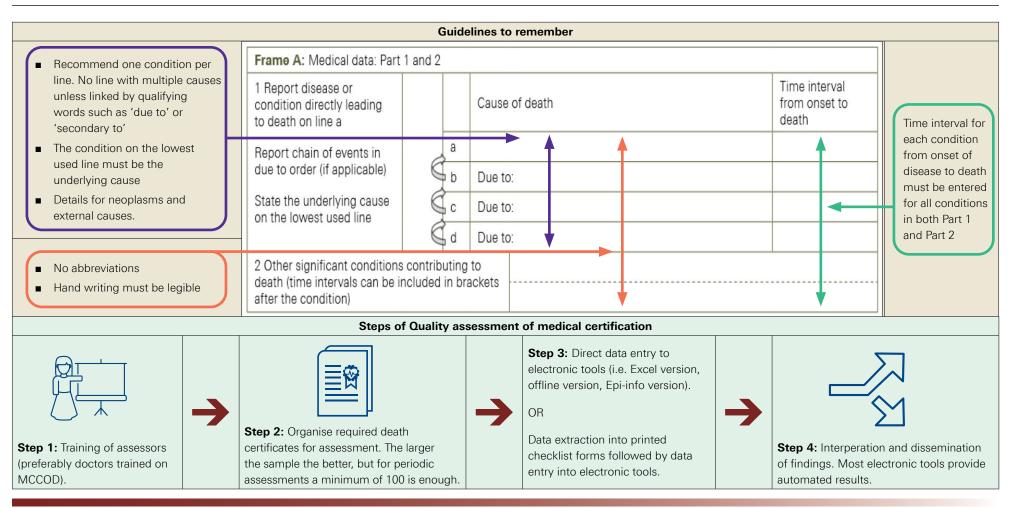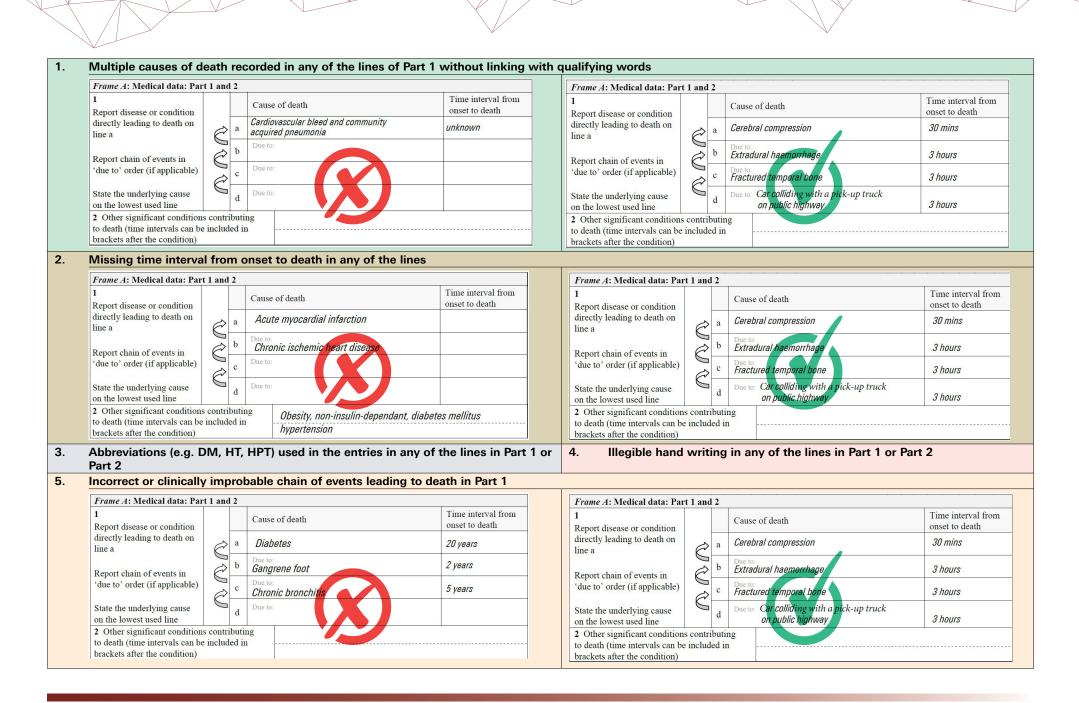# CRVS technical guide
Assessment of quality of medical certification practices: A quick reference guide

