

Cause of Death statement-
Manner of death-
Mode of Death -

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Writing cause of death statements.....

- **Death certificate serves many purposes.....**
- **Legal documentation that the named person is dead**
- **Information about the deceased.**
- **Information needed to evaluate cause and manner of death,**
- **To settle deceased properties**
- **Information about disposition of the remains,**
- **Research, planning & funding of national programs**

INTERNATIONAL FORM OF MEDICAL CERTIFICATE OF CAUSE OF DEATH



	Cause of death	Approximate interval between onset and death
I Disease or condition directly leading to death*	(a) due to (or as a consequence of)
Antecedent causes Morbid conditions, if any, giving rise to the above cause, stating the underlying condition last	(b) due to (or as a consequence of)
	(c) due to (or as a consequence of)
	(d)
II Other significant conditions contributing to the death, but not related to the disease or condition causing it
<i>*This does not mean the mode of dying, e.g. heart failure, respiratory failure. It means the disease, injury, or complication that caused death.</i>		

Definitions:

- A cause of death is the morbid condition or disease process, abnormality, injury or poisoning leading directly or indirectly to death. It consists of a diagnostic entity, which is a single term or a composite term that is used to describe a disease, nature of injury, or other morbid condition.
- The immediate cause of death is the condition leading directly to death and is reported on line (a) in Part I.
- The words due to, or as a consequence of printed between the lines of Part I apply to sequences with an etiological or pathological basis and to sequences where an antecedent condition is believed to have prepared the way for the more direct cause.

Definitions:

- **A reported sequence is two or more conditions entered on successive lines in Part I,**
- **Each condition being an acceptable cause of the one on the line above it.**
- **An antecedent cause of death is any intervening cause of death occurring between the immediate and the underlying cause of death.**

Underlying cause of death

- The underlying cause of death is defined by the World Health Organization (WHO) as the disease or injury which initiated the train of morbid events leading directly or indirectly to death. If the certificate has been completed properly the condition reported alone on the lowest completed line of Part I will:
 - Have caused all of the conditions on the lines above it
 - Have the longest duration
 - Is the diagnosis of a terminal illness made by a medical practitioner.

Filling Part I

- It is formatted so that sequential information is reported with **ONE CONDITION** per line,
- Starting with the most recent condition on the top line and going backward in time on progressively lower lines.

Part I A.

In this example, floppy mitral valve syndrome is the underlying cause of death-- the specific condition (disease or injury) that started the downhill course of events that led to death.

- **Cerebral infarction**

Due to, or as a consequence of:

- **Thrombo-embolism to right internal carotid artery**

Due to, or as a consequence of:

- **Thrombo-embolism from bacterial endocarditis of mitral valve**

Due to, or as a consequence of:

- **Floppy mitral valve syndrome**



Underlying cause of
death

A major goal when writing a cause-of-death statement is to report an underlying cause of death that is as etiologically specific as possible based on current medical knowledge

Part I

- a) **Most recent condition –**
Cardiac Tamponade/ Haemopericardium.
- b) **Next oldest –**
Ruptured myocardial infarction
- c) **Oldest (original, initiating) condition -**
Atherosclerotic coronary artery disease)

Immediate cause of Death

Cause of death the disease or condition thought to be the underlying cause should be the lowest complete line of part I

I	(a) <i>Disease or condition leading directly to death</i>	<i>Cerebral infarction</i>
	(b) <i>other disease or condition, if any, leading to I(a)</i>	<i>Thrombosis of basilar artery</i>
	(c) <i>other disease or condition, if any, leading to I(b)</i>	<i>Cerebrovascular atherosclerosis</i>
II	<i>Other significant conditions Contributing to death but not related to the disease or condition causing it</i>	

Underlying cause of Death.

Cause of death <i>the disease or condition thought to be the underlying cause should be the lowest complete line of part I</i>		
I	(a) <i>Disease or condition leading directly to death</i>	Intraperitoneal haemorrhage
	(b) <i>other disease or condition, if any, leading to I(a)</i>	Ruptured metastatic deposit in liver
	(c) <i>other disease or condition, if any, leading to I(b)</i>	primary adenocarcinoma of ascending colon
II	<i>Other significant conditions Contributing to death but not related to the disease or condition causing it</i>	Non-insulin dependent diabetes mellitus

- The colon cancer on line 1(c) led directly to the liver metastases on line 1(b), which ruptured, causing the fatal haemorrhage on 1(a). Adenocarcinoma of the colon is the underlying cause of Death.

