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Evaluation of Different Errors in Writing Cause of Death Certificate

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Abstract

Background: Prompt and accurate certification of death is essential. This provides legal evidence of the fact and cause(s) of death, thus enabling the death to be formally registered. Death certification also provides data of mortality statistics. These are vital for public health surveillance and for a wide range of research – and thus ultimately for improving the health of the population. **METHODS:** This is a retrospective, descriptive, cross-sectional study. In this study, all issued death certificates in five private non-teaching hospitals in Davangere, during Jan., 2010 to Dec. 2010 were reviewed. The total 334 death certificates were considered for the study. The rate of documentation and errors were calculated. The questionnaire was designed according to aim of research and reliability was tested with Cronbach's alpha = 0.87 in a pilot study. **RESULTS:** The gross errors in writing Medical Certification of Cause of Death (MCCD) were the frequent findings in our study. Out of 334 MCCDs' evaluated, the name of deceased was not written correctly in 24.25% of cases. The sex and age are the two of the important demographic criteria which were not mentioned in more than 1/3 of cases. The Address of the deceased was not mentioned correctly in 21.84% cases. The date and time of death were not written properly in 17.07% of cases, but they are the very important factors to be mentioned in the cause of death certificate. The doctor's name was not written in more than 50% of cases. In 66 certificates, the place of death was not mentioned amounting to 19.76% of the total certificates. The Cause of Death was not correctly written in about 75% certificates. Mode of death was wrongly mentioned as cause of death in 35.33% of total cases. **CONCLUSION:** Evaluation of MCCD's shows significant number of errors in writing death certificate. The reasons being, low level training and callous attitude of the physicians towards writing death certificates. Training program in death certificate completion by physicians and improvement of diagnostic tests for better documentation are suggested. Physician's skills in death certificate completion can be improved with an educational intervention. An interactive workshop is a more effective intervention than a printed handout.

Keywords: Cause of Death, World health organization, medical certification, Autopsy, guidelines, Medical Certification of Cause of Death (MCCD).

Introduction

The death certificate is an important medical document that impacts mortality statistics and health care policy. Resident physician's accuracy in completing death certificates is poor [1]. The death certificate is the source for State and national mortality statistics and is used to determine which medical conditions receive research and development funding, to set public health goals, and to measure health status at local, State, national, and international levels. Death-related information is source for identifying the health prerequisites and formulating the related programs. Due to importance of data for decision making, evaluation of it to determine the rate of documentation and errors is necessary [2].

In order to examine the accuracy of death statistics, the present study analyzed the death certificates for various errors in writing the Medical Certification of Cause of Death

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(MCCD) Certificate. This study brings into realization that there is a high rate of error in wring the death certificates and also, there are a few useful and correctly written death certificates. Because statistical data derived from death certificates can be no more accurate than the information on the certificate, it is very important that all persons concerned with the registration of deaths strive not only for complete registration, but also for accuracy and promptness in reporting these events. Furthermore, the potential usefulness of detailed specific information is greater than more general information. Therefore, we want to propose several remedies to increase the accuracy of writing a death certificate [3].

Methods

In this retrospective, descriptive, cross-sectional study, all issued death certificates in five private non-teaching hospitals in Davangere, during Jan: 2010 to Dec: 2010 were reviewed. The characteristics of certifying death of deceased and the documentation error were checked with a checklist according to the WHO's model death certificate and for associated factors a self-administration questioners were used. The rate of different documentation errors in certifying the cause of death is calculated. The total of 367 death certificates were collected, out of which 33 were excluded. Thus remaining 334 death certificates were considered for the study.

Exclusion criteria

The certificates which were damp & black, crumbling due to moisture, & those which are only carbon copies nothing visible on the sheet.

Three groups comprising of 3 students each were formed to collect primary data written in English language from the hospitals selected for the study. They were given a tutorial as well as a printed form of MCCD along with a sheet having 10 columns to be filled (Parameters).

The parameters that were studied in details are as follow:

1. Errors in writing the Name of deceased (Illegible& Incomplete)
2. Absence Name of deceased in MCCD.
3. Age
4. Sex
5. Address
6. Place of death (POD)
7. Time of death (TOD)
8. Critical care Unit deaths not mentioning time of death.
9. Errors in writing Correct Cause of death (COD) in MCCD.
10. Cause of death not written in chronology: (Immediate cause à Antecedent cause à Other associated condition).

The questionnaires were designed according to aims of research and reliability was tested with Cronbach's alpha = 0.87 in a pilot study. Data were analyzed with simple mathematical calculations.

Results

Total 334 Medical Cause of Death Certificates evaluated, out of that the doctor's name who declared death or written MCCD was not written in more than 56% of certificates followed by the Age of the deceased not mentioned in 34.13% of certificates and signature of the doctor was missing in 107 cases amounting to 32.04% of cases. Furthermore some other important parameters like address of the deceased was not mentioned correctly in 28.14% certificates, name of deceased not written correctly in 24.25% of certificates, and the gender of the deceased was also not mentioned in about 2.% of cases. In addition to this the most important information of the cause of death certificate i.e. date and time of death is also not written properly in a significant number of certificates amounting to 17.07% of total cases (Table 1).

Table I. Showing different documentation errors in writing MCCDs

Parameter	Cases N= 334	Percentage (%)
Correct Name not mentioned	81	24.25
Sex not mentioned	07	02.10
Age not mentioned	114	34.13
Address not mentioned	94	28.14
Time of Death not mentioned	57	17.07
Doctors signature missing	107	32.04
Doctors Name not mentioned	188	56.29.

Amongst the total 334 cases of MCCDs evaluated, the place of death in case of deaths occurring at the hospitals, was correctly written in 268 death certificates (81.24%) and not at all mentioned in the remaining 66 death certificates which amounts to 19.76% of error. The commonest place of death was the hospital ward i.e 130 cases out of 334 certificates amounting to 38.92% cases followed by Causality where 110 cases died amounting to 32.93% and only in 26 cases the place of death was ICU/ OT amounting to 7.78% of total 334 certificates evaluated (Table-II).

Table II. Showing various PLACES OF DEATH in the hospitals and errors in mentioning the same in MCCDs

Place of Death	Cases N= 334	Percentage (%)
Place of Death not written	66	19.76
Causality	110	32.94
Ward	130	38.92
ICU/OT	26	07.78
Total	**334**	**100**

Amongst the total 334 cases of MCCDs evaluated, there is error in writing the Cause of Death in 251 certificates amounting to 75.15% of cases. Among these, in 118 certificates, Mode of death is wrongly mentioned as cause of death amounting to 35.33% of total 334 MCCD's evaluated, in 90 certificates cause of death is not mentioned / written at all amounting to 26.94% error and in 43 certificates, the Cause of Death is not written in chronological order amounting to 12.87% error out of total number of certificates evaluated. The cause of death is correctly and chronologically mentioned only in 83 certificates (24.85% cases) out of 334 MCCD's evaluated (Table III).

Table III. Showing errors in writing the correct cause of death in the MCCD

Cause of Death	Cases N= 334	Percentage (%)
Mode of death is mentioned as cause of death	118	35.33
Cause of Death Not written correctly	90	26.94
Cause of Death is not written in chronological order	43	12.87
Cause of Death is written correctly	83	24.85

Discussion

Data from death certificates constitute an essential component of national mortality and morbidity statistics. The Department of Health and family Services, the National Center for Health Statistics, and the National Death Index rely on the accuracy of these forms. In only 83 (24.85%) death certificates cause of death was documented correctly. The most common error being is failure to mention the doctor name (56.29 %) and least common error being failure to mention the sex of the deceased (02.10%) of total cases. Thus, MCCD documentation errors in our study are little better compared to study conducted at Mazandaran University of Medical Sciences, Iran during March 2004-5 [2]. Earlier studies suggest that the accuracy and reliability of certification of underlying cause of death is very poor, and error rates range from 16 to 40% [4-10]. In the present study, time and date of death was not mentioned in 57 (17.07%) of certificates. The date of death, a fact of

medico-legal significance, may sometimes be very important in subsequent handling of the affairs of the deceased. It should therefore always be indicated whether the date of death stated in the certificate was actually verified or whether it was estimated [8]. In the present study error in documenting the correct cause of death ranges from 12.87% to 35.33%. The inconsistency rate between the actual underlying causes of death and the underlying causes of death on death certificates was 18.9%, with the most frequent reason for inconsistency being the recording of an uncertain cause of death such as old age or unknown cause (53.3%), and next most frequent parameter being the recording of an interim result as the underlying cause of death (38.7%) [11]. In our study, occurrence of gross errors range from 12.87% to 56.29%. This is more compared to any of the previous such studies done in Australia and European countries [12]. The most common cause for error in writing cause of death certificate is the low level training or exposure of the doctor or physician in writing the certificate.

Conclusions

The Provision of data of vital and cause of death statistics is undoubtedly a primary purpose of death certificate, however , despite constantly increasing importance of this statistical aspect, it should not be forgotten that a death certificate is always also a medico-legal instrument. Equal consideration must be given to the statistical and medico-legal aspects of death certificates, and this will in turn enhance the reliability of cause of death statistics.

The accuracy of the certified information therefore rests more or less upon the authority of the certifier, who can seldom be known to all parties examining or using the death certificate. For this reason the reliability of death certificates or cause of death statistics cannot be considered unless laborious additional investigations are made. Physician's skills in death certificate completion can be improved with an educational intervention. An interactive workshop is a more effective intervention than a printed handout.[3]

Recommendations

The accuracy of the medical certificate of cause of death is ultimately based on its being a document of medico-legal character. Emphasis on this fact by the very manner in which the certificate form is drawn up and by other means provides a possibility- only partly utilized in most countries for improving the reliability of death certificates and cause of death statistics. To comply with medico-legal requirements the death certificate should be a medical certificate that contains all the information known to the certifier as to what caused or contributed the death and is capable of evaluated as to reliability. To attain this objective the death certificate form must have an adequate space for the medical entries and a detailed statement of the examinations that form the basis for the certification. Any doubt as to the time of death should be indicated.

Appropriate arrangements should be made so that the verified cause of death can be entered in the death certificate even in cases requiring lengthy examinations. The filling out of death certificate should be made as easy as possible, and consideration given to the increasing use of computers in many countries. The authorities verifying the certificates should each be provided an individual space on the form for annotations, since any information they may add enhances the reliability of certificate in many ways.

General instructions for writing cause of death certificate

Death certificates are permanent legal records from which official copies are made. It is essential that the certificate be prepared accurately. Completing a death certificate involves the following guidelines:

1. If you are a registered medical practitioner and were in attendance during the deceased's last illness, you are required to certify the cause of death as per the Births

and Deaths Registration Act 1953. You must state the cause or causes of death to the best of your knowledge and belief.

2. Death certification should preferably be carried out by a consultant or other senior clinician, if available at that time. Delegation of this duty to a junior doctor who was also in attendance should only occur if he/she is closely supervised.
3. Use the current form designated by the State.
4. Complete each item, following the specific instructions for that item.
5. Make the entry legible. Use a computer printer with high resolution, typewriter with good black ribbon and clean keys, or print legibly using permanent black ink.
6. Do not use abbreviations except those recommended in the specific item instructions.
7. Verify with the informant the spelling of names, especially those that have different spellings for the same sound ,
8. Refer problems not covered in these instructions to the State office of vital statistics or to the local registrar.
9. Obtain all signatures; rubber stamps or other facsimile signatures are not acceptable. If jurisdiction provides, authenticate electronically.
10. Do not make alterations or erasures.
11. File the original certificate or report with the registrar. Reproductions or duplicates are not acceptable.
12. Doctor should complete the counterfoil for your record in all cases.
13. In the following cases, doctor should not issue MCCD, and the death should be informed to the POLICE;

- The cause of death is unknown.
- The deceased was not seen by the certifying doctor *either* after death *or* within 14 days before death.
- The death was violent or unnatural or was suspicious.
- The death may be due to an accident (whenever it occurred).
- The death may be due to self-neglect or neglect by others.
- The death may be due to an industrial disease or related to the deceased's employment.
- The death may be due to an abortion.
- The death occurred during an operation or recovery from the effects of anesthetic.
- The death may be suicide.
- The death occurred during or shortly after detention in police or prison custody.

Most States require that the death certificate be completed and filed within a specified time period. Physicians are expected to use medical training, knowledge of medicine, available medical history, symptoms, diagnostic tests, and autopsy results, if available, to determine the cause of death.

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