May 15, 2000

Specifications for Help Screens, Prompts, Queries, and Processing Interface on an Electronic Death Certificate (EDC) prepared by NCHS

[EDC Developer:] The following are five broad sets of specifications that should be included in an electronic death registration system, the specifications are based upon the 1989 revision of the U.S. Standard Certificate of Death:

I. General instructions for completing the cause-of-death statement.

II. Messages that automatically appear when the cursor is on a specific item in the State Electronic Death Certificate.

III. Information that should be included in the Help function.

IV. Automatic queries for the certifying physician entering information on cause of death

V. Interface with NCHS processing software.

Note: Questions regarding the content of the module should be directed to Chief, Mortality Statistics Branch, Room 820, DVS, NCHS, 6525 Belcrest Road, Hyattsville, MD 20782. Questions regarding NCHS software for processing cause-of-death data should be directed to Chief, Data Preparation Branch, NCHS, P.O. Box 12214, Research Triangle

Park, North Carolina 27709.

I. GENERAL INSTRUCTIONS FOR COMPLETING THE CAUSE-OF-DEATH STATEMENT

[EDC Developer:]When the cause-of-death section of the electronic death certificate is opened or accessed, the first screen to appear should read as follows:

[Prominent Message to Certifier:] A death certificate is a permanent record of the fact of death of an individual. It provides important personal information about the decedent and about the circumstances and cause of death. Information on cause of death is important to the family to bring closure, peace-of-mind, and to document the exact cause of death. Cause of death is also used for medical and epidemiological research on disease etiology and evaluating the effectiveness of diagnostic and therapeutic techniques. It is a measure of health status at local, state, national, and international levels.

Physician's responsibility

The physician's primary responsibility in completing the cause-of-death section is to report to the best of his or her knowledge, based upon available information, the causal chain that led to the death. The causal chain should begin with the cause that was closest to the time of death and work backwards to the initiating condition which is called the underlying cause of death. For example, the physician might report a death for which staphylococcus pneumonia occurs closest to the time of death; however the physician also reports that the pneumonia is due to carcinoma metastatic to both lungs, which in turn, is due to poorly differentiated adenocarcinoma, unknown primary site.

Medical examiner/coroner's responsibility

The medical examiner/coroner investigates deaths that are unexpected, unexplained, or if an injury or poisoning was involved. State laws provide guidelines for when a medical examiner/coroner must be notified. In the case of deaths known or suspected to have resulted from injury or poisoning, report the death to the medical examiner/coroner as required by State law. The medical examiner/coroner will either complete the cause-of-death section of the death certificate or waive that responsibility. If the medical examiner/coroner does not accept the case, then the certifier will need to complete the cause-of-death section.

<u>General instructions for completing cause of death</u> (For an expanded set of instructions, click on help)

- *Cause-of-death information should be your best medical opinion.*
- *List only one condition per line in Part I.*
- *Each condition in Part I should cause the condition above it.*
- *Abbreviations and parentheses should be avoided in reporting causes of death.*
- *Provide the best estimate of the interval between the presumed onset of each condition and death.*
- *The original death certificate should be amended if additional medical information or autopsy findings become available that would change the cause of death originally reported.*
- *For deaths caused by injury or poisoning, complete only if the medical examiner or coroner instructs you to do so.*
- *If you have never completed a death certificate or need a refresher, click on Help for additional assistance and examples of properly completed cause-of-death statements.*

II. MESSAGES THAT AUTOMATICALLY APPEAR WHEN THE CURSOR IS IN A SPECIFIC BOX IN THE STATE ELECTRONIC DEATH CERTIFICATE (EDC)

[EDC Developer:] On medical examiner (ME), coroner, and physician entry screens of the EDC, it is imperative that the physician viewing the screen be able to see, at minimum, the same prompts and formatting as those physicians using the paper version of the 1989 revision of the U.S. Standard Certificate of Death (as shown below). These medical certifiers need to be able to see that they will be completing both Parts I and II of the death certificate. The physicians completing cause of death must enter medical conditions using their own terminology **(PICK LISTS FOR CAUSES ARE NOT ALLOWED)**. The EDC provides the opportunity to provide additional space and instructions; pick lists and other techniques may be used for fields other than cause of death.

27. PART I. Enter the diseases, injuries, or complications that caused the death. Do not enter the mode of dying, such as cardiac or respiratory arrest, shock, or heart failure. List only one cause on each line.		Approximate Interval Between Onset and Death
IMMEDIATE CAUSE (Final disease or condition resulting in death)	a.	
Sequentially list conditions, if any, leading to immediate cause. Enter UNDERLYING CAUSE (Disease or injury that initiated events resulting in death) LAST	DUE TO (OR AS A CONSEQUENCE OF): b.	
	DUE TO (OR AS A CONSEQUENCE OF): c.	
	DUE TO (OR AS A CONSEQUENCE OF): d.	

PART II. Other significant conditions contributing to death but not resulting in the underlying cause given in Part I.	28a. WAS AN AUTOPSY PERFORMED? *(Yes or no)*	28b. WERE AUTOPSY FINDINGS AVAILABLE PRIOR TO COMPLETIOI OF CAUSE OF DEATH? *(Yes or no)*

29. MANNER OF DEATH	30a. DATE OF INJURY *(Month,Day,Year)*	30b. TIME OF INJURY M	30c. INJURY AT WORK? *(Yes or no)*	30d. DESCRIBE HOW INJURY OCCURRED
9 Natural **9** Accident **9** Suicide **9** Homicide **9** Pending Investigation **9** Could not be Determined				
	30E. PLACE OF INJURY - At home, farm, street, factory, office building, etc. *(Specify)*		30f. LOCATION (Street and Number or Rural Route Number, City or Town, State)	

<u>The following cause-of-death message/actions would apply</u>

[EDC Developer:] Each page should include a context sensitive progress bar (or mouse-over or some alternative pop-up) that provides an instruction or definition as the cursor moves from item to item. When the cursor moves to the cause-of-death boxes representing Part I of the standard certificate of death, the progress bar or other alternative should have a status message that says:

[Prominent Message to Certifier:] "Provide a description of the sequence of causes resulting in death in these entry boxes, starting with the most recent condition. Click on Help for examples and assistance."

[EDC Developer:] When cursor is on the entry box representing information collected on Part II of the certificate of death, the status message on the progress bar should read:

[Prominent Message to Certifier:] "Report conditions that pre-existed or co-existed and contributed to death, but did not result in the cause reported in the lowest line used in Part I, as reported above. Click on Help for examples and assistance."

[EDC Developer:] When the cursor is on the entry box for "date of injury," "time of injury," "describe how injury occurred," "place of injury," or "location" of injury in Part II, then the status message on the progress bar should read:

[Certifier:] "Complete if any other than natural cause of death is mentioned. Click on Help for further information."

[EDC Developer:] When the cursor is on the entry box for "injury at work" of Part II, then the status message on progress bar should read:

[Prominent Message to Certifier:] "Complete if any other than natural cause of death is mentioned. Click on Help for guidelines."

[EDC Developer:] When the cursor is on an entry box for the "approximate interval between onset and death," the status message on the progress bar should read:

[Prominent Message to Certifier:] "Time interval between presumed onset of the condition and the date of death. Click on Help for additional information."

[EDC Developer:] When the cursor is on "was an autopsy performed", the status message on the progress bar should read:

[Certifier:] "Enter "Yes" if a partial or complete autopsy was performed. Otherwise enter "No." Click on Help for additional information."

[EDC Developer:] When the cursor is on "were autopsy findings available prior to completion of cause of death?," the status message on the progress bar should read:

[Certifier:] "Enter "Yes" if the autopsy findings were available and used to determine the cause of death. Otherwise enter "No." If no autopsy was performed, leave this item blank. Click on Help for additional information."

[EDC Developer:] When the cursor is on “manner of death,” the status message on the progress bar should read:

[Certifier:] “Complete for all deaths. Deaths not due to external causes should be identified as “Natural.” “Pending Investigation” and “Could not be Determined” refer to medical examiner or coroner cases only. Click on Help for additional information.”

III. INFORMATION THAT SHOULD BE INCLUDED IN THE HELP FUNCTION

[EDC Developer:] The following shows the structure and content of the Help Section. When the user clicks on Help from an item, the Help screen that appears should show the section of Help that is relevant to that item as well as the index of the Help Section that would permit them to navigate elsewhere within the Help. This will provide assistance for the item in question as well as letting them know that the additional topics are addressed in Help.

[Certifier- Guidance on getting to help should be prominent on every screen; within the help section, the index should be prominent:]

***Index of Help Section**:*

Introduction to completing a cause-of-death statement
Examples of properly completed cause-of-death statements
Detailed instructions
Glossary of terms
Possible solutions to common problems in death certification
    Uncertainty
    Elderly deaths
    Infant deaths
    Avoid ambiguity
References
Approximate interval between onset and death
Autopsy
Manner of death
Date of injury
Time of injury
Injury at work item
    Operational guidelines for determination of injury at work
Describe how injury occurred
Place of injury
Location of injury

<u>Introduction to completing a cause-of-death statement</u>

A death certificate is a permanent record of an individual's death. One purpose of the death certificate is to obtain a simple description of the sequence or process leading to death rather than a record describing all medical conditions present at death.

Causes of death on the death certificate represent a medical opinion that might vary among individual physicians. In signing the death certificate, the physician, medical examiner, or coroner certifies that, in his/her medical opinion, the individual died from the reported causes of death. The certifier's opinion and confidence in that opinion are based upon his/her training, knowledge of medicine, available medical history, symptoms, diagnostic tests, and available autopsy results for the decedent. Even if extensive information is available to the certifier, causes of death may be difficult to determine, so the certifier may indicate uncertainty by qualifying the causes on the death certificate.

Cause-of-death data is important for surveillance, research, design of public health and medical interventions, and funding decisions for research and development. The death certificate is also a legal document used in settling estates.

Examples of properly completed cause-of-death statements

The following are examples of properly completed death certificates:

27. PART I. Enter the diseases, injuries, or complications that caused the death. Do not enter the mode of dying, such as cardiac or respiratory arrest, shock, or heart failure. List only one cause on each line.		Approximate Interval Between Onset and Death
IMMEDIATE CAUSE (Final disease or condition resulting in death)	a. Rupture of myocardium	Mins.
Sequentially list conditions, if any, leading to immediate cause. Enter UNDERLYING CAUSE (Disease or injury that initiated events resulting in death) LAST	DUE TO (OR AS A CONSEQUENCE OF): b. Acute myocardial infarction	6 days
	DUE TO (OR AS A CONSEQUENCE OF): c. Coronary artery thrombosis	6 days
	DUE TO (OR AS A CONSEQUENCE OF): d. Atherosclerotic coronary artery disease	7 years

PART II. Other significant conditions contributing to death but not resulting in the underlying cause given in Part I.	28a. WAS AN AUTOPSY PERFORMED? *(Yes or no)*	28b. WERE AUTOPSY FINDINGS AVAILABLE PRIOR TO COMPLETIOI OF CAUSE OF DEATH? *(Yes or no)*
Diabetes, Chronic obstructive pulmonary disease, smoking	*Yes*	Yes

29. MANNER OF DEATH	30a. DATE OF INJURY *(Month,Day,Year)*	30b. TIME OF INJURY	30c. INJURY AT WORK? *(Yes or no)*	30d. DESCRIBE HOW INJURY OCCURRED
: Natural 9 Accident 9 Suicide 9 Homicide 9 Pending Investigation 9 Could not be Determined		M		
	30E. PLACE OF INJURY - At home, farm, street, factory, office building, etc. *(Specify)*		30f. LOCATION (Street and Number or Rural Route Number, City or Town, State)	

27. PART I. Enter the diseases, injuries, or complications that caused the death. Do not enter the mode of dying, such as cardiac or respiratory arrest, shock, or heart failure. List only one cause on each line.