Specific causes of death:

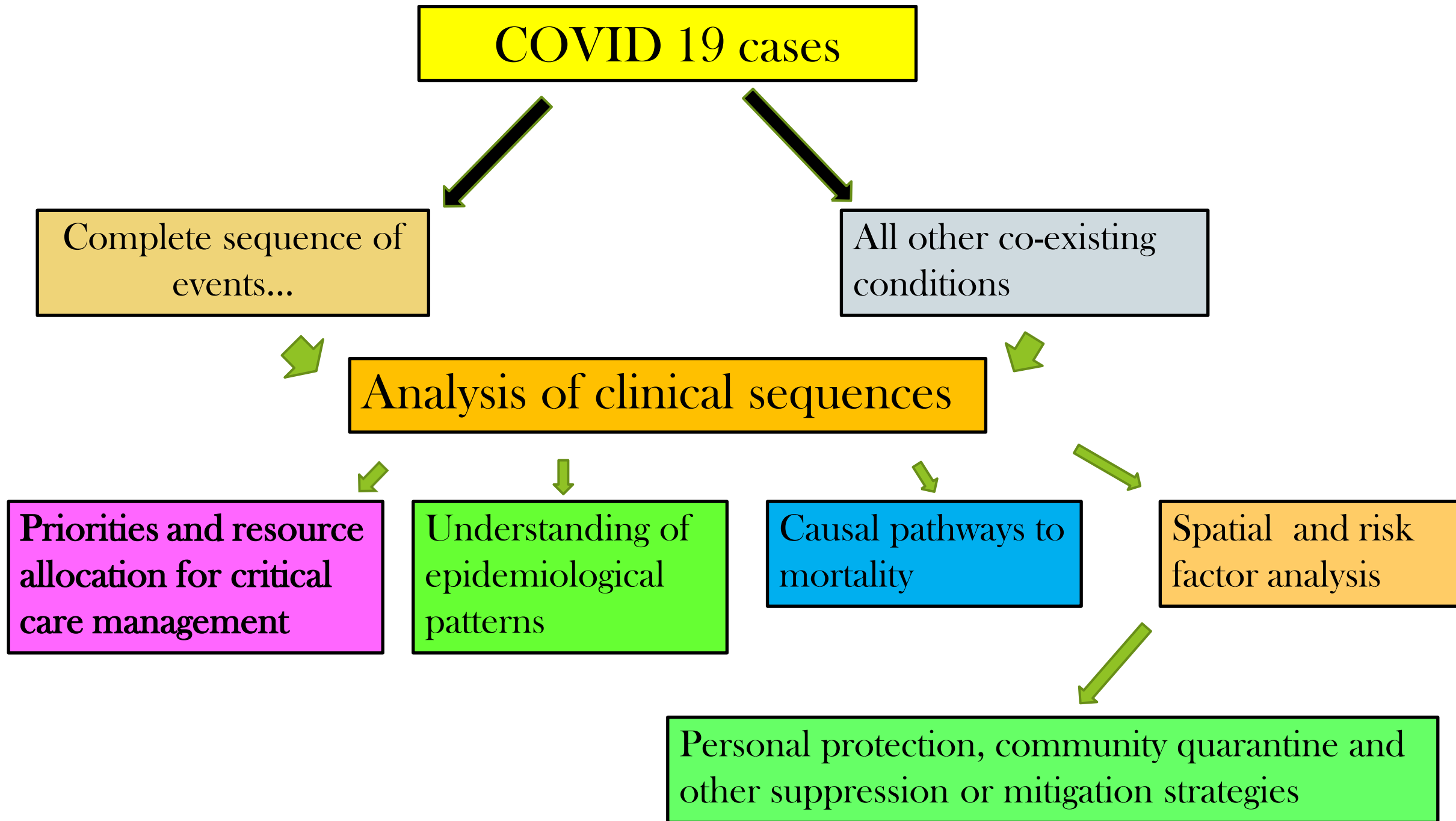
- **Stroke and cerebrovascular disorders.**
- **Diabetes mellitus.**
- **Injuries and external causes**
- **Infections and communicable diseases.**
- **Health care associated infections**
- **Pneumonia**
- **Substance abuse**

Note:

- In some cases, there may be only one condition.
- COD should be as specific as possible.
- When recording neoplasms include histo-pathological type, primary/secondary, malignant/benign
- Joint causes of death - occasionally, indicate that they are joint causes within brackets...
- Don't indicate only the mode of dying ... heart failure..etc.
- Do not use 'old age' or 'senility' as the only cause of death.
- Avoid abbreviations
- Occupational causes - be aware

Medical certification of cause of death for COVID-19

- **Accurate information is essential to understand the epidemic profile and natural history of COVID-19.**
- **To guide data recording, compilation and analysis, the World Health Organization (WHO) has published protocols for countries to notify COVID-19 individual case reports as well as aggregated data of newly confirmed cases and deaths.**



COVID 19 cases

Complete sequence of events...

All other co-existing conditions

Analysis of clinical sequences

Priorities and resource allocation for critical care management

Understanding of epidemiological patterns

Causal pathways to mortality

Spatial and risk factor analysis

Personal protection, community quarantine and other suppression or mitigation strategies

Die 'of' or 'from' COVID - 'primary' or 'contributory' cause

- Die 'with' COVID -
positive for covid but dies of something else -
accident

- When dies 'with' are we going to mention
'covid' in the death certificate...??

Scenario II

CAUSE OF DEATH (See instructions and examples)			Approximate interval: Onset to death
<p>32. PART I. Enter the <u>chain of events</u>—diseases, injuries, or complications—that directly caused the death. DO NOT enter terminal events such as cardiac arrest, respiratory arrest, or ventricular fibrillation without showing the etiology. DO NOT ABBREVIATE. Enter only one cause on a line. Add additional lines if necessary.</p>			
<p>IMMEDIATE CAUSE (Final disease or condition -----> resulting in death)</p>	<p>a. <u>Acute respiratory distress syndrome</u></p> <p style="text-align: right; margin-right: 20px;">Due to (or as a consequence of):</p>	<p><u>2 days</u></p>	<p><u>2 days</u></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>Pneumonia</u></p> <p style="text-align: right; margin-right: 20px;">Due to (or as a consequence of):</p>	<p><u>10 days</u></p>	<p><u>10 days</u></p>
<p>c. <u>COVID-19</u></p> <p style="text-align: right; margin-right: 20px;">Due to (or as a consequence of):</p>	<p>d. _____</p> <p style="text-align: right; margin-right: 20px;">Due to (or as a consequence of):</p>	<p><u>10 days</u></p>	<p>_____</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>33. WAS AN AUTOPSY PERFORMED? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>
<p>34. WERE AUTOPSY FINDINGS AVAILABLE TO COMPLETE THE CAUSE OF DEATH? <input type="checkbox"/> Yes <input type="checkbox"/> No</p>			
<p>35. DID TOBACCO USE CONTRIBUTE TO DEATH?</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> Probably</p> <p><input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown</p>	<p>36. IF FEMALE:</p> <p><input checked="" 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>	

Scenario I: A 77-year-old male with a history of hypertension and chronic obstructive pulmonary disease

A 77-year-old male with a 10-year history of hypertension and chronic obstructive pulmonary disease (COPD) presented to a local emergency department complaining of 4 days of fever, cough, and increasing shortness of breath. He reported recent exposure to a neighbor with flu-like symptoms. He stated that his wheezing was not improving with his usual bronchodilator therapy. Upon examination, he was febrile, hypoxic, and in moderate respiratory distress. His chest x-ray demonstrated hyperinflation and his arterial blood gas was consistent with severe respiratory acidosis. Testing of respiratory specimens indicated COVID-19. He was admitted to the ICU and despite aggressive treatment, he developed worsening respiratory acidosis and sustained a cardiac arrest on day 3 of admission.

CAUSE OF DEATH (See instructions and examples)

32. **PART I.** 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. Enter only one cause on a line. Add additional lines if necessary.

