Goals of the Presentation
After the presentation, attendees will be able to:

- Understand how death certificate information is processed and used
- Apply specific concepts to write cause-of-death statements of good quality
- Properly complete the certifier's section of the death certificate
- Appropriately use mechanisms of death when writing cause-of-death statements
- Report appropriate cases to the coroner

Lecture Information
- This handout was designed for a two-hour presentation.
- An abbreviated one-hour presentation has been prepared.
- The slides included in the one-hour presentation are indicated with □ in the bottom left corner of the slide, as shown below.
- Other slides are provided in the handout as an additional source of information

The Problem....
1. Death Occurs
2. A Death Certificate is needed

The Response.......
What's this death certificate thing?

The Outcome.......
Cardiac Arrest

Part I
Date:

Part II

test
Another common one...

Sepsis

Therefore......

Certifiers should produce professional quality Death Certifications

It's Axiomatic......

- Physicians, Coroners, and Coroner's Pathologists certify deaths (they are certifiers)
- These certifiers are professionals
- Professionals should produce professional work products
- The Death Certificate is a work product

Also to be considered...

- Ethical responsibility
- End-of-Life Care
- May be a legal duty

The duty should not be shirked

Educational Resources


Educational Resources

Laminated Cards
Disclaimer: The CAP derives revenue from sales but Hanslick does not.

Origin of the Death Certificate

World Health Organization (WHO)
192 Member "States"
The USA is one of the member "States"
Signatory States must follow the WHO rules

State Vital Statistics Offices

Rules

CDC-NCHS

Driving the System:

National data collected through Cooperative Agreements
Between States and NCHS (Part of CDC)
Why Accuracy is Important

- Family
- Research
- Funding
- Statistics
- Programs

Responsibilities

- **Funeral Director**
  - Completes parts of the death certificate
  - Ensures certifier does his/her part
  - Files certificate with Registrar

- **Certifier of Death**
  - Completes cause of death section
  - Responds to queries from Registrar
  - Supplements or amendments, as needed

- **Registrars**
  - Conducts queries
  - Registers and assigns state file number
  - Forwards data to NCHS

- **CDC/NCHS**
  - Works with and assists states
  - Compiles data and generates reports
  - Conducts research
  - Provides National leadership

Nebraska Mortality Data [Year 2003]

- All Deaths: 15,439
- Natural Deaths: 14,406
- Non-Natural: 933 (6%)

- MVA: 306
- Suicide: 175
- Acc Falls: 121
- Homicide: 63
- Acc Poisoning: 35
- Acc Drowning: 21
- Acc Fires: 16
- Acc Guns: 5
- Other Accident: 191

Of 2,443,668 deaths in US, about 15,466 (0.6%) occur in Nebraska
Death rate 889/100,000 compared with 840/100,000 national average
Nebraska Mortality Data [Year 2003]

- Heart disease 3,948
- Cancer 3,331
- Cerebrovascular 1,090
- Chronic Lung Disease 785
- Accidents 695
- Alzheimer's 461
- Diabetes 406
- Pneumonia 404

Most death certifications involve these causes

Nebraska Infant Mortality Data [Year 2003]

- Total Deaths 141
- Neonates 96
- Post-Neonates 45

- Low Birth weight 88
- Birth defects 36
- SIDS 24

Nebraska’s Death Certificate is based on a U.S. Standard Certificate of Death 2003 Version

The Cause-of-Death Statement

Part I

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>Most recent condition</td>
</tr>
<tr>
<td>b.</td>
<td>An older condition</td>
</tr>
<tr>
<td>c.</td>
<td>An even older condition</td>
</tr>
<tr>
<td>d.</td>
<td>Oldest Condition (what started it all)</td>
</tr>
</tbody>
</table>

Part II

Something that contributed to death but did not cause the ones listed above
### Terminology

<table>
<thead>
<tr>
<th>Immediate Cause</th>
<th>Intermediary Cause</th>
<th>Underlying Cause</th>
</tr>
</thead>
<tbody>
<tr>
<td>Systemic sepsis</td>
<td>Infected decubitus ulcers</td>
<td>Bedridden state from previous stroke</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cerebral artery arteriosclerosis</td>
</tr>
</tbody>
</table>

Next:

| Part II OSC: Insulin-dependent diabetes mellitus |

---

### You can use all 4 lines in Part I...

<table>
<thead>
<tr>
<th>Immediate Cause</th>
<th>Intermediary Cause</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Peritonitis</td>
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<td>Bowel obstruction</td>
</tr>
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<td></td>
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</tr>
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Next:

| Part II OSC: |

---

### Or 3, if appropriate.....

<table>
<thead>
<tr>
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</tr>
</thead>
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| Part II OSC: |

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### Or 2, if appropriate......

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</thead>
<tbody>
<tr>
<td>Acute myocardial infarction</td>
<td>Coronary artery atherosclerosis</td>
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</tr>
</tbody>
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Next:

| Part II OSC: |

---

### A Good One.....

<table>
<thead>
<tr>
<th>Part I</th>
<th>Part II OSC:</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Systemic sepsis</td>
<td>Insulin-dependent diabetes mellitus</td>
</tr>
<tr>
<td>b. Infected decubitus ulcers</td>
<td></td>
</tr>
<tr>
<td>c. Bedridden state from previous stroke</td>
<td></td>
</tr>
<tr>
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| Part II OSC: |

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</tr>
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</table>

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| Part II OSC: |

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<th>Intermediary Cause</th>
<th>Underlying Cause</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute myocardial infarction</td>
<td>Coronary artery atherosclerosis</td>
<td></td>
</tr>
</tbody>
</table>

Next:

| Part II OSC: |

---
Or just one, if required...