		Approximate Interval Between Onset and Death
IMMEDIATE CAUSE (Final disease or condition resulting in death)	a. Acute renal failure	5 days
Sequentially list conditions, if any, leading to immediate cause. Enter UNDERLYING CAUSE (Disease or injury that initiated events resulting in death) LAST	DUE TO (OR AS A CONSEQUENCE OF): b. Hyperosmolar nonketotic coma	8 days
	DUE TO (OR AS A CONSEQUENCE OF): c. Diabetes mellitus, non-insulin-dependent	15 years
	DUE TO (OR AS A CONSEQUENCE OF): d.	

PART II. Other significant conditions contributing to death but not resulting in the underlying cause given in Part I.	28a. WAS AN AUTOPSY PERFORMED? *(Yes or no)*	28b. WERE AUTOPSY FINDINGS AVAILABLE PRIOR TO COMPLETIOI OF CAUSE OF DEATH? *(Yes or no)*
Hypertension, Atherosclerotic coronary artery disease	No	

29. MANNER OF DEATH	30a. DATE OF INJURY *(Month,Day,Year)*	30b. TIME OF INJURY	30c. INJURY AT WORK? *(Yes or no)*	30d. DESCRIBE HOW INJURY OCCURRED
: Natural 9 Accident 9 Suicide 9 Homicide 9 Pending Investigation 9 Could not be Determined		M		

30E. PLACE OF INJURY - At home, farm, street, factory, office building, etc. *(Specify)*	30f. LOCATION (Street and Number or Rural Route Number, City or Town, State)

27. PART I. Enter the diseases, injuries, or complications that caused the death. Do not enter the mode of dying, such as cardiac or respiratory arrest, shock, or heart failure. List only one cause on each line.

		Approximate Interval Between Onset and Death
IMMEDIATE CAUSE (Final disease or condition resulting in death)	a. Carbon monoxide poisoning	Unknown
Sequentially list conditions, if any, leading to immediate cause. Enter UNDERLYING CAUSE (Disease or injury that initiated events resulting in death) LAST	DUE TO (OR AS A CONSEQUENCE OF): b. Inhalation of auto exhaust fumes	
	DUE TO (OR AS A CONSEQUENCE OF): c.	
	DUE TO (OR AS A CONSEQUENCE OF): d.	

PART II. Other significant conditions contributing to death but not resulting in the underlying cause given in Part I.	28a. WAS AN AUTOPSY PERFORMED? *(Yes or no)*	28b. WERE AUTOPSY FINDINGS AVAILABLE PRIOR TO COMPLETIOI OF CAUSE OF DEATH? *(Yes or no)*
Cancer of stomach	Yes	Yes

29. MANNER OF DEATH	30a. DATE OF INJURY *(Month,Day,Year)*	30b. TIME OF INJURY	30c. INJURY AT WORK? *(Yes or no)*	30d. DESCRIBE HOW INJURY OCCURRED
9 Natural 9 Accident : Suicide 9 Homicide 9 Pending Investigation 9 Could not be Determined	August 15,1994	Unknown M	No	Inhaled exhaust from auto enclosed in garage

30E. PLACE OF INJURY - At home, farm, street, factory, office building, etc. *(Specify)*	30f. LOCATION (Street and Number or Rural Route Number, City or Town, State)
Own home-garage	898 Sylvan Road, Alexandria, Missouri

27. PART I. Enter the diseases, injuries, or complications that caused the death. Do not enter the mode of dying, such as cardiac or respiratory arrest, shock, or heart failure. List only one cause on each line.		Approximate Interval Between Onset and Death
IMMEDIATE CAUSE (Final disease or condition resulting in death)	a. Cardiac tamponade	15 minutes
Sequentially list conditions, if any, leading to immediate cause. Enter UNDERLYING CAUSE (Disease or injury that initiated events resulting in death) LAST	DUE TO (OR AS A CONSEQUENCE OF): b. Perforation of heart	20 minutes
	DUE TO (OR AS A CONSEQUENCE OF): c. Shotgun wound to thorax	20 minutes
	DUE TO (OR AS A CONSEQUENCE OF): d.	

PART II. Other significant conditions contributing to death but not resulting in the underlying cause given in Part I.	28a. WAS AN AUTOPSY PERFORMED? *(Yes or no)*	28b. WERE AUTOPSY FINDINGS AVAILABLE PRIOR TO COMPLETIOI OF CAUSE OF DEATH? *(Yes or no)*
_____	Yes	Yes

29. MANNER OF DEATH	30a. DATE OF INJURY *(Month,Day,Year)*	30b. TIME OF INJURY	30c. INJURY AT WORK? *(Yes or no)*	30d. DESCRIBE HOW INJURY OCCURRED
9 Natural 9 Accident 9 Suicide : Homicide 9 Pending Investigation 9 Could not be Determined	August 20,1994	9:00 pM	No	Shot by another person using a shotgun

30E. PLACE OF INJURY - At home, farm, street, factory, office building, etc. *(Specify)*	30f. LOCATION (Street and Number or Rural Route Number, City or Town, State)
Neighbor's home	3129 Discus Avenue, Columbus, Alabama

Detailed instructions

- *Cause-of-death information should be your best medical opinion.*
- *List only one condition per line in Part I. Additional lines may be added if necessary.*
- *Each condition in Part I should cause the condition above it.*
- *Abbreviations and parentheses should be avoided in reporting causes of death.*
- *Provide the best estimate of the interval between the presumed onset of each condition and death. The terms "approximately" or "unknown" may be used. Do not leave the interval blank; if unknown, indicate that it is unknown.*
- *The original death certificate should be amended by the certifying physician (if additional medical information or autopsy findings become available that would change the cause of death originally reported) by immediately reporting the revised cause of death to the State Vital Records Office.*
- *Report each disease, abnormality, injury, or poisoning that you believe adversely affected the decedent. A condition can be listed as "probable" even if it has not been definitively diagnosed.*
- *A complete sequence should be reported in Part I that explains why the patient died. The sequence may be an etiological or pathological sequence as well as a sequence in which an earlier condition is believed to have prepared the way for a subsequent cause by damage to tissues or*

impairment of function.

- *No entry is necessary on lines (b), (c), and (d) if a single cause of death reported on line (a) describes completely the train of events resulting in death.*
- *If two or more possible sequences resulted in death, report in Part I the one that, in your opinion, most directly caused death. Report in Part II the other conditions or diseases.*
- *A specific cause of death should be reported in the last entry in Part I so there is no ambiguity about the etiology of this cause.*
- *Conditions or diseases in Part II should contribute to death but not result in the last entry in Part I.*
- *Mechanistic terminal events such as respiratory arrest, asystole, cardiac arrest, cardio-respiratory arrest, ventricular fibrillation, and electromechanical dissociation should not be the only condition included in the cause-of-death statement and are unlikely to be the underlying cause.*
- *Always report an etiology for organ system failure such as congestive heart failure, hepatic failure, renal failure, or respiratory failure on the lines beneath it.*
- *If, in your opinion, the use of alcohol, tobacco, other substance by the decedent, or a recent pregnancy or injury caused or contributed to death, then this condition should be reported.*
- *A primary site and/or histological type should be specified for neoplasms or specify that site and type are unknown.*
- *Deaths known or suspected as having been caused by injury or poisoning should be reported to the medical examiner or coroner, and you will only need to complete the death certificate if the medical examiner or coroner instructs you to do so.*
- *For deaths resulting from injuries, always report the fatal injury event, the trauma, and the impairment of function.*

<u>Glossary of terms</u>

Causes of death: The causes of death to be entered on the medical certificate of cause of death are all those diseases, morbid conditions or injuries which either resulted in or contributed to death and the circumstances of the accident or violence which produced any such injuries.

Underlying cause of death: the disease or injury that initiated the chain of morbid events which led directly to death.

Immediate cause of death: the disease, injury, or complication directly causing death. The interval between this condition and death is equal to or less than that between any other condition and death in Part I.

Intermediate cause of death: a disease, injury, or complication that occurs between the onset of the underlying cause and the immediate cause of death in the sequence of conditions reported in Part I of the death certificate.

Due to (or as a consequence of): apply to etiological or pathological sequences as well as to sequences in which an earlier condition is believed to have prepared the way for a subsequent cause by damage to tissues or impairment of function

<u>Possible solutions to common problems in death certification</u>

Uncertainty:

Often several acceptable ways of writing a cause-of-death statement exist. Optimally, a certifier will be able to provide a simple description of the process leading to death that is etiologically clear and to be confident that this is the correct sequence of causes. However, realistically, description of the process is sometimes difficult because the certifier is not certain.

In this case, the certifier should think through the causes about which he/she is confident and what possible etiologies could have resulted in these conditions. The certifier should select the causes that are suspected to have been involved and use words such as "probable" or "presumed" to indicate that the description provided is not completely certain. If the initiating condition reported on the death certificate could have arisen from a pre-existing condition but the certifier cannot determine the etiology, he/she should state that the etiology is unknown, undetermined, or unspecified, so it is clear that the certifier did not have enough information to provide even a qualified etiology. Reporting a cause of death as unknown should be a last resort.

Elderly deaths:

When preparing a cause-of-death statement for an elderly decedent, the causes should present a clear and distinct etiological sequence, if possible. Causes of death on the death certificate should not include terms such as senescence, old age, infirmity, and advanced age because they have little value for public health or medical research. Age is recorded elsewhere on the death certificate. When

malnutrition is involved, the certifier should consider if other medical conditions could have led to malnutrition.

The death certificate and the classification of diseases are not designed to capture multiple organ/system failure. When a number of conditions or multiple organ/system failure resulted in death, the physician, medical examiner, or coroner should choose a single sequence to describe the process leading to death and list the other conditions in Part II of the certification section. "Multiple system failure" could be included as an "other significant condition" but also specify the systems involved to ensure that the information is captured. In other instances, conditions listed in Part II of the death certificate may include causes that resulted from the underlying cause but which did not fit into the sequence resulting in death.

