



Death certificates

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Mortality data from the National Vital Statistics System

- Basis for official mortality statistics in the U.S.
- Data come from death certificates
- Includes all deaths registered in the U.S.
- Vital Statistics Cooperative Program
 - 50 states, New York City, District of Columbia and 5 territories (Puerto Rico, US Virgin Islands, Guam, American Samoa, Commonwealth of the Northern Marianas)
 - NCHS provides funding, coordination, and standards
 - States maintain autonomy in their operations, but collect and provide data according to standard specifications and agreed upon timelines



National Vital Statistics System

Medical



Physicians



Medical History



Medical Examiners & Coroners



Death Scene



Autopsy



Toxicology

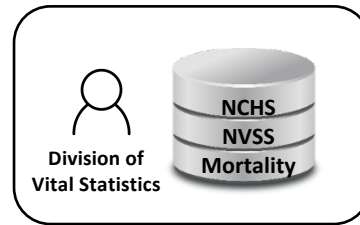
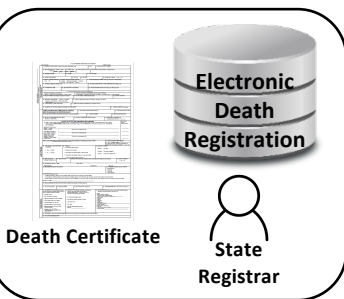


Funeral Home Directors



Demographic Data

Demographic



Mortality Surveillance



Analyses and Reports

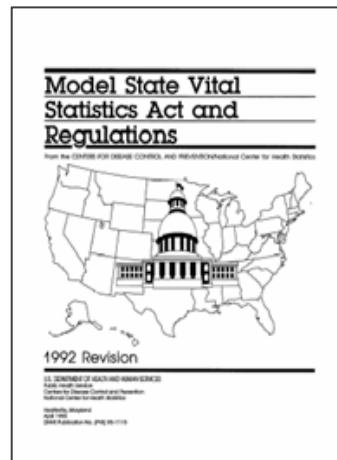
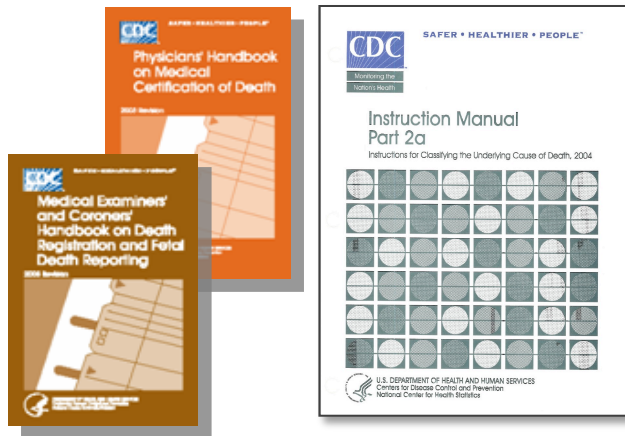


Public-Use and Restricted Data



Promoting Consistency and Uniformity

- Model State Vital Statistics Act and Regulations
- Standard Certificates and Reports – standardized worksheets

A detailed 'U.S. STANDARD CERTIFICATE OF DEATH' form is shown. It is a complex document with multiple sections for recording vital statistics, including fields for name, sex, race, date of birth, date of death, cause of death, and place of death. The form is designed for standardized data collection across different states.

- Training materials – handbooks, videos, instruction manuals
- Technical assistance – ICD 10
- Software – automated coding

U.S. Standard Death Certificate

The image shows the U.S. Standard Certificate of Death form, which is divided into several sections. The top section (1) is for demographic and personal information, including name, sex, race, date of birth, and place of birth. The middle section (2) is for medical information, including the cause of death and the attending physician. The bottom section (3) is for more demographic information, including the decedent's marital status and the informant's name and relationship to the decedent. The form is color-coded: blue for demographic information, yellow for medical information, and white for more demographic information.