This quick reference guide contains guidelines on how to assess the errors commonly recorded on Frame A (Part 1 and Part 2) of the WHO recommended International Form of Medical Certificates of Cause of Death (MCCOD). Guidelines help to standardise the recording of cause of death and facilitate selection of an appropriate Underlying Causes of Death. This tool can be used to monitor quality of certification practices as part of a routine assessment; assess the training needs of doctors, and; evaluate the effectiveness of death certification training.
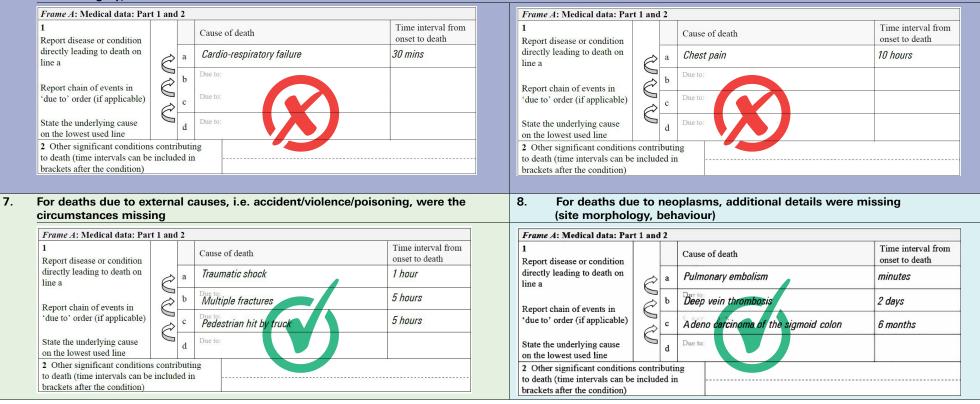
Guidelines to remember

- Recommend one condition per line. No line with multiple causes unless linked by qualifying words such as 'due to' or 'secondary to'
- The condition on the lowest used line must be the underlying cause
- Details for neoplasms and external causes.

- No abbreviations
- Hand writing must be legible

Frame A: Medical data: Part 1 and 2

1 Report disease or condition directly leading to death on line a		Cause of death	Time interval from onset to death
Report chain of events in due to order (if applicable)	a		
	b	Due to:	
State the underlying cause on the lowest used line	c	Due to:	
	d	Due to:	
2 Other significant conditions contributing to death (time intervals can be included in brackets after the condition)			

Time interval for each condition from onset of disease to death must be entered for all conditions in both Part 1 and Part 2

Steps of Quality assessment of medical certification

Step 1: Training of assessors (preferably doctors trained on MCCOD).

➔

Step 2: Organise required death certificates for assessment. The larger the sample the better, but for periodic assessments a minimum of 100 is enough.

➔

Step 3: Direct data entry to electronic tools (i.e. Excel version, offline version, Epi-info version).

OR

Data extraction into printed checklist forms followed by data entry into electronic tools.

➔

Step 4: Interperation and dissemination of findings. Most electronic tools provide automated results.