If any potentially lethal medical conditions are known but cannot be cited as part of the sequence leading to death, they should be listed as other significant conditions.

If the certifier cannot determine a descriptive sequence of causes of death despite carefully considering all information available, the medical examiner or coroner should be consulted about conducting an investigation or providing assistance in completing the medical certification.

Infant deaths:

When preparing a cause-of-death statement for an infant death, the causes should present a clear and distinct etiological sequence, if possible. Causes of death on the death certificate should not include terms such as prematurity without explaining the etiology because they have little value for public health or medical research.

When a number of conditions or multiple organ/system failure resulted in death, the physician, medical examiner, or coroner should choose a single sequence to describe the process leading to death and list the other conditions in Part II of the certification section. "Multiple system failure" could be included as an "other significant condition" but also specify the systems involved to ensure that the information is captured. Maternal conditions may have initiated or affected the sequence that resulted in an infant death. These maternal conditions should be reported in the cause-of-death statement in addition to the infant causes.

When SIDS is suspected, a complete investigation should be conducted, typically by a medical examiner or coroner. If the infant is under 1 year of age, no cause of death is determined after scene investigation, clinical history is reviewed, and a

complete autopsy is performed, then the death can be reported as Sudden infant death syndrome.

Avoid ambiguity:

Most certifiers will find themselves, at some point, in the circumstance in which they are unable to provide a simple description of the process of death. In this situation, the certifier should try to provide a clear sequence, qualify the causes about which he/she is uncertain, and be able to explain the certification chosen.

When conditions such as the following are reported, information about the etiology should be reported if possible:

CARDIOVASCULAR

Acute myocardial infarction
Arrhythmia
Atrial fibrillation
Cardiac arrest
Cardiac dysrhythmia
Congestive heart failure
Cardiomyopathy
Dysrhythmia
Heart failure
Hypotension
Myocardial infarction
Shock
Ventricular fibrillation
Ventricular tachycardia

CENTRAL NERVOUS SYSTEM

Altered mental status
Anoxic encephalopathy
Brain injury
Brain stem herniation
Cerebrovascular accident
Cerebellar tonsillar herniation
Cerebral edema
Dementia (when not otherwise specified)
Epidural hematoma
Increased intracranial pressure
Intracranial hemorrhage
Metabolic encephalopathy
Open (or closed) head injury
Seizures
Subdural hematoma
Subarachnoid hemorrhage
Uncal herniation

RESPIRATORY

Aspiration
Pleural effusions
Pneumonia
Pulmonary embolism
Pulmonary insufficiency
Pulmonary edema

GASTROINTESTINAL

Biliary obstruction
Bowel obstruction
Cirrhosis
Diarrhea
End-stage liver disease
Gastrointestinal hemorrhage
Hepatic failure
Hepatorenal syndrome
Perforated gallbladder

BLOOD, RENAL, IMMUNE

Coagulopathy
Disseminated intravascular coagulopathy
End-stage renal disease
Hepatorenal syndrome
Immunosuppression
Pancytopenia
Renal failure
Thrombocytopenia
Urinary tract infection

NOT SYSTEM-ORIENTED

Abdominal hemorrhage
Ascites
Anoxia
Bacteremia
Bedridden
Carcinogenesis
Carcinomatosis
Chronic bedridden state
Decubiti
Dehydration
Exsanguination
Failure to thrive
Gangrene
Hemothorax
Hyperglycemia
Hyperkalemia
Hyponatremia
Multi-organ failure
Multi-system organ failure
Necrotizing soft-tissue infection
Peritonitis
Sepsis
Septic shock
Shock
Volume depletion

If the certifier is unable to determine the etiology of a process such as those shown above, the process must be qualified as being of an unknown, undetermined, probable, presumed, or unspecified etiology so it is clear that a distinct etiology was not inadvertently or carelessly omitted.

The following conditions and types of death might seem to be specific but when the medical history is examined further, the conditions may be found to be complications of an injury or poisoning (possibly occurring long ago):

Subdural hematoma
Epidural hematoma
Subarachnoid hemorrhage
Fracture
Pulmonary emboli
Thermal burns/chemical burns
Sepsis
Hyperthermia
Hypothermia
Hip fracture
Seizure disorder
Drug or alcohol overdose/drug or alcohol abuse

Is it possible that the underlying cause of death was the result of an injury or poisoning? If it might be, check with the medical examiner/coroner to find out if the death should be reported to him/her.

When indicating neoplasms as a cause of death indicate the following: 1) primary site or that the primary site is unknown, 2) benign or malignant, 3) cell type or that the cell type is unknown, 4) grade of a neoplasm, and 5) part or lobe of an organ affected. For example, a well-differentiated squamous cell carcinoma, lung, left upper lobe.

<u>References</u>

For detailed information on how to complete the medical certification section of the death certificate, you may refer to:

- *The Medical Cause of Death Manual edited by Randy Hanzlick: can be ordered from the College of American Pathologists (800-323-4040 ext. 7531 for information and credit card orders). The product code number is B260.*
- *Cause-of-Death Statements and Certification of Natural and Unnatural Deaths edited by Randy Hanzlick: can be ordered from the College of American Pathologists (800-323-4040 ext. 7531 for information and credit card orders). The product code number is BK7261.*
- *Tutorial information available at http://www.TheNAME.org (Poorly written cause-of-death statement at http://www.thename.org/screen2.htm)*
- *State resources.*
- *NCHS' Medical Examiners' and Coroners' Handbook on Death Registration and Fetal Death Reporting (available from NCHS or at http://www.cdc.gov/nchs/data/hb_me.pdf).*
- *NCHS' Physicians' Handbook on Medical Certification of Death (available from NCHS or at http://www.cdc.gov/nchs/data/hb_cod.pdf).*
- *Laminated cards (available from NCHS or at http://www.cdc.gov/nchs/about/major/dvs/handbk.htm).*

Approximate interval between onset and death

Record the interval between the presumed onset of the condition (not the diagnosis of the condition) and the date of death. This should be entered for all conditions in Part I. These intervals usually are established by the physician on the basis of available information. In some cases the interval will have to be estimated. If the time of onset is entirely unknown, state that the interval is "Unknown." Do not leave these items blank.

This information is useful in coding certain diseases and also provides a useful check on the accuracy of the reported sequence of conditions.

Was an autopsy performed item

Enter "Yes" if a partial or complete autopsy was performed. Otherwise enter "No."

An autopsy is important in giving additional insight into the conditions that lead to death. This additional information is particularly important in arriving at the immediate, intermediate, and underlying causes when the cause is not immediately clear.

Were autopsy findings available prior to completion of cause of death item

Enter "Yes" if the autopsy findings were available and used to determine the cause of death. Otherwise enter "No." If no autopsy was performed, leave this item blank.

This information assists in determining whether, for the 10 percent of cases for which an autopsy is done, the information was used to assist in determining the cause of death. Knowing whether the autopsy results were used in determining the cause of death gives insight into the quality of the cause-of-death data.

Manner of death

Complete this item for all deaths. Check the box corresponding to the manner of death. Deaths not due to external causes should be identified as "Natural." Usually, these are the only types of deaths an attending physician will certify. "Pending Investigation" and "Could not be Determined" refer to medical examiner or coroner cases only.

If an injury, intentional or unintentional, contributed to death, check State law to learn if the medical examiner or coroner must be consulted on this case.

In cases of accidental death this information is used to justify the payment of double indemnity on life insurance policies. It is also used to obtain a more accurate determination of cause of death.

Date of injury item

Enter the exact month, day, and year that the injury occurred. Enter the full name of the month- January, February, March, etc. Do not use a number or abbreviation to designate the month.

The date of injury may not necessarily be the same as the date of death.

Complete this item in cases where injury or external cause (accidents or unintentional injuries, homicides, and suicides) caused or contributed to the death. All deaths resulting from injury or external cause (accidents or unintentional injuries, homicides, and suicides) must be reported to a medical examiner or coroner, who will usually certify the cause of death. However, there may be instances in which a medical examiner or coroner will not assume jurisdiction and the attending physician will certify an accidental death. In these cases when the manner of death is anything other than natural, the attending physician is to complete this item.

Time of injury item

Enter the exact time (hours and minutes) that the injury occurred. Use prevailing local time. In cases in which the exact time is impossible to determine, an estimate should be made. Be sure to indicate whether the time of injury was a.m. or p.m.

Complete this item in cases where injury or external cause (accidents or unintentional injuries, homicides, and suicides) caused or contributed to the death. All deaths resulting from injury or external cause (accidents or unintentional injuries, homicides, and suicides) must be reported to a medical examiner or coroner, who will usually certify the cause of death. However, there may be instances in which a medical examiner or coroner will not assume jurisdiction and the attending physician will certify an accidental death. In these cases when the manner of death is anything other than natural, the attending physician should complete this item.

Injury at work item

Enter "Yes" if the injury occurred while the decedent was at work. If not, enter "No." If this cannot be determined, enter "Unknown."

Operational guidelines for determination of injury at work

1. Complete the injury-at-work item if any other than natural cause of death is mentioned in Part I or Part II of the medical certification, including homicides, suicides, and accidents, including motor vehicle deaths.

*2. The injury at work item **must** be completed for decedents ages 14 or over and may be completed for those less than 14 years of age if warranted. Consider the possibility of a work injury regardless of whether injury occurred in the course of work in "usual" or other occupation and/or industry. If decedent's "usual" occupation is housewife, student, or retired consider possible injury during other employment. If occupation is transportation-related, suspect injury at work and evaluate per criteria.*

3. Consider available information with regard to location and activity at time of injury. If location is farm, suspect work-related and evaluate per criteria.

Criteria	Injury at work	
	Yes	No
On Employer Premises		
Engaged in work activity, apprentice, vocational training	X	
On break; in hallways, rest room, cafeteria, storage area	X	
In employer parking lots while working, arriving, or leaving	X	
Engaged in recreational activities on employer controlled facilities (games, etc.) for personal enjoyment		X
As a visitor for non-work purposes, not on official business		X
Off Employer Premises		
Working for pay or compensation, including at home	X	
Working as a volunteer EMS, firefighter, or law enforcement officer	X	
Working in family business, including family farm. Activity should be clearly related to a profit-oriented	X	
Traveling on business, including to and from customer/business contacts	X	
Engaged in work activity where vehicle is considered the work environment (e.g., taxi driver, truck driver, etc.)	X	
Homemaker working at homemaking activities		X
Working for self-non profit, i.e., mowing lawn, repairing own roof, hobby, or recreation activities		X
Student engaged in school activities		X
Operating vehicle (personal or commercial) for non-work purposes		X
Commuting to or from work site		X

These guidelines were developed jointly by: The National Association for Public Health Statistics and Information Systems (NAPHSIS), the National Institute of Occupational Safety and Health (NIOSH), the National Center for Health Statistics (NCHS), and the National Center for Environmental Health and Injury Control (NCEHIC). For questions contact your State Vital Statistics Office.

Complete this item in cases where injury or external cause (accidents or unintentional injuries, homicides, and suicides) caused or contributed to the death. All deaths resulting from injury or external cause (accidents or

unintentional injuries, homicides, and suicides) must be reported to a medical examiner or coroner, who will usually certify the cause of death. However, there may be instances in which a medical examiner or coroner will not assume jurisdiction and the attending physician will certify an accidental death. In these cases when the manner of death is anything other than natural, the attending physician should complete this item.

Describe how injury occurred

Briefly and clearly describe how the injury occurred, explaining the circumstances or cause of the accident or injury, such as "fell off ladder while painting house," "driver of a car ran off roadway," or "driving a car struck by a truck." For motor vehicle accidents, indicate whether the decedent was a driver, passenger, or pedestrian and what type of vehicles were involved. When weapons were involved, specify the type of gun or other weapon used.

Complete this item in cases where injury or external cause (accidents or unintentional injuries, homicides, and suicides) caused or contributed to the death. All deaths resulting from injury or external cause (accidents or unintentional injuries, homicides, and suicides) must be reported to a medical examiner or coroner, who will usually certify the cause of death. However, there may be instances in which a medical examiner or coroner will not assume jurisdiction and the attending physician will certify an accidental death. In these cases when the manner of death is anything other than natural, the attending physician should complete this item.

Place of injury

Enter the general category of the place (such as restaurant, vacant lot, or home) where the injury occurred. Do not enter firm or organization names, just the general category for the place of injury, such as loading platform, office building, or baseball field.

Complete this item in cases where injury or external cause (accidents or unintentional injuries, homicides, and suicides) caused or contributed to the death. All deaths resulting from injury or external cause (accidents or unintentional injuries, homicides, and suicides) must be reported to a medical examiner or coroner, who will usually certify to the cause of death. However, there may be instances in which a medical examiner or coroner will not assume jurisdiction and the attending physician will certify to an accidental death. In these cases when the manner of death is anything other than natural, the attending physician should complete this item.

Location of injury

Enter the complete address where the injury took place.

Complete this item in cases where injury or external cause (accidents or unintentional injuries, homicides, and suicides) caused or contributed to the death. All deaths resulting from injury or external cause (accidents or unintentional injuries, homicides, and suicides) must be reported to a medical examiner or coroner, who will usually certify to the cause of death. However, there may be instances in which a medical examiner or coroner will not assume jurisdiction and the attending physician will certify to an accidental death. In these cases when the manner of death is anything other than natural, the attending physician should complete this item.

IV. AUTOMATIC QUERIES FOR THE PHYSICIAN ENTERING DATA AT THE HOSPITAL

[EDC Developer:] The electronic death certificate can be made more useful by providing some more immediate edit checks based on literal entries. Below are some specifications.

[EDC Developer:]1) Unacceptable causes. An edit that flags the following as unacceptable causes if they are the only cause reported or are reported on the lowest line of the certification: respiratory arrest, RAR, resp arrest, asystole, cardiac arrest, CAR, cardio-respiratory arrest, cardiac pul arrest, cardiac pulmonary arrest, cardiopulmonary arrest, CPAR, ventricular fibrillation, VF, electrical mechanical dissociation, EMD, and electromechanical dissociation.

[EDC Developer:] The edit message should be *[Certifier:] "Mechanistic terminal events such as the last entry preferably should not be either the only cause or underlying cause in a cause-of-death statement. Please enter the medical conditions that led to this terminal event."*

[EDC Developer:] 2) Spellcheck. Include an automatic spelling checker

[EDC Developer:] 3) Abbreviations and parentheses. If there is an abbreviation or parentheses in the cause-of-death statement, provide a message that neither is good practice and please specify what is meant. It would be desirable to customize abbreviations so that the computer would ask if the certifier meant x,y, or specify. Providing possible terms using the same abbreviations would a) illustrate why using abbreviations is confusing and b) lessen the work the certifier needs to do to correct the entry. The abbreviations, shown below, are from NCHS Instruction Manual Part 2b, Instructions for Classifying Multiple Causes of Death, 2000.

[EDC Developer:] The edit message should be *[Certifier:] "Please do not use abbreviations to report cause of death. We think that the full term for (e.g., AAA) is (e.g., abdominal aortic aneurysm)? Indicate which term is correct if multiple meanings are possible, or specify what you meant by the abbreviation if we have not suggested the correct full term. Thank you."*

AAA	abdominal aortic aneurysm
AAS	aortic arch syndrome
AAT	alpha-antitrypsin
AAV	AIDS-associated virus
AB	abortion; asthmatic bronchitis
ABD	abdomen
ABE	acute bacterial endocarditis
ABS	acute brain syndrome
ACA	adenocarcinoma
ACD	arteriosclerotic coronary disease; absolute cardiac dullness
ACH	adrenal cortical hormone
ACT	acute coronary thrombosis
ACTH	adrenocorticotrophic hormone
ACVD	arteriosclerotic cardiovascular disease
AD	auris dextra (right ear); addiction, drug; adenoidal degeneration; atrio dextro (rt. atrium)
ADEM	acute disseminated encephalomyelitis
ADH	antidiuretic hormone

ADS antibody deficiency syndrome
AEG air encephalogram
AF auricular or atrial fibrillation; acid fast
AFB acid-fast bacillus
AFI amaurotic familial idiocy
AGG agammaglobulinemia
AGL acute granulocytic leukemia
AGN acute glomerulonephritis
AGS adrenogenital syndrome
AHA acquired hemolytic anemia; autoimmune hemolytic anemia
AHD arteriosclerotic heart disease
AHHD arteriosclerotic hypertensive heart disease
AHG anti-hemophilic globulin deficiency
AHLE acute hemorrhagic leukoencephalitis
AI aortic insufficiency; additional information
AIDS acquired immunodeficiency syndrome
AKA above knee amputation
ALL acute lymphocytic leukemia
ALS amyotrophic lateral sclerosis
AMI acute myocardial infarction
AML acute myelocytic leukemia
ANS arteriolonephrosclerosis
AOD arterial occlusive disease
AODM adult onset diabetes mellitus
AOM acute otitis media
AP angina pectoris; anterior and posterior repair; artificial pneumothorax; anterior pituitary
A&P anterior and posterior repair
APC auricular premature contraction; Acetylsalicylic acid, Acetophenetidin, and caffeine
APE acute pulmonary edema; anterior pituitary extract
APH antepartum hemorrhage
AR aortic regurgitation
ARC AIDS-related complex
ARF acute respiratory failure
ARM artificial rupture of membranes
ARV AIDS-related virus
AS arteriosclerotic; arteriosclerosis; aortic stenosis; auris sinestra (left ear)
ASA acetylsalicylic acid (aspirin)
ASAD arteriosclerotic artery disease
ASCD arteriosclerotic coronary disease
ASCHD arteriosclerotic coronary heart disease
ASCVA arteriosclerotic cerebrovascular accident
ASCVD arteriosclerotic cardiovascular disease
ASCVHD arteriosclerotic cardiovascular heart disease
ASCVRD arteriosclerotic cardiovascular renal disease
ASD atrial septal defect
ASDHD arteriosclerotic decompensated heart disease
ASHCVD arteriosclerotic hypertensive cardiovascular disease
ASHD arteriosclerotic heart disease; atrioseptal heart defect
ASHHD arteriosclerotic hypertensive heart disease
ASHVD arteriosclerotic hypertensive vascular disease
ASO arteriosclerosis obilterans
ASPVD arteriosclerotic peripheral vascular disease
ASVD arteriosclerotic vascular disease
ASVH(D) arteriosclerotic vascular heart disease
ATC all-terrain cycle
ATN acute tubular necrosis
ATS anxiety tension state; anti-tetanus serum; arteriosclerosis
ATSHD arteriosclerotic heart disease
ATV all-terrain vehicle
AU aures unitas (both ears)
AUL acute undifferentiated leukemia
AV arteriovenous; auriculoventricular; aortic valve
AVF arterio-ventricular fibrillation; arteriovenous fistula
AVH acute viral hepatitis
AVP aortic valve prosthesis
AVR aortic valve replacement
AWMI anterior wall myocardial infarction
AZT azidothymidine
BA basilar arteriogram; bronchial asthma; basilar artery
B&B bronchoscopy and biopsy
BBB bundle branch block
B&C biopsy and cauterization
BCE basal cell epithelioma
BE barium enema
BEH benign essential hypertension
BGL Bartholin's gland
BKA below knee amputation
BL bladder; bucolingual; blood loss; Burkitt's lymphoma
BMR basal metabolism rate
BNA Bladder neck adhesions
BNO bladder neck obstruction
BOMSA bilateral otitis media serous acute
BOMSC bilateral otitis media serous chronic
BOW "bag of water" (membrane)
B/P, BP blood pressure
BPH benign prostate hypertrophy
BSA body surface area
BSO bilateral salpingo-oophorectomy
BSP Bromosulfaphthalein test
BTL bilateral tubal ligation
BUN blood, urea, and nitrogen test
BVL bilateral vas ligation
B&W Baldy-Webster suspension (uterine)
BX biopsy
BX CX biopsy cervix
$\overline{c}$ with
Ca cancer
CA cancer; carotid arteriogram; cardiac arrest
CAD coronary artery disease

CAG chronic atrophic gastritis
CAO coronary artery occlusion; chronic airway obstruction
CAS cerebral arteriosclerosis
CASCVD chronic arteriosclerotic cardio-vascular disease
CB chronic bronchitis
CBC complete blood count
CBD common bile duct
CBS chronic brain syndrome
CCF chronic congestive failure
CCI chronic cardiac or coronary insufficiency
CDE common duct exploration
CDH congenital dislocation hip
CF congestive failure; compliment fixation test; cystic fibrosis; Christmas factor (plasma thromboplastin component)
CFT chronic follicular tonsillitis
CGN chronic glomerulonephritis
CHA congenital hypoplastic anemia
CHB complete heart block
CHD congestive heart disease; coronary heart disease; Chediak-Higaski Disease; congenital heart disease
CHF congestive heart failure
C_2H_5OH ethyl alcohol
CI cardiac insufficiency; cerebral infarction
CID cytomegalic inclusion disease
CIS carcinoma in situ
CLD chronic lung disease; chronic liver disease
CLL chronic lymphatic leukemia; chronic lymphocytic leukemia
CMID cytomegalic inclusion disease
CML chronic myelocytic leukemia
CMM cutaneous malignant melanoma
CMV cytomegalic virus
CNHD congenital nonspherocytic hemolytic disease
CNS central nervous system
CO carbon monoxide
COAD chronic obstructive airway disease
CO_2 carbon dioxide
COBE chronic obstructive bullous emphysema
COBS chronic organic brain syndrome
COFS cerebro-oculo-facio-skeletal
COOMBS test for Rh sensitivity
COLD chronic obstructive lung disease
COPD chronic obstructive pulmonary disease
COPE chronic obstructive pulmonary emphysema
CP cerebral palsy; cor pulmonale
C&P cystoscopy and pyelography
CPB cardiopulmonary bypass
CPC chronic passive congestion
CPD cephalopelvic disproportion; contagious pustular dermatitis
CPE chronic pulmonary emphysema
CRD chronic renal disease
CRF cardiorespiratory failure; chronic renal failure
CRST calcinosis cutis, Raynaud's phenomenon, sclerodactyly, and telangiectasis
CS coronary sclerosis; cesarean section; cerebro-spinal
CSF cerebral spinal fluid
CSH chronic subdural hematoma
CSM cerebrospinal meningitis
CT cerebral thrombosis; coronary thrombosis
CTD congenital thymic dysplasia
CU cause unknown
CUC chronic ulcerative colitis
CUP cystoscopy, urogram, pyelogram (retro)
CUR cystocele, urethrocele, rectocele
CV cardiovascular; cerebrovascular
CVA cerebral vascular accident
CV Accident cerebral vascular accident
CVD cardiovascular disease
CVHD cardiovascular heart disease
CVI cardiovascular insufficiency; cerebral vascular insufficiency
CVRD cardiovascular renal disease
CWP coal worker's pneumoconiosis
CX cervix
DA degenerative arthritis
DBI Phenformin hydrochloride
D&C dilation and curettage
DCR dacrocystorhinostomy
D&D drilling and drainage; debridement and dressing
D&E dilation and evacuation
DFU dead fetus in utero
DIC disseminated intravascular coagulation
DILD diffuse infiltrative lung disease
DIP distal interphalangeal joint; desquamative interstitial pneumonia
DJD degenerative joint disease
DM diabetes mellitus
DMT dimethyltriptamine
DOA dead on arrival
DOPS diffuse obstructive pulmonary syndrome
DPT diphtheria, pertussis, tetanus vaccine
DR diabetic retinopathy
DS Down's syndrome
DT due to; delirium tremens
D/T delirium tremens; due to
DU diagnosis unknown; duodenal ulcer
DUB dysfunctional uterine bleeding
DUI driving under influence
DVT deep vein thrombosis
DWI driving while intoxicated
DX dislocation; diagnosis; disease
EBV Epstein-Barr virus
ECCE extracapsular cataract extraction
ECG electrocardiogram
ECT electric convulsive therapy
EDC expected date of confinement
EEE Eastern equine encephalitis
EEG electroencephalogram

EFE endocardial fibroelastosis
EGL eosinophilic granuloma of lung
EH enlarged heart; essential hypertension
EIOA excessive intake of alcohol
EKC epidemic keratoconjunctivitis
EKG electrocardiogram
EKP epikeratoprosthesis
ELF elective low forceps
EMC encephalomyocarditis
EMD electromechanical dissociation
EMF endomyocardial fibrosis
EMG electromyogram
EN erythema nodosum
ENT ear, nose, and throat
EP ectopic pregnancy
ER emergency room
ERS evacuation of retained secundines
EST electric shock therapy
ETOH alcohol
EUA exam under anesthesia
EWB estrogen withdrawal bleeding
FB foreign body
FBS fasting blood sugar
Fe symbol for iron
FGD fatal granulomatous disease
FHS fetal heart sounds
FHT fetal heart tone
FLSA follicular lymphosarcoma
FME full-mouth extraction
FS frozen section; fracture site
FT full term
FTA fluorescent Treponemal antibody test
5FU Fluorouracil
FUB functional uterine bleeding
FULG fulguration
FUO fever unknown origin
FX fracture
FYI for your information
GAS generalized arteriosclerosis
GB gallbladder; Guillain-Barre syndrome
GC gonococcus; gonorrhea; general circulation (systemic)
GI gastrointestinal
GIT gastrointestinal tract
GOK God only knows
GSW gunshot wound
GTT glucose tolerance test
gtt drop
GU genitourinary; gastric ulcer
GVHR graft versus host reaction
GYN gynecology
HA headache
HAA hepatitis associated antigen
HASCVR hypertensive arteriosclerotic cardiovascular renal disease
HASVD hypertensive arteriosclerotic vascular disease
HB hemoglobin; heart block
HBP high blood pressure
HC Huntington's chorea
HCT hematocrit
HCVD hypertensive cardiovascular disease
HCVRD hypertensive cardiovascular renal disease
HD Hodgkin's disease; heart disease
HDN hemolytic disease of newborn
HDS herniated disc syndrome
HF heart failure; hayfever
HGB;Hgb hemoglobin
HHD hypertensive heart disease
HIV human immunodeficiency virus
HMD hyaline membrane disease
HN_2 Nitrogen Mustard
HNP herniated nucleus pulposus
H/O history of
HPN hypertension
HPVD hypertensive pulmonary vascular disease
HRE high-resolution electro-cardiology
HS herpes simplex; Hurler's syndrome
HTLV-III/LAV human T-cell lymphotropic virus-III/ lymphadenopathy-associated virus
HTLV-3 human T-cell lymphotropic virus-III
HTLV-III human T-cell lymphotropic virus -III
HVD hypertensive vascular disease
Hx history of
IADH inappropriate antidiuretic hormone
IASD interatrial septal defect
ICCE intracapsular cataract extraction
ICD intrauterine contraceptive device
I&D infectious disease; incision and drainage
IDA iron deficiency anemia
IDDM type 1 diabetes
IH infectious hepatitis
IHD ischemic heart disease
IHSS idiopathic hypertrophic subaortic stenosis
ILD ischemic leg disease
IM intramuscular; intramedullary; infectious mononucleosis
IMPP intermittent positive pressure
INAD infantile neuroaxonal dystrophy
INC incomplete
INE infantile necrotizing encephalomylopathy
INF infection; infected; infantile; infarction
INH Isoniazid; inhalation
INS idiopathic nephrotic syndrome
IO intestinal obstruction
IOH idiopathic orthostatic hypotension
IPD inflammatory pelvic disease
IPP intermittent positive pressure
IRDS idiopathic respiratory distress syndrome
IRHD inactive rheumatic heart disease
ISD interatrial septal defect
ITP idiopathic thrombocytopenic purpura
IU intrauterine
IUCD intrauterine contraceptive device

IUD intrauterine device (contraceptive); intrauterine death
IUP intrauterine pregnancy
IVC intravenous cholangiography; inferior vena cava
IVCC intravascular consumption coagulopathy
IVD intervertebral disc
IVH intraventricular hemorrhage
IVP intravenous pyelogram
IVSD intraventricular septal defect
IVU intravenous urethrography
IWMI inferior wall myocardial infarction
JBE Japanese B encephalitis
KFS Klippel-Feil syndrome
KS Klinefelter's syndrome
KUB kidney, ureter, bladder
K-W Kimmelstiel-Wilson disease or syndrome
LAP laparotomy
LAV lymphadenopathy-associated virus
LAV/ lymphadenopathy-associated
HTLV-III virus/Human T-cell lymphotrophic virus-III
LBBB left bundle branch block
LBNA lysis bladder neck adhesions
LBW low birth weight
LBWI low birth weight infant
LCA left coronary artery
LDH lactic dehydrogenase
LE lupus erythematosus; lower extremity; left eye
LKS liver, kidney, spleen
LLL left lower lobe
LMA left mentoanterior (position of fetus)
LMCAT left middle cerebral artery thrombosis
LML left mesiolateral; left mediolateral (episiotomy)
LMP last menstrual period; left mento-posterior (position of fetus)
LN lupus nephritis
LOA left occipitoanterior
LOMCS left otitis media chronic serous
LP lumbar puncture
LRI lower respiratory infection
LS lumbosacral;lymphosarcoma
LSD lysergic acid diethylamide
LSK liver, spleen, kidney
LSO left salpingo-oophorectomy
LTB laryngotracheobronchitis
LUL left upper lobe
LVF left ventricular failure
LVH left ventricular hypertrophy
MBD minimal brain damage
MD muscular dystrophy; manic depressive; myocardial damage
MDA methylene dioxyamphetamine
MEA multiple endocrine adenomatosis
MF myocardial failure; myocardial fibrosis; mycosis fungoides
MGN membranous glomerulonephritis
MHN massive hepatic necrosis
MI myocardial infarction; mitral insufficiency
MID multi-infarct dementia
MLC myelomonocytic leukemia, chronic
MM malignant melanoma; multiple myeloma
MMOA mandible, maxillary, odontectomy, alveolectomy
MOD mode of death; moment of death
MPC meperidine, promethazine, chlorpromazine
MS multiple sclerosis; mitral stenosis
MT malignant teratoma
MUA myelogram
MVR mitral valve regurgitation
NACD no anatomical cause of death
NCA neurocirculatory asthenia
NDI nephrogenic diabetes insipidus
NFI no further information
NFTD normal full-term delivery
NH_3 symbol for ammonia
NIDDM type 2 diabetes
NMI no more information
NPD Niemann-Pick disease
NSD normal spontaneous delivery; nonsurgical delivery
NSR normal sinus rhythm; nasal submucous resection
NTG nontoxic goiter
NTN nephrotoxic nephritis
N&V nausea and vomiting
NVD nausea, vomiting, diarrhea
OA osteoarthritis
OAD obstructive airway disease
OB obstetrical
OBS organic brain syndrome
OBST obstetrical
OD oculus dexter (right eye); overdose; occupational disease
OHD organic heart disease
OM otitis media
OMI old myocardial infarction
OMS organic mental syndrome
ORIF open reduction, internal fixation
OS oculus sinister (left eye); occipitosacral (fetal position)
OT occupational therapy; old TB
OU oculus uterque (each eye); both eyes
PA pericious anemia; paralysis agitans; pulmonary artery; peripheral arterio sclerosis
PAC premature auricular contraction; phenacetin, aspirin, caffeine
PAF paroxysmal auricular fibrillation
PAOD peripheral arterial occlusive disease; peripheral arteriosclerosis occlusive disease
PAP primary atypical pneumonia
PAS pulmonary artery stenosis
PAT pregnancy at term; paroxysmal auricular tachycardia
Pb chemical symbol for lead
PCD polycystic disease
PCF passive congestive failure

PCP pentachlorophenol; pneumocystis carinii pneumonia
PCT porphyria cutanea tarda
PCV polycythemia vera
PDA patent ductus arteriosus
PE pulmonary embolism; pleural effusion; pulmonary edema
PEG pneumoencephalography
PET pre-eclamptic toxemia
PG pregnant; prostaglandin
PGH pituitary growth hormone
PH past history; prostatic hyertrophy; pulmonary hypertension
PI pulmonary infarction
PID pelvic inflammatory disease; pro-lapsed intervertebral disc
PIE pulmonary interstitial emphysema
PIP proximal interphalangeal joint
PKU phenylketonuria
PMD progressive muscular dystrophy
PMI posterior myocardial infarction; point of maximum impulse
PN periarteritis nodosa; pneumonia;pyelonephritis
PO postoperative
POC product of conception
POE point (or portal) of entry
PP postpartum
PPD purified protein derivative test for tuberculosis
PPH postpartum hemorrhage
PPLO pleuropneumonia-like organism
PPS postpump syndrome
PPT precipitated; prolonged prothrombin time
PROM premature rupture of membranes
PT paroxysmal tachycardia; pneumothorax; prothrombin time
PTA prior to admission; persistent truncus arteriosus
PTC plasma thromboplastin component
PU peptic ulcer
PUD peptic ulcer disease; pulmonary disease
PUO pyrexia of unknown origin
P&V pyloroplasty and vagotomy
PVC premature ventricular contraction
PVD peripheral vascular disease; pulmonary vascular disease
PVI peripheral vascular insufficiency
PVT paroxysmal ventricular tachycardia
PVS premature ventricular systole (contraction)
PWI posterior wall infarction
PWMI posterior wall myocardial infarction
PX pneumothorax
R right
RA rheumatoid arthritis; right atrium; right auricle
RAD radiation absorbed dose
RAI radioactive iodine
RBBB right bundle branch block
RBC red blood cells
RCA right coronary artery
RCS reticulum cell sarcoma
RD Raynaud's disease; respiratory disease
RDS respiratory distress syndrome
RE regional enteritis
REG radioencephalogram
RF rheumatic fever
RHD rheumatic heart disease
RLF retrolental fibroplasia
RLL right lower lobe
RMCA right middle cerebral artery
RMCAT right middle cerebral artery thrombosis
RMLE right mediolateral episiotomy
RNA ribonucleic acid
RND radical neck dissection
R/O rule out
RSA reticulum cell sarcoma
RSR regular sinus rhythm
Rt right
RT recreational therapy; right
RTA renal tubular acidosis
RV right ventricle
RVH right ventricular hypertrophy
RVT renal vein thrombosis
RX drugs or other therapy or treatment
þ without
SA sarcoma; secondary anemia
SACD subacute combined degeneration
SBE subacute bacterial endocarditis
SBO small bowel obstruction
SC sickle cell
SCC squamous cell carcinoma
SCI Subcoma insulin; spinal cord injury
SD spontaneous delivery; septal defect; sudden death
SDAT senile dementia, Alzheimer's type
SDII sudden death in infancy
SDS sudden death syndrome
SF scarlet fever
SGA small for gestational age
SH serum hepatitis
SI saline injection
SIADH syndrome of inappropriate antidiuretic hormone
SICD sudden infant crib death
SID sudden infant death
SIDS sudden infant death syndrome
SLC short leg cast
SLE systemic lupus erythematosus; Saint Louis encephalitis
SMR submucous resection
SNB scalene node biopsy
SO or S&O salpingo-oophorectomy
SOB shortness of breath
SOM secretory otitis media
SOR suppurative otitis, recurrent
S/P status post
SPD sociopathic personality disturbance
SPP suprapubic prostatectomy
SQ subcutaneous
S/R schizophrenic reaction; sinus rhythm
S/p P/T schizophrenic reaction, paranoid type
SSE soapsuds enema
SSKI saturated solution potassium iodide

SSPE subacute sclerosing panencephalitis
STB stillborn
STS serological test for syphilis
STSG split thickness skin graft
SUBQ subcutaneous
SUD sudden unexpected death
SUDI sudden unexplained death of an infant
SUID sudden unexpected infant death
SVC superior vena cava
SVD spontaneous vaginal delivery
Sx symptoms
T&A tonsillectomy and adenoidectomy
TAH total abdominal hysterectomy
TAL tendon achilles lengthening
TAO Triacetyloleandomycin (antibiotic); thromboangiitis oliterans
TAPVR total anomalous pulmonary venous return
TAR thrombocytopenia absent radius (syndrome)
TAT tetanus anti-toxin
TB tuberculosis; tracheobronchitis
TBC,Tbc tuberculosis
TBLC term birth living child
TCI transient cerebral ischemia
TEF tracheo-esophageal fistula
TF tetralogy of Fallot
TGV transposition great vessels
TI tricuspid insufficiency
TIA transient ischemic attack
TIE transient ischemic episode
TL tubal ligation
TM tympanic membrane
TOA tubo-ovarian abscess
TP thrombocytopenic purpura
TSD Tay-Sachs disease
TTP thrombotic thrombocytopenic purpura
TUI transurethral incision
TUR transurethral resection (NOS) (prostate)
TURP transurethral resection of prostate
TVP total anomalous venous return
UC ulcerative colitis
UP ureteropelvic
UPJ ureteropelvic junction
URI upper respiratory infection
UTI urinary tract infection
VAMP vincristine, amethopterine, 6-mercaptopurine, and prednisone
VB vinblastine
VC vincristine
VD venereal disease
VDRL venereal disease research lab
VEE Venezuelan equine encephalomyelitis
VF ventricular fibrillation
VH vaginal hysterectomy; viral hepatitis
VL vas ligation
VM viomycin
V&P vagotomy and pyloroplasty
VPC ventricular premature contractions
VR valve replacement
VSD ventricular septal defect
VT ventricular tachycardia
WBC white blood cell
WC whooping cough
WE Western encephalomyelitis
WPW Wolfe-Parkinson-White syndrome
YF yellow fever
ZE Zollinger-Ellison (syndrome)
fracture
' minute
" second(s)
9 decreased
8 increased; elevated
ÿ without

00
11 secondary to

00
11 to secondary to

[EDC Developer:] 4) Rare cause. If a rare cause of death is on the death certificate, provide an automatic query stating *[Certifier:] "The reported cause is one of the causes that State Health Departments always try to verify, either because the cause is rarely reported on a death certificate or because it may present threats to public health in the United States."* Then ask, *"Was this the cause of death that the certifier intended to enter?"*

[EDC Developer:] The diagnosis then needs to be confirmed by the certifier. It is strongly recommended by NCHS/CDC that the State vital statistics program notify, as soon as possible, the state health officer (or designee) and the state epidemiologist of validated rare causes of death. For all cases, a notation of confirmation should be recorded on a copy of the certificate that is sent to the NCHS, whether confirmed electronically or by traditional means. Correspondence

between NCHS and the State will still be needed, so that we ensure that all appropriate parties are aware that a rare cause has been reported.

The following list of infrequent and rare causes is from NCHS Instruction Manual Part 2b, Instructions for classifying multiple causes of death, 2000:

A00	Cholera
A01	Typhoid and paratyphoid fevers
A05.1	Botulism (botulism, infant botulism, wound botulism)
A07.0-.2,.8-.9	Other protozoal intestinal diseases, excluding coccidiosis
A20	Plague
A21	Tularemia
A22	Anthrax
A23	Brucellosis
A24.0	Glanders
A24.1-.4	Melioidosis
A25	Rat-bite fever
A27	Leptospirosis
A30	Leprosy
A33	Tetanus neonatorum
A34	Obstetrical tetanus
A35	Other tetanus (Tetanus)
A36	Diphtheria
A37	Whooping cough
A44	Bartonellosis
A65	Nonvenereal syphyllis
A66	Yaws
A67	Pinta
A68	Relapsing fever
A69	Other spirochetal infection
A70	Chlamydia psittaci infection (ornithosis)
A75.0	Louse-born typhus due to Rickettsia prowazekii
A75.1-.9	Other typhus
A77.1	Spotted fever due to Rickettsia conorii (Boutonneuse fever)
A77.2	Spotted fever due to Rickettsia siberica (North Asian tick fever)
A77.3	Spotted fever due to Rickettsia australis (Queensland tick typhus)
A77.8	Other spotted fevers (Other tick-born rickettsioses)
A77.9	Unspecified spotted fevers (Unspecified tick-born rickettsioses)
A78	Q fever
A79	Other Rickettsioses
A80	Acute poliomyelitis
A81	Slow virus infections of central nervous system
A82	Rabies
A84	Tick-born viral encephalitis

A85.2	Arthropod-born viral encephalitis, unspecified (Viral encephalitis transmitted by other and unspecified arthropods)
A90	Dengue fever
A91	Dengue hemmorrhagic fever
A92	Other mosquito-born viral fevers
A93	Other arthropod-born viral fevers including Oropouche fever, sandfly fever, Colorado tick fever and other specified
A94	Unspecified arthropod-born viral fever
A95	Yellow fever
A96	Arenaviral hemorrhagic fever
A98-A99	Other viral hemorrhagic fevers including Crimean-Congo, Omsk, Kyasanur Forest, Ebola virus, Hanta virus
B01	Varicella without complication (Chickenpox)
B03	Small pox
B04	Monkeypox
B05	Measles
B06	Rubella
B08.0	Other orthopoxvirus (cowpox and paravaccinia)
B26	Mumps
B33.0	Epidemic myalgia (epidemic pleurodynia)
B50-B54	Malaria
B55	Leishmaniasis
B56	African trypanosomiasis (trypanosomiasis)
B57	Chagas' disease (trypanosomiasis)
B65	Schistosomiasis
B66	Other fluke infections (Other trematode infection)
B67	Echinococcosis
B68	Taeniasis
B69	Cysticercosis
B70	Diphyllobothriasis and sparganosis
B71	Other cestode infections
B72	Dracunculiasis (Dracontiasis)
B73	Onchocerciasis
B74	Filariasis (Filarial infection)
P35.0	Congenital rubella syndrome
W88-W91	Exposure to radiation
Y36.5	War operation involving nuclear weapons

Causing adverse effects in therapeutic use:

Y58	Bacterial vaccines
Y59.0	Viral vaccines
Y59.1	Rickettsial vaccines
Y59.2	Protozoal vaccines
Y59.3	Immunoglobulin

[EDC Developer:] 5) Specificity for cancer. If words indicative of cancer appear on the death certificate (as shown below), ask *[Certifier:] "Have you specified the site and cell type or if the condition had metastasized? Thank you."* [EDC Developer:] The following list is from Instruction manual part 2g, Data Entry Instructions for the Mortality Medical Indexing, Classification, and Retrieval System (MICAR), 2000:

Acidophil cancer
Acidophil carcinoma
Adenocarcinoma
Adenocarcinomatosis
Adenofibroma
Adenoid cystic carcinoma
Adenoma
Adenomatous polyp
Adenomatous polyposis
Adenosarcoma
Adenosquamous (cell) cancer
Adenosquamous (cell) carcinoma
Aleukemic leukemia
Alveolar adenocarcinoma
Alveolar carcinoma
Alveolar cancer
Alveolar cell cancer
Alveolar cell carcinoma
Alveolar rhabdomyosarcoma
Anaplastic adenocarcinoma
Anaplastic astrocytoma
Anaplastic cancer
Anaplastic carcinoma
Anaplastic fulminant cancer
Anaplastic fulminant carcinoma
Angioblastic meningioma
Angioblastoma
Angioma
Angiomyosarcoma
Angiosarcoma
Apocrine cancer
Apocrine carcinoma
Astroblastoma
Astrocytoma
Astroglioma
Basal cell cancer
Basal cell carcinoma
Basal cell epithelioma
Basophil adenocarcinoma
Basophil cancer
Basophil carcinoma
Bile duct type cancer
Bile duct type carcinoma
C cell cancer
C cell carcinoma
Cancer
Carcinoid
Carcinoid malignancy
Carcinoid tumor
Carcinoma
Carcinomatosis
Cavernous hemangioma
Cavernous lymphangioma
Chemodectoma
Cholangiocarcinoma
Cholangiohepatoma
Cholangioma
Chondrosarcoma
Chordoma
Choriocarcinoma
Chorioepithelioma
Chorionic cancer
Chorionic carcinoma
Chromophobe adenocarcinoma
Chromophobe adenoma
Chromophobe cancer
Chromophobe carcinoma
Clear cell adenocarcinoma
Congenital leukemia
Craniopharyngioma
Cylindroma
Cystadenocarcinoma
Dermatofibroma
Dermatofibrosarcoma
Di Guglielmos disease
Duct cell carcinoma
Ductal cancer
Ductal carcinoma
Ductal cell carcinoma
Dukes adenocarcinoma
Dukes cancer
Dysgerminoma
Eaton lambert syndrome
Embryoma
Embryonal adenocarcinoma
Embryonal cancer
Embryonal carcinoma
Eosinophil adenocarcinoma
Eosinophil cancer
Eosinophil carcinoma
Ependymoblastoma
Ependymoma
Epidermoid cancer
Epidermoid carcinoma
Epidermoid cystic tumor
Epithelioma
Erythremic myelosis
Erythrocythemia
Erythroleukemia
Ewings sarcoma
Ewings tumor
Familial polyposis
Fibroid
Fibroid tumor
Fibrolipoma
Fibroliposarcoma
Fibroma
Fibromyoma
Fibromyosarcoma
Fibromyxolipoma
Fibromyxosarcoma
Fibrosarcoma
Fibrous histiocytoma
Follicular adenocarcinoma
Follicular lymphoma
Ganglioglioma
Gardners syndrome
Gastrinoma
Gastrocarcinoma
Germ cell carcinoma
Giant cell cancer
Giant cell carcinoma
Giant cell leukemia
Glioblastoma
Glioblastoma multiforme
Glioma
Gliosarcoma
Glomangioma
Granulocytic leukemia
Granulocytic leukemia blast crisis
Granulosa cell cancer
Granulosa cell carcinoma
Growth
Hemangioendothelioma
Hemangioma
Hemangiopericytoma
Hemangiosarcoma
Hemoleukemia
Hepatoblastoma
Hepatocarcinoma
Hepatocellular cancer

Hepatocellular carcinoma
Hepatocholangiocarcinoma
Hepatocholangiolitic cancer
Hepatocholangiolitic carcinoma
Hepatoma
Histiocytic leukemia
Histiocytic lymphoma
Histiocytoma
Hodgkins disease
Hodgkins disease
Hodgkins lymphoma
Hurthle cell adenocarcinoma
Hurthle cell adenoma
Hurthle cell cancer
Hurthle cell carcinoma
Hygroma
Hypernephroma
Immunoblastic sarcoma
Immunolymphosarcoma
Infiltrating duct adenocarcinoma
Infiltrating duct cancer
Infiltrating duct carcinoma
Infiltrating duct cell cancer
Infiltrating duct cell carcinoma
Infiltrating ductal carcinoma
Infiltrating lobular carcinoma
Inflammatory cancer
Inflammatory carcinoma
Insulinoma
Insuloma
Intraductal cancer
Intraductal carcinoma
Islet cell adenocarcinoma
Islet cell adenoma
Islet cell cancer
Islet cell carcinoma
Kaposi sarcoma
Kaposis sarcoma
Kasabach Merritt syndrome
Krukenbergs tumor
Large cell anaplastic cancer
Large cell anaplastic carcinoma
Large cell cancer
Large cell carcinoma
Large cell lymphoma
Large cell tumor
Leiomyosarcoma
Lesion
Leucosarcoma
Leukemia
Leukemic crisis
Leukemic infiltrate
Leukemic infiltration
Leukemic lymphosarcoma
Leukolymphosarcoma
Leukosarcoma
Linitis plastica
Lipoblastoma
Lipoblastomatosis
Lipofibroma
Lipoma
Lipomyosarcoma
Lipomyxoma
Lipomyxosarcoma
Liposarcoma
Lobular carcinoma
Lymphangiosarcoma
Lymphangiosarcoma
Lymphatic leukemia
Lymphocyte depleted
Lymphocytic leukemia
Lymphocytic lymphoma
Lymphocytic lymphosarcoma
Lymphogenous leukemia
Lymphohistiocytic lymphoma
Lymphoid leukemia
Lympholeukemia
Lymphoma
Lymphomatous disease
Lymphoproliferative disease
Lymphoproliferative disorder
Lymphoreticularproliferative disease
Lymphoreticularproliferative disorder
Lymphoreticulum cell leukemia
Lymphosarcoma
Lymphosarcoma cell leukemia
Lymphosarcoma leukemia
Malignancy
Mass
Medullary carcinoma
Medulloblastoma
Megaadenoma
Megakaryocytic leukemia
Megakaryocytic myelosclerosis
Megakaryocytoid leukemia
Megaloleukemia
Meigs syndrome
Melanoma
Meningioma
Mesenchymoma
Mesoepithelioma
Mesothelioma
Metastases
Metastasis
Microglioma
Mixed cell leukemia
Mixed cell lymphoma
Mixed leukemia
Monocytic leukemia
Monocytoid leukemia
Monoleukemia
Monoleukocytic leukemia
Monomyelocytic leukemia
Monomyelogenous leukemia
Mucinous adenocarcinoma
Mucinous adenofibroma
Mucinous cancer
Mucinous carcinoma
Mucinous cystadenocarcinoma
Mucinous cystadenocarcoma
Mucinous cystadenoma
Mucoepidermoid cancer
Mucoepidermoid carcinoma
Mucoid cell adenocarcinoma
Multiple myeloma
Myelogenous leukemia
Myeloid leukemia
Myeloleukemia
Myeloma
Myelomonocytic leukemia
Myeloproliferative disease
Myeloproliferative disorder
Myeloproliferative syndrome
Myelosis
Myoliposarcoma
Myoma
Myxofibrosarcoma
Myxoliposarcoma
Myxopapillary ependymoma
Myxosarcoma
Neoplasm
Neoplastic disease
Nephroblastoma
Nephroma
Neurilemmoma
Neurilemmosarcoma
Neuroblastoma
Neurofibromatosis
Neurofibrosarcoma
Neurogenic sarcoma
Nodular lymphcytic leukemia
Nodular lymphoma
Non Hodgkins lymphoma
Non oat cell carcinoma
Non small cell carcinoma
Oat cell cancer
Oat cell carcinoma
Oligodendroblastoma
Oligodendroglioma
Orchioblastoma
Osteochondrosarcoma
Osteofibrosarcoma
Osteogenic sarcoma
Osteosarcoma
Pancoast syndrome
Pancoast tumor
Pancoasts syndrome

Pancoasts tumor
Papillary adenocarcinoma
Papillary cancer
Papillary carcinoma
Papillary ependymoma
Papillary serous adenocarcinoma
Papillary serous cystadenocarcinoma
Papillary transitional (cell) carcinoma
Pheochromoblastoma
Pheochromocytoma
Pinealoblastoma
Pinealoma
Pineoblastoma
Pineocytoma
Plasma cell leukemia
Plasma cell myeloma
Plasmacytic myeloma
Plasmacytoma
Polycythemia
Polycythemia rubra vera
Polycythemia vera
Polyp
Polyposis
Promyelocytic leukemia
Pseudofollicular leukemia
Pseudomucinous adenocarcinoma
Pseudomucinous cancer
Pseudomucinous carcinoma
Pseudomucinous cystadenocarcinoma
Recklinghausens disease
Renal cell adenocarcinoma
Renal cell cancer
Renal cell carcinoma
Reticularproliferative disease
Reticuloendothelial tumor
Reticulum cell sarcoma
Retinoblastoma
Rhabdomyosarcoma
Rhabdosarcoma
Round cell cancer
Round cell carcinoma
Sarcoma
Sarcomatosis
Schilling type monocytic leukemia
Schwannoma
Scirrhous carcinoma
Seminoma
Serous adenocarcinoma
Serous adenofibroma
Serous cystadenocarcinoma
Signet cell adenocarcinoma
Sipples syndrome
Small cell cancer
Small cell carcinoma
Small cell lymphoma
Spindle cell cancer
Spindle cell carcinoma
Squamous cancer
Squamous carcinoma
Squamous cell cancer
Squamous cell carcinoma
Stem cell leukemia
Subependymoma
Subleukemic leukemia
Synovial sarcoma
T cell leukemia
T cell lymphoma
Teratoma
Theca cell cancer
Theca cell carcinoma
Thecoma
Thrombocythemia
Thrombocytic leukemia
Thymoma
Transitional (cell) cancer
Transitional (cell) carcinoma
Transitional cell tumor
Tumor
Vaguez disease
Vaguez Osler disease
Vernet Morrison syndrome
Verrucous carcinoma
Villous adenocarcinoma
Villous adenoma
Von Recklinghausens disease
Von Recklinghausens tumor
WDHA syndrome
Wilms tumor

[EDC Developer:] 6) Unlikely underlying causes. Include an edit that flags the following as unlikely (nonspecific) underlying causes of death if reported on the lowest used line. The causes include:

Abdominal hemorrhage
Abdominal hem
Acute myocardial infarction
A MI
A Myocardial infarct
A Myocardial infarction
Acute MI
Acute myocardial infarct
AMI
Altered mental status
Anoxia
Anoxic encephalopathy
Arrhythmia
Ascites
Aspiration
Aspir
Atrial fibrillation
AF
Bacteremia
Bedridden
Bed ridden condition
Bed ridden status
Bedridden state
Bedridden status
Biliary obstruction
Bowel obstruction
Obstructed bowel
Brain injury
Brain injuring
Brain stem herniation
Carcinogenesis
Carcinomatosis
Cardiac dysrhythmia
Cardiomyopathy
CMY
Cerebellar tonsillar herniation
Cerebral edema
Cerebral Ed
Cerebrovascular accident
Cerebral vascular accident
Cerv accident
Cerva
CVA
CVACC
Chronic bedridden state
Cirrhosis
Cirrhosis D Cirrhosis disease
Cirrhotic
Coagulopathy
Congestive Heart Failure
CHF
Congestive HFA
Congestive HTF
Congestive HTFA
Decubiti
Dehydration
Deh
Dementia (when not otherwise specified)
Diarrhea
Disseminated intravascular coagulopathy
Dis intravascular coagulopathy
Dysrhythmia
End-stage liver disease
End-stage renal disease
End stage renal D
Endstage renal
Endstage Renal D
Endstage renal disease
ESRD
Epidural hematoma
Exsanguination
Exsanguinated
Failure to thrive
FTT
Gangrene
Gastro Intestinal hem
Gastro Intestinal hemorrhage
Gastrointestinal Hem
Gastrointestinal hemorrhage
Gi hem
Gi hemorrhage
Gihem
G
Gangrenous
Gg
GOK
Heart failure
HFA
HTF
HTFA

Hemothorax
Hepatic failure
Hepatorenal syndrome
Hepatorenal Sy
Hepatorenal syndrome
Hyperglycemia
Hyperkalemia
Hyponatremia
Hypotension
Immunosuppression
Increased intracranial pressure
Increase intracranial pressure
Intracranial pressure increased
Intracranial hemorrhage
Intracranial hem
Metabolic encephalopathy
Multi-organ failure
Multiple system failure
Multiple systems failure
Multisystem failure
Multi organ system failure
Multi organ systems failure
Multi organs system failure
Multi organs systems failure
Multi system organ failure
Multi system organs failure
Multi systems organ failure
Multi systems organs failure
Multiorgan system failure
Multiorgan systems failure
Multiorgans system failure
Multiorgans systems failure
Multiple organ system failure
Multiple organ systems failure
Multiple organs system failure
Multiple organs systems failure
Multiple system organ failure
Multiple system organs failure
Multiple systems organ failure
Multiple systems organs failure
Multisystem organ failure
Multisystem organs failure
Multisystems organ failure
Multisystems organs failure
Organ system failure
Multi-system organ failure
Myocardial infarction
MI
Myocardial infarct
Myocardium infarct
Myocardium infarction
Necrotizing soft-tissue infection
Open (or closed) head injury
Closed head trauma
Pancytopenia
Perforated gallbladder
Peritonitis
Pleural effusions
Pleura effusion
Pleural effusion
Pneumonia
Pn
Pulmonary edema
Pul ed
Pul edema
Pulmonary ed
Pulmonary embolism
Pul embolism
Pul embolus
Pulem
Pulmonary emboli
Pulmonary embolus
Pulmonary insufficiency
Pul insuf
Pul insufficiency
Puli
Pulmonary insuf
Renal failure
Renfa
Seizures
Seizure
Sepsis
Septic shock
Shock
Subarachnoid hemorrhage
Sa hem
Sa hemorrhage
Subarachnoid hem
Subdural hematoma
Subd hematoma
Thrombocytopenia
Uncal herniation
Urinary tract infection
UTI
Ventricular tachycardia
VT
Volume depletion

[EDC Developer:] The flagged causes would generate either a generic message similar to the message for the first automatic query but giving the certifier more leeway in reporting these conditions. The message to the certifier is *[Certifier:] "The condition you reported on the lowest box in Part I ("Pneumonia") usually develops as a complication of another more specific condition. Was there a specific underlying condition in this case? If so, please report it in the lowest box you use in Part I."* [EDC Developer:] The appropriate term should be used where Pneumonia is shown as an example.

[EDC Developer:] 7) Manner of death. A prompt would appear when manner is completed instructing certifier to *[Certifier:] "Check that the injury items (30a-f on the the standard certificate) have some sort of entry if the manner has been reported as accident, homicide, suicide, or perhaps undetermined."*

V. INTERFACE WITH NCHS PROCESSING SOFTWARE

[EDC Developer:] The outputs from the EDC can directly interface with the NCHS software for processing cause-of-death data (ACME, TRANSAX, MICAR, and SuperMICAR). This can be done through conversion to an ASCII flat file using the input file record format for the highest-end program that the State uses. Increasingly, the States are using all the programs starting with SuperMICAR. The following are the formats for SuperMICAR and MICAR:

SuperMICAR Input File Record Format

Additional information data from SuperMICAR is given in the same format described in the following table. All of the certificate data will be written out, followed by the AI data. A single line of three asterisks (***) will separate the certificate data from the AI. For example:

All Certificate Data

***

All Additional Information

ICD-10 SuperMICAR Input Record Format

Variable	Position	Length	Description
Data Year	01-04	4	0000-9999 (Numeric) Year of Death
State Code	05-06	2	Numeric, see Adding Certificates Using SuperMICAR
Certificate Number	07-12	6	6-digit number, padded with 0's on left
Coder Status	13	1	Numeric: Valid codes 0 – 9
Lot	14-17	4	NCHS ID Information Numeric, 0000-9999 (States commonly use "book number")
Section Number	18	1	NCHS ID Information. Numeric, 0-9
Shipment Number	19-21	3	NCHS ID Information, Alpha\Numeric (Usually month of death or month of receipt)
Receipt Date	22-27	6	NCHS ID Information. Data inserted at the time file is received by NCHS
PGM Version Control	28-31	4	Version number for the program
Manner of Death	32	1	Accident 1

			Suicide	2
			Homicide	3
			Pending Investigation	4
			Could Not Determine	5
			Self-Inflicted	6
			Natural	7
			Not Specified	blank
Place of Injury Code	33	1	Home	A
			Farm	B
			Residential Institution	C
			Military Residence	D
			Hospital	E
			School, Other Institution, Administrative Area	F
			Industrial & Construction	G
			Garage/Warehouse	H
			Trade and Service Area	I
			Mine/Quarry	J
			Street/Highway	K
			Public Recreation Area	L
			Institutional Recreation Area	M
			Sports & Athletics Area	N
			Other Building	O
			Other Specified Place	P
			Unspecified Place	Q
			Blank	blank
Activity Code	34	1	While Engaged in Sports Activity	0
			While Engaged in Leisure Activity	1
			While Working for Income	2
			While Engaged in Other types of Work	3
			While Resting, Sleeping, Eating (vital Activities)	4
			While Engaged in Other specified Activities	8
			During Unspecified Activity	9
			Not applicable	blank
Sex of Decedent	35	1	Male	M
			Female	F
			Not Classifiable	U
Month of Death	36-37	2	Numeric, 01 – 12	
			Not classifiable	99
Day of Death	38-39	2	Numeric, 01 – 31	
			Not classifiable	99

Age Unit	40	1	years < 100	0
			years >= 100	1
			months	2
			weeks	3
			days	4
			hours	5
			minutes	6
			Not classifiable	9
Number of Units	41-42	2	Numeric, age value	
Date of Injury	43-50	8	Numeric or blank if no injury reported.	
Month (2)			2 digit month	
Day (2)			2 digit day	
Year (4)			4 digit year	
			If any portion is not reported	99
Injury at Work	51	1	Yes	Y
			No	N
			Otherwise	blank
Date of Surgery	52-59	8	Numeric or blank if no Surgery reported.	
Month (2)			2 digit month	
Day (2)			2 digit day	
Year (4)			4 digit year	
			If any portion is not reported	99
Cause of Death Part I Line a	60-179	120	Literal information reported on Line a	
Interval Line Ia	180-199	20	Duration Part I Line a	
Cause of Death Part I Line b	200-319	120	Literal information reported on Line b	
Interval Line Ib	320-339	20	Duration Part I Line b	
Cause of Death Part I Line c	340-459	120	Literal information reported on Line c	
Interval Line Ic	460-479	20	Duration Part I Line c	
Cause of Death Part I Line d	480-599	120	Literal information reported on Line d	
Interval Line Id	600-619	20	Duration Part I Line d	
Other Conditions	620-739	120	Literal information reported in Part II	
Injury Description	740-859	120	Injury Description	
Place of Injury	860-899	40	Full text for place of injury	
Incomplete Data Flag	900	1	Information entered is complete	1
			Otherwise, blank	
Line Ib "Due to" Flag	901	1	"Due to" deleted by certifier	1
			Otherwise, blank	

Line Ic "Due to" Flag	902	1	"Due to" deleted by certifier 1 Otherwise, blank
Line Id "Due to" Flag	903	1	"Due to" deleted by certifier 1 Otherwise, blank
State Specific Data	904-933	30	Optional. Any information entered through PC-MICAR or SuperMICAR for state use only.
Occupation	934-963	30	Optional. Literal information reported in Occupation block.
Industry	964-993	30	Optional. Literal information reported in Industry block.
Education	994-995	2	Optional. Valid codes: 00 - 17, 99, blank.

MICAR200 Input File Record Format

Variable	Position	Length	Description
Data Year	01-04	4	0000-9999 (Numeric) Year of Death
State Code	05-06	2	Numeric, see Adding Certificates Using SuperMICAR.
Certificate Number	07-12	6	6-digit number, padded with 0's on left
Coder Status	13	1	Numeric: Valid codes 0 – 9
Lot	14-17	4	NCHS ID Information Numeric, 0001-9999 (States commonly use "book number")
Section Number	18	1	NCHS ID Information, Numeric, 0-9
Shipment Number	19-21	3	NCHS ID Information, Numeric, 00-99 (Usually month of death or month of receipt)
Receipt Date	22-27	6	NCHS ID Information… Data inserted at the time file is received by NCHS
PGM Version Control	28-31	4	SuperMICAR/PC-MICAR version number
Manner of Death	32	1	Accident 1 Suicide 2 Homicide 3 Pending Investigation 4 Could Not Determine 5 Self-Inflicted 6 Natural 7 Not Specified blank
Place of Injury Code	33	1	Home A Farm B Residential Institution C Military Residence D Hospital E School, Other Institution, Administrative Area F Industrial & Construction G Garage/Warehouse H Trade and Service Area I Mine/Quarry J Street/Highway K Public Recreation Area L Institutional Recreation Area M Sports & Athletics Area N Other Building O Other Specified Place P Unspecified Place Q Blank blank

Activity Code	34	1	While Engaged in Sports Activity 0 While Engaged in Leisure Activity 1 While Working for Income 2 While Engaged in Other types of Work 3 While Resting, Sleeping, Eating (vital activities) 4 While Engaged in Other specified Activities 8 During Unspecified Activity or not applicable blank
Sex of Decedent	35	1	Sex code: Male 1 Female 2 Not Classifiable 9
Month of Death	36-37	2	Numeric, 01 – 12 Not Classifiable 99
Day of Death	38-39	2	Numeric, 01-31 Not Classifiable 99
Age Unit	40	1	years < 100 0 years >= 100 1 months 2 weeks 3 days 4 hours 5 minutes 6 Not classifiable 9
Number of Units	41-42	2	Numeric, age value
Date of Injury Month (2) Day (2) Year (4)	43-50	8	Numeric or blank if no injury reported. 2 digit month 2 digit day 4 digit year If any portion is not reported 99
Injury at Work	51	1	Yes Y No N Otherwise blank
Date of Surgery Month (2) Day (2) Year (4)	52-59	8	Numeric or blank if no Surgery reported. 2 digit month 2 digit day 4 digit year If any portion is not reported 99
Maximum Cond. Flag	60	1	Reject record for manual review
Conditions and durations	61-360	300	Free format field, see MICAR Instruction Manual 2g
Injury Description	361-420	60	Injury description
Always Blank	421-460	40	Not used at this time
State Specific Data	461-490	30	(Optional) - Any information entered through PC-MICAR or SuperMICAR for state use only