

WHO Recommendations for conducting an external inspection of a body and filling in the Medical Certificate of Cause of Death

Based on the the Volume

“WHO Recommendations for conducting an external inspection of a body and filling in the Medical Certificate of Cause of Death”

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The WHO international Medical Certificate of Cause of Death (MCCD) form

- Documenting a cause of death, **WHO's MCCD form** serves as the **international standard** and has been agreed by all countries.
- This MCCD form is applied to **all countries, irrespective of the ICD revision** the country is currently using.
- Physicians and practitioners are encouraged to adopt a **standard approach to the investigation of the circumstances surrounding a death** and the **external inspection of a body**, as set out in these recommendations.

Why the accurate MCCD is important?

- Accurate Medical Certificate of Cause of Death (MCCD) data results in **precise mortality statistics**.
- Governments use death cause data to oversee **public health** and create **health policies and programs**.
- Such data are crucial for **epidemiological studies** and help **reduce early and avoidable deaths**.

Initial steps in MCCD process

- 1) The confirmation of a death**
- 2) The external examination of the body**

How to confirm death?

The methods by which death is confirmed

① The presence of **certain signs of death**

- livor mortis
- rigor mortis
- presence of physical trauma that is incompatible with life (e.g. decapitation)

② Prolonged **absence of cardiac and respiratory activity**

- palpation → absence of a central pulse
- observation → absence of respiratory effort
- auscultation → absence of heart or breath sounds

③ Absence of **neurological activity**

- pupillary response to light
- motor response to a central painful stimulus

④ The presence of **asystole (zero voltage)** on an ECG

The approved methods differ from country to country.

Be mindful of and adhere to local guidelines and laws.

Minimum Statistical Dataset recommended for Civil Registration (United Nations Statistical Division - UNSD)

For all deaths:

(i) Characteristic of the event

1. Date of occurrence
2. Place of occurrence
3. Place of registration
4. Cause of death
5. Certifier

(ii) Characteristics of the decedent

1. Date of birth
2. Sex
3. Marital status
4. Place of usual residence
5. Place of usual residence of the mother (for deaths under one year of age)

For fetal deaths add the following:

(iii) Characteristics of the mother

1. Date of birth
2. Date of last previous live birth
3. Previous live births
4. Previous stillbirths
5. Previous abortions
6. Date of marriage
7. Place of usual residence

(iv) Characteristics of the father

1. Date of birth
2. Place of usual residence

What information do we need to fill MCCD?

1. Administrative data

The deceased's

- name
- address
- date of birth (age)
- date of death
- administrative sex

The required additional data differ from country to country.

Be mindful of and adhere to local regulations and laws.

The identity of the deceased always must be certain.

For statistical use of the data, age and sex are necessary.

* To confirm accuracy of the information, for example, compare with the identification document.

What information do we need to fill MCCD?

2. Medical history review

- Medical information that **may contribute to identify the the cause of death:**
 - approximate dates of onset or diagnosis
 - past surgery history with the approximate dates
 - recent hospitalizations
 - medications taken prior to death
 - medical allergies

What information do we need to fill MCCD?

2. Medical history review

Be mindful of and adhere to local guidelines and laws for perinatal and maternal deaths

- Special situations

Death of child-bearing age women	Pregnancy-related circumstances (ectopic pregnancy, unsafe delivery, abortion, etc.) should be considered
Death during a hospitalization	certifying physician will have access to recent hospital notes, diagnoses, treatments and patients' responses

Certifying physicians

- should consider **all potential sources of useful information** pertaining to the death (e.g. ambulance records, general practitioner records, pathology and imaging reports)
- **Non-health sources of information** could be considered as well. (e.g. police reports)

What information do we need to fill MCCD?

3. External examination of the body

- Should be performed in a way which is consistent with **the cultural and religious concerns** of the deceased.
- Observations of the **surroundings** can often provide useful cues (e.g. recent consumption of alcohol, drugs, or signs of violence)
- Information can be elicited from **relatives, caregivers, or other person.**

Be mindful of and adhere to local guidelines and laws for non-natural deaths

- Before examining individual parts of the body, **general features (e.g. nutritional condition, skin discolouration)** should be noted.
- **Both the front and back** of the body, **hair and all orifices** should be examined.
- Don't forget to look for **scars, old injuries, and tattoo marks.**

What information do we need to fill MCCD?

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What information do we need to fill MCCD?

