



MEDICAL CERTIFICATION OF CAUSE OF DEATH: PRESENT STATUS AT A TERTIARY CARE HOSPITAL IN SOUTH WESTERN MAHARASHTRA

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ABSTRACT **Background-** Medical certificate of cause of death (MCCD) is issued by a Registered Medical Practitioner for death certification in cases of natural deaths. It is not only an important legal document but also has varied implications – statistically and epidemiologically. Errors in filing up death certificates are not uncommon and these inaccuracies range from incomplete certificates, illegible handwriting and wrong cause/manner of death. This study aimed to find out frequency and type of inaccuracies by medical practitioner at a tertiary care hospital and to suggest remedial measure
Method- One thousand MCCD were studied during the two year period (Jul 2012 to Jun 2014). All these certificates were completed by residents working in tertiary care hospital.
Results- Out of one thousand MCCD, six hundred and sixty two MCCD were wrongly filled (66.2%). Out of these, six hundred forty nine MCCD had major errors (64.94% of total) and five hundred forty nine (54.9%) MCCD had minor errors. Among wrongly filled certificates, 34.1% of certificates had unacceptable cause of death, followed by 33.3% certificates, where death mechanism was wrongly listed, contending causes (16.7%) and improper sequencing (13.9%).
Conclusion- This universal problem of inaccuracies can be curtailed through an elementary but structured educational mediation, such as analysis of the MCCD of each deceased patient during ward rounds and yearly course in certification of death primarily aimed at residents and medical officers, who usually fill up MCCD.

KEYWORDS : Medical certification, Major errors, Minor errors, cause of death, Antecedent cause.

INTRODUCTION

The office of Registrar General, India had prepared the blueprint of Medical Certification of Cause of Death. It is an important tool of obtaining scientific and genuine information with regard to causes of mortality and for formulating statistics. Across the country from states to union territories and from medical college hospital to district hospitals, this scheme has been executed in a phased manner. Mortality statistics is essential for better health planning and management of programmes, to know the impact of health services, and to evaluate health indicators like infant mortality, maternal mortality etc. It helps to understand the trend and changing mortality pattern of various diseases as well as to find out the magnitude of newly emerged diseases. The 1969, Act of Registration of Births and deaths has a provision for MCCD under section 10 (2) and 10 (3). MCCD helps in acquiring disease preponderance in a population on the basis of which health statistics are prepared. That is why it is imperative to assure correctness and validity of data filled in MCCD. Mistakes in filing up death certificates are not uncommon and these inaccuracies range from incomplete certificates, illegible handwriting to wrong cause/manner of death. As per international studies 24% -37% of MCCD contain considerable errors in the cause of death.^{1,3} The standard format of the certificate prescribed by WHO is incorporated in the Maharashtra Registration of Births and Death Rules, 2000 viz. form No. 4 & form No. 4A.⁴ A medical person attending the deceased in his/her last illness, after death of a person shall fill in form No.4 for institutional deaths/4A for non-institutional deaths. The registered medical practitioner concludes the cause of death which is defined as a disease, abnormality, injury or poisoning that contributed directly or indirectly to death. After the receipt of certificates the coding of cause of death is done centrally according to alphanumeric coding system of ICD-10. The aim of this study was auditing of all MCCD received from a tertiary care hospital from Jul 2012 to Jun 2014 to find out the frequency and type of inaccuracies in MCCD completed by medical practitioner at a tertiary care hospital and their remedial measures.

MATERIALS AND METHODS

For the present study, death certificates (MCCD) of in-hospital natural deaths occurring in a tertiary care hospital from Jul 2012 to Jun 2014 were audited for seven types of errors. (Table 1). Two Previous methods (Jordan JM and Bass MJ and Weeramanthri T and Berseford

B) of auditing death certificates for errors were adopted with minor modifications for use in our audit.

STUDY DESIGN

It was a descriptive cross sectional study. No sampling was done. All the MCCD forms which were filled in a tertiary health care centre from Jul 2012 to Jun 2014 meeting the inclusion criteria's were included in the study. In our study one thousand MCCD forms were audited (n=1000) which were collected from the stat section of the hospital during the above mentioned period.

Inclusion Criteria

MCCD issued after death of admitted patient, cause of death being natural.

Exclusion Criteria

Unnatural deaths, found dead cases and sudden death in hospital after admission.

RESULTS

One thousand MCCD were studied during the above period. All these certificates were completed by residents working in tertiary care hospital. Out of one thousand MCCD, Six hundred and sixty two MCCD were wrongly filled (66.2%) / Out of these six hundred forty nine MCCD had major errors (64.94%) and 549 MCCD had minor errors. Among wrongly filled certificates, 34.1% of certificates had unacceptable cause of death, followed by 33.3% certificates, where without an underlying cause the mechanism of death has been recorded, contending causes (16.7%) and improper sequencing (13.9%). Persistent minor inaccuracies were exclusion of time interval (n = 536, 80.97%). (Table 2)

DISCUSSION

Guidelines for filling up MCCD are present not only at the reverse of each certificate but various manuals are also available for ready reference. Despite it, inaccuracy in death certification is a global problem. The data on these inaccuracies in filled MCCD forms from academic institutions in India is meager. These inaccuracies are due to the fact that the medical students and medical practitioners are not sufficiently asserted and taught relevance of scripting an authentic

'cause of death'. Instead of writing a legitimate basic cause of death, most practitioners attribute the cause of death to the mechanism of death, e.g. cardio-pulmonary arrest as they are uninformed about the appropriate, 'cause of death'. This happens because not much importance is given to going in details about the history of health condition of the deceased and filing MCCD is taken as a routine formality. Other factors for errors include fatigue and lack of time. Medical certificate of cause of death is included in undergraduate syllabus but they get practical training in filing up these only when they are residents. Error in death certification is a global problem, and reported rates of leading errors at other institutions range from 34% to 37%.^{15,6,12} In our study, 64.94% MCCD had one of the four major errors, unacceptable 'underlying cause of death' accounted for most of them, which is in agreement with the study by Myers and Farquhar,⁵ ,Pandya H et.al.⁹ and Amul B Patel et.al.¹¹ Minor errors were frequent in our study (82.94% of total wrong MCCD). The leading minor inaccuracy was the exclusion of time intervals (80.98%), which is in agreement with the study by Myers and Farquhar⁵, Bobbi S Pritt et al.⁷, Shantibala K et.al.¹⁰ and Amul B Patel et.al.¹¹ This universal problem of inaccuracies can be curtailed through a elementary but structured educational mediation. Analysis of the MCCD of each deceased patient during ward rounds and yearly course in certification of death will help to improve the veracity of death certification.^{2,8,13} In present study, the comparison of inaccuracies with other studies was difficult due to divergence in benchmark used to construe errors. There are only few studies related to educational interventions to improve the authenticity of filling of MCCD in India despite the magnitude of problem. To counter the factors that adversely affect accurate completion of medical certificate of cause of death, following recommendations if implemented will go a long way. Firstly, a mandatory Yearly course in death certification for all residents and medical officers is strongly recommended. Myers and Farquhar⁵ demonstrated a 15.7% decrease in the error rate following a onetime educational intervention. The error rate will decrease if these courses are repeated on a regular basis in institutions. During such a course, the importance of filling of MCCD can be emphasized. As an educational resource for residents and attending physicians an Instructional resource should be available with them. Other proposals for improvement include regular audit of all MCCD by an independent panel and regular updates in the form of CME programmes and death review meetings. It is recommended that death certification be completed by a physician who was treating the deceased and not by casualty or ward medical officers.

CONCLUSION

Present study showed avoidable errors in all death certificates which were examined. It shows lack of proper understanding, knowledge and sometimes carelessness on the part of doctors. To start with, the medical practitioners should be taught that that death certification is a basic requirement for obtaining epidemiological data. Various studies have shown that these inaccuracies can be curtailed through a elementary but structured educational mediation. Frequent academic discussions, pragmatic and interactive programmes and recurrent scrutinizing of MCCD are imperative to boost the veracity of completing this document.

Table 1. Major and minor inaccuracies in MCCD

Major errors

- Mechanism of death listed without an underlying cause
- Improper sequencing
- Competing causes
- Unacceptable causes

Minor errors

- Abbreviations
- Absence of time interval
- Mechanism of death followed by a legitimate underlying cause of death

Table 2. Frequency of major and minor errors*

Type of error	No	% of wrong MCCD
Major		
Mechanism only	220	33.2
Improper sequencing	92	13.9
Competing cause	111	16.7
Unacceptable cause	226	34.1

Minor		
No time interval	536	80.97
Use of abbreviations	Nil	-
Mechanism+ Legitimate cause	13	1.96

*Most MCCD contained more than one error, therefore the sum of the number of cases exceeds the study cases and their percentage exceeds 100%

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