IMMEDIATE CAUSE (Final disease or condition → resulting in death)

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**

a. Acute respiratory acidosis
Due to (or as a consequence of):
COVID-19

b. _____
Due to (or as a consequence of): _____

c. _____
Due to (or as a consequence of): _____

d. _____
Due to (or as a consequence of): _____

Approximate interval:
Onset to death

3 days

1 week

PART II. Enter other significant conditions contributing to death but not resulting in the underlying cause given in PART I

Chronic obstructive pulmonary disease, hypertension

33. WAS AN AUTOPSY PERFORMED?

Yes No

34. WERE AUTOPSY FINDINGS AVAILABLE TO COMPLETE THE CAUSE OF DEATH? Yes No

35. DID TOBACCO USE CONTRIBUTE TO DEATH?

Yes Probably

No Unknown

36. IF FEMALE:

Not pregnant within past year

Pregnant at time of death

Not pregnant, but pregnant within 42 days of death

Not pregnant, but pregnant 43 days to 1 year before death

Unknown if pregnant within the past year

37. MANNER OF DEATH

Natural Homicide

Accident Pending Investigation

Suicide Could not be determined

Scenario II: A 34-year-old female with no significant past medical history

A 34-year-old female with no significant past medical history presented to her primary care physician complaining of 6 days of fever, cough, and myalgias. She was found to be febrile, hypotensive, and hypoxic. She was admitted to the hospital and underwent a CT scan of the chest, which revealed diffuse ground-glass opacification indicative of viral pneumonia. Respiratory specimens were sent for testing and rRT-PCR confirmed COVID-19. Her condition deteriorated over the next 2 days and she developed acute respiratory distress syndrome (ARDS). She was transferred to the ICU and started on positive pressure ventilation. Despite aggressive resuscitation, the patient expired on hospital day 4.

CAUSE OF DEATH (See instructions and examples)

32. **PART I.** 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. Enter only one cause on a line. Add additional lines if necessary

Approximate interval onset to death

IMMEDIATE CAUSE (Final disease or condition----> resulting in death)

a. **Acute respiratory distress syndrome**
Due to (or as a consequence of)

2 days

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**

b. **Pneumonia**
Due to (or as a consequence of)

10 days

c. **COVID-19**
Due to (or as a consequence of)

10 days

d.

PART II. Enter other significant conditions contributing to death but not resulting in the underlying cause given in PART I

33. WAS AN AUTOPSY PERFORMED?

Yes No

34. WERE AUTOPSY FINDINGS AVAILABLE TO COMPLETE THE CAUSE OF DEATH? Yes No

35. DID TOBACCO USE CONTRIBUTE TO DEATH?

36. IF FEMALE
 Not pregnant within past year

37. MANNER OF DEATH

Natural Homicide
 Accident Pending Investigation
 Suicide Could not be determined

Yes Probably
 No Unknown

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

Scenario III: An 86-year-old female with an unconfirmed case of COVID-19.

An 86-year-old female passed away at home. Her husband reported that she was nonambulatory after suffering an ischemic stroke 3 years ago. He stated that 5 days prior, she developed a high fever and severe cough after being exposed to an ill family member who subsequently was diagnosed with COVID-19. Despite his urging, she refused to go to the hospital, even when her breathing became more labored and temperature escalated. She was unresponsive that morning and her husband phoned emergency medical services (EMS). Upon EMS arrival, the patient was pulseless and apneic. Her husband stated that he and his wife had advanced directives and that she was not to be resuscitated. After consulting with medical command, she was pronounced dead and the coroner was notified.

CAUSE OF DEATH (See instructions and examples)

Approximate interval:
Onset to death

32. **PART I.** 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. Enter only one cause on a line. Add additional lines if necessary.

IMMEDIATE CAUSE (Final disease or condition -----> resulting in death)

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**

- a. Acute respiratory illness
Due to (or as a consequence of): _____
- b. Probable COVID-19
Due to (or as a consequence of): _____
- c. _____
Due to (or as a consequence of): _____
- d. _____
Due to (or as a consequence of): _____

1 day

5 days

PART II. Enter other significant conditions contributing to death but not resulting in the underlying cause given in PART I

Ischemic stroke

33. WAS AN AUTOPSY PERFORMED?

Yes No

34. WERE AUTOPSY FINDINGS AVAILABLE TO COMPLETE THE CAUSE OF DEATH? Yes No

35. DID TOBACCO USE CONTRIBUTE TO DEATH?

- Yes Probably
- No Unknown

36. IF FEMALE:

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

37. MANNER OF DEATH

- Natural Homicide
- Accident Pending Investigation
- Suicide Could not be determined

Manner of Death

Manner of death is an American invention.