3. External examination of the body

Be mindful of and adhere to local guidelines and laws for non-natural deaths

During examination

- The examination should be performed on the **completely undressed body**.
- If the body is clothed, observe **the condition of the clothing** prior to its removal.
- **Any extraneous items on the body** should be noted.
- In the case of a **homicide or suspicious death**, the body **should NOT be undressed**.
- Be careful **not to destroy or contaminate evidence** or **to create artefacts**.

What information do we need to fill MCCD?

3. External examination of the body

*Please refer to the checklist provided in the WHO recommendations document

[Clues for certain causes]

① The head

- It should be **palpated** so as not to miss **fractures and injuries**.
- **Conjunctival petechial haemorrhages** may indicate **neck compression**.
- Examine **the color of the eyes**.
- **Blood or cerebrospinal fluid leaks from the external auditory canals** can indicate a **skull base fracture**.
- **The oral cavity** should be inspected for signs of blood, foreign matter and other evidence of injury to the oral structures.

What information do we need to fill MCCD?

3. External examination of the body

② The neck

- **Skin abrasions or bruises** may indicate manual strangulation
- **Ligature impressions or furrows** suggest ligature strangulation or hanging.
- **Neck skin injuries and petechial haemorrhages** indicates neck compression.

What information do we need to fill MCCD?

3. External examination of the body

③ The chest

- It should be **palpated** for possible **rib fractures**.
- **Subcutaneous crepitus** suggests **pneumothorax**.
- **Bite injuries** on the breasts or other areas may indicate a **sexually-related assault**.

What information do we need to fill MCCD?

3. External examination of the body

④ The limbs

- Assess **unnatural mobility** caused by fracture or rigor mortis by **passively moving limbs**.
- While examining hands, look for **broken fingernails, electrical burns, and any injuries**, may be indicative of "defence wounds".
- Examine any **injection punctures** in the **forearm, wrists, back of the hands, ankles, and the dorsal feet**, may be related to injection drug use and raise suspicion for drug-related death.

What information do we need to fill MCCD?

3. External examination of the body

⑤ Thigh and genital region

- **Contusions on the inner thighs** may indicate **sexual assault**.
Bondage marks on the ankles or **injuries on the feet** (e.g. electrical burns) can be also found.
- **Injury of the genital or anal region** may indicate **sexual assault**.
- **Any faecal material** should be noted.
- **Bloody stool** can indicate **gastrointestinal haemorrhage**.

Completing MCCD process

1) MCCD contents

2) Guide to fill in MCCD

MCCD contents – Frame A and Frame B

Frame A

- **Part 1**
 - Causally related sequence of the diseases, injuries, conditions that **ultimately resulted in the death**
 - Part 1 can consist of **1, 2, 3, or 4 lines**.
 - Underlying Cause of Death (UCOD) should go to the lowest completed line.
 - **The lower line is the cause of the upper line**
- **Part 2**
 - Other, injuries or conditions that **contributed to death but did not directly cause the death** (they are not part of the causal sequence)

Frame B

- includes information on manner of death,
- circumstantial data for non-natural or external causes of death
- information on maternal deaths, perinatal deaths, and deaths due to post-procedural conditions

MCCD contents

MCCD

Frame A

Part 1

Causal sequence of the diseases, injuries, conditions that **ultimately resulted in the death**

Part 2

diseases, injuries, conditions that **contributed to death but did not directly cause the death** (they are not part of the causal sequence)

Frame B

Detail that is relevant to a more complete understanding of the death

- manner of death
- data for non-natural or external causes of death
- data on maternal deaths, perinatal deaths, and deaths due to post-procedural conditions

NOT REPORTED on MCCD: diseases, injuries or conditions that **did not cause or contribute to death**

Correct example of MCCD

Frame A

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	Right sub-phrenic abscess	1 day
	b	Due to: Perforated duodenal ulcer	5 days
	c	Due to: Chronic duodenal ulcer	3 years
	d	Due to:	
2 Other significant conditions contributing to death (time intervals can be included in brackets after the condition)			

- Part 1 is filled in starting from the top line.
- Underlying Cause of Death (UCOD) should go to the lowest completed line.
- **The lower line is the cause of the upper line**

Frame B

Frame B: Other medical data												
Was surgery performed within the last 4 weeks?						Yes		No		Unknown		
If yes please specify date of surgery						D	D	M	M	Y	Y	Y
If yes please specify reason for surgery (disease or condition)												
Was an autopsy requested?						Yes		No		Unknown		
If yes were the findings used in the certification?						Yes		No		Unknown		
Manner of death:												
Disease				Assault				Could not be determined				
Accident				Legal intervention				Pending investigation				
Intentional self harm				War				Unknown				
If external cause or poisoning:				Date of injury		D	D	M	M	Y	Y	Y
Please describe how external cause occurred (If poisoning please specify poisoning agent)												

