



Research Article

**KNOWLEDGE ON MEDICAL CERTIFICATION OF CAUSE OF DEATH AMONG
MEDICAL POST GRADUATES**

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ABSTRACT

Background: Mortality statistics form an integral part of the vital statistics system. The cause specific mortality rates are key indicators of the health trends in the population. The data on cause of death contained in the certificate helps in assessing the effectiveness of public health programs and provide a feed-back for future policy and implementation. **Objectives:** To assess knowledge on Medical Certification of Cause of Death (MCCD) among medical post graduates. **Methods:** A Cross sectional study was done among 1st year medical post graduates in a private medical college during the month of July, 2017. Data was collected using pre designed and semi structured questionnaire. **Results:** Out of 50 postgraduates, it was observed that 32 (64%) members knowledge regarding the Medical Certification of Cause of Death was found to be $\leq 50\%$. **Conclusion:** There is a need to conduct active training sessions for Post Graduates to improve their knowledge regarding Medical Certification of Cause of Death.

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INTRODUCTION

The age, sex and cause-specific mortality rates are important indicators forevidence-based monitoring of health trends in the population. The statistics oncauses of death is essential for planners, administrators and medical professionals in undertaking appropriate curative and preventive measures for various health problems. It also plays an important role in furtherance of medical research and is fundamental for monitoring as well as improving the methods of diagnosis and analysis.¹

Under the system of Registration of Births & Deaths, the scheme of Medical Certification of Cause of Death (MCCD) – an integral part of the Vital Statistics System, aims at providing a reliable and temporal database for generating cause-specific mortality statistics. The Office of the Registrar General, India, (ORGI) obtains data on causes of death from the Chief Registrar of Births and Deaths of different States and Union Territories, under the Registration of Births & Deaths Act, 1969. During the Third Five Year Plan period, Office of the Registrar General, India launched a programme of action, both short term as well as long term through a plan scheme, for development of a comprehensive system of vital statistics in the country.

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Accordingly, it was envisaged to introduce the scheme of MCCD in all major medical teaching institutions and other hospitals in different States/UTs.¹

The necessary data is collected in the prescribed Form No.4 as filled in by the concerned hospital authorities. A separate Form No.4 A has been prescribed for non-institutional deaths, which are attended to by the medical practitioners. These forms conform to the international format of medical certification of cause of death as evolved by the World Health Organization (WHO). These forms comprising two parts incorporate immediate and antecedent causes of death along with the identification and other particulars of the deceased. Part-I provides for entering the diseases in a specific sequence of events leading to death, so that the immediate cause is recorded first and the underlying cause, the last. The underlying cause is that morbid condition which initiated the chain of events leading to death. Besides, there is also a provision for recording the approximate intervals between onset of disease and death in the sequence of events. Part- II of the form allows recording information on other significant morbid conditions, but not directly related to the cause of death. Doctors attending to the deceased during his/her terminal illness are required to fill the forms up.¹

Wrong diagnosis or incorrect filling up of the certificate will result in gross error in mortality statistics, thus directly affecting formulation of National Health Policy. In addition, the certified cause of death is subjected to legal scrutiny in

medico-legal deaths. If the opinion given by the medical officer fails to withstand the acid test of cross examination, it is not only embarrassing for the medical officer but also may result in doubts being raised about his professional competence. Despite utmost importance being given in the curriculum, many MBBS doctors submit improperly/incorrectly completed medical certificates of cause of death either due to ignorance or casual attitude. There have been media reports and studies which have revealed that approximately 50-60% of medical certificates of cause of death submitted to death registering authorities are incorrectly filled up, the matter is of serious concern.²

Present study was undertaken to know the knowledge regarding regulations and format of MCCD among post graduates of various clinical departments.

MATERIAL AND METHODS

Type of study: Observational study

Study design: Institution based cross sectional study

Study Setting: Study has been done in the month of July 2017, in a Private Medical College.

Study Population: Study was conducted among 1st year medical post graduates

Inclusion criteria

Purpose of the study was explained and those who showed interest to participate after giving consent were included in the study.

RESULTS

Table 1 Knowledge of the Participants Regarding Mccd

| Knowledge Regarding Mccd | | | | | Correct response (%) |
|---|--|---------------------------------------|---|------------------------------|----------------------|
| Part [a]. ASCERTAINING CAUSE OF DEATH | | | | | |
| Q1 | What is full form of MCCD? | | | | 53% |
| Q2 | Notifying the authorities of the fact of death is called? | 1. Registering a death | 2. Certifying a death | | 34% |
| Q3 | Underlying cause of death refers to | | | | 36% |
| | 1. The condition (disease/injury) that triggered the chain of events leading to death; temporally, the most remote condition; etiologically specific | | | | |
| | 2. The final complication resulting from the underlying cause of death, occurring closest to the time of death and directly causing death | | | | |
| | 3. A disease or condition that occurred as a result of the underlying cause of death but was not the final complication or immediate cause of death | | | | |
| Q4 | Cardiac arrest/Cardio-respiratory arrest is the | 1. Cause of death | 2. Mode/mechanism of death | | 58% |
| Q5.1 | Can a doctor mention the following as cause of death? | Shock | 1. Yes | 2. No | 48% |
| Q5.2 | | Septicemia | 1. Yes | 2. No | 58% |
| Q6 | Smoking and alcoholism can be coded as underlying cause of death | 1. Yes | 2. No | | 70% |
| Q7 | Prematurity and low birth weight can be coded as underlying cause of death? | 1. Yes | 2. No | | 38% |
| Q8 | A patient is admitted with Myocardial infarction and then develops arrhythmia and heart failure and then dies in the Coronary Care Unit (CCU)? Thus Antecedent Cause of Death is | 1. Arrhythmia | 2. Heart failure | 3. Myocardial infarction | 30% |
| PART [B]. DEATH CERTIFICATE PARTS, TYPES & FILLING UP | | | | | |
| Q9 | On death certificate, along with cause of death which of the following should be mentioned? | 1. Manner of death | 2. Mode/ Mechanism of death | | 22% |
| Q10 | Which part of the death certificate is used for diseases related to the sequence of events leading directly to the death? | 1. Part 1 | 2. Part 2 | | 40% |
| Q11 | The line on which cause of death written on death certificate will be taken as the underlying cause of death. | 1. Top | 2. Middle | 3. Lower | 28% |
| Q12 | What is the use of Form IV(A) | 1. For Institutional Deaths | 2. For Non Institutional Deaths | | 54% |
| Q13 | Is there a separate form for stillbirth | 1. Yes | 2. No | | 24% |
| Q14 | Manner of death is to be filled only in the Institutional death certificate (Form No. 4): | 1. Yes | 2. No | | 52% |
| Q15 | Under MCCD scheme submission of cause-of-death data is not mandatory for private hospitals or practitioners | 1. Yes | 2. No | | 78% |
| PART [C]. MAJOR & MINOR ERRORS | | | | | |
| Q16 | Identify the Major Certification Error -that mechanism of death | 1. Listed without an underlying cause | 2. Followed by a legitimate underlying cause of death | | 48% |
| Q17 | Identify the Minor Certification Error | 1. Abbreviations | 2. Improper sequencing | 3. Competing causes of death | 36% |
| PART [D]. ICD CODES & CODING | | | | | |
| Q18 | Classification diseases is present in which volume of ICD-10 | 1. Vol:1 | 2. Vol:2 | 3. Vol:3 | 24% |
| Q19 | How many Chapters are present in ICD – 10 | 1. 20 | 2. 21 | 3. 22 | 28% |
| Q20 | The structure of ICD code is? | 1. Numeric | 2. Alphabet | 3. Alphanumeric | 25% |

Exclusion criteria

Those who are not willing to participate in the study were excluded

Sample Size: Data was obtained from 50, 1st year medical post graduates.

Data collection procedure & Instruments Used

After brief introduction regarding the study and questionnaire, participants are invited to complete the pre designed and semi structured questionnaire.

Questionnaire was divided in to 4 parts and questions related to specific topic are grouped together

- Part A: Contains questions related to ascertaining cause of death.
- Part B: Contains questions related to death certificate parts, types & filling up.
- Part C: Contains questions related to major & minor errors in certification.
- Part D: Contains questions related to ICD codes & coding

Confidentiality

Questionnaire does not contain any identification details of the participant and confidentiality was maintained throughout the study.

Plan of analysis/ Statistical tools

Data entry and statistical analysis was done using Microsoft excel. Results were represented in the form of percentages and proportions.

Ethical considerations

Ethical clearance was obtained from the institutional ethical committee prior to the start of study.

Table 2 Categorization of the Participants Based on Correct Response

| Score | Frequency | Percentage |
|-----------|-----------|------------|
| ≤ 50% | 32 | 64 % |
| 50% - 75% | 18 | 36% |
| ≥ 75% | 0 | 0.0% |
| TOTAL | 50 | 100% |

DISCUSSION

In the present study participants knowledge regarding various aspects of the medical certification like ascertaining cause of death, death certificate parts, types & filling up, major & minor errors, ICD coding are assessed.

In this study full form of MCCD was known only to 53% of the participants. Similar finding was observed by the study done by Aarati P *et al.*³ Knowledge regarding the structure of ICD code was known to 25% of the participants and major and minor certification errors were known to 48%, 36% of the participants respectively.

Out of 50 postgraduates, it was observed that 32 (64%) members knowledge regarding the Medical Certification of Cause of Death was found to be ≤50%.

Tsung-Hsueh Lu A *et al*, revealed that training in death certificate completion should focus on younger certifiers and those working at lower level teaching hospitals and nonteaching hospitals.⁴ Study conducted by Myers and Farquhar demonstrated that a 15.7% decrease in the error rate following a one-time educational intervention to be offered early in the first year of postgraduate training, when they have the most clinical relevance.^{3,5}

Above studies highlights the need for conduction of active training sessions for Post Graduates to improve their knowledge regarding MCCD and possible to render cause-of-death statistics more informative as this information is used for many important purposes, such as the development of public health programs and the allocation of health care resources.

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