Part I
a. Metastatic adenocarcinoma of prostate
b. Due to:
C. Due to:
d. Due to:

Part II
This is a “Single Line Part I Format”

The Underlying Cause.....

Part I
a. Acute myocardial infarction
b. Due to: Coronary artery atherosclerosis
c. Due to:
d. Due to:

It is Underlying in 2 respects:
- Position in Part I
- Position in causal sequence

It is the “Bottom Line” of both

One condition per line in Part I

Part I
a. Subarachnoid hemorrhage
b. Due to: Ruptured berry aneurysm
c. Due to:
d. Due to:

Part II

Part II can have multiple conditions listed

Part I
a. Peritonitis
b. Due to: Perforated gastric peptic ulcer
c. Due to: Helicobacter pylori infection
d. Due to:

Part II
Chronic gastritis, chronic alcohol use

No Laundry Lists Please

Limit it to conditions that actually caused or contributed to death.

Part I
a. Right middle cerebral infarct
b. Due to: Generalized atherosclerosis
c. Due to:
d. Due to:

Part II
Ischemic heart disease; diabetes mellitus
Let's try doing one....

HISTORY:
A 56 year old male with hypertension is admitted and diagnosed with acute MI. 4 days later he's found dead in his hospital bed. Autopsy shows cardiac tamponade, ruptured MI, recent thrombus in the LAD, > 90% stenosis by ASCVD, and a 500 gram heart with LVH.

Another way to do it....

<table>
<thead>
<tr>
<th>Part I</th>
<th>Part II</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Cardiac tamponade</td>
<td>Essential hypertension with cardiomegaly</td>
</tr>
<tr>
<td>b. Due to: Ruptured myocardial infarct</td>
<td></td>
</tr>
<tr>
<td>c. Due to: Atherosclerotic coronary disease</td>
<td></td>
</tr>
<tr>
<td>d. Due to:</td>
<td></td>
</tr>
</tbody>
</table>

There is often more than one acceptable way

Yet another way to do it....

<table>
<thead>
<tr>
<th>Part I</th>
<th>Part II</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Ruptured myocardial infarct</td>
<td>Essential hypertension</td>
</tr>
<tr>
<td>b. Due to: Atherosclerotic coronary disease</td>
<td></td>
</tr>
<tr>
<td>c.</td>
<td></td>
</tr>
<tr>
<td>d. Due to:</td>
<td></td>
</tr>
</tbody>
</table>

There is often more than one acceptable way

What Happens to Your Cause-of-Death Statement?

<table>
<thead>
<tr>
<th>Part I</th>
<th>Part II</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hepatic cirrhosis (K70.3)</td>
<td>Chronic alcoholism (F10.2)</td>
</tr>
<tr>
<td>Due to:</td>
<td>Both recorded for &quot;Multiple Cause&quot; Mortality Data</td>
</tr>
</tbody>
</table>

Underlying Cause of Death For "Single Cause" Mortality Data
**General Rules for ICD Coding**

- If two or more conditions are reported on a line in Part I, the first one mentioned will be given priority, usually.
- Specific entities are usually given preference over nonspecific ones.
- Keep these things in mind, but do not let these procedures dictate how you certify the death.

**Example**

| Part I                                      | Part II  
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Hypertension and coronary artery disease</td>
<td><strong>OCC:</strong></td>
</tr>
<tr>
<td>b. Due to:</td>
<td></td>
</tr>
<tr>
<td>c. Due to:</td>
<td></td>
</tr>
<tr>
<td>d. Due to:</td>
<td></td>
</tr>
</tbody>
</table>

Preference is usually given to the first condition reported.
It's better to report the most important in Part I and the lesser important in Part II.

**Another Example**

- **Part I**
  - a. Congestive Heart Failure
  - b. Due to:
  - c. Due to:
  - d. Due to:

- **Part II**
  - **OCC:** Coronary artery atherosclerosis

Preference is usually given to the most specific condition.
It would be better to report the coronary disease on Line B in Part I.

**The Cause of Death Statement:**

- Is your best opinion
- Is not set in stone
- Can be changed if needed
- Poses little legal risk

**General Rules**

- Always try to include a specific underlying cause of death.
- Try to include the immediate cause, when possible.
- Try to include intermediary causes when reasonably known.
- Try to report only one condition per line in Part I.

**Let's try another one....**

**HISTORY:**

While cleaning his gutters, a 65 year old man falls off his ladder and breaks his hip. Surgical hip repair is performed. One week later, he has a massive pulmonary embolism and dies.
Coroner Cases
- Criminal means or violence.
- Homicide or suicide.
- By drowning.
- If sudden or unusual.
- If drug-related.

Coroner Cases (cont’d)
- If sudden infant death syndrome is suspected.
- When involving the sudden and unexplained death of a child between the ages of 1 week and 3 years, and when neglect, violence, or any unlawful means are possible.

Other Nebraska Coroner Issues
- The County Attorney is the Coroner.
- The Coroner appoints Coroner Physicians to assist and certify deaths.
- The Coroner's Physician ensures performance of autopsies when requested by the coroner.
- Drivers and Pedestrians 16 and older must be examined and have tox tests if they die within 4 hours.
- Autopsies are required in certain cases (less than age 19, death is sudden and not due to disease or accident [SIDS]).

