

Cause-of-death – Background, Examples, and Common Problems

Accurate cause of death information is important

- to the public health community in evaluating and improving the health of all citizens, and
- often to the family, now and in the future, and to the person settling the decedent's estate.

The cause-of-death section consists of two parts. **Part I** is for reporting a chain of events leading directly to death, with the **immediate cause** of death (the final disease, injury, or complication directly causing death) on line a and the **underlying cause** of death (the disease or injury that initiated the chain of events that led directly and inevitably to death) on the lowest used line. **Part II** is for reporting all other significant diseases, conditions, or injuries that contributed to death but which did not result in the underlying cause of death given in **Part I**. **The cause-of-death information should be YOUR best medical OPINION.** A condition can be listed as "probable" even if it has not been definitively diagnosed.

Examples of properly completed medical certifications

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) -----> a. <u>Rupture of myocardium</u> Due to (or as a consequence of): _____</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> <p>b. <u>Acute myocardial infarction</u> Due to (or as a consequence of): _____</p> <p>c. <u>Coronary artery thrombosis</u> Due to (or as a consequence of): _____</p> <p>d. <u>Atherosclerotic coronary artery disease</u> Due to (or as a consequence of): _____</p>		<p>Minutes</p> <p><u>6 days</u></p> <p><u>5 years</u></p> <p><u>7 years</u></p>
<p>PART II. Enter other <u>significant conditions contributing to death</u> but not resulting in the underlying cause given in PART I</p> <p>Diabetes, Chronic obstructive pulmonary disease, smoking</p>		<p>33. WAS AN AUTOPSY PERFORMED? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>34. WERE AUTOPSY FINDINGS AVAILABLE TO COMPLETE THE CAUSE OF DEATH? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p>35. DID TOBACCO USE CONTRIBUTE TO DEATH? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> Probably <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 checked="" 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>

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<p>38. DATE OF INJURY (Mo/Day/Yr) (Spell Month)</p> <p>August 15, 2003</p>	<p>39. TIME OF INJURY</p> <p>Approx. 2320</p>	<p>40. PLACE OF INJURY (e.g., Decedent's home; construction site; restaurant; wooded area)</p> <p>road side near state highway</p>
<p>42. LOCATION OF INJURY: State: Missouri City or Town: near Alexandria</p> <p>Street & Number: mile marker 17 on state route 46a Apartment No.: Zip Code:</p>		<p>41. INJURY AT WORK? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>
<p>43. DESCRIBE HOW INJURY OCCURRED:</p> <p>Decedent driver of van, ran off road into tree</p>		<p>44. IF TRANSPORTATION INJURY, SPECIFY:</p> <p><input checked="" type="checkbox"/> Driver/Operator</p> <p><input type="checkbox"/> Passenger</p> <p><input type="checkbox"/> Pedestrian</p> <p><input type="checkbox"/> Other (Specify)</p>

Common problems in death certification

The **elderly decedent** should have a clear and distinct etiological sequence for cause of death, if possible. Terms such as senescence, infirmity, old age, and advanced age have little value for public health or medical research. Age is recorded elsewhere on the certificate. When a number of conditions resulted in death, the physician should choose the single sequence that, in his or her opinion, best describes the process leading to death, and place any other pertinent conditions in Part II. If after careful consideration the physician cannot determine a sequence that ends in death, then the medical examiner or coroner should be consulted about conducting an investigation or providing assistance in completing the cause of death.

The **infant decedent** should have a clear and distinct etiological sequence for cause of death, if possible. "Prematurity" should not be entered without explaining the etiology of prematurity. Maternal conditions may have initiated or affected the sequence that resulted in infant death, and such maternal causes should be reported in addition to the infant causes on the infant's death certificate (e.g., Hyaline membrane disease **due to** prematurity, 28 weeks **due to** placental abruption **due to** blunt trauma to mother's abdomen).

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.

When processes such as the following are reported, additional information about the etiology should be reported:

Abcess	Carcinomatosis	Disseminated intravascular coagulopathy	Hyponatremia	Pulmonary arrest
Abdominal hemorrhage	Cardiac arrest	Dysrhythmia	Hypotension	Pulmonary edema
Adhesions	Cardiac dysrhythmia	End-stage liver disease	Immunosuppression	Pulmonary embolism
Adult respiratory distress syndrome	Cardiomyopathy	End-stage renal disease	Increased intra cranial pressure	Pulmonary insufficiency
Acute myocardial infarction	Cardiopulmonary arrest	Epidural hematoma	Intra cranial hemorrhage	Renal failure
Altered mental status	Cellulitis	Exsanguination	Malnutrition	Respiratory arrest
Anemia	Cerebral edema	Failure to thrive	Metabolic encephalopathy	Seizures
Anoxia	Cerebrovascular accident	Fracture	Multi-organ failure	Sepsis
Anoxic encephalopathy	Cerebellar tonsillar herniation	Gangrene	Multi-system organ failure	Septic shock
Arrhythmia	Chronic bedridden state	Gastrointestinal hemorrhage	Myocardial infarction	Shock
Ascites	Cirrhosis	Heart failure	Necrotizing soft-tissue infection	Starvation
Aspiration	Coagulopathy	Hemothorax	Old age	Subdural hematoma
Atrial fibrillation	Compression fracture	Hepatic failure	Open (or closed) head injury	Subarachnoid hemorrhage
Bacteremia	Congestive heart failure	Hepatitis	Paralysis	Sudden death
Bedridden	Convulsions	Hepatorenal syndrome	Pancytopenia	Thrombocytopenia
Biliary obstruction	Decubiti	Hyperglycemia	Perforated gallbladder	Uncal herniation
Bowel obstruction	Dehydration	Hyperkalemia	Pleuritis	Urinary tract infection
Brain injury	Dementia (when not otherwise specified)	Hypovolemic shock	Pneumonia	Ventricular fibrillation
Brain stem herniation	Diarrhea			Ventricular tachycardia
Carcinogenesis				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 or natural but when the medical history is examined further may be found to be complications of an injury or poisoning (possibly occurring long ago). Such cases should be reported to the medical examiner/coroner.

Asphyxia	Epidural hematoma	Hip fracture	Pulmonary emboli	Subdural hematoma
Bolus	Exsanguination	Hyperthermia	Seizure disorder	Surgey
Choking	Fall	Hypothermia	Sepsis	Thermal burns/chemical burns
Drug or alcohol overdose/drug or alcohol abuse	Fracture	Open reduction of fracture	Subarachnoid hemorrhage	