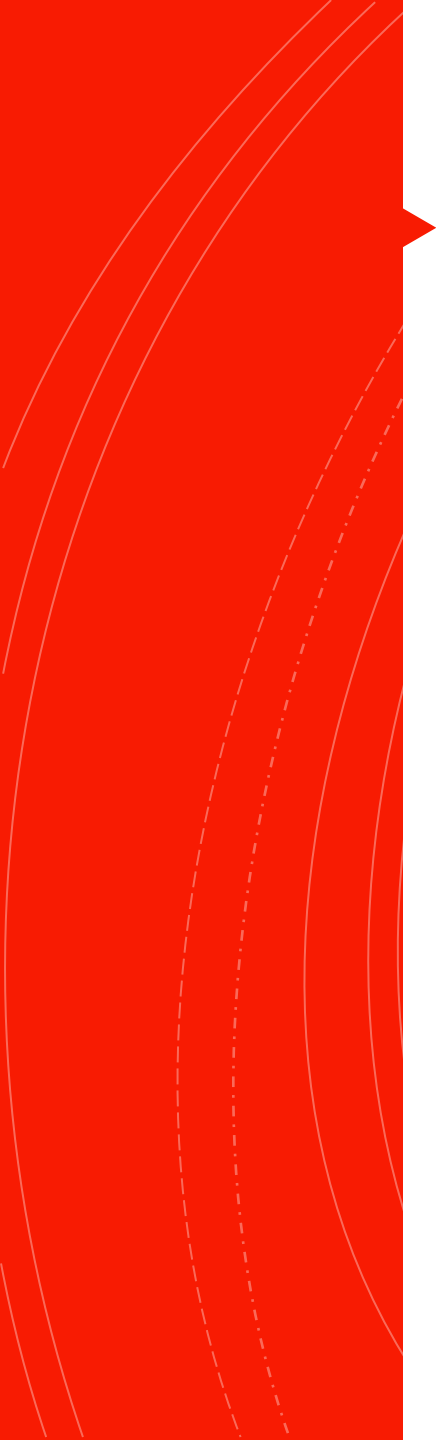
Medical examiners and coroners have debated for decades about how the manner of death should be classified in certain situations,

and more recently, whether certifiers should be required to classify manner of death at all.



In most states, the acceptable options for manner-of-death classification are:

- **Natural**
- **Accident**
- **Suicide**
- **Homicide**
- **Undetermined (or “Could not be Determined”)**



Because the cause and manner of death are opinions, judgment is required to formulate both for reporting on the death certificate.

Manner of Death

There are exceptions to every “rule,” but every rule holds true most of the time. Therefore, rules can be modified or broken in exceptional circumstances but can and should be followed most of the time.

Natural

Natural deaths are due solely or nearly totally to disease and/or the aging process

Accidental

Accident applies when an injury or poisoning causes death and there is little or no evidence that the injury or poisoning occurred with intent to harm or cause death. In essence, the fatal outcome was unintentional.

Suicidal

Suicide results from an injury or poisoning as a result of an intentional, self-inflicted act committed to do self harm or cause the death of oneself.

