Chapter

06

Certifying cause of death

Why it is important: Understanding the cause of death (COD) and manner of death for every death is critical to ensuring that usable mortality data are produced by the CRVS system. Countries should strive to have an accurate and detailed COD and manner of death attached to every registered death, regardless of whether the person dies in a health facility under the supervision of a physician, at home or in the community, under violent or accidental circumstances, or during an emergency or disaster.

Introduction

Understanding the manner and cause of death ("COD") for all deaths is critical to ensuring that usable mortality data is available in a country. "Cause of death" is defined as "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 such injuries."[1] "Manner of death" explains the circumstances in which a death arose. The International Classification of Diseases (ICD) classifies manner of death as disease, accident, intentional self-harm, assault, legal intervention, war, pending investigation, unknown, or "manner undetermined." Statistics on COD facilitates informed policymaking. For example, information on unnatural deaths (e.g., homicides, poisonings, suicides, road traffic accidents and other externally caused deaths) can inform policies related to violence, drug use, road safety, and other public policy. Cause of death should only be determined by a medical professional; family and other non-medical personal should never be asked to provide cause of death information. Countries should strive to have an accurate and detailed medically certified cause and manner of death attached to every registered death. However, in some contexts it may not be possible to have a physician certify the cause of death, particularly in rural or remote areas where deaths occur at home. In circumstances where a medical certificate of cause of death is not available, registration should be permitted without a cause of death.

1.   Compulsory COD certification

Best Practice:

Ideally, a medically certified COD determination should be required before registering a death. However, the capacity of the health care system to reach remote areas of the country and the level of training of medical professionals on certifying COD varies greatly among countries. For example, in some countries, deaths that occur in health facilities under the supervision of a physician, and deaths referred to the medicolegal authorities, may be likely to have a medically certified COD. By contrast, it may be more difficult to obtain a medically certified COD for deaths that occur in the home or community.[2] In countries or circumstances where it is not practical or possible to have a medically certified COD for all deaths, failure to ascertain or certify COD should not prevent death registration. In those circumstances, requiring only evidence of fact of death, not cause of death, should be the minimum requirement for registration. (Alternative methods of determining cause of death - such as verbal autopsy - may also be permitted (see Section 4 below)).

Guidance: For each of the circumstances of death listed below, describe whether a medical certification of cause of death is *required* in order to register the death. Indicate whether there are any deadlines within which the certification must be completed (e.g., within 24 hours of the death). The next section will examine the entities and individuals authorized to certify the cause of death, so do not include that here. In the comments section, describe whether the law aligns with best practice and note any recommendations for regulatory reform.

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a. Deaths due to natural causes that occur in a health facility:

Citation:

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[1] World Health Organization, *International Classification of Diseases, 2016, volume 2;* See also *Health Topics*, World Health Organization website, available at: *https://www.who.int/bulletin/volumes/84/3/mortality_glossary/en/*
[2] United Nations, Guidelines for the Legislative Framework for Civil Registration, Vital Statistics and Identity Management Systems, New York, 2019, Para. 321.

Comments:

b. Deaths due to natural causes that occur in the home/community under medical supervision:

Citation:

Comments:

c. Deaths due to natural causes that occur in the home/community without medical supervision:

Citation:

Comments:

d. Unnatural or suspicious deaths (e.g., violence, accident, suicide, unsupervised deaths, including deaths that occur in and out of a health facility, and dead on arrival):

Citation:

Comments:

e. Emergency or disaster (mass fatalities):

Citation:

Comments:

2.   **Certifiers of COD**

Best Practice: A certifier of COD is the person authorized by law to medically certify the underlying and contributory causes of death, and other facts related to the death, for submission to the local registrar or other appropriate authority.[3] For deaths due to natural causes that occur in a health facility, the head of the health facility should be responsible for ensuring a medically certified COD; however, this responsibility may be delegated to qualified staff. For a death due to natural causes that occurs in the home or community under medical supervision, the medical professional that treated the deceased during their last illness should be responsible for certifying cause of death. When a death due to unnatural causes or a suspicious death occurs, the death must be reported to the medicolegal authorities (e.g. police, coroner, medical examiner), regardless of whether the death occurred in a health facility or in the home/community, or the deceased was dead on arrival. For these types of deaths, the coroner or medical examiner should be responsible for medically certifying cause of death. Emergencies and disasters present a challenge for death registration because there may be a large number of deaths that occur in a

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[3] United Nations, Principles and Recommendations for a Vital Statistics System, Revision 3, New York, 2014, page 202.

short period of time. Because these are deaths due to unnatural causes, they should be referred to the medicolegal authority. However, because these authorities may not be equipped to deal with a large number of deaths at once, emergency rescue may assist medicolegal authorities with identification of the deceased and handling of bodies.[4] (See Chapter 12 for more on medicolegal death investigation).

Guidance: For each of the circumstances of death below, indicate what entity/agency (e.g., health facility, coroner's office) and person (e.g., attending physician, coroner, medical examiner) is allowed or required to medically certify cause of death. Note whether there is a clear definition or understanding of who can medically certify the death. For example, if "medical practitioners" can certify, note the definition of "medical practitioner" either in the cited law or another controlling text. Be specific about the authority of each certifier and any gaps in the system. For example, if the "physician attending the death" is required to medically certify facility deaths, explain who would certify the COD for deaths that occur without an attending physician (such as when a person is brought in dead to the hospital or dies before a physician can see the patient). Another gap might occur if doctors at public hospitals are required to certify deaths, but private hospitals are not. In the comments section, describe whether the law aligns with best practice and note any recommendations for regulatory reform.

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a. Deaths due to natural causes that occur in a health facility:

Citation:

Comments:

b. Deaths due to natural causes that occur in the home/community under medical supervision:

Citation:

Comments:

c. Deaths due to natural causes that occur in the home/community without medical supervision:

Citation:

Comments:

d. Unnatural or suspicious deaths (e.g., violence, accident, suicide, unsupervised deaths, including deaths that occur in and out of health facility, and dead on arrival):

Citation:

Comments:

e. Emergency or disaster:

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[4] United Nations, Guidelines for the Legislative Framework for Civil Registration, Vital Statistics and Identity Management Systems, New York, 2019, Para. 324, 329 - 345.

Citation:

Comments:

3.   Form of COD reporting and international classification of COD mortality coding

Best Practice: The WHO International Standard Form of the Medical Certificate of Cause of Death (MCCD) is the recommended form for recording COD information for certification. The form contains data fields for the immediate, antecedent and underlying causes of death, which are completed by a physician. Underlying cause of death is defined as "the disease or injury which initiated the train of morbid events leading directly to death, or the circumstances of the accident or violence which produced the fatal injury."[5] The underlying COD assigned by the physician is a tentative determination. The form is designed for trained coders or an automated system, Iris, to determine the underlying cause of death from the immediate, antecedent, and underlying causes of deaths listed with their respective time intervals.

These diseases and injuries should be coded in accordance with the rules of the International Classification of Diseases (ICD), which was developed by the World Health Organization and is the foundation for the identification of health trends and statistics globally. ICD defines the universe of diseases, disorder, injuries and other related health conditions. These are organized systematically to allow for sharing and comparing health information across facilities, regions, and times.[6] Mortality coding takes place as the last step in the process and is a separate activity from medical certification of cause of death. Mortality coding staff, which may be situated in the central health or statistical agencies, use the ICD to assign and code the underlying cause of death. Coding may be done manually or using automated software, such as Iris.

Guidance: Describe the form to be used for medical certification of cause of death for each of the circumstances below. Indicate whether the MCCD and ICD are used. If non-standard MCCD forms or coding are used, describe which information is required to be contained in an MCCD or equivalent documents. For example, coroners, police, emergency personnel, or others may have a different form. If non-standard coding methods are used, describe the method's process in determining underlying cause of death and its link with ICD. Indicate whether mortality coding is required or permitted to be undertaken automatically using a software program and whether coding is required to be undertaken centrally or at a subnational level. In the comments section, describe whether the law aligns with best practice and note any recommendations for regulatory reform.

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a. Describe the form or forms used for certifying cause of death for:

       i. Natural deaths occurring in health facilities:

       ii. Natural deaths occurring in the home/community:

       iii. Deaths investigated by medicolegal authorities:

       iv. Deaths with mass fatalities (i.e. natural and man-made disasters):

       v. Other:

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[5] http://www.who.int/topics/mortality/en/
[6] United Nations, Principles and Recommendations for a Vital Statistics System, Revision 3, New York, 2014, paragraph 494; United Nations, Guidelines for the Legislative Framework for Civil Registration, Vital Statistics and Identity Management Systems, New York, 2019, Para. 325.

Citation(s):

Comments:

b. Describe the mortality coding process (Note whether mortality coding takes place centrally or sub-nationally, and if Iris or other software program is used)

Citation:

Comments:

4. Verbal autopsy and determinations of cause of death without medical certification of cause of death

Best Practice: While a proper medical certification of cause of death based on directly observed clinical or autopsy data is the most reliable, difficult access to health facilities in many countries leading to many individuals dying outside of medical care, makes such medical certification of cause of death for all deaths difficult. For deaths occurring outside of health facilities, it may be appropriate to use verbal autopsy (VA) — a structured interview of the decedent's family members or other caregivers who can provide enough information to determine the probable COD, either using a computer algorithm (automated VA) or by a physician who reviews the interview results and assigns a COD (physician-certified VA).[7]

Note that the use of verbal autopsy in national CRVS systems is a relatively recent development. Therefore, standards and best practice regarding the use of VA for ascertaining COD for legal and statistical purposes are still under development. In some countries, physician-certified VA may be used at the individual level for legal purposes (equivalent to an MCCD). In other countries, VA is used for statistical purposes at the population-level only.[8] Information on COD at the population level is important for public health decision-making, and COD data generated through VA can make a significant contribution to public health data.

Guidance: Describe how COD is determined if physicians are not available to medically certify a COD. Indicate whether, and in what circumstances, the law permits VA - physician-certified VA, automated VA, or another form. If VA is explicitly mentioned, indicate as such. Indicate whether a COD derived from physician-certified VA would satisfy any requirement that COD be "medically certified" for legal or statistical purposes. For automated VA, indicate whether the derived COD would satisfy the requirement to determine COD at an individual level for legal purposes or whether it could be used for public health purposes at a population level. In the comments section, describe whether the law aligns with best practice and note any recommendations for regulatory reform.

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a. How is COD determined if no physician is available to medically certify a COD? Is VA explicitly permitted or required? If so, is it permitted for legal or statistical purposes?

[7] United Nations, Principles and Recommendations for a Vital Statistics System, Revision 3, New York, 2014. Paras. 499-501.
[8] United Nations, Guidelines for the Legislative Framework for Civil Registration, Vital Statistics and Identity Management Systems, New York, 2019, Para. 349-351.

Citation(s):

Comments:

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5.   Transmission of COD information to civil registration and statistics agencies

Best Practice: The MCCD should be transmitted to the civil registrar by the health facility, medical practitioner, coroner, or other authorized medical personnel, to be used for legal purposes. Generally, it is the responsibility of the civil registrar to ensure that the MCCD, and any other information needed for statistical purposes, is submitted to the statistical authorities for processing and the production of vital statistics.[9] However, some countries use a bifurcated form, containing a section for legal information and a section for statistical information. With this type of form, the legal information is submitted to the registrar and the statistical information is submitted directly to the statistics agency.[10]

There is currently no consensus among international experts regarding the reporting of VA-generated COD information to the civil registrar. Determinations of COD by verbal autopsy are not considered to be accurate at the individual level, however the results provide useful population level data. Due to this, some experts recommend that COD information from VA should be delivered or transmitted directly to the statistics agency (not the registrar), as it is used for statistical purposes only, not legal purposes. If physician-assisted VA is used for legal purposes, this information should be transmitted to the registrar, but with a notation that COD was generated from VA.[11]

The direct link from certifier to civil registrar, or from certifier to civil registrar and statistics agency, achieves two simultaneous benefits. First, the efficient transmission of information provides the necessary information, including COD, to the civil registrar and statistics agency without placing an additional burden on an intermediary, often a mourning family, to carry the MCCD to the registrar. Second, certifiers of COD are less likely to modify sensitive COD information if fewer people have access and knowledge to that potentially sensitive information. For example, a physician may not feel comfortable listing HIV as the underlying cause of death on an MCCD that will be handed to the family.[12] Note, however, that the *Principles and Recommendations for a Vital Statistics System, Revision 3*, state that cause of death information may be disclosed to close relatives.[13] Nonetheless, some countries may restrict even the family's access to COD information.

Guidance: For each circumstance below, describe whether and how the COD information is transmitted to the civil registrar and/or statistics agencies. Pay particular attention to whether any intermediaries could diminish the quality or lower the quantity of the information reaching the government agencies. In the comments section, describe whether the law aligns with best practice and note any recommendations for regulatory reform.

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a. MCCD for death that occurred in a health facility:

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[9] United Nations, Principles and Recommendations for a Vital Statistics System, Revision 3, New York, 2014. Para. 498.
[10] United Nations, Guidelines for the Legislative Framework for Civil Registration, Vital Statistics and Identity Management Systems, New York, 2019, Para. 327.
[11] United Nations, Guidelines for the Legislative Framework for Civil Registration, Vital Statistics and Identity Management Systems, New York, 2019, Para. 351.
[12] United Nations, Guidelines for the Legislative Framework for Civil Registration, Vital Statistics and Identity Management Systems, New York, 2019, Para. 328.
[13] United Nations, Principles and Recommendations for a Vital Statistics System, Revision 3, New York, 2014, paragraph 498.

Citation:

Comments:

b. MCCD from physician for out-of-facility death:

Citation:

Comments:

c. MCCD from medicolegal investigation:

Citation:

Comments:

d. COD from Verbal Autopsy:

Citation:

Comments:

6. **Access to COD information**

Best Practice: COD is sensitive and confidential medical information. This information is critical for statistical purposes, but it must be carefully secured. Information on cause of death can be important to close family members of the decedent for insurance and other matters. UN guidance provides that close family members should have the right to request COD information. However, due to the confidential nature of this information, country practices vary with regard to inclusion of COD on the death certificate. Some do not include COD information on death certificates issued by the CR, others do; and some countries have a short-form and a long-form death certificate, the former without COD information and latter with it.[14]

The death certificate issued by the Civil Registrar is the official legal document providing evidence of death. If an extended list of people can request and receive a death certificate, countries should carefully consider whether COD should be included to protect the privacy of the decedent and his/her family. Only interested parties with a legitimate interest or their legal representatives should be able to request certificates that contain COD information.[15]

Guidance: For each of the following documents, indicate who can request access to the COD information. Indicate any other security measures that ensure the confidentiality and security of the information. For the death certificate, indicate whether the COD information is always listed in certified copies (including

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[14] United Nations, Guidelines for the Legislative Framework for Civil Registration, Vital Statistics and Identity Management Systems, New York, 2019, Para. 360.
[15] United Nations, Guidelines for the Legislative Framework for Civil Registration, Vital Statistics and Identity Management Systems, New York, 2019, Para. 363.

short and long form). In the comments section, describe whether the law aligns with best practice and note any recommendations for regulatory reform.

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a. Death certificate:

Citation:

Comments:

b. MCCD from health facility or physician:

Citation:

Comments:

c. MCCD from medicolegal investigation:

Citation:

Comments:

d. COD from Verbal autopsy:

Citation:

Comments:

e. Other COD determination:

Citation:

Comments:

7. **Training and other resources to improve COD data**

Best Practice: Correctly completed MCCD and well-trained coders determining the underlying cause of death form the basis for good quality mortality statistics. Practicing medical professionals must be trained and retrained in medical certification of cause of death. To improve the quality of information in medical certification of cause of death, physicians must be trained in correct completion of the international MCCD standard form. Medical certification of cause of death should be included in mandatory curricula

for all medical students and in all post-graduate medical education and professional in-service trainings.[16] Well-trained coders applying ICD coding rules and principles are essential to the production of high-quality mortality data. Coders require specialized training and continuous supervision. Therefore, it is recommended that a dedicated ICD-coder cadre be created, funded, and adequately trained and re-trained.[17]

Guidance: Describe any law, regulation, or directive related to training for medical students, physicians, and other medical professionals (e.g., coroners, medical examiners, medical officers, nurses, etc.) in medical certification of cause of death. Indicate whether training in medical certification of cause of death is optional but counts toward continuing medical education requirement and whether training is required for licensure or re-licensure. Any requirement for the medical profession related to this training is likely to be contained in the rules/regulations of the country's medical association or other body that accredits and licenses physicians. Any requirement related to training for medical students is likely to be contained in the rules/regulations related to the curricula of medical schools.

Describe any law or directive creating a job classification of ICD mortality coders. Include details of ministry/entity that oversees the cadre, whether the job is full-time, and any other relevant details.

In the comments section, describe whether the law aligns with best practice and note any recommendations for regulatory reform.

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a. Medical school training in COD certification:

Citation:

Comment:

b. Physician training in COD certification:

Citation:

Comment:

c. Training of other medical professionals in COD certification (including coroners/medical examiners)**:**

Citation:

Comments:

d. Dedicated cadre of trained ICD mortality coders:

Citation:

Comments:

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[16] World Health Organization, Strengthening Civil Registration and Vital Statistics for Births, Deaths, and Causes of Death, Resource Kit, 2012, Module 4.
[17] World Health Organization, Strengthening Civil Registration and Vital Statistics for Births, Deaths, and Causes of Death, Resource Kit, 2012, Modules 4, 5.

e. Other resources or training available

Citation:

Comments:

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8.   Enforcement, monitoring, and evaluation

Best Practice: Completeness of mortality data can only be improved if legal obligations to determine and medically certify COD following best practices are monitored and enforced.[18]

Guidance: Describe any documented system of fines, incentives, or oversight applied to those required to determine or medically certify COD. Include a description of the monitoring system and the amount of fines/penalties, and parties subject to fines/penalties. In the comments section, describe whether the law aligns with best practice and note any recommendations for regulatory reform.
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a. Monitoring and Evaluation:

Citation:

Comments:

b. Fines or other penalties:

Citation:

Comments:

c. Incentives:

Citation:

Comments:

<div style="background-color:purple; height:1em;"></div>

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[18] World Health Organization, Strengthening Civil Registration and Vital Statistics for Births, Deaths, and Causes of Death, Resource Kit, 2012, pp. 55-57.