Problems arise when....

* Call the coroner!!

Many seemingly "Natural" deaths are not Natural and the Coroner should at least be notified to determine investigation and certification strategy.
Typical Problem Cases
- A fall with hip fracture or head injury
- Post-traumatic seizure disorder
- Complications of paralysis from an old injury
- Subdural, subarachnoid, or epidural hemorrhage that may have been due to injury
- Pulmonary embolism from immobility due to an injury
- Pneumonia as a complication of injury or poisoning

“Unnatural” and Medical Care
Medical problem:  
- Fractured hip
- Pulmonary emboli
- Seizure disorder
- Paralysis
- Coma/Unresponsive
- Intracranial hemorrhage

The coroner’s concern:  
- Fall?
- Immobility from injury?
- Post-traumatic?
- From an injury?
- Poisoning?
- Head trauma?

If uncertain, call the coroner!

Typical Problem Cases (cont’d)
- Peritonitis following ruptured viscera that may have had a traumatic cause
- Complications of prolonged coma following a drug overdose or old injury
- Sepsis following an injury (such as a burn) or poisoning

Manner of Death
- Natural
- Accident
- Suicide
- Homicide
- Undetermined (Could not be determined)
- Pending Investigation

NOTE: If you are not a coroner or are not acting on behalf of the coroner, if you are tempted to check any manner other than Natural, call the coroner.
### Part I: Cardiac tamponade

<table>
<thead>
<tr>
<th>Condition</th>
<th>Minutes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cardiac tamponade</td>
<td></td>
</tr>
<tr>
<td>Rupture of myocardium</td>
<td></td>
</tr>
<tr>
<td>Myocardial infarct</td>
<td>7 days</td>
</tr>
<tr>
<td>Coronary artery atherosclerosis</td>
<td>9 years</td>
</tr>
</tbody>
</table>

### Part II: Other Significant Conditions

- Cardiac conditions contributing to death not resulting in the underlying cause of death in Part I

<table>
<thead>
<tr>
<th>Condition</th>
<th>Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural</td>
<td></td>
</tr>
</tbody>
</table>

### Interval Between Onset and Death

- Generic intervals may be used, when necessary.

### Other Checkbox Items

- If Female
  - Not pregnant within past year
  - Not pregnant at time of death
  - Not pregnant, but pregnant within 42 days
  - Not pregnant, pregnant 43 days to 1 year before death
  - Unknown if pregnant within the past year

### Dates...

- MM/DD/YY (03/05/05) format acceptable for most information items

Use MONTH/DD/YY (March 3, 2005) for:
- Date of Death
- Date Pronounced
- Date Signed

Except for Date Pronounced, you may qualify a date as "Found" or "Approximate".

### Other Medical Examinations

- If an Autopsy Performed?
  - YES
  - NO

Indicate YES if it is a partial autopsy. May indicate "Partial" or "Limited".

### Organ or Tissue Donation

- YES
- NO

### Physician Certification

- Natural Death
  - Completed

### Times....

- Military time is preferred (1442)
- 0000 starts the new day

Except for Pronounced Time, you may qualify a time as "Found", "Approximate," or "Unknown" in Selected Cases.

### Physician Certification

<table>
<thead>
<tr>
<th>Condition</th>
<th>Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypertension</td>
<td></td>
</tr>
<tr>
<td>Congestive heart failure</td>
<td>4 days</td>
</tr>
<tr>
<td>Acute myocardial infarct</td>
<td>7 days</td>
</tr>
<tr>
<td>Coronary artery atherosclerosis</td>
<td>Decades</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Date</th>
<th>Physician</th>
</tr>
</thead>
<tbody>
<tr>
<td>March 14, 2006</td>
<td>Jack Jones, MD</td>
</tr>
<tr>
<td>March 14, 2005</td>
<td></td>
</tr>
</tbody>
</table>

12
General Rules

- Make sure you use the current DC Form
- Make entries legible
- Use permanent black ink
- Do not abbreviate
- Do not make alterations
- Do not erase or use whiteout
- Forward DC in timely fashion
- Put decedent name in margin

In Nebraska, this is on the bottom section of the form

Some Additional Cause-of-Death Statements

Making Some Important Points

Part I: Dialysis-dependent renal failure

- Essential hypertension
- 15 years

Part II: Other Significant Conditions

- Chronic kidney disease
- 3 years

Natural

- This connotes the end-stage nature of cause of death

Part I: Pneumocystis pneumonia

- Natural
- 7 years

Part II: Other Significant Conditions

- Acquired Immune Deficiency Syndrome
- 10 years
- Human Immunodeficiency Virus Infection

Natural

- Cryptococcal myocarditis
  - Cryptococcal myocarditis is a comorbid condition, in this case, clinically less important than Pneumocystis pneumonia, so it is placed on Part II as anOSC

Part I: Heart disease requiring implanted defibrillator

- Natural
- 9 weeks

Part II: Other Significant Conditions

- Chronic ischemic heart disease
- 10 years
- Atrial fibrillation, Diabetes Mellitus
- 5 years
**Being Generic....**

<table>
<thead>
<tr>
<th>Part I</th>
<th>Part II</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Natural causes associated with old age</td>
<td><strong>Hypertension</strong></td>
</tr>
<tr>
<td>b. Due to</td>
<td></td>
</tr>
<tr>
<td>c. Due to</td>
<td></td>
</tr>
<tr>
<td>d. Due to</td>
<td></td>
</tr>
</tbody>
</table>

When generic statements are used but another specific condition is reported, the specific condition will be coded as the underlying cause of death.