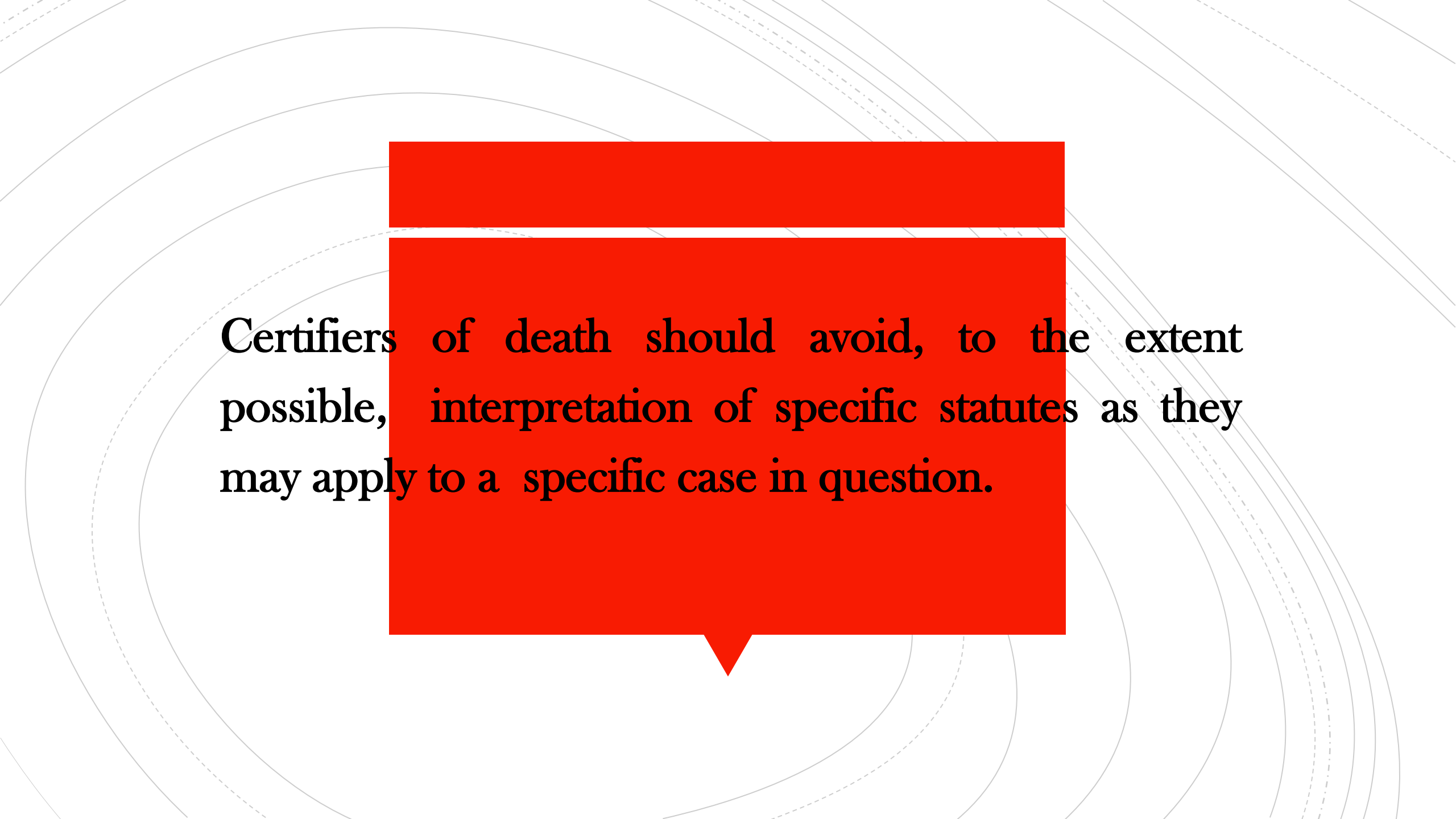
Homicidal

Homicide occurs when death results from a volitional act committed by another person to cause fear, harm, or death. Intent to cause death is a common element but is not required for classification as homicide (more below). It is to be emphasized that the classification of Homicide for the purposes of death certification is a “neutral” term and neither indicates nor implies criminal intent, which remains a determination within the province of legal processes.

Undetermined

Undetermined or “could not be determined” is a classification used when the information pointing to one manner of death is no more compelling than one or more other competing manners of death in thorough consideration of all available information.

In general, when death involves a combination of natural processes and external factors such as injury or poisoning, preference is given to the non-natural manner of death.

The background features several concentric circles, some solid and some dashed, in a light gray color. A prominent red callout box is centered on the page, containing the text. The callout box has a rectangular top and a pointed bottom, resembling a speech bubble or a highlight.

Certifiers of death should avoid, to the extent possible, interpretation of specific statutes as they may apply to a specific case in question.

In general, the time interval between an injury/poisoning event and death is of little relevance in regard to manner of death classification if death resulted from the effects or complications of the injury/poisoning and there is no clear supervening cause.

Manner of Death

Regardless of how the certifier classifies the manner of death, the certifier may later address whether the findings are consistent with a proposed hypothetical situation.

Manner of Death

Most jurisdictions do not provide for manner of death to *be classified as “Complication of Therapy.”*

