

Building physicians skills for accurate cause of death certification

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Organization**

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Construction workers are 3 times more likely to die from falls than any other occupation



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Relevance of cause of death information

- Legal
 - To certify the occurrence of a death
 - To define the nature: natural causes or not
 - Legal identity
- Statistical
 - Demographic aspects: sex, age, ethnic group, residence, socioeconomic data
- Epidemiological / public health
 - Cause(s)
 - Data for specific groups: infant and maternal deaths



The 7 steps necessary for the collection and publishing of cause of deaths statistics

1. Find the dead
2. Use WHO 2016 death certificate
3. Physicians certify deaths
4. Coders code Underlying cause of death
5. Data checking and validation
6. Data quality assessment
7. Tabulation and dissemination of statistics



Step 3: Physicians certify deaths

- Train physicians on how to complete the deaths certificate to conform with international standards.
- Concept of underlying cause of death.
- Be careful when transferring from paper to digital- data entry errors.
- Store each death as one record – micro data
- Automated systems have inbuilt validations.
- WHO conducts national death certification workshops.
- Training materials :WHO on-line certification course; handbook for certification of deaths.



Roles of doctors

- Doctors – certifier's responsibility
 - Good quality of **diagnosis**, operation notes, medical records and any other doctor notes
 - Correctness
 - Completeness
 - Specificity
 - Timeliness
 - Readable

Good diagnosis

- Must include all words to described
 - What is the name of diagnosis?
 - Where is the location of disease?
 - Which type of disease?
- Must be final diagnosis or near final - not sign, symptom or condition



INTERNATIONAL STANDARD DEATH CERTIFICATE

- The international form of medical certificate of cause of death facilitates reporting the chain of events leading to death in a sequence.
- Important for international comparability.

WHO International form of medical certificate of cause of death (2016) is recommended for certification of death in all countries

| <i>Administrative Data</i> (can be further specified by country) | | | | | | | | | | | | | | | | | |
|--|---------|----------------|--|---|--|--|--|--|--|---|---|-----------------------------|---|---|----------------------------------|---|--|
| Sex | | | <input type="checkbox"/> Female | | | <input type="checkbox"/> Male | | | <input type="checkbox"/> Unknown | | | | | | | | |
| Date of birth | | | | | | Date of death | | | | | | | | | | | |
| 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 | | | | | | | | | | | | | | | |
| | | 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 B: Other medical data | | | | | | | | | | | | | | | | | |
| Was surgery performed within the last 4 weeks? | | | | | | | | | <input type="checkbox"/> Yes | | | <input type="checkbox"/> No | | | <input type="checkbox"/> Unknown | | |
| If yes please specify date of surgery | | | | | | | | | D | M | Y | M | Y | Y | Y | Y | |
| If yes please specify reason for surgery (disease or condition) | | | | | | | | | | | | | | | | | |
| Was an autopsy requested? | | | | | | | | | <input type="checkbox"/> Yes | | | <input type="checkbox"/> No | | | <input type="checkbox"/> Unknown | | |
| If yes were the findings used in the certification? | | | | | | | | | <input type="checkbox"/> Yes | | | <input type="checkbox"/> No | | | <input type="checkbox"/> Unknown | | |
| Manner of death: | | | | | | | | | | | | | | | | | |
| <input type="checkbox"/> Disease | | | | <input type="checkbox"/> Assault | | | | <input type="checkbox"/> Could not be determined | | | | | | | | | |
| <input type="checkbox"/> Accident | | | | <input type="checkbox"/> Legal intervention | | | | <input type="checkbox"/> Pending investigation | | | | | | | | | |
| <input type="checkbox"/> Intentional self harm | | | | <input type="checkbox"/> War | | | | <input type="checkbox"/> Unknown | | | | | | | | | |
| If external cause or poisoning: | | | | | | Date of injury | | | D | M | Y | M | Y | Y | Y | | |
| Please describe how external cause occurred (If poisoning please specify poisoning agent) | | | | | | | | | | | | | | | | | |
| Place of occurrence of the external cause: | | | | | | | | | | | | | | | | | |
| <input type="checkbox"/> At home | | | <input type="checkbox"/> Residential institution | | | <input type="checkbox"/> School, other institution, public administrative area | | | <input type="checkbox"/> Sports and athletics area | | | | | | | | |
| <input type="checkbox"/> Street and highway | | | <input type="checkbox"/> Trade and service area | | | <input type="checkbox"/> Industrial and construction area | | | <input type="checkbox"/> Farm | | | | | | | | |
| <input type="checkbox"/> Other place (please specify): | | | | | | | | | <input type="checkbox"/> Unknown | | | | | | | | |
| Fetal or infant Death | | | | | | | | | | | | | | | | | |
| Multiple pregnancy | | | | | | | | | <input type="checkbox"/> Yes | | | <input type="checkbox"/> No | | | <input type="checkbox"/> Unknown | | |
| Stillborn? | | | | | | | | | <input type="checkbox"/> Yes | | | <input type="checkbox"/> No | | | <input type="checkbox"/> Unknown | | |
| If death within 24h specify number of hours survived | | | | | | Birth weight (in grams) | | | | | | | | | | | |
| Number of completed weeks of pregnancy | | | | | | Age of mother (years) | | | | | | | | | | | |
| If death was perinatal, please state conditions of mother that affected the fetus and newborn | | | | | | | | | | | | | | | | | |
| For women, was the deceased pregnant? | | | | | | | | | <input type="checkbox"/> Yes | | | <input type="checkbox"/> No | | | <input type="checkbox"/> Unknown | | |
| <input type="checkbox"/> At time of death | | | | | | | | | <input type="checkbox"/> Within 42 days before the death | | | | | | | | |
| <input type="checkbox"/> Between 43 days up to 1 year before death | | | | | | | | | <input type="checkbox"/> Unknown | | | | | | | | |
| Did the pregnancy contribute to the death? | | | | | | | | | <input type="checkbox"/> Yes | | | <input type="checkbox"/> No | | | <input type="checkbox"/> Unknown | | |

Definition of cause of deaths

*“**all those** diseases, morbid conditions or injuries which either resulted in or contributed to death and the circumstances of the accident or violence which produced any such injuries”.*

(Twentieth World Health Assembly, 1967)

The purpose of the definition

- To ensure all the relevant information are recorded
- To ensure certifier does not select some conditions for entry and reject others
- Does not include symptoms and modes of dying, such as Heart Failure and Respiratory Failure



Concept of “underlying cause of death”

- When more than one cause is recorded, there is need to select a single cause for reporting
- The selection is done by the coders, using mortality coding rules
- This single cause is usually given the special name underlying cause of death
- It is the condition, event or circumstances without which the patient would not have died



Sequence

- Refers to two or more conditions entered on successive lines of Part 1
- It is extremely important that doctors report the events in a correct sequence, in the part 1 of the certificate.
- Incorrect sequence result in the incorrect underlying cause of death selection by the coders



Ill-defined conditions

- Ill-defined conditions should never be reported in death certificates as underlying cause of death
- They are coded to unusable codes for public health and policy



Examples of ill-defined conditions

- I46.1 (Sudden cardiac death)
- I46.9 (Cardiac arrest, unspecified)
- I50.- (Acute heart failure in I50.-)
- I95.9 (Hypotension unspecified)
- I99 (Other and unspecified disorders of circulatory system)
- J96.0 (Acute respiratory failure)
- J96.9 (Respiratory failure unspecified),
- P28.5 (Respiratory failure of newborn)

Frequently used ill-defined terms

- **Accident**
 - Specify **circumstances**
 - Specify **intent**, as ‘car accident’ suicidal, or assault
 - Specify **place** of occurrence
- **Alcohol, drugs**
 - Specify **use**: long term or single, addiction
- **Complications of surgery**
 - Specify **disease**: disease that caused surgery
- **Dementia**
 - Specify **cause**: Alzheimer, infarction, old age, other



Frequently used ill-defined terms (cont.)

- **Hepatitis**

- Specify **course, etiology**: acute or chronic, alcoholic
- If **viral**: specify Type (A, B, C, ...)

- **Infarction**

- Specify **site**: heart, brain, ...
- Specify **cause**: arteriosclerotic, thrombotic, embolic ...

- **Infection**

- Specify: primary or secondary, causative **organism**
- If **primary**: specify bacterial or viral
- If **secondary**: specify the primary infection



Frequently used ill-defined terms (cont.)

- **Leukaemia**
 - Specify: acute, subacute, chronic lymphatic, myeloid, monocytic
- **Pneumonia**
 - Specify: primary, aspiration, **cause**, causative organism
 - If due to **immobility**: specify the cause of the immobility
- **Pulmonary embolism**
 - Specify **cause**: cause of embolism
 - If **post-surgical or immobility**: **specify disease** that caused surgery or immobility



Frequently used ill-defined terms (cont)

- **Renal failure**

- Specify: acute, chronic or terminal, underlying **cause** of insufficiency, like arteriosclerosis, or infection
- If due to **immobility**: specify the cause of the immobility

- **Thrombosis**

- Specify: arterial or venous
- Specify: the blood vessel
- If post-surgical or immobility: specify disease that caused surgery or immobility



Frequently used ill-defined terms (cont)

- **Tumour**
 - Specify: behaviour, location, metastases
- **Urinary tract infection**
 - Specify: **site** in the urinary tract, causative **organism**, underlying **cause** of infection
 - If due to **immobility**: specify the cause of the immobility

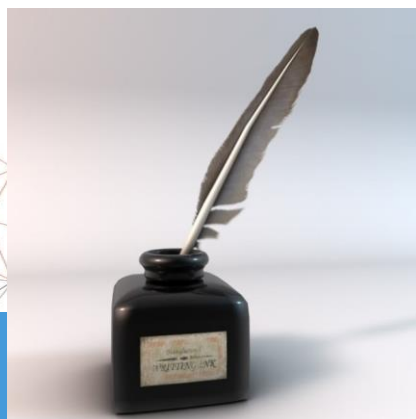


GENERAL GUIDELINES FOR DOCTORS COMPLETING DEATH CERTIFICATES



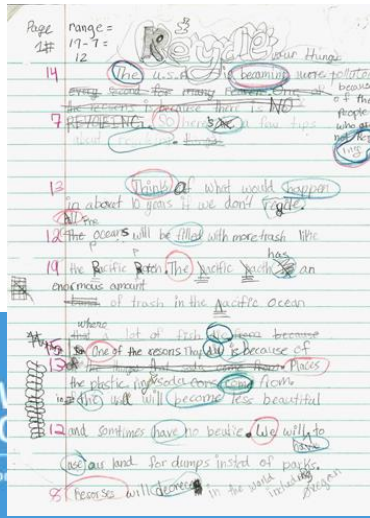
GENERAL GUIDELINES FOR DOCTORS COMPLETING DEATH CERTIFICATES

- All entries must be legible
- Use black or blue ink
- Check the accuracy of identification data including correct spelling of the names



GENERAL GUIDELINES FOR DOCTORS COMPLETING DEATH CERTIFICATES

- Do not make alterations or erasures
- If you want to delete an entry, draw a single line across it
- Do not use correction fluid



GENERAL GUIDELINES FOR DOCTORS COMPLETING DEATH CERTIFICATES

- Only ONE Diagnosis per line in Part 1
- Do not speculate on the cause of death, rather record “cause unknown”.
- Avoid the use of Abbreviations BPH, MI, PID, etc.
- For accidents, injuries or poisonings, the external cause should ALWAYS be reported

GENERAL GUIDELINES FOR DOCTORS COMPLETING DEATH CERTIFICATES

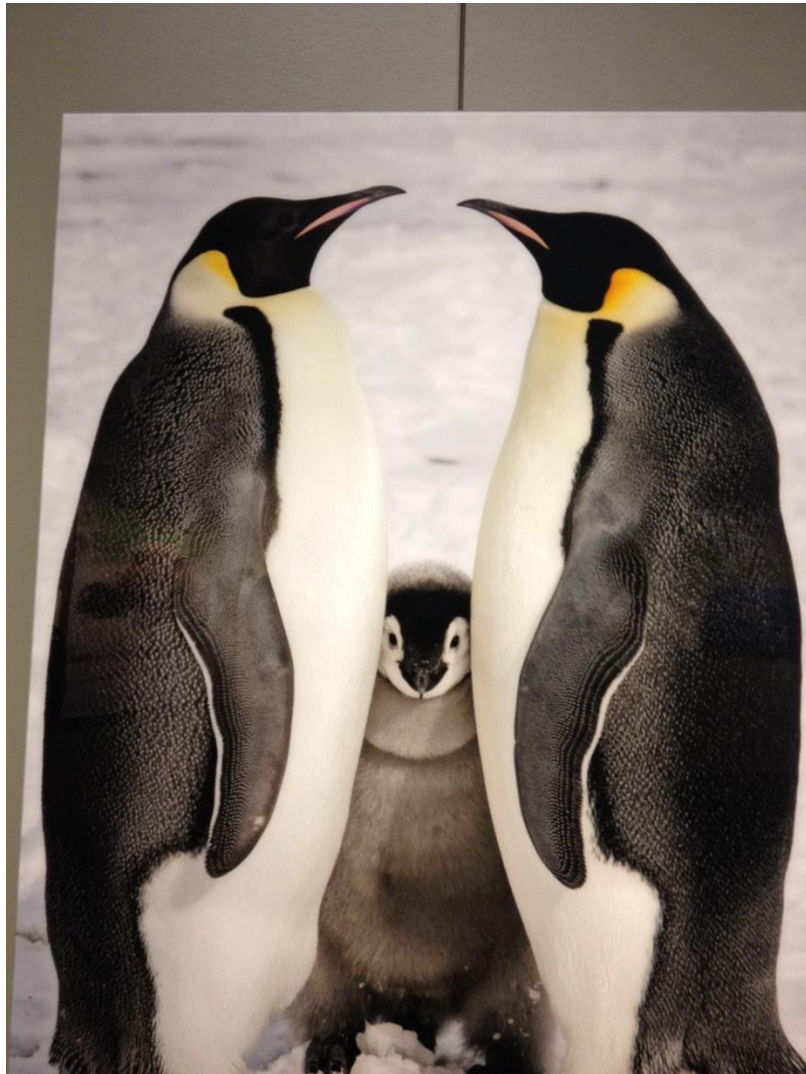
- The mode of dying should not be reported as the immediate cause of death
- Provide precise information about the site or nature of the condition
- Remember to indicate if the patient was pregnant or recently pregnant at the time of death



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Thank you

<http://www.emro.who.int/entity/civil-registration-statistics/index.html>

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