**Qualifying a cause....**

<table>
<thead>
<tr>
<th>Part I</th>
<th>Part II</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Probable intra-cerebral hemorrhage</td>
<td><strong>It's Okay to use the word “probable” or “presumed”</strong></td>
</tr>
<tr>
<td>b. Due to</td>
<td></td>
</tr>
<tr>
<td>c. Due to</td>
<td></td>
</tr>
<tr>
<td>d. Due to</td>
<td></td>
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</tbody>
</table>

**Case Scenario**

**HISTORY:**

A 23-year old male became quadriplegic after an automobile accident. He lived for several years but developed recurrent urinary tract infections. His most recent admission to the hospital for UTI was 2 weeks ago, and he died of systemic sepsis while still in the hospital.

**Injury Deaths**

(External Causes)

Caveat: 1) Do not certify such deaths unless the coroner requests it. 2) Some knowledge of injury death certification is helpful.

**Injury or Poisoning Deaths**

Similar to Immediate, Intermediary, and Underlying Causes
Injury Death

**Part I**

a. Intra-thoracic hemorrhage  
b. Penetrating lung injury  
c. Stab wound of left chest  
d. ... 

**Part II OSC:**

Pneumothorax

Similar to Immediate, Intermediary, and Underlying Causes

---

Poisoning Deaths

**Part I**

a. Probable cardiac dysrhythmia  
b. Chlorinated hydrocarbon toxicity  
c. Inhalation of paint fumes  
d. ...

**Part II OSC:**

Similar to Immediate, Intermediary, and Underlying Causes

Describe How Injury Occurred

Huffing. Sprayed paint into plastic bag and inhaled paint fumes.

- Be complete  
- Avoid citing individual people or individual entities/businesses  
- In Homicides, be a little more generic

---

For our “Fall” Scenario

[Fell off of ladder while cleaning gutters, died later of pulmonary embolism]

**Part I**

a. Pulmonary embolism  
b. Immobility from hip fracture  
c. Fall from height  
d. ...

**Part II OSC:**

Similar to Immediate, Intermediary, and Underlying Causes

---

But there’s more when external causes occur......

**Part I**

a. Probable cardiac dysrhythmia  
b. Chlorinated hydrocarbon toxicity  
c. Inhalation of paint fumes  
d. ...

**Part II**

OTHER SIGNIFICANT CONDITIONS

Describe How Injury Occurred

Sprayed paint into plastic bag and inhaled paint fumes.

Manner of Death How injury occurred

---

Examples:

Describe How Injury Occurred

Shot self in head with .38 caliber revolver

Describe How Injury Occurred

Unrestrained driver of sports utility vehicle which veered off interstate highway and struck a tree.

Describe How Injury Occurred

Shot by other(s)
**Other Injury-Related Information**

**Injury at Work? (=Yes)....**
- Working or in vocational training on job premises
- While on break or at lunch or in parking lot on job premises
- Working for pay or compensation, including at home
- Working as a volunteer law enforcement official etc.
- While traveling on business, including to/from business contacts

**Injury at Work? (=No)....**
- Engaged in personal recreational activity on job premises
- While a visitor (not on official work business) to job premises
- Homemaker working at homemaking activities
- Student in school
- Working for self for no profit (mowing yard, repairing own roof, hobby)
- Commuting to or from work

---

**Other Injury Information**

- **Injury at Work?**
  - Yes
  - No

- **Place of Injury**
  - Interstate Highway Exit Ramp

- **Transportation Injury**
  - Driver/Operator
  - Passenger

- **Comment**
  - These may be qualified (found, approx, etc)

- **Date of Injury**
  - 03/05/05

- **Time of Injury**
  - 13:26

- **Location of Injury**
  - 125 Second Hand Avenue, North Platte, NE 69103

---

**Coroner Certification**

- John Smith, JD, Coroner
- 122 First St, North Platte, NE 69103

---

**Part I**

<table>
<thead>
<tr>
<th>Condition</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Systemic sepsis</td>
<td>Due to or as a consequence of:</td>
</tr>
<tr>
<td>Pneumonia</td>
<td>4 days</td>
</tr>
<tr>
<td>Trauma induced coma</td>
<td>8 days</td>
</tr>
<tr>
<td>Blunt force head injury</td>
<td>8 days</td>
</tr>
<tr>
<td>Collision of Motor Vehicles</td>
<td>5 days</td>
</tr>
</tbody>
</table>

---

**Part II**

<table>
<thead>
<tr>
<th>Condition</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other significant conditions</td>
<td>Motor vehicle accident</td>
</tr>
<tr>
<td>Systemic sepsis</td>
<td>3 years</td>
</tr>
</tbody>
</table>

---

**Accident**

- Passenger in car that left roadway, rolled over, and ejected the victim.

Remember! Medical complications may result from injuries which can make you forget that it's a coroner's case. Always keep this in mind.
Combinations of Injury and Disease

CAVEATS: 1. There are exceptions to every rule 2. There is often more than one acceptable way to do things.

Case Scenario
- A 65-year-old lady with previous MI has chest pain while driving. She passes out and loses control of the car and hits a tree.
- She lives several hours in the hospital.
- Autopsy shows multiple rib fractures, pulmonary lacerations, and an old myocardial infarct with no acute changes in the heart or coronary arteries.