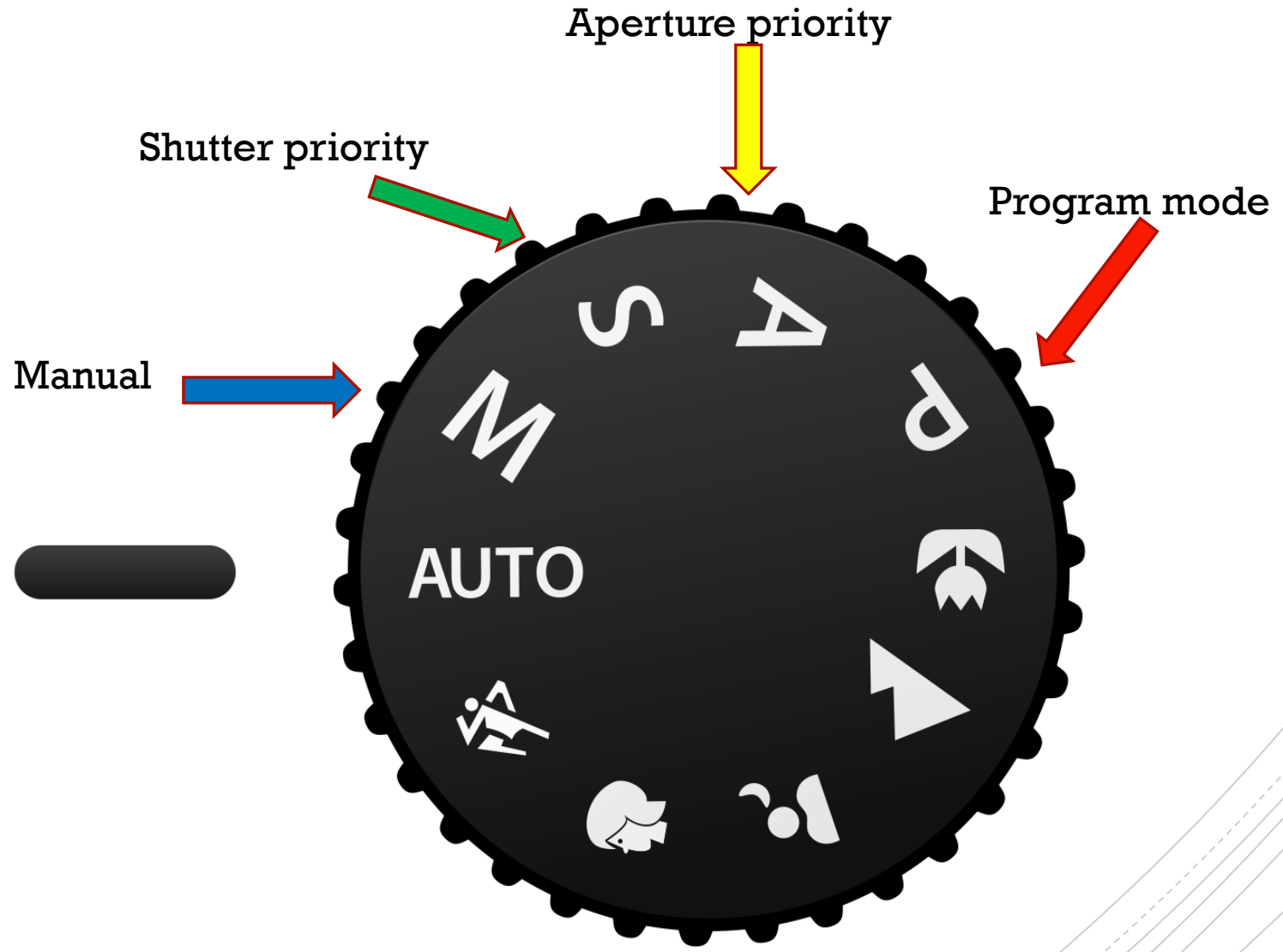
A large red speech bubble graphic with a white outline, positioned on the left side of the slide. It has a rectangular body and a small triangular tail pointing downwards and to the left.

**Risk taking behaviour poses challenges
when classifying manner of death**

Mechanism of death:


The specific physiological derangement that actually led to the cessation of life. For example, a heart attack victim could die from a deadly change in heart rhythm or from severe damage to the heart muscle, leading to shock. Here the cause of death is a heart attack, but the mechanism is a cardiac arrhythmia or cardiogenic shock, respectively.

Mode



Mode of Death

- Coma -death from failure of functioning of brain
- Syncope -death from failure of functioning of heart
- Asphyxia -death from failure of functioning of lungs
- ? More than one mode

- 
- Dayapala, A., 2015. The cause of death – should it be revisited in Sri Lanka?. Sri Lanka Journal of Forensic Medicine, Science & Law, 6(1), pp.7–11. DOI: <http://doi.org/10.4038/sljfmsl.v6i1.7757>.



Thank you