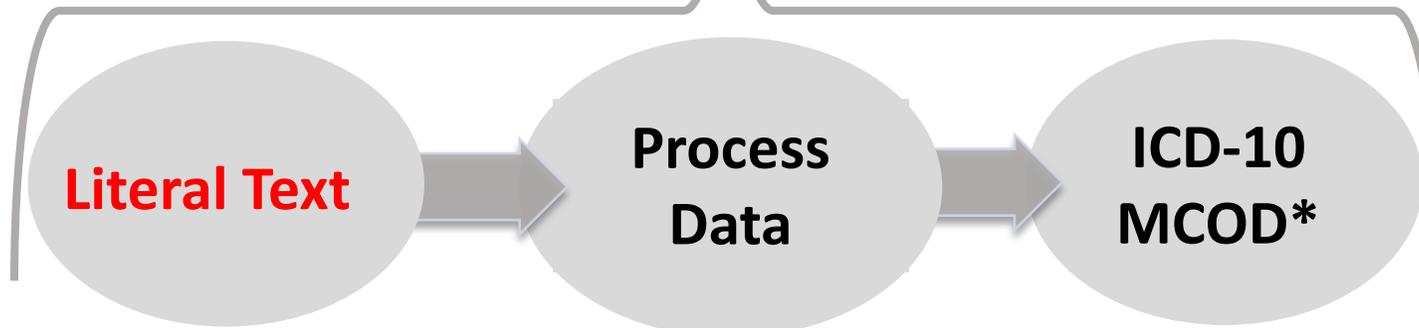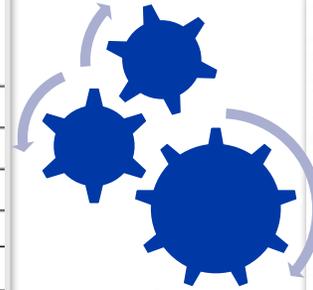
45. CERTIFIER (Check only one):

# Coding ICD-10 multiple causes of death

Multiple cause of death files



Literal Text → Process Data → ICD-10 MCOD*

*International Classification of Diseases 10th Revision   Multiple Causes of Death*

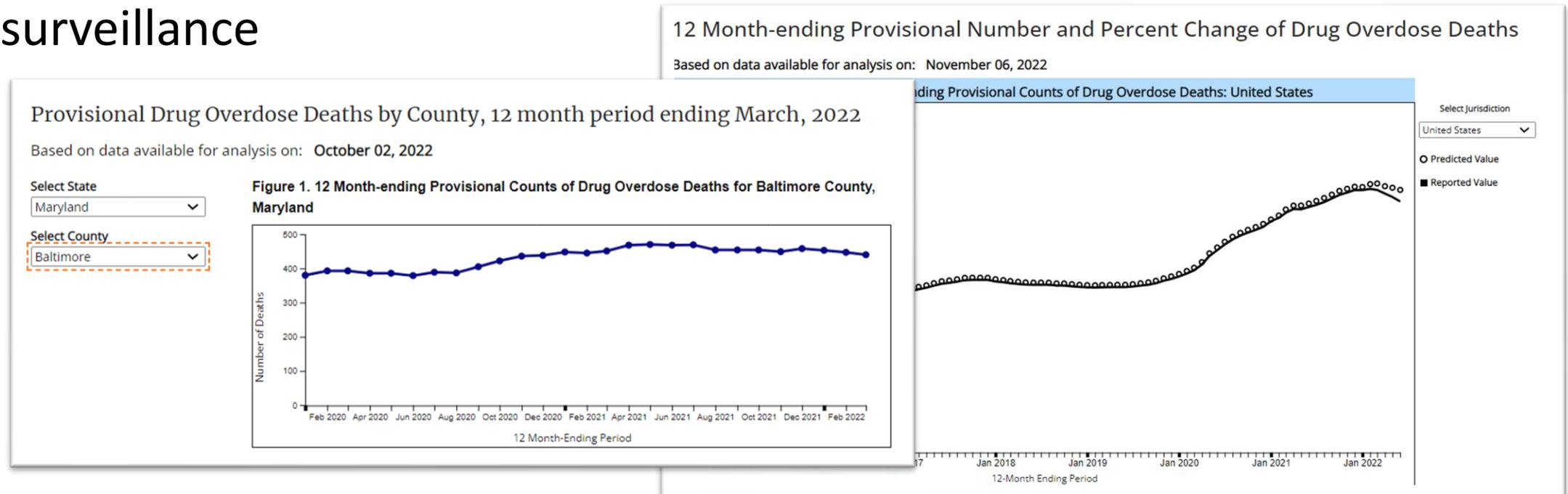# Accessing NVSS Mortality Data to Understand Drug Poisonings

# Where to find information on drug overdose deaths?

- Download public-use NVSS files directly from the NCHS website

  - https://www.cdc.gov/nchs/data_access/vitalstatsonline.htm#Mortality_Multiple

- Access NCHS published summaries, reports, briefs and statistical figures

  - Data briefs: https://www.cdc.gov/nchs/products/databriefs.htm

  - Health E-Stats: https://www.cdc.gov/nchs/products/hestats.htm

  - National Vital Statistics Reports: https://www.cdc.gov/nchs/products/nvsr.htm

  - Provisional estimates: https://www.cdc.gov/nchs/nvss/vsrr.htm

- Use interactive online platform to generate tabulations

  - CDC WONDER, Vital Statistics Rapid Release Program

# Vital Statistics Rapid Release Program

- Can access provisional monthly national-, state, and county-level drug overdose death counts

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

- Provides access to the timeliest vital statistics for public health surveillance

# CDC WONDER

- Using the CDC WONDER tool to query data: https://wonder.cdc.gov/mcd.html

# Future Directions

# Future Directions

- Information on causes and manner of death relies on quality data from the death investigation process of medical examiners and coroners

- Prescription Drug Monitoring Programs (PDMP) data are a critical component in providing prescription history to medical examiners and coroners
  - There is opportunity to synergize data sources to help better understand what specific drugs are involved in deaths, and to draw additional context about poisoning issues

- Collaborating Office of Medical Examiners and Coroners (COMEC)
  - Public health relies on medical examiners and coroners for quality data about deaths, including drug overdose deaths
  - Medicolegal death investigations are crucial for understanding causes of death and conducting surveillance on drugs, including prescription drugs.

# Questions?

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