Manner of Death Principle
- Natural
- Accident
- Suicide
- Homicide
- Undetermined
- Pending Investigation (Could not be determined)

NOTE: A general rule is that if an external cause (injury or poisoning) combined with natural disease to cause death, preference is given to the non-natural manner. Another way of looking at it: "If the injury had not occurred, would death likely have occurred when it did?" If no, then the manner will probably be other than Natural. "But for" the injury, death would not have occurred when it did.

One way to do it......

<table>
<thead>
<tr>
<th>Part I</th>
<th>Rib fracture with lung lacerations</th>
<th>Natural ( n ) hours ( n ) years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part II</td>
<td>OTHER SIGNIFICANT CONDITIONS:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Coronal artery atherosclerosis</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Blunt force injury of chest</td>
<td></td>
</tr>
<tr>
<td>Manner of Death</td>
<td>Driver of car. Had acute cardiac event. Lost control and ran into rear of another car.</td>
<td></td>
</tr>
</tbody>
</table>

Another way to do it....

<table>
<thead>
<tr>
<th>Part I</th>
<th>Blunt force injury of chest</th>
<th>Natural ( n ) hours ( n ) years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part II</td>
<td>OTHER SIGNIFICANT CONDITIONS:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Coronary artery atherosclerosis</td>
<td></td>
</tr>
<tr>
<td>Manner of Death</td>
<td>Driver of car. Had acute cardiac event. Lost control and ran into rear of another car.</td>
<td></td>
</tr>
</tbody>
</table>

Another way to do it....

<table>
<thead>
<tr>
<th>Part I</th>
<th>Motor vehicle collision with tree</th>
<th>Natural ( n ) hours ( n ) years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part II</td>
<td>OTHER SIGNIFICANT CONDITIONS:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Coronal artery atherosclerosis</td>
<td></td>
</tr>
<tr>
<td>Manner of Death</td>
<td>Driver of car. Had acute cardiac event. Lost control and ran into rear of another car.</td>
<td></td>
</tr>
</tbody>
</table>
### Another way to do it....

**Part I**
- **Blunt force chest trauma complicating coronary artery atherosclerosis**
  - Death is a consequence of:
    - Motor vehicle collision with tree
  - Does this violate the One Condition Pop-line rule? Yes.

**Part II**
- **OTHER SIGNIFICANT CONDITIONS:**
  - Conditions contributing to death but not resulting in the underlying cause of death
    - Driver of car. Had acute cardiac event. Lost control and ran into rear of another car.

**Manner of Death:** Describe How Injury Occurred
- Sudden cardiac death

This method makes the story clearer.

### Deaths of The Elderly

#### Natural

**Part I**
- **Chronic aspiration pneumonia**
  - Death is a consequence of:
    - Senile Dementia
  - 15 years

**Part II**
- **OTHER SIGNIFICANT CONDITIONS:**
  - Conditions contributing to death but not resulting in the underlying cause of death
    - Environmental hypothermia

**Manner of Death:** Describe How Injury Occurred
- Natural

### Hypertension

**Part I**
- **Intracerebral hemorrhage**
  - Due to, or as a consequence of:
    - Acute cocaine intoxication

**Part II**
- **OTHER SIGNIFICANT CONDITIONS:**
  - Conditions contributing to death but not resulting in the underlying cause of death
    - Heart failure

**Manner of Death:** Describe How Injury Occurred
- Hypertension

Some intoxications can cause an otherwise “natural” event.

#### Accident
- Smoked illicit crack cocaine. Developed a Hemorrhage in the brain.

#### Environmental hypothermia

**Part I**
- **Cold exposure complicating Alzheimer Dementia**
  - Due to, or as a consequence of:
    - Cold exposure

**Part II**
- **OTHER SIGNIFICANT CONDITIONS:**
  - Conditions contributing to death but not resulting in the underlying cause of death
    - Hypothermia

**Manner of Death:** Describe How Injury Occurred
- Wandered away from home in cold weather. Inadequately dressed. Died of cold exposure

**Note that the Manner corresponds to underlying cause**
**Part I**

<table>
<thead>
<tr>
<th>Event</th>
<th>Occurrence</th>
<th>Nature</th>
<th>Timeframe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pulmonary embolism</td>
<td>Immobility</td>
<td>6 days</td>
<td>Minutes</td>
</tr>
<tr>
<td>Hip fracture aggravating senile dementia</td>
<td>Immobile</td>
<td>6 days; Years</td>
<td></td>
</tr>
</tbody>
</table>

**Part II**

<table>
<thead>
<tr>
<th>Event</th>
<th>Occurrence</th>
<th>Nature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accident</td>
<td>Unstable on feet. Fell while walking. Fractured left hip.</td>
<td></td>
</tr>
</tbody>
</table>

**OTHER SIGNIFICANT CONDITIONS:**

- Conditions contributing to death not resulting in the underlying cause of death in Part I

- Accident

**Part II**

<table>
<thead>
<tr>
<th>Event</th>
<th>Occurrence</th>
<th>Nature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pulmonary embolism following hip fracture</td>
<td>Unstable on feet. Fell while walking. Fractured left hip.</td>
<td></td>
</tr>
</tbody>
</table>

**OTHER SIGNIFICANT CONDITIONS:**

- Conditions contributing to death not resulting in the underlying cause of death in Part I