Error checklist used in assessing the death certificates				Modes of presenting findings
	Yes	No	Not assessed due to illegible handwriting	Percentage of certificates without errors, 1-2 errors or more than 2 errors
1. Multiple causes of death recorded in any of the lines of Part 1?				
2. Missing time interval from onset to death in any of the lines?				
3. Abbreviations used in the entries in any of the lines?				
4. Illegible hand writing in any of the lines?				
5. Incorrect or clinically improbable chain of events leading to death in Part 1?				Distribution of quality categories (excellent, good, poor) based on weighted scores
6. Impossible underlying cause entered in the lowest used line of Part 1*				
7. (a) Was the death due to an accident, violence, poisoning or other external cause?				
(b) For deaths due to external causes, i.e. accident/violence/poisoning, were the circumstances missing? (details of the accident of violence including intent, activity [e.g. pedestrian knocked down by a car, assaulted with a knife] and place of occurrence)				Feedback on individual question
8. (a) Was the death due to a neoplasm?				
(b) For deaths due to neoplasms, additional details were missing (site, morphology, behaviour)?				
*Underlying cause of death cannot be:				Examples of conditions that are not useful for policy decision making and hence should not be reported as underlying causes of death:
a. A symptom or sign (e.g. fever, backache, headache, enlarged liver etc.)				Left Heart failure, Sepsis, Senility, Cardiac Arrest & Shock, Pneumonitis, Renal Failure, Convulsions, Dehydration, Cerebral Palsy, Acute Respiratory Failure, Unspecified anaemia, Peritonitis, Hydrocephalus, Hepatic Failure, Pulmonary Embolism, Fever Unknown, Unspecified Poisoning, Osteomyelitis, Pneumothorax, CNS Abscess, Coma & Stupor, Monoplegia/ hemiplegia/quadriplegia, Pyothorax, Cachexia, Fistula, Nausea And Vomiting, Toxic Encephalopathy, Toxic liver disease, Impossible causes for death.
b. An intermediate cause (e.g. septicaemia, secondary hypertension, pneumonitis, pathological fracture)				
c. A mode of dying (e.g. cardiac arrest, respiratory arrest, organ failure)				
d. An unspecified cause within a larger death category (e.g. cardiovascular disease, congenital anomaly) etc.				

If two or more causes are reported in the lowest used line, and each condition is separated by a space, comma or a similar punctuation, consider the first condition as underlying. If two or more causes are reported on the lowest used line and the conditions are reported as 'due to', 'secondary to', 'as a consequence of' or a term having similar meaning, consider the last condition as underlying.

1. Multiple causes of death recorded in any of the lines of Part 1 without linking with qualifying words

Frame A: Medical data: Part 1 and 2

1 Report disease or condition directly leading to death on line a Report chain of events in 'due to' order (if applicable) State the underlying cause on the lowest used line		Cause of death	Time interval from onset to death
	a	Cardiovascular bleed and community acquired pneumonia	unknown
	b	Due to:	
	c	Due to:	
	d	Due to:	
2 Other significant conditions contributing to death (time intervals can be included in brackets after the condition)			

Frame A: Medical data: Part 1 and 2

1 Report disease or condition directly leading to death on line a Report chain of events in 'due to' order (if applicable) State the underlying cause on the lowest used line		Cause of death	Time interval from onset to death
	a	Cerebral compression	30 mins
	b	Due to: Extradural haemorrhage	3 hours
	c	Due to: Fractured temporal bone	3 hours
	d	Due to: Car colliding with a pick-up truck on public highway	3 hours
2 Other significant conditions contributing to death (time intervals can be included in brackets after the condition)			

2. Missing time interval from onset to death in any of the lines

Frame A: Medical data: Part 1 and 2

1 Report disease or condition directly leading to death on line a Report chain of events in 'due to' order (if applicable) State the underlying cause on the lowest used line		Cause of death	Time interval from onset to death
	a	Acute myocardial infarction	
	b	Due to: Chronic ischemic heart disease	
	c	Due to:	
	d	Due to:	
2 Other significant conditions contributing to death (time intervals can be included in brackets after the condition)		Obesity, non-insulin-dependant, diabetes mellitus hypertension	