Correct example of MCCD

Frame A

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	d	Due to:	
2 Other significant conditions contributing to death (time intervals can be included in brackets after the condition)			

- Part 1 is filled in starting from the top line.
- Underlying Cause of Death (UCOD) should go to the lowest completed line.
- **The lower line is the cause of the upper line**

In this example the following was done:

- Enter a cause of death on Line 1a of Part 1.
- If Part 1 lists only one cause, it's the Underlying Cause of Death (UCOD).
- If multiple causes are listed:
 - Line 1a cause: Immediate cause of death.
 - Lines 1b and 1c causes: Intermediate causes of death.
 - UCOD: Listed last, on line 1c or 1d.
- Record time intervals for each condition in Frame A.
- Time intervals reflect the span from condition onset to death, not diagnosis to death.
- Time estimates can be in minutes, hours, days, weeks, months, or years.

Incorrectly Completed MCCD (1)

ex)

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	TB	
	b	Due to: Broken arm	
	c	Due to:	
	d	Due to:	
2 Other significant conditions contributing to death (time intervals can be included in brackets after the condition)			

Error of causal sequence; Broken arm does not lead to TB

Incorrectly Completed MCCD (2)

ex)

Frame A: Medical data: Part 1 and 2		
1		
Report disease or condition directly leading to death on line a		Cause of death
Report chain of events in due to order (if applicable)	a	Retroviral disease
State the underlying cause on the lowest used line	b	Due to: Pulmonary tuberculosis
	c	Due to:
	d	Due to:
2 Other significant conditions contributing to death (time intervals can be included in brackets after the condition)		

The certificate refers to a case of an advanced stage of HIV infection.

Error of omission; Should use **"HIV/AIDS"** even though the other terms are more discrete or easier for patients' families to accept

Error of causal sequence; HIV/AIDS resulted in pulmonary tuberculosis

Incorrectly Completed MCCD (3)

ex)

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	Shock	
		b	Due to: Abscess	
		c	Due to: Ulcer perforation	
		d	Due to:	
2 Other significant conditions contributing to death (time intervals can be included in brackets after the condition)			Road traffic accident	

Error of selection; should not have included “road traffic accident” in Part 2, since it neither initiated nor contributed to death.

Error of lack of specificity; should have used more precise terms for “abscess” and “ulcer perforation”

Guidance for completing the MCCD form

- Should be described using terms **as specific as possible** when describing **the underlying cause of death**

examples of **imprecise terminologies**

Fracture	Specify the location and the cause
Gangrene	Specify the location and the cause
Gastrointestinal haemorrhage	Specify the cause
Heart failure	Specify the cause
Haemothorax	Specify the cause
Hepatic failure	Specify the cause
Hepatitis	Specify the whether acute or chronic, viral (specify type), or other aetiology

Guidance for completing the MCCD form

- **Should not report only the terminal or intermediate causes** without an etiologically specific cause of death

Example: when the terminal (immediate) cause of the death is **“kidney failure”** you should always indicate the causing condition, for example like **“diabetes mellitus type 2”** or **“arterial hypertension”**.

- Using specific terms can encourage **the usefulness of mortality data to identify health priorities**.

Guidance for completing the MCCD form

- **Do not use a mode of death*** instead of a cause of death

Ex: 'cardiac arrest', 'heart failure', or 'respiratory failure' can not be the cause of death

- **Do not use abbreviations** (e.g. TB)

It may confuse coders, who are not always medical doctors, and make their task more difficult when determining causes of death.

*Mode of death: the immediate physiologic derangement that leads to death.
also called “mechanism of death” or “mode of dying, like stopping breathing, or respiratory failure

Additional guidance for completing the MCCD form

- Always make sure that you are completing the form for **the correct deceased person**.
- Do include in your draft **as much clarifying detail as possible** (if it is “**cancer**”, make a note of **the type of malignancy, the site**, and etc.)
- Do complete **all parts of the form**, including the pertinent sections in Frame B
- **Don't leave Part 1 blank**. If you lack information despite your **best efforts**, do not fabricate a cause; instead, record it as "unknown."
- It is acceptable to report the medical condition as “**probable**” or “**possible**” if a diagnosis **is not confirmed by a procedure but the clinical presentation provides sufficient confirmation**.

Thank you

Find more detail, and a checklist in the [original document here](#)