Assessment of Medical Certification of Cause of Death at Medical College Hospital, Bhavnagar, Gujarat

Ghanshyam Ahir¹, Pravin Damor², Atul Trivedi³

¹Government Medical College, Bhavnagar.
²Health Department, Gujarat.
³Associate Professor of Community Medicine, Government Medical College, Bhavnagar.

DOI: https://doi.org/10.24321/2454.325X.201802

Abstract

Introduction: Medical certification of cause of death (MCCD) may be employed in explaining trends and differentials in overall mortality, indicating priorities for health action, and in the assessment and monitoring of public health problems and programs. MCCD is compulsory as per the registration of Birth and Deaths Act, 1969.

Objectives: (1) To assess the completeness and accuracy of MCCD. (2) To recommend necessary corrective measures to improve completeness and accuracy of MCCD form.

Methodology: Record base review was carried out during October 2012 at Sir Takhtsinjhi Hospital, Bhavnagar. Medical record section of this hospital receives death certificates in two copies from all the departments. After taking written permission from the superintendent of the hospital, all the certificates of death in hospital deaths from 1st January 2012 to October 2012, which were kept in medical record section, were assessed for completeness and accuracy of MCCD form as per guidelines of MCCD, Government of Gujarat.

Results: Accuracy was immediate cause, antecedent cause and underlying cause of death was only 20.07%, 26.76% and 28.87% of MCCD forms. Completeness of underlying cause of death was only in 47.99 forms.

Conclusion: This study revealed definite lacuna of accuracy and completeness in MCCD process of the hospital.

Keywords: Assessment, Medical certification of cause of death, Medical College Hospital

Introduction

The medical certification of cause of death plays an important role in providing mortality pattern of various diseases. The data on cause of death contained in the certificate serve many purposes: they help in assessing the effectiveness of public health programs and provide feed-back for future policy and implementation. They are essential for better health planning and management and for deciding priorities of health and medical research programs (manual).

As per legal provision of the Registration of Births and Deaths Act, 1969, MCCD is compulsory. The physician’s primary responsibility is to complete the medical part of the certificate regarding all diseases, morbid conditions or injuries which either resulted in or contributed to death. Causes of death are classified, coded and grouped according to International Classification of Diseases (ICD-10) recommended by WHO. Assessment is the process which leads to improvement in the system. MCCD process assessment had not been done at the Medical College Hospital till date. Inaccurate and incomplete certification
process may lead to wrong coding of ICD, which may show wrong data of mortality at the hospital. With this view in mind, we planned a study to assess MCCD at the Medical College Hospital.

**Methodology**

This record-based cross-sectional study was carried out during October 2012 at Sir Takhtsinhji Hospital, Bhavnagar, which is a medical college-attached hospital run by the health and family welfare department of the Government of Gujarat. Medical record section of this hospital receives death certificates in two copies from all the departments after the death of an admitted patient in the hospital. After taking written permission from the medical superintendent of the hospital, all the certificates of death in hospital deaths from 1st January 2012 to October 2012, which were kept in the medical record section, were assessed for completeness and accuracy of MCCD form as per guidelines of MCCD, Government of Gujarat. The assessment tool was prepared for all variables of standard MCCD form, which is filled in by the attending physician to check accuracy and completeness in accordance with the physician’s manual on MCCD published by the Chief Registrar of Births and deaths, Gujarat state. Data obtained were entered in a Microsoft Excel sheet for analysis. Expected outcomes were proportion of reported deaths, proportion of MCCD forms having complete accuracy in variables like immediate cause, antecedent cause and underlying cause of death and proportion of completed MCCD forms in terms of variables like age, intervals, signature of the physician, etc.

**Results and Discussion**

A total of 523 forms of MCCD of the government hospital were assessed. McGivern et al. had found out that certificates for deaths occurring in hospitals were more likely to have major errors, which was 59%. Figure 1 shows the manner of reported deaths, which shows that 68.26% of deaths were natural deaths. It was noticeable that 16.25% of forms did not mention the manner of death. Patel et al. in their study did not study the manner of death, which is an important part of the MCCD form. Table 1 shows underlying cause was mentioned in only 47.99%. Sibai et al. reported that immediate, antecedent and underlying cause of death was mentioned in 44.3%, 61.7% and 82.9% of death certificates, respectively. Out of total forms, 12.86% of the forms were missing in physician’s signature. Qaddumi et al. had shown in their study that 17.3% of physicians wrote the mechanism of death without reporting the underlying cause of death. Table 2 shows that accuracy in immediate cause, antecedent cause and underlying cause of death was only 20.07%, 26.76% and 28.87% of MCCD forms. Venu et al. have shown in their study that accuracy was only 1.1% with the use of scoring system.

**Conclusion**

Most of the deaths at the medical college hospital were mostly attended by PG students. Certification is a fundamental requirement for building up epidemiological data. This Study revealed definite lacuna of accuracy and completeness in MCCD process of the hospital. This study showed avoidable errors in all death certificates. It reflects inadequate practice, training and lack of awareness about importance of medical certificate of cause of death, carelessness and negligence on the part of attending doctors.
Table 1. Completeness of Important Variables of MCCD Forms (n=523)

| S. No. | Variable                                      | Number | Percentage |
|--------|----------------------------------------------|--------|------------|
| 1      | Age                                          | 520    | 99.42      |
| 2      | Date and time of death                       | 523    | 100        |
| 3      | Immediate cause                              | 359    | 68.64      |
| 4      | Interval between Immediate cause and death   | 27     | 5.16       |
| 5      | Antecedent cause                             | 328    | 62.71      |
| 6      | Underlying cause                             | 251    | 47.99      |
| 7      | Interval between underlying cause and death  | 12     | 2.29       |
| 8      | Name and signature of doctor                 | 461    | 88.14      |
| 9      | Date of verification                         | 203    | 38.81      |

Table 2. Accuracy of Important Variables in the MCCD Forms (n=523)

| Variable                        | Accurate | Inaccurate | Did Not Write |
|---------------------------------|----------|------------|---------------|
| Immediate cause                 | 105 (20.07 ) | 414 (79.15 ) | 4 (0.78 ) |
| Antecedent cause                | 140 (26.76 ) | 292 (55.38) | 91 (17.39)|
| Underlying cause of death       | 151 (28.87 ) | 213 (40.72) | 159 (30.40)|

Conflict of Interest: None

Financial support: None

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Date of Submission: 2018-01-07
Date of Acceptance: 2018-02-07