Frame A: Medical data: Part 1 and 2

1 Report disease or condition directly leading to death on line a Report chain of events in 'due to' order (if applicable) State the underlying cause on the lowest used line		Cause of death	Time interval from onset to death
	a	Cerebral compression	30 mins
	b	Due to: Extradural haemorrhage	3 hours
	c	Due to: Fractured temporal bone	3 hours
	d	Due to: Car colliding with a pick-up truck on public highway	3 hours
2 Other significant conditions contributing to death (time intervals can be included in brackets after the condition)			

3. Abbreviations (e.g. DM, HT, HPT) used in the entries in any of the lines in Part 1 or Part 2

4. Illegible hand writing in any of the lines in Part 1 or Part 2

5. Incorrect or clinically improbable chain of events leading to death in Part 1

Frame A: Medical data: Part 1 and 2

1 Report disease or condition directly leading to death on line a Report chain of events in 'due to' order (if applicable) State the underlying cause on the lowest used line		Cause of death	Time interval from onset to death
	a	Diabetes	20 years
	b	Due to: Gangrene foot	2 years
	c	Due to: Chronic bronchitis	5 years
	d	Due to:	
2 Other significant conditions contributing to death (time intervals can be included in brackets after the condition)			

Frame A: Medical data: Part 1 and 2

1 Report disease or condition directly leading to death on line a Report chain of events in 'due to' order (if applicable) State the underlying cause on the lowest used line		Cause of death	Time interval from onset to death
	a	Cerebral compression	30 mins
	b	Due to: Extradural haemorrhage	3 hours
	c	Due to: Fractured temporal bone	3 hours
	d	Due to: Car colliding with a pick-up truck on public highway	3 hours
2 Other significant conditions contributing to death (time intervals can be included in brackets after the condition)			

6. Impossible underlying cause entered in the lowest used line of Part 1 (e.g. symptom or sign, intermediate cause, mode of dying, unspecified cause within a larger death category)

Frame A: Medical data: Part 1 and 2

1 Report disease or condition directly leading to death on line a		Cause of death	Time interval from onset to death
	a	Cardio-respiratory failure	30 mins
Report chain of events in 'due to' order (if applicable)	b	Due to:	
	c	Due to:	
State the underlying cause on the lowest used line	d	Due to:	
2 Other significant conditions contributing to death (time intervals can be included in brackets after the condition)			

Frame A: Medical data: Part 1 and 2

1 Report disease or condition directly leading to death on line a		Cause of death	Time interval from onset to death
	a	Chest pain	10 hours
Report chain of events in 'due to' order (if applicable)	b	Due to:	
	c	Due to:	
State the underlying cause on the lowest used line	d	Due to:	
2 Other significant conditions contributing to death (time intervals can be included in brackets after the condition)			

7. For deaths due to external causes, i.e. accident/violence/poisoning, were the circumstances missing

Frame A: Medical data: Part 1 and 2

1 Report disease or condition directly leading to death on line a		Cause of death	Time interval from onset to death
	a	Traumatic shock	1 hour
Report chain of events in 'due to' order (if applicable)	b	Due to: Multiple fractures	5 hours
	c	Due to: Pedestrian hit by truck	5 hours
State the underlying cause on the lowest used line	d	Due to:	
2 Other significant conditions contributing to death (time intervals can be included in brackets after the condition)			

8. For deaths due to neoplasms, additional details were missing (site morphology, behaviour)

Frame A: Medical data: Part 1 and 2

1 Report disease or condition directly leading to death on line a		Cause of death	Time interval from onset to death
	a	Pulmonary embolism	minutes
Report chain of events in 'due to' order (if applicable)	b	Due to: Deep vein thrombosis	2 days
	c	Due to: Adeno carcinoma of the sigmoid colon	6 months
State the underlying cause on the lowest used line	d	Due to:	
2 Other significant conditions contributing to death (time intervals can be included in brackets after the condition)			

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