Demographic and personal information

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

Medical information

For most deaths due to natural causes: completed by attending physician, nurse practitioner, physician's assistant

For sudden, unexpected or suspicious deaths: completed by medical examiner or coroner

More demographic information

Revision of the standard death certificate

- Last revision intended for implementation in 2003
- Revision process
 - Survey of states to determine if revision is needed
 - Evaluation of previous revision and recommendations for content and format
 - Panel of expert consultants to oversee the process, including representatives from state vital registration and statistics offices, data providers and user organizations
 - Subgroups focused on birth, death, fetal death and standards/design
 - Death subgroup for 2003 revision included state registrars, medical examiners/coroners, researchers and representatives from professional associations (funeral directors, AHA, AMA)

Cause of death reporting

- Cause of death section of the death certificate is designed to elicit an underlying cause of death
 - Disease or injury that initiated the chain of events leading to death, or the circumstances of the accident or violence which produced the fatal injury (ICD-10 volume 2)
 - All diseases or conditions in the chain of events leading to death should be reported
- Conditions contributing to death, but that were not part of the chain of events may also be reported
- Only those diseases or conditions that caused or contributed to death are to be reported on death certificates

Cause of death section of the standard death certificate (2003 revision)

CAUSE OF DEATH (See instructions and examples)			Approximate interval: Onset to death
<p>32. PART I. Enter the <u>chain of events</u>—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.</p> <p>IMMEDIATE CAUSE (Final disease or condition -----> resulting in death)</p> <p>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</p>			
a. _____	Due to (or as a consequence of): _____	<div style="background-color: red; color: white; padding: 10px; text-align: center;">Causal sequence leading to death</div>	_____
b. _____	Due to (or as a consequence of): _____		_____
c. _____	Due to (or as a consequence of): _____		_____
d. _____	Due to (or as a consequence of): _____		_____
<p>PART II. Enter other <u>significant conditions contributing to death</u> but not resulting in the underlying cause given in PART I</p>		<div style="background-color: red; color: white; padding: 10px; text-align: center;">Contributing conditions</div>	33. WAS AN AUTOPSY PERFORMED?
			34. MANNER OF DEATH? <input type="checkbox"/> Yes <input type="checkbox"/> No
<p>35. DID TOBACCO USE CONTRIBUTE TO DEATH?</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> Probably</p> <p><input type="checkbox"/> No <input type="checkbox"/> Unknown</p>	<p>36. IF FEMALE:</p> <p><input type="checkbox"/> Not pregnant within past year</p> <p><input type="checkbox"/> Pregnant at time of death</p> <p><input type="checkbox"/> Not pregnant, but pregnant within 42 days of death</p> <p><input type="checkbox"/> Not pregnant, but pregnant 43 days to 1 year before death</p> <p><input type="checkbox"/> Unknown if pregnant within the past year</p>		<p>37. MANNER OF DEATH?</p> <p><input type="checkbox"/> Natural <input type="checkbox"/> Homicide</p> <p><input type="checkbox"/> Accident <input type="checkbox"/> Pending Investigation</p> <p><input type="checkbox"/> Suicide <input type="checkbox"/> Could not be determined</p>

More information and instructional material available at:
https://www.cdc.gov/nchs/nvss/writing_cod_statements.htm

Cause of death coding

- Causes of death currently coded using the Tenth Revision of the International Classification of Diseases (ICD-10)
 - Implemented for mortality in 1999
 - Standardized rules for assigning codes and selecting the underlying cause
- All diseases and conditions reported on death certificates are coded and retained

Accuracy and completeness of cause of death reporting

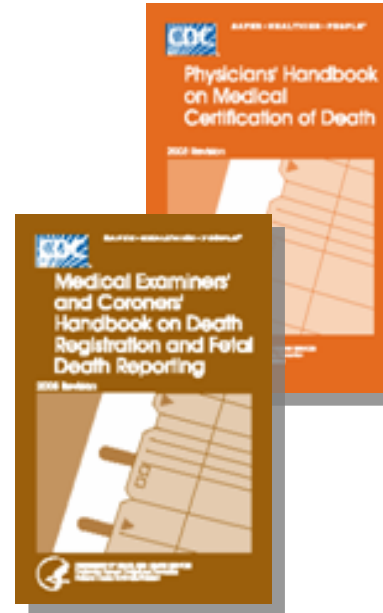
- Accuracy difficult to determine
 - Lack of true gold standard
 - No national studies
 - Autopsy studies
 - Medical records review
- Completeness of reporting
 - Ill-defined conditions
 - Lack of specificity
 - Missing information in the causal sequence
 - Missing underlying cause

Complications of medical and surgical care

- Includes adverse effects of drugs and medical misadventures
- Not typically the underlying cause
 - Coding rules require selection of the condition for which the decedent was being treated as the underlying cause
 - Medical/surgical complications causing death should be specified in the causal sequence
 - If reported, medical/surgical complications can be captured and coded for statistical purposes
- Disincentive to report on death certificates

Training for cause of death certifiers

- Handbooks
- Topic specific Vital Statistics Reporting Guidance
 - Disasters
 - Drug overdose
 - COVID-19
- E-learning – Improving Cause of Death Reporting
- Mobile app – Death certificate quick guide (android and IOS)



Vital Statistics Reporting Guidance

Report No. 3 • April 2020

Guidance for Certifying Deaths Due to Coronavirus Disease 2019 (COVID-19)

Introduction

In December 2019, an outbreak of a respiratory disease associated with a novel coronavirus was reported in the city of Wuhan in the Hubei province of the People's Republic of China (1). The virus has spread worldwide and on March 11, 2020, the World Health Organization declared Coronavirus Disease 2019 (COVID-19) a pandemic (2). The first case of COVID-19 in the United States was reported in January 2020 (3) and the first death in February 2020 (4), both in Washington State. Since then, the number of reported cases in the United States has increased and is expected to continue to rise (5).

In public health emergencies, mortality surveillance provides crucial information about population-level disease progression, as well as guides the development of public health interventions and assessment of their impact. Monitoring and analysis of mortality data allow dissemination of critical information to the public and key stakeholders. One of the most important methods of mortality surveillance is through monitoring causes of death as reported on death certificates. Death certificates are registered for every death occurring in the United States, offering a complete picture of mortality nationwide. The death certificate provides essential information about the deceased and the cause(s) and circumstance(s) of death. Appropriate completion of death certificates yields accurate and reliable data for use in epidemiologic analyses and public health reporting. A notable example of the utility of death certificates for public health surveillance is the ongoing monitoring of pneumonia and influenza deaths. Accurate and timely death certificate data are integral to detecting elevated levels of influenza activity in real time (<https://www.cdc.gov/flu-weekly/index.htm>).

Monitoring the emergence of COVID-19 in the United States and guiding public health response will also require accurate and timely death reporting. The purpose of this report is to provide guidance to death certifiers on proper cause-of-death certification for cases where confirmed or suspected COVID-19 infection resulted in death. As clinical guidance on COVID-19 evolves, this guidance may be updated, if necessary. When COVID-19 is determined to be a cause of death, it is important that it be reported on the death certificate to assess accurately the effects of this pandemic and appropriately direct public health response.

Cause-of-Death Reporting

When reporting cause of death on a death certificate, use any information available, such as medical history, medical records, laboratory tests, an autopsy report, or other sources of relevant information. Similar to many other diagnoses, a cause-of-death statement is an informed medical opinion that should be based on sound medical judgment drawn from clinical training and experience, as well as knowledge of current disease rates and local trends (6).

Part I

This section on the death certificate is for reporting the sequence of conditions that led directly to death. The immediate cause of death, which is the disease or condition that directly preceded death and is not necessarily the underlying cause of death (UCOD), should be reported on line a. The conditions that led to the immediate cause of death should be reported in a logical sequence in terms of time and etiology below it.

The UCOD, which is "(a) the disease or injury which initiated the train of morbid events leading directly to death or (b) the circumstances of the accident or violence which produced the fatal injury" (7), should be reported on the lowest line used in Part I.

Approximate Interval: Onset to death

For each condition reported in Part I, the time interval between the presumed onset of the condition, not the diagnosis, and death should be reported. It is acceptable to approximate the intervals or use general terms, such as hours, days, weeks, or years.

Part II

Other significant conditions that contributed to the death, but are not a part of the sequence in Part I, should be reported in Part II. Not all conditions present at the time of death have to be reported—only those conditions that actually contributed to death.

https://www.cdc.gov/nchs/nvss/writing_cod_statements.htm

<https://www.cdc.gov/nchs/nvss/reporting-guidance.htm>

Questions?