**Part I**

<table>
<thead>
<tr>
<th>Event</th>
<th>Occurrence</th>
<th>Nature</th>
<th>Timeframe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fat embolism</td>
<td>Pathologic fracture of right femur</td>
<td>2 days</td>
<td>Years</td>
</tr>
<tr>
<td>Osteoporosis</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Part II**

<table>
<thead>
<tr>
<th>Event</th>
<th>Occurrence</th>
<th>Nature</th>
<th>Timeframe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Senile dementia</td>
<td>Unstable on feet. Fell while walking. Fractured left hip.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**OTHER SIGNIFICANT CONDITIONS:**

- Conditions contributing to death not resulting in the underlying cause of death in Part I

- Natural

**Part I**

<table>
<thead>
<tr>
<th>Event</th>
<th>Occurrence</th>
<th>Nature</th>
<th>Timeframe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unspecified natural causes</td>
<td></td>
<td></td>
<td>Unknown</td>
</tr>
</tbody>
</table>

**OTHER SIGNIFICANT CONDITIONS:**

- Conditions contributing to death not resulting in the underlying cause of death in Part I

**Part II**

<table>
<thead>
<tr>
<th>Event</th>
<th>Occurrence</th>
<th>Nature</th>
<th>Timeframe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accident</td>
<td>Unstable on feet. Fell while walking. Fractured left hip.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Part II**

<table>
<thead>
<tr>
<th>Event</th>
<th>Occurrence</th>
<th>Nature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Although "Senescence" is probably OK, it is not needed.

Do not do this unless you have no likely cause.
The important things....
- Usually more than one way to certify
- Get the major conditions on the DC
- Put conditions in a logical order
- Correctly classify manner
- Complete the injury information as needed
- Use the various "tricks"
- Report appropriate cases to the Coroner

Neonates
28 Days or Younger

Deaths of Neonates and Infants

<table>
<thead>
<tr>
<th>Part</th>
<th>Significant Condition</th>
<th>Date(s) or Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Necrotizing enterocolitis</td>
<td>3 Days</td>
</tr>
<tr>
<td>I</td>
<td>Extreme prematurity</td>
<td>2 weeks</td>
</tr>
<tr>
<td>I</td>
<td>Maternal placental abruption</td>
<td>2 weeks</td>
</tr>
</tbody>
</table>

OTHER SIGNIFICANT CONDITIONS:
- Conditions contributing to death but not included in the underlying cause of death in Part I

<table>
<thead>
<tr>
<th>Infant</th>
<th>Hypoxic cerebral hemorrhage</th>
<th>Description of Injury - Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Unknown</td>
</tr>
</tbody>
</table>

Part II
Natural

- Try to include the underlying maternal/gestational condition

Infants [1 month to 1 year]
- Clear-cut cause(s)
- SIDS-Like
- Not SIDS, but no cause known
- Inadequate investigation
  (Hopefully, these will be non-existent)
Clear-cut causes are handled as usual...

**Part I**

**Viral myocarditis**

<table>
<thead>
<tr>
<th>Disease or an Acute Event</th>
<th>Days</th>
</tr>
</thead>
<tbody>
<tr>
<td>Death, or a consequence of</td>
<td>6</td>
</tr>
<tr>
<td>Death, or a consequence of</td>
<td></td>
</tr>
<tr>
<td>Death, or a consequence of</td>
<td></td>
</tr>
</tbody>
</table>

**Part II**

**Other Significant Conditions:**

- Conditions contributing to death but not resulting in the underlying cause of death in Part I

**Bronchitis**

**Natural**

---

Clear-cut causes are handled as usual...

**Part I**

**Cranioencephalic Trauma**

<table>
<thead>
<tr>
<th>Disease or an Acute Event</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Due to, or a consequence of</td>
<td></td>
</tr>
<tr>
<td>Due to, or a consequence of</td>
<td></td>
</tr>
<tr>
<td>Due to, or a consequence of</td>
<td></td>
</tr>
</tbody>
</table>

**Part II**

**Other Significant Conditions:**

- Conditions contributing to death but not resulting in the underlying cause of death in Part I

**Homicide**

**Injuries inflicted by another person(s)**

---

SIDSOID Cases...

- Consistent with SIDS
- SIDS plus disease
- SIDS plus external stressor
- SIDS plus both
- Not consistent with SIDS; no cause identifiable
- Inadequate investigation

---

"Triple Risk Model"

- Vulnerable Infant
- SIDS
- Critical Period
- Exogenous Stressor

Some might be "natural"  
Some might be non-natural

---

This Confuses the Nosologists!

**Part I**

**Undetermined**

<table>
<thead>
<tr>
<th>Disease or an Acute Event</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Due to, or a consequence of</td>
<td></td>
</tr>
<tr>
<td>Due to, or a consequence of</td>
<td></td>
</tr>
<tr>
<td>Due to, or a consequence of</td>
<td></td>
</tr>
</tbody>
</table>

**Part II**

**Other Significant Conditions:**

- Conditions contributing to death but not resulting in the underlying cause of death in Part I

**Measure of Death**

**How Sudden Occurred**

**Undetermined**

There are better ways to certify such deaths

---

Uncomplicated case

Each would be coded as R95 SIDS

**Part I**

**Natural**

**Sudden Unexplained Infant Death**

- Cause not determined
- No underlying disease
- No other cause present
- No external cause present
- Inadequate investigation

**Part II**

**Other Significant Conditions:**

- Conditions contributing to death but not resulting in the underlying cause of death in Part I

