CRVS technical guide

Action guide on improving the quality of cause of death data in hospitals

This CRVS action guide provides eight key action areas to improve the quality of cause of death data in hospitals.

1. Establish a national stakeholder group or committee
2. Introduce the International Form of MCCOD
3. Improve or introduce coding of medical certificates
4. Develop training curricula and materials
5. Implement a targeted training program
6. Establish clinical audit committees
7. Measure and monitor the quality of certification
8. Improve medical records systems

How can hospitals improve cause of death data?

Countries seeking to plan and monitor the health of their populations need reliable cause of death (COD) information to produce population-level mortality data.[1] Such COD data are derived from information on medical death certificates, meaning that **accurate medical certification of cause of death** (MCCOD) by physicians is crucial.[2]

When a patient dies in a hospital, a physician – usually the one who attended to the patient, or one who is familiar enough with the patient's medical history to confidently ascertain the COD – will complete a medical certificate of cause of death.[3] This is usually the World Health Organization International Form of Medical Certificate of Cause of Death.

To do this, the physician must identify the disease or injury leading directly to death, and then trace back the sequence of events to determine the underlying COD. The causes recorded on the certificate include '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'.[4]

The process of certification in hospitals is not without its challenges, as physicians filling out death certificates are often **not properly trained in MCCOD**. This lack of training results in incorrect MCCOD, and reflects a lack of broader awareness among physicians, medical training bodies and hospital management of the legal, ethical and public health importance of proper certification.[5]

1 Lopez AD, Setel PW. Better health intelligence: a new era for civil registration and vital statistics? *BMC Medicine* 2015; 13:73.

2 University of Melbourne. *Training and education on medical certification of cause of death: Effective strategies and approaches.* CRVS development series. Melbourne, Australia: Bloomberg Philanthropies Data for Health Initiative, Civil Registration and Vital Statistics Improvement, the University of Melbourne; 2018.

3 Lomas HD, Berman JD. Diagnosing for administrative purposes: some ethical problems. Social Science and Medicine 1983; 17:241-244.

4 World Health Organization. Mortality theme issue: glossary. *Bulletin of the World Health Organization* 2006; 84:161-256.

5 Dash, SK, Behera BK, Patro S, et al. Accuracy in certification of cause of death in a tertiary care hospital – a retrospective analysis. *Journal of Forensic and Legal Medicine* 2014; 24:33-36.

Action guide – key tasks and challenges

1 2 3 4 5 6 7 8

Step 1: Establish a national stakeholder group or committee

Create a national stakeholder committee responsible for coordinating and leading efforts to improve mortality and COD data.

Specific objectives of such committees will vary from country to country, but broad terms of reference include:

- Coordinate, monitor, and ensure alignment of interventions to improve mortality and COD information with government priorities and strategies.
- Assist in producing accurate mortality information.
- Provide leadership on matters related to improving mortality and COD information.
- Support strengthening of inter-agency mechanisms for death reporting and COD.
- Support relevant line ministries to ensure improved processes for timely information and data sharing, including interoperability among existing and developing IT systems.
- Promote policy reform and development in line with international best standards for mortality and COD information.
- Create a national plan for certification improvement.
- Establish standards for certification training as part of continuing medical education.
- Consider requirements for including certification quality as a reportable quality metric for hospitals.

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Step 2: Introduce the International Form of Medical Certificate of Cause of Death

Hospitals should implement and consistently use the World Health Organization's International Form of Medical Certificate of Cause of Death.

By using this international standardised death certificate, COD data collection will immediately and significantly improve. When all hospitals within a country use the same standardised tool, the data become comparable and easily aggregated to be analysed at the national level for policy and planning. Hospitals in countries that do not yet have legislation regarding the recoding of COD can lead by example by introducing such practices, allowing them to operate at the international standard as well as being the impetus for change in their countries.

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Step 3: Improve or introduce coding of medical certificates

Hospitals should introduce/improve coding and reporting on deaths, which can occur in two ways: 1) through coding of medical certificates of COD, in which case mortality coders need training in coding medical certificates; and 2) in the form of hospital death discharge data used for morbidity coding.

Coding is essential for enabling the use of mortality data, and as such, hospital clinical audit committees should be responsible for maintaining communication between coders and physicians. Hospitals seeking to develop a coding strategy can follow the steps below:

- Clarify the flow of mortality data.
- Determine the ICD coding workforce: distribution, qualifications, training.
- Develop a training/retraining strategy for mortality coders (international and national).
- Plan the optimal distribution of mortality coders within the overall context of hospital morbidity and mortality coding.
- Train coders.

Step 4: Develop training curricula and materials

Medical school curricula should include an up-to-date training component on medical certification of COD, and continuing education modules should be developed and offered regularly as in-service training. For practising physicians, certification should be assessed as part of continuing medical education.

Education programs on medical certification of COD should aim to provide physicians with:

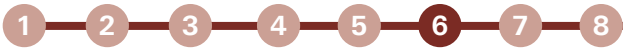
- knowledge of the importance of medical certification of COD for public health policy and practice,
- the necessary skills to complete a medical certificate, and
- the attitude that correct medical certification is an essential part of clinical practice.

Step 5: Implement a targeted training program

Hospital administrators must prioritise MCCOD training for both junior and senior physicians in medical certification.

Education and training on MCCOD are fundamental for improving the accuracy of death certification.[6] For junior physicians and interns, education should centre around providing hands-on experience in completing death certificates. Experienced practicing physicians should receive refresher trainings on certification rules and significance for improved COD data.

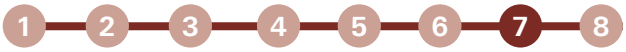
Given the scale of training required, hospitals may adopt a 'training of trainer' model, where trainers will be experienced physicians with the ability to adjust training methods to different audiences and circumstances.



Step 6: Establish clinical audit committees

Hospital management should create a clinical audit committee (and/or subcommittee) dedicated to implementing and improving MCCOD. This will ensure that countries make sustainable improvements in the quality of COD data. Such committees or subcommittees should:

- Oversee the introduction of the International Form of Medical Certificate of Cause of Death.
- Oversee the training of physicians on how to correctly perform MCCOD.
- Monitor and evaluate quality of clinical records, including quality of MCCOD reporting.
- Link monitoring and evaluation processes to requirements for the hospital's overall accreditation process(es).



Step 7: Measure and monitor the quality of certification

Physicians and relevant hospital staff must follow a series of steps for clinical record-keeping (**Box 1**). These steps will ensure that clinical records contain comprehensive information about patients' signs and symptoms, and assist reviewers in determining the accuracy of the assigned underlying COD.

At the same time, hospital clinical audit committees must conduct quality-assurance reviews of such records (**Box 2**). Part of this review process should be determining whether the correct underlying COD has been recorded in the records of deceased patients.

6 Pillay-van Wyk V, Bradshaw D, Groenewald P, et al. Improving the quality of medical certification of cause of death: the time is now! *South African Medical Journal* 2011; 101:626.

1 2 3 4 5 6 7 8

Step 8: Improve medical records systems

The storage and retrieval of medical records are fundamental to improving MCCOD. Disorganised records can make it difficult to maintain complete clinical history, which will result in poor-quality COD data in the future. Improving medical records systems requires collaboration between government agencies, technical partners and funders.[7] Hospitals should consider how to respond to challenges relating to space, information technology and human resources for managing records systems.

Box 1: Diagnostic steps for physicians' clinical records

- Patient admission to hospital
  - Presenting symptoms
  - Clinical history and physical examination
- Provisional diagnoses
  - What possible conditions is this person suffering from?
  - What do we treat?
  - How do we investigate?
- Main condition
  - What condition necessitated admission or, if more than one condition, what condition was responsible for the greatest use of resources?
  - Analysis of the use of resources and funding models
  - Case fatality rate and mortality indexes
- Underlying COD (medical certificate)
  - Disease prevention
  - Public health policy and planning

Box 2: Points to cover in review of clinical records

- Patient admission to hospital
- Whether the admission notes and discussion of differential diagnosis are complete
- Whether the results of any investigations are in the record, including visual inspection during surgical procedures and results from tissue biopsies
- Whether the physicians drew the appropriate conclusions
- Whether the MCCOD was filled out completely and correctly
- Whether the record contains comments on the course of the illness in hospital in relation to diagnosis
- Public health policy and planning

Summary

For countries to have accurate mortality data, hospitals must produce accurate COD information. Although hospitals are often at the frontline of COD data collection, physicians often have limited to no training in death certification. This results in inaccurate medical certification and subsequent poor-quality COD data. Hospital management can implement eight interrelated strategies to improve the accuracy and consistency of COD drawn from medical records. These strategies should be embedded within larger interagency frameworks for cause of death data strengthening in hospitals across countries.

7 World Health Organization. *Medical records manual: a guide for developing countries*. WHO, Geneva; 2002.

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