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Pattern of Filling Up of Medical Certificate of Cause of Death at A Tertiary Care Hospital during Covid Pandemic: A Matter of Concern

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Abstract

Medical Certification of Cause of Death- MCCD, plays an important role in deciding the direction of public health programs, provide a feedback system for future implementation of health policies, health planning and management of epidemiological studies, vital statistics, medico-legal investigations, census studies, health research, assessment of effectiveness of public health programs. As Covid- 19 produces so much confusion into the mind of treating doctor as how to give cause of death in MCCD. Certification and classification and coding of death related to Covid-19 is essential for smooth contact tracing afterwards. Our study focused on the analysis of MCCD proformas filled up by residents and faculty members and common mistakes committed while filling it while treating the Covid patient at isolation wards. This is a retrospective, cross sectional study carried out at Covid-19 dedicated hospital associated with a Medical College situated in Rajasthan. The period of this study is three month of early Covid-19 pandemic time from 1st April 2020 to 30th June 2020, in which a total of 199 deaths were reported. We could study a total of 152 certificates (76.38%) out of total 199 deaths as in rest of cases, the MCCD was not attached as deceased was brought dead to hospital. The analytical result of study revealed some major errors like immediate cause of death was Covid-19 positive with cardiovascular arrest. The conclusion of our study highlights an urgent need for imparting extra efforts towards awareness, importance to undergraduates as well as postgraduate training. Also emphasis training of senior and junior faculty with other treating doctors. Suggestions to government for impose strict rules over clinician so that they know the importance of MCCD in pandemic time also.

Keywords: Brought dead; MCCD; Covid-19; Certification; Pandemic.

Introduction

The mortality statistics are good indicators of demographic health trends and are provided on scientific basis of the system of MCCD- Medical Certification of Cause of Death.[1] The statistics regarding cause of death is very useful entity, as it helps in deciding the direction of public health programs, provide a feedback system for future implementation of health policies, health planning and management of epidemiological studies, vital statistics, medico-legal investigations, census studies, health research, assessment of effectiveness of public health programs. COVID-19 is the infectious disease caused by the most recently discovered corona virus (SARS-CoV-2) from Wuhan, China, in December 2019. The COVID-19 disease outbreak was declared a Public Health Emergency of International Concern (PHEIC) on 30 January 2020 by the World Health Organization, and later on 11 March 2020 as a Global Pandemic. During such situations, mortality surveillance becomes a very important public health tool to assess the impact of the viral infection. It is also

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important in insurance sectors the Government of India launched various mediclaims. In that scenario the number of insurance claims will increase many folds. For attending physicians, it is of paramount importance as they often find themselves at the centre of various litigations in future.[2] COVID-19 is a new disease and is a pandemic affecting all communities and countries. It's clinical presentation ranges from mild to severe, and fatality depends on the severity of the illness, associated comorbid conditions and age of patients. Patterns of disease and patterns of death can come from only standardised recording of clinical disease history and cause of death, and therefore epidemiological surveillance of disease and death are important. Robust data is needed from every district and state in India to measure the public health impact of COVID 19 and to plan for timely health interventions and protect communities. At the same time, other health conditions affecting populations need to be also monitored so that the health system is prepared for responding to the needs of the population. Standard cause of death report in India follows the recommendations of the WHO. The causes of death are classified according to the International Classification of Diseases (ICD) and the MCCD is as per the format presented in volume II of ICD-10.[3] It originally came in to the existence in 1960 and India started to follow the system in 1969 along with incorporation in RBDA- Registration of Birth and Death Act, 1969 in subsection 3 of Sec.[10] of the Act in the form of 4 or 4A.[4,5] This document should be 100% correct and fool proof. But in reality, the MCCD proformas which are being filled up by most of the Registered Medical Practitioners are not correct.[6] This study is undertaken to analyse the MCCD proformas filled up by residents and faculty members in Covid dedicated hospital.[7]

COVID-19 is reported to cause pneumonia/ acute respiratory distress syndrome (ARDS)/ cardiac injury / disseminated intravascular coagulation and so on. These may lead to death and may be recorded in line 'a' or 'b'. It is likely that COVID-19 is the underlying cause of death (UCOD) that lead to ARDS or Pneumonia in most of the deaths due to COVID-19 (test positive and symptoms positive). In these cases COVID-19 must be captured in the last line / lowest line of Part 1 of MCCD form 4/4 A. Acute respiratory failure is a mode of dying and it is prudent not to record it in line a/b/c. Patients may present with other pre-existing comorbid conditions such as chronic obstructive pulmonary disease (COPD) or asthma, chronic bronchitis, ischemic heart disease, cancer and diabetes mellitus. These conditions increase the risk of developing respiratory infections, and may lead to complications and severe disease in a COVID-19 positive individual. These conditions are not considered as UCOD as they have directly not caused death due to COVID-19. Also a patient may have many co-morbid conditions, but only those that have contributed to death should be recorded in Part 2.

Aims and Objectives

1. To know if the MCCD format filled or not.
2. If used- is it filled up correctly?
3. Whether the Covid-19 was written as immediate and antecedent cause of death?
4. If not-what were the columns filled wrongly or left blank.
5. To know the causes behind these lacunae.
6. To point out the commoner mistake committed by faculty while filling up the MCCD.
7. To suggest the way to rectify the mistakes.

Materials and Methods

It is a retrospective study carried out at Covid-19 dedicated hospital associated with a Medical College situated in Rajasthan. Study period was three month of early Covid-19 pandemic time from 1st April 2020 to 30th June 2020. A total 199 deaths occurred at Covid dedicated hospital, which were died during treatment or brought dead to hospital and the body of deceased which were kept in mortuary for waiting of Covid-19 report from the microbiology. A proforma is prepared and relevant data is entered. After filling a proformas on the basis of the information obtained from the case records for all deaths, these proformas analysed and a conclusion was made. Strict confidentiality of the case papers has been maintained and no medical condition is revealed, disclosing the identity of the deceased. Various aspects of MCCD proforma were classified into sub headings like major errors and minor errors.[6]

Inclusion and exclusion criteria: Body of that deceased was kept in mortuary for waiting of Corona-19 laboratory report, which used to confirmed by microbiology department were included only. Dead Bodies and deceased which were not kept for waiting of Covid test report not included in this study.

Study Type: Cross sectional study.

Ethical issues: No ethical issues involved.

Results

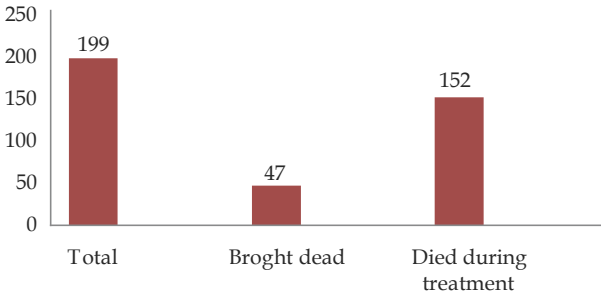

Chart 1: Distribution of brought dead and died during treatment.

We studied a total of 152 certificates. As it shown that rest 47 (23.61%) were not attached with any MCCD as they were brought dead to hospital and only OPD slip was there with details.(Table 1, Chart 1). Analytical outcome