**Measure of Death**

**How Sudden Occurred**

**Undetermined**

The Manner does not matter

---
Gray Zone Case with Disease

Part I
Sudden Unexplained Infant Death

- Date is not in consequence of
- Date is in consequence of
- Date is not in consequence of

Part II
OTHER SIGNIFICANT CONDITIONS

- Upper respiratory tract viral infection

Manner of Death
Undetermined

This would be coded as SIDS

Gray Zone Case with Disease

Part I
Sudden Unexplained Infant Death

- Date is not in consequence of
- Date is in consequence of
- Date is not in consequence of

Part II
OTHER SIGNIFICANT CONDITIONS

- Upper respiratory tract viral infection

Manner of Death
Undetermined

This would be coded as SIDS

Gray Zone Case with External Stressors

Part I
Sudden Unexplained Infant Death

- Date is not in consequence of
- Date is in consequence of
- Date is not in consequence of

Part II
OTHER SIGNIFICANT CONDITIONS

- Bed sharing with 4 adults. Found face down.

Manner of Death
Undetermined

This would be coded as SIDS

Gray Zone Case with External Stressor and Disease

Part I
Sudden Unexplained Infant Death

- Date is not in consequence of
- Date is in consequence of
- Date is not in consequence of

Part II
OTHER SIGNIFICANT CONDITIONS

- Upper respiratory tract viral infection

Manner of Death
Undetermined

This would be coded as SIDS

Stressors....

- Bedsharing
- Unsafe or soft sleep surface (if found face down)
- Previous unexplained infant death of sibling
- Excessive blanketing or wrapping
- Face down position when found
- Intoxication (defined as detection of a substance in infant’s system)
- Abrupt change in sleep position
- Abrupt change in sleep location
- Abrupt change in sleep surface
- Injuries of unknown significance (specifying the type)

In many settings, after investigation and autopsy, SIDS-like deaths account for about 53% of infant deaths, and 70% of those have gray zone findings.
Complications of Treatment or Diagnostic Procedures

- Bilateral pneumothoraces
  - Complication of ventilatory support
  - Acquired immune deficiency syndrome

Part II

OTHER SIGNIFICANT CONDITIONS
- Digoxin toxicity
- Chronic ischemic heart disease
- Periprocedural death not otherwise classifiable

Category of Complication or Outcome

1. Malfunction of (or a defective) medical device, tool, or diagnostic/therapeutic agent (malfunctioning thermometer)
   - Suggested Manner: Accident

2. Incorrect use of a medical device, tool, or diagnostic/therapeutic agent (wrong dose of drug)
   - Suggested Manner: Accident

3. Rarely occurring complication with a recognized untoward potential (anaphylaxis after dye)
   - Suggested Manner: Variable

4. Unanticipated complication (ligating wrong artery)
   - Suggested Manner: Variable

5. Reasonably anticipated outcome of a indicated medical therapy or procedure (digoxin toxicity)
   - Suggested Manner: Natural

6. Inherent and accepted risk of an invasive procedure or surgery (very ill and can't wean from pump)
   - Suggested Manner: Natural

7. Non-specific stresses of procedure or therapy (high risk patient who dies during hip replacement)
   - Suggested Manner: Natural

8. Periprocedural death not otherwise classifiable (healthy man died during hernia repair; no cause)
   - Suggested Manner: Undetermined

Other Significant Conditions
- Unexpected and Undetermined Cause
  - Conditions contributing to death but not leading for the assignment of death in Part 1 (e.g. malfunctions of device)

Natural
Part I
- Pseudomonas burn wound sepsis
- Cutaneous scald burns
- Whirlpool therapy for leg contractures
- Complications of cerebrovascular stroke

Part II
OTHER SIGNIFICANT CONDITIONS

Manner of Death: Describe how injury occurred

Accident: Scalded in overheated water in a whirlpool.

Consider all of these....
- Age and underlying condition of patient
- Was the procedure elective?
- Emergent nature of the procedure
- Inherent difficulty and reasonably known risks of the procedure
- Acceptability of the untoward outcome

These issues have to do with manner of death classification.
Regardless of the manner, be sure to include the complication in the Cause-of-Death Statement.

"Mechanisms" of Death
- Terminal Events (eg., asystole, cardiopulmonary arrest)
- Nonspecific Anatomic Processes (eg., cirrhosis, DAD, peritonitis)
- Nonspecific Physiologic Derangement (eg., hyperkalemia, hypoglycemia)

-Previous cerebrovascular stroke

Part I
- Pseudomonas burn wound sepsis
- Cutaneous scald burns
- Whirlpool therapy for leg contractures

Part II
OTHER SIGNIFICANT CONDITIONS

Manner of Death: Describe how injury occurred

Accident: Scalded in overheated water in a whirlpool.

-Terminal Events-
-Nonspecific Processes-
-Mechanisms-

For the Cause-of-Death Statement:
- Terminal Events should be used
  - Asystole
  - Cardiac arrest
  - Ventricular fibrillation
  - Cardiopulmonary arrest
  - Electromechanical dissociation
  - Respiratory arrest

OK to use if certain conditions are met:
- Nonspecific Anatomic Processes
- Nonspecific Physiologic Derangements
**General Rules:**

Include NAP or NPD in COD Statement if:

- Its a recognized potentially fatal complication of the underlying cause of death
- Its NOT a symptom or sign
- It was involved in the cause of death sequence in the case in question
- Its existence in the patient would not be known unless reported in the COD statement
- Its inclusion is not an oversimplification or redundant
- A specific underlying cause is also reported

---

**Possible candidates for the DC**

- Asystole
- Respiratory arrest
- Hepatic encephalopathy
- Hyperammonemia
- Asterixis
- Portal hypertension
- Cirrhosis
- Chronic alcohol abuse

---

**An example:**

A chronic alcoholic developed cirrhosis, portal hypertension, hyperammonemia, hepatic coma, asterixis, respiratory arrest, and then asystole.

---

**Applying the rules....**

- Asystole — Terminal Event
- Respiratory arrest — Terminal Event
- Hepatic encephalopathy — Implicit
- Hyperammonemia — Sign
- Asterixis — Terminal Event
- Portal hypertension
- Cirrhosis
- Chronic alcohol abuse

---

**Nonspecific Processes and Derangements (Mechanisms)**

These need to have an underlying cause reported.
Another way to do it....

Part I
a. Hepatic Encephalopathy
b. Cirrhosis of liver
c. Chronic alcohol abuse
d. 

Part II
O C:

Queries by Registrar
- Registrar contacts Certifier
- To verify DC accuracy or obtain missing information
- Extent of queries vary regionally
- If you are queried, you should respond promptly

Amendments & Supplements
- Queries
- Amendments
- Supplemental Reports

Certifier:
- Writes to registrar specifying needed changes or updates (in a pending case)
- A specific form is used
- Documentary evidence is required
- A fee is charged for the process and for each new copy of the corrected DC

An Idea
The “Hospital Certifier” Concept

Surgery Service
ICU Services
Emergency Service

Use Death Certificate Worksheet

Internal Medicine Service
Oncology Service

Etc.

“Hospital-appointed Certifier” Prepares “Official” Certificate

Some Final Examples

Natural

Upper gastrointestinal hemorrhage

Death or an consequence of
Undetermined Natural Cause

Other Significant Conditions:
Conditions contributing to death but not resulting in the underlying cause of death in Part I

Manner of Death
Describe How Injury Occurred

Let the history guide you

Most are Easy....

Part I

Upper gastrointestinal hemorrhage

Death or an consequence of
Undetermined Natural Cause

Other Significant Conditions:
Conditions contributing to death but not resulting in the underlying cause of death in Part I

Manner of Death
Describe How Injury Occurred

Let the history guide you

Part II

Natural

Let the history and medical knowledge guide you
**Part I:**
- **Pneumonia**
  - Date of death: 3 days
- **Cerebral contusions**
  - Date of death: 5 days
- **Blunt force trauma of head**
  - Date of death: 5 days
- **Motor vehicle collision**
  - Date of death: 5 days

**OTHER SIGNIFICANT CONDITIONS:**
- Multiple skull fractures, subdural hematoma
- Unrestrained driver of sports utility vehicle that left the roadway and struck a tree.

**Part II** contains other significant injuries

**Part I:**
- **Pyelonephritis**
  - Date of death: 2 weeks
- **Recurrent E. coli bladder infections**
  - Date of death: 2 years
- **Indwelling urinary catheter**
  - Date of death: 3 years

**OTHER SIGNIFICANT CONDITIONS:**
- Multiple sclerosis

**Part II** contains other significant injuries

**Natural**

Sequential history is evident by reading the cause

**Part I:**
- **Oxycodone poisoning**
  - Date of death: 8 days
  - Date of death: 3 years

**OTHER SIGNIFICANT CONDITIONS:**
- Overmedication of degenerative disc disease

**Part II** contains other significant injuries

**Analgesic dependency**

Task excessive prescribed medication.

**Asphyxia**

Drug is a consequence of:

**Obstruction of airway by food bolus**

Minutes

**Part II** contains other significant injuries

**Acute alcohol intoxication**

Minutes

**Part I**
- **Cryptococcal myocarditis**
  - Date of death: 2 weeks
  - Date of death: 4 years
  - Date of death: 8 years

**OTHER SIGNIFICANT CONDITIONS:**
- Acquired Immune Deficiency Syndrome
- Human Immunodeficiency Virus infection

**Suicide**

Shot self in head with 38 caliber revolver

Appropriate to include psych conditions and possible medical reasons

**Part I**
- **Perforating injury of head and brain**
  - Date of death: 7 minutes

**OTHER SIGNIFICANT CONDITIONS:**
- Clinical history of depression
- Metastatic gastric cancer

**Suicide**

Shot self in head with 38 caliber revolver

Appropriate to include psych conditions and possible medical reasons

**Part I**
- **Acute alcohol intoxication**
  - Date of death: 8 minutes

**Part I**
- **Risk factor in Part II**

Accident

Choked on piece of meat while eating. Acute intoxication with ethanol.
### Part I: Intra-abdominal hemorrhage

**Death in a consequence of**

- Delayed rupture of contused spleen
- Blunt force injury of abdomen
- Fall from height

**Time**

- 5 days

**Ongoing significant conditions**

- Bronchopulmonary artery fistula
- Squamous cell carcinoma, left lung

**Manner of Death**

- Traumatic brain injury (Coma)

**Accident**

- Working on roof. Fell approximately 15 feet to ground. Injured spleen. Spleen ruptured 5 days later.

**Immediate, intermediary, underlying cause; sequential part I format**

**Contact Points**

Randy Hanzlick, MD
Chief Medical Examiner, Fulton County, GA
Professor of Forensic Pathology
Emory School of Medicine, Atlanta, GA
430 Pryor St SW
Atlanta, GA 30312
404-730-4400
randy.hanzlick@co.fulton.ga.us