I have no financial relationships or affiliations to disclose
OBJECTIVES

Define Cause of Death and Manner of Death.

Classify a death into the appropriate Manner.

Properly complete a Death Certificate.
Construct an appropriate cause of death statement.

Determine when a death should appropriately be reported to the Office of the Medical Examiner.

PURPOSE OF FORENSIC POSTMORTEM EXAM

Document postmortem changes
Document injuries
Document natural disease
Look for evidence of drug use/abuse
Establish an opinion as to the Cause of Death and the Manner of Death

~~~~~~ Hic locus est ubi mors gaudet succurre vitae. ~~~~~~
“Here is the place where death delights to serve the living.”
CAUSE OF DEATH

The natural disease or injury which in a natural or unbroken sequence produced death, and without which death would not have occurred

- Atherosclerotic coronary artery disease
- Gunshot wound of head with skull and brain injuries
- Acute bronchopneumonia DUE TO complications of quadriplegia DUE TO blunt impacts to torso and extremities with spine fracture and spinal cord laceration

MANNER OF DEATH

Classification system

- NATURAL
- ACCIDENT
- SUICIDE
- HOMICIDE
- UNDETERMINED

In the State of Arizona, if you are not a Medical Examiner (ie. Forensic Pathologist), you CANNOT certify a death as any manner other than Natural.
VITAL STATISTICS

Vital statistics are considered to be the foundation of public health.

Records are used by multiple organizations for a variety of purposes including the Social Security Administration for legal and administrative records, state agencies to plan and evaluate programs, as well as by researchers to look at health outcomes and population growth.

Data are evaluated to address public health issues such as improving birth outcomes and causes of death.

AZ DEATH CERTIFICATION

Physicians are responsible for providing Medical Certification of death on a death record. Medical certification shall be provided if the medical certifier has examined, treated or provided care for a person for a chronic or acute condition within eighteen months preceding that person’s death. Current care does not include services provided in connection with a single event of emergency or urgent care. The term “treated” includes prescribing medication. The medical certification is the medical certifier’s best medical opinion.

https://www.azvitals.com/Web/Logon.aspx
PROPER COMPLETION OF A DEATH CERTIFICATE

Part 1 – PROBABLE Cause of Death
• Most immediate cause on Line a
• Underlying causes on successive Lines (if applicable)
• All lines do NOT need to be completed
• Time intervals are estimates

Part 2 – Other Significant Conditions that CONTRIBUTED to death but did not result in the underlying Cause of Death listed in Part 1
• All deaths resulting from injury must be reported to the medical examiner, who decides whether to assume jurisdiction and certify the cause of death, or allow the attending physician to certify, even if the injury is listed in Part 2.
• For example, Grandma falls and breaks her leg and never returns to baseline. She dies in her nursing home 2 months later. The blunt force injury with fracture should be listed on the death certificate. This will make her manner of death NOT NATURAL. Her death should be reported to the OME.

Part 1 is for reporting a chain of events leading directly to death.
• Only one condition should be listed on each line.
• Line a must always have an entry.
• If the condition on Line a resulted from an underlying condition, put the underlying condition on Line b, and so on until the full sequence is reported.
• Time intervals may be estimates between presumed onset and death. General terms (ie. hours, days, years) are acceptable.

Part 2 is for reporting all other significant diseases, conditions, or injuries.

The cause of death information should be YOUR best medical opinion.

A condition may be listed as “probable” even if it has not been definitively diagnosed.

http://www.cdc.gov/nchs/nvss/vital_certificate_revisions.htm
Think of CAUSE OF DEATH as a noun. It should not be listed as “cardiopulmonary arrest” or “respiratory arrest”, for example. These are MECHANISMS OF DEATH (physiologic derangements). Think of mechanism of death as a verb.

If an organ system failure is listed as cause of death, ALWAYS report its etiology on the line(s) beneath it.
Example: Congestive heart failure due to aortic stenosis and hypertensive cardiovascular disease
Example: End stage liver disease due to Hepatitis C viral infection
APPROPRIATE OR NO?

Cardiac arrest
Congestive heart failure
Acute respiratory failure
Acute bronchopneumonia
Acute on chronic renal failure
Myocardial infarction
Sepsis
Diabetes mellitus
Chronic obstructive pulmonary disease
End stage renal disease
Multisystem organ failure
ARIZONA STATE STATUTE §11-593

Death when not under the current care of a health care provider as defined pursuant to section 36-301. – **18 months**

Death resulting from violence.

Unexpected or unexplained death.

Death of a person in a custodial agency as defined in section 13-4401.

Unexpected or unexplained death of an infant or child.

Death occurring in a suspicious, unusual or nonnatural manner, including death from an accident believed to be related to the deceased person's occupation or employment.

Death occurring as a result of anesthetic or surgical procedures.

Death suspected to be caused by a previously unreported or undiagnosed disease that constitutes a threat to public safety.

Death involving unidentifiable bodies.

[https://www.azleg.gov/ars/11/00593.htm](https://www.azleg.gov/ars/11/00593.htm)

OKLAHOMA STATE STATUTE §63-938

Violent deaths, whether apparently homicidal, suicidal or accidental including but not limited to deaths due to thermal, chemical, electrical or radiation injury and deaths due to criminal abortions, whether self-induced or not.

Deaths under suspicious, unusual or unnatural means.

Deaths related to disease which might constitute a threat to public health.

Deaths unattended by a licensed medical or osteopathic physician for fatal or potentially fatal illness. – **90 days**

Deaths of persons after unexplained coma.

Deaths that are medically **unexpected** and that occur during a therapeutic procedure.

Deaths of any inmate occurring in any place of penal incarceration.

Deaths of persons whose bodies are to be cremated, buried at sea, transported out of state or otherwise made ultimately unavailable for pathological study.
62yF, died in hospital – came to OME attention as a cremation permit request from the funeral home

**Principal Final Discharge Diagnosis:**
Death secondary to respiratory failure secondary to degenerative neurologic disease.

**Associated Final Discharge Diagnosis:**
2. Hypertension.

**Brief Hospital Summary:**
The patient was a 62-year-old female who received her primary care from Dr. [Redacted]. She had a long history of traumatic brain injury and a progressive neurodegenerative dementia. She was admitted to [Redacted] Medical Center here [Redacted] after being found down and unresponsive. Ultimately, she was seen by neurocritical care and her condition continued to worsen. She was placed on comfort measures. She passed away without apparent discomfort.

**Problem List/Past Medical History**
- Past MVA causing TBI
  - HO seizure disorder post MVA
  - Hypothyroidism

**History of Present Illness**
Pt with HO of TBI from past MVA, 1 reported seizure after accident treated with daily Keppra, changed yesterday to Risperidol, Hypothyroidism and Depression reports to ER tonight from [Redacted]. Pt is intubated, thereby husband reports that they were home and she was standing in the kitchen, he walked away to the bedroom and seconds later heard and “thud” found pt on the floor so he got to her to sit her up and she started having what was described as “tonic clonic seizure.” There was no reported biting of the tongue, choking, incontinence noted. Ambulance was called and pt was taken to [Redacted]. In route pt was intubated 2/2 fear of compromised protection of airway. Upon arrival to hospital potassium was found to be 2.6. KCl was started, repeat chem Potassium was 2.5- oral potassium ordered. Lactic acid elevated. CPK WNL. Troponin WNL. All vitals remained stable. Pt to ICU now.

Declined in hospital and died 8 days after admission.

Should this death be reported to the OME? **YES**
Forensic Autopsy Standards

Standard A2 Initial Inquiry

Medicolegal death investigators assess each death reported to the office to determine whether it falls under their jurisdiction as outlined by statutes, rules, and regulations. The categories below are those which should receive further investigations to protect the public safety and health, and determine the cause and manner of death.

The forensic pathologist or representative shall investigate all:

A2.1 deaths due to violence.
A2.2 known or suspected non-natural deaths.
A2.3 unexpected or unexplained deaths when in apparent good health.
A2.4 unexpected or unexplained deaths of infants and children.
A2.5 deaths occurring under unusual or suspicious circumstances.
A2.6 deaths of persons in custody.
A2.7 deaths known or suspected to be caused by diseases constituting a threat to public health.
A2.8 deaths of persons not under the care of a physician.

Standard B3 Selecting Deaths Requiring Forensic Autopsies

The forensic pathologist shall perform a forensic autopsy when:

B3.1 the death is known or suspected to have been caused by apparent criminal violence.
B3.2 the death is unexpected and unexplained in an infant or child.
B3.3 the death is associated with police action.
B3.4 the death is apparently non-natural and in custody of a local, state, or federal institution.
B3.5 the death is due to acute workplace injury.
B3.6 the death is caused by apparent electrocution.
B3.7 the death is by apparent intoxication by alcohol, drugs, or poison, unless a significant interval has passed, and the medical findings and absence of trauma are well documented.
Standard B3  Selecting Deaths Requiring Forensic Autopsies

The forensic pathologist shall perform a forensic autopsy when:

B3.8 the death is caused by unwitnessed or suspected drowning.
B3.9 the body is unidentified and the autopsy may aid in identification.
B3.10 the body is skeletonized.
B3.11 the body is charred.
B3.12 the forensic pathologist deems a forensic autopsy is necessary to determine cause or manner of death, or document injuries/disease, or collect evidence.
B3.13 the deceased is involved in a motor vehicle incident and an autopsy is necessary to document injuries and/or determine the cause of death.

REFER TO OME?

An 82-year-old man is hospitalized following a mechanical fall at home resulting in nasal bone fractures and C1-C2 cervical spine fractures. He underwent surgical repair of the fractures. Hospital course was complicated by development of MRSA pneumonia, dysphagia, and metabolic encephalopathy. He suddenly coded on hospital day 19 and was unable to be resuscitated.
A 48-year-old man with an extensive history of coronary artery atherosclerosis, CABG x 3, and DM arrives at your office for a scheduled visit 2 weeks after discharge from the hospital where he was admitted for chest pain. While in your office, he suddenly collapses. CPR is begun and EMS arrives within minutes. EKG shows V-tach and suggests acute anterior-lateral wall MI. EMS transports him to the hospital where resuscitative efforts are unsuccessful. There is no history of drug or alcohol abuse. No trauma is noted.

COD: Atherosclerotic coronary artery disease
Manner of Death: NATURAL
Other significant conditions: Diabetes mellitus
A 48-year-old man with an extensive history of coronary artery atherosclerosis, CABG x 3, and DM arrives at the emergency department by private vehicle. EKG shows V-tach and suggests acute anterior-lateral wall MI. Resuscitative efforts are unsuccessful. There is no history of drug or alcohol abuse. No trauma is noted.

Cause of Death?  COD: Atherosclerotic coronary artery disease
Manner of Death?  NATURAL
Notify OME? Other significant conditions: Diabetes mellitus

A 48-year-old man with no known medical history arrives at the emergency department by private vehicle. EKG shows V-tach and suggests acute anterior-lateral wall MI. He codes in the cath lab. Resuscitative efforts are unsuccessful. There is no history of drug or alcohol abuse. No trauma is noted.

Cause of Death?  COD: Atherosclerotic cardiovascular disease
Manner of Death?  NATURAL
Notify OME?
A 48-year-old man with no known medical history arrives at the emergency department by private vehicle. EKG shows V-tach and suggests acute anterior-lateral wall MI. Urine drug screen is positive for methamphetamine. Resuscitative efforts are unsuccessful. No trauma is noted.

Cause of Death?
Manner of Death? NOT
Notify OME? NATURAL

A 48-year-old man with a history of morbid obesity and hypertension is found dead at home approximately 4 hours after he was last known alive. No trauma is noted. There is no history of drug or alcohol abuse. His last visit to your office was 6 weeks ago.

Cause of Death? COD: Hypertensive cardiovascular disease
Manner of Death? OSC: Morbid obesity
Notify OME? NATURAL
A 48-year-old man with a history of morbid obesity and hypertension is found dead at home approximately 4 hours after he was last known alive. No trauma is noted. There is no history of drug or alcohol abuse. His last visit to your office was 19 months ago.

Cause of Death?
Manner of Death?
Notify OME? NATURAL, but unattended

A 12-year-old boy died at the hospital after a 6-month stay in which he fought several episodes of hospital-acquired pneumonia, developed multisystem organ failure, and was declared clinically brain dead, following admission for a motor vehicle accident. He had been a passenger in the rear seat of a vehicle that was struck from behind and was admitted as unresponsive.

Cause of Death?
Manner of Death? NOT NATURAL
Notify OME?
Death Certification

PART 1

a. Immediate Cause: ANOXIC ENCEPHALOPATHY

b. Due to or as a consequence of MULTISYSTEM ORGAN FAILURE

c. Due to or as a consequence of BLUNT IMPACTS TO HEAD WITH TRAUMATIC BRAIN INJURY

Other significant conditions contributing to death but not resulting in the underlying cause

PART 2

MANNER: ACCIDENT

A 27-year-old man with a history of malaria arrives at the emergency department by private vehicle. His wife says they were driving to dinner, and the man started seizing in the car. Resuscitative efforts are unsuccessful. There is no history of drug or alcohol abuse. No trauma is noted.

Cause of Death? Vector-borne disease
Manner of Death? NATURAL
Notify OME?

COD: Malaria
A 4-year-old girl with no documented medical history arrives at the emergency department by private vehicle. Her mother reports she was stung by a scorpion. She is vomiting and in respiratory distress on arrival. Resuscitative efforts are unsuccessful.

Cause of Death?  
Manner of Death?  
Notify OME?  

**Toxic envenomation**

**COD:** Toxic envenomation (scorpion sting)

A 23-year-old woman died from complications of pneumonia at the hospital after a long-term decline. She came to the hospital from a nursing home where her diagnosis was anoxic brain injury, status post cardiopulmonary arrest with resuscitation. She had been found unresponsive at home 3 years ago.

**What else do you need to know?**

Cause of death?  
Manner of death?  
Notify OME?
Three years ago she was found unresponsive at home with a tourniquet around her arm and drug paraphernalia (spoon, needles) at the scene. She had a history of accidental HEROIN overdose twice the previous year and a long history of polysubstance abuse.

 Cause of death?  
 Manner of death?  
 Notify OME?  

NOT  
NATURAL

**Death Certification**

<table>
<thead>
<tr>
<th>PART 1</th>
<th>PART 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>P A R T</td>
<td></td>
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<tr>
<td>P</td>
<td>a. Immediate Cause:</td>
</tr>
<tr>
<td></td>
<td>b. Due to or as a consequence of</td>
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<td></td>
<td>c. Due to or as a consequence of</td>
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<tr>
<td>1</td>
<td></td>
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<tr>
<td></td>
<td>Other significant conditions contributing to death but not resulting in the underlying cause</td>
</tr>
</tbody>
</table>

MANNER: **ACCIDENT**
Three years ago she was found unresponsive at home approximately 3 hours after she was last known alive. Medical history includes hypertension and epilepsy, with frequent seizures resulting from a head injury when she was 7 years old and an older neighbor child hit her in the head with a thrown rock.

Cause of death?
Manner of death?  NOT
Notify OME?  NOT NATURAL

Death Certification

<table>
<thead>
<tr>
<th>PART 1</th>
<th>PART 2</th>
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<tbody>
<tr>
<td>P A R T</td>
<td>Other significant conditions contributing to death but not resulting in the underlying cause</td>
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<tr>
<td>a. Immediate Cause:</td>
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<tr>
<td>b. Due to or as a consequence of</td>
<td></td>
</tr>
<tr>
<td>c. Due to or as a consequence of</td>
<td></td>
</tr>
<tr>
<td>PNEUMONIA</td>
<td>ANOXIC ENCEPHALOPATHY</td>
</tr>
<tr>
<td>SEIZURE DISORDER SECONDARY TO BLUNT HEAD TRAUMA</td>
<td></td>
</tr>
</tbody>
</table>

MANNER: HOMICIDE
Three years ago she was found unresponsive at home approximately 3 hours after she was last known alive. Medical history includes hypertension and epilepsy, with frequent seizures since birth, including multiple hospitalizations for status epilepticus.

Cause of death?

Manner of death?

Notify OME? Natural
## ERRORS IN DEATH CERTIFICATION

### COD & CCOD BLOOPERS

<table>
<thead>
<tr>
<th>PART</th>
<th>Immediate Cause:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>CEREBRAL HEMORRHOIDS</td>
</tr>
</tbody>
</table>

- Due to or as a consequence of
- Due to or as a consequence of

### PART 2

Other significant conditions contributing to death but not resulting in the underlying cause

### MANNER:
### COD & CCOD BLOOPERS

**PART 1**

<table>
<thead>
<tr>
<th></th>
<th>a. Immediate Cause:</th>
<th></th>
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<tbody>
<tr>
<td></td>
<td><strong>CANCER OF THE SEMI COLON</strong></td>
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<th>b. Due to or as a consequence of</th>
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<th>c. Due to or as a consequence of</th>
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<th></th>
<th>Other significant conditions contributing to death but not resulting in the underlying cause</th>
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</table>

**PART 2**

**MANNER:**

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### COD & CCOD BLOOPERS

**PART 1**

<table>
<thead>
<tr>
<th></th>
<th>a. Immediate Cause:</th>
<th></th>
</tr>
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<tbody>
<tr>
<td></td>
<td><strong>CARDIAC ARREST</strong></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>b. Due to or as a consequence of</th>
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<tbody>
<tr>
<td></td>
<td><strong>RESPIRATORY ARREST</strong></td>
<td></td>
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</table>

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<thead>
<tr>
<th></th>
<th>c. Due to or as a consequence of</th>
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<tbody>
<tr>
<td></td>
<td><strong>UROSEPSIS/CHRONIC BUTTOCKS</strong></td>
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</table>

<table>
<thead>
<tr>
<th></th>
<th>Other significant conditions contributing to death but not resulting in the underlying cause</th>
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</tbody>
</table>

**PART 2**

**MANNER:**

---
**COD & CCOD BLOOPERS**

**PART 1**

<table>
<thead>
<tr>
<th>P</th>
<th>A</th>
<th>Immediate Cause:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>VULVULAR HEART DISEASE</td>
<td></td>
</tr>
<tr>
<td></td>
<td>b. Due to or as a consequence of</td>
<td></td>
</tr>
<tr>
<td></td>
<td>c. Due to or as a consequence of</td>
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</tr>
<tr>
<td>T</td>
<td>Other significant conditions contributing to death but not resulting in the underlying cause</td>
<td></td>
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</tbody>
</table>

**PART 2**

MANNER:

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**COD & CCOD BLOOPERS**

**PART 1**

<table>
<thead>
<tr>
<th>P</th>
<th>A</th>
<th>Immediate Cause:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Disease Progression</td>
<td></td>
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<tr>
<td></td>
<td>b. Due to or as a consequence of</td>
<td></td>
</tr>
<tr>
<td></td>
<td>c. Due to or as a consequence of</td>
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</tr>
<tr>
<td>T</td>
<td>Other significant conditions contributing to death but not resulting in the underlying cause</td>
<td></td>
</tr>
<tr>
<td></td>
<td>TRANSFER TO THE VA HOSPITAL.</td>
<td></td>
</tr>
</tbody>
</table>

**PART 2**

MANNER:
## COD & CCOD BLOOPERS

### PART 1

<table>
<thead>
<tr>
<th>Immediate Cause</th>
<th>Due to or as a consequence of</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A</strong> PNEUMONIA</td>
<td></td>
</tr>
<tr>
<td><strong>b.</strong> PERITONITIS</td>
<td></td>
</tr>
<tr>
<td><strong>c.</strong> HEMORRHAGIC PERITONITIS</td>
<td></td>
</tr>
</tbody>
</table>

Other significant conditions contributing to death but not resulting in the underlying cause:

**SHAKEN BABY SYNDROME**

### MANNER:

---

## COD & CCOD BLOOPERS

### PART 1

<table>
<thead>
<tr>
<th>Immediate Cause</th>
<th>Due to or as a consequence of</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A</strong> SEPTIC SHOCK</td>
<td></td>
</tr>
<tr>
<td><strong>b.</strong> PERITONITIS</td>
<td></td>
</tr>
<tr>
<td><strong>c.</strong> HEMORRHAGIC PERITONITIS</td>
<td></td>
</tr>
</tbody>
</table>

Other significant conditions contributing to death but not resulting in the underlying cause:

**SHAKEN BABY SYNDROME**

### MANNER:
### COD & CCOD BLOOPERS

**PART 1**

| P | a. Immediate Cause: | Stopped breathing |
| A | b. Due to or as a consequence of | Respiratory failure |
| R | c. Due to or as a consequence of | Other significant conditions contributing to death but not resulting in the underlying cause |

**PART 2**

| MANNER: |

### COD & CCOD BLOOPERS

**PART 1**

| P | a. Immediate Cause: | Diastatic heart failure |
| A | b. Due to or as a consequence of | Hypertension, Diabetes, Atrial fibrilation |
| R | c. Due to or as a consequence of | Not related to surgery |

**PART 2**

| MANNER: |
# COD & CCOD BLOOPERS

<table>
<thead>
<tr>
<th>PART 1</th>
<th>PART 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Immediate Cause:</td>
<td>Other significant conditions contributing to death but not resulting in the underlying cause</td>
</tr>
<tr>
<td><strong>Organ Recovery</strong></td>
<td></td>
</tr>
<tr>
<td>b. Due to or as a consequence of</td>
<td></td>
</tr>
<tr>
<td>c. Due to or as a consequence of</td>
<td></td>
</tr>
</tbody>
</table>

**MANNER:**

---

[Image of a medical form with red corrections]
Part I.
Line a. Blunt impact to head with skull fracture and subdural hematoma

Part II.
Metabolic acidosis, Spontaneous upper gastrointestinal hemorrhage
Part I.
Line a. Complications of thermal injuries

Part II.
Congestive heart failure DUE TO ???
Alzheimer Disease

Manner of Death – ACCIDENT vs HOMICIDE vs SUICIDE

Truck driver who was killed when his truck wrecked - presumably he fell asleep?

Part I.
Line a. Multiple blunt impact injuries

Manner of Death - ACCIDENT
Part I.
Line a. Adult failure to thrive

Part II.
Blunt impact to hip with femur fracture

Manner of Death - ACCIDENT

<table>
<thead>
<tr>
<th>COD: Malignant neoplasm of lung</th>
</tr>
</thead>
<tbody>
<tr>
<td>OSC: Chronic obstructive pulmonary disease</td>
</tr>
</tbody>
</table>
What’s wrong with this death certificate?

[Image of a death certificate with highlighted areas showing errors]

What’s wrong with this death certificate?

[Image of another death certificate with highlighted areas showing errors]
COD: End stage renal disease due to diabetes mellitus

OSC: Necrotizing fasciitis, Osteomyelitis
### Cause of Death

**PART I**

**Immediate Cause (Final disease or condition resulting in death)**

<table>
<thead>
<tr>
<th>Line</th>
<th>Description</th>
<th>Onset to Death</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>MULTIPLE SCLEROSIS</td>
<td>12/14/2017</td>
</tr>
<tr>
<td>b.</td>
<td>HEART FAILURE</td>
<td>12/14/2017</td>
</tr>
<tr>
<td>c.</td>
<td>HYPERTENSION</td>
<td>12/14/2017</td>
</tr>
<tr>
<td>d.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**PART II**

**Other significant conditions contributing to death but not resulting in the underlying cause given in PART I**

<table>
<thead>
<tr>
<th>Line</th>
<th>Description</th>
<th>Onset to Death</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**NCHS Recommendations for Entry of Cause of Death**

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

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.

---

### Cause of Death

**PART I**

**Immediate Cause (Final disease or condition resulting in death)**

<table>
<thead>
<tr>
<th>Line</th>
<th>Description</th>
<th>Onset to Death</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>Acute on Chronic Diabetic Heart Failure</td>
<td>1 hour</td>
</tr>
<tr>
<td>b.</td>
<td>Myocardial Infarction</td>
<td>9 weeks</td>
</tr>
<tr>
<td>c.</td>
<td>Paroxysmal Atrial Fibrillation</td>
<td>9 weeks</td>
</tr>
<tr>
<td>d.</td>
<td>Insulin Dependent Type 2 Diabetes Mellitus with Chronic Kidney Disease and Neuropathy</td>
<td>9 years</td>
</tr>
</tbody>
</table>

**PART II**

**Other significant conditions contributing to death but not resulting in the underlying cause given in PART I**

<table>
<thead>
<tr>
<th>Line</th>
<th>Description</th>
<th>Onset to Death</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>HTN, Pulmonary Fibrosis, Coronary Artery Disease, COPD, Other Secondary</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pulmonary HTN, Dependence on Supp Oxygen</td>
<td></td>
</tr>
</tbody>
</table>
### PROBLEMS?

**Cause of Death**

**NCHS Recommendations for Entry of Cause of Death**

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

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.

<table>
<thead>
<tr>
<th>Cause of Death</th>
<th>Approximate Interval Onset to Death</th>
</tr>
</thead>
<tbody>
<tr>
<td>PART I</td>
<td></td>
</tr>
<tr>
<td>Line a</td>
<td>Immediate Cause (Final disease or condition resulting in death)</td>
</tr>
<tr>
<td></td>
<td>coronary artery disease</td>
</tr>
<tr>
<td>Line b</td>
<td>Due to (or as a consequence of):</td>
</tr>
<tr>
<td></td>
<td>hyperlipidemia</td>
</tr>
<tr>
<td>Line c</td>
<td>Due to (or as a consequence of):</td>
</tr>
<tr>
<td></td>
<td>hypertension</td>
</tr>
<tr>
<td>Line d</td>
<td>Due to (or as a consequence of):</td>
</tr>
<tr>
<td>PART II</td>
<td></td>
</tr>
<tr>
<td>Other significant conditions contributing to death but not resulting in the underlying cause given in PART I.</td>
<td></td>
</tr>
</tbody>
</table>

- Parkinson's disease

Continue to enter additional causes, if necessary, until all causes have been listed. Additional lines may be added if necessary.
PROBLEMS?

Cause of Death

NCHS Recommendations for Entry of Cause of Death

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

Sequentially list conditions, if any, leading to the cause listed on line 1a. Enter the UNDERLYING CAUSE (disease or injury that initiated the events resulting in death) LAST.

<table>
<thead>
<tr>
<th>Cause of Death</th>
<th>Approximate Interval Onset to Death</th>
</tr>
</thead>
<tbody>
<tr>
<td>PART I</td>
<td></td>
</tr>
<tr>
<td>Line a</td>
<td>Hemorrhagic shock</td>
</tr>
<tr>
<td>Line b</td>
<td>Acute gastrointestinal liver</td>
</tr>
<tr>
<td>Line c</td>
<td>Bleed from Esophageal varices</td>
</tr>
<tr>
<td>Line d</td>
<td>Cirrhosis with Portal Hypertension</td>
</tr>
<tr>
<td>PART II</td>
<td>Other significant conditions</td>
</tr>
</tbody>
</table>

PROPER CERTIFICATION

Cause of Death

NCHS Recommendations for Entry of Cause of Death

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

Sequentially list conditions, if any, leading to the cause listed on line 1a. Enter the UNDERLYING CAUSE (disease or injury that initiated the events resulting in death) LAST.

<table>
<thead>
<tr>
<th>Cause of Death</th>
<th>Approximate Interval Onset to Death</th>
</tr>
</thead>
<tbody>
<tr>
<td>PART I</td>
<td></td>
</tr>
<tr>
<td>Line a</td>
<td>Disseminated coccidiomycosis</td>
</tr>
<tr>
<td>Line b</td>
<td>Acquired Immunodeficiency Syndrome</td>
</tr>
<tr>
<td>Line c</td>
<td></td>
</tr>
<tr>
<td>Line d</td>
<td>Due to (or as a consequence of)</td>
</tr>
</tbody>
</table>

PART II Other significant conditions contributing to death but not resulting in the underlying cause given in PART I.
### PROPER CERTIFICATION

**Cause of Death**

**NCHS Recommendations for Entry of Cause of Death**

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

<table>
<thead>
<tr>
<th>Part</th>
<th>Line</th>
<th>Immediate Cause (Final disease or condition resulting in death)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>a</td>
<td>Respiratory Failure</td>
</tr>
<tr>
<td></td>
<td>b</td>
<td>Metastatic squamous cell lung carcinoma</td>
</tr>
<tr>
<td></td>
<td>c</td>
<td>Due to (or as a consequence of):</td>
</tr>
<tr>
<td></td>
<td>d</td>
<td>Due to (or as a consequence of):</td>
</tr>
</tbody>
</table>

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

---

**Validate Page** | **Next** | **Clear** | **Save** | **Return**
SO A DEATH IS REFERRED TO THE MEDICAL EXAMINER

Scene investigation

What happens to the patient?

• (Recovery of vital organs for transplant)
• (Recovery of bone/tissue/corneas for donation)
• Documentation of arrival at facility
• Radiographic imaging
• External examination
• Internal examination
• Microscopic examination
• Toxicology testing
• Miscellaneous testing – cultures, metabolic screen, evaluation of implanted cardiac pacemaker, etc.

Do NOT remove medical therapy

If the patient dies upon arrival to the E.D. or soon after in the O.R., do NOT clean the gunshot wounds

Try not to cut through gunshot wounds or sharp force injuries when implementing life-saving measures
POSTMORTEM CHANGES

Algor mortis
Rigor mortis
Livor mortis
Decomposition

RIGOR MORTIS

Begins w/in 2 hrs after death
Fully developed in ~6-12 hours
Persists ~36-48 hours
LIVOR MORTIS

Onset as early as 30 min after death

Fixed after ~ 12-18 hours
INJURIES

- Blunt force injuries
- Sharp force injuries
- Gunshot wound injuries
Thermal injuries

- Extent determined by “rule of nines”
- Total body surface = 100%
  - Head = 9%
  - Upper extremities each = 9%
  - Front torso = 18%
  - Back torso = 18%
  - Lower extremities each = 18%
  - Groin = 1%

FIRE DEATHS

Most important issue in fire death investigation is determining if the person died before or during the fire

Most deaths occurring during a fire are due to carbon monoxide poisoning and smoke and soot inhalation
FIRE INJURIES

Presence of carbon monoxide means person alive and breathing at time of fire

- CO level of 40% is typical but may be as low as 25% in elderly, debilitated, or lung disease
- CO baseline may be up to 8-10% in smokers

FIRE INJURIES

Soot in upper airways (trachea and bronchi) means person alive and breathing during fire
WHAT IF THE OME DECLINES JURISDICTION?

The treating physician will sign the death certificate.

The body is released to the family.

If the family requests an autopsy on a patient that does not fall under our jurisdiction, a hospital pathologist can provide that service.

- Consent must be signed by next of kin
OBJECTIVES

Define Cause of Death and Manner of Death.

Classify a death into the appropriate Manner.

Properly complete a Death Certificate.

Construct an appropriate cause of death statement.

Determine when a death should appropriately be reported to the Office of the Medical Examiner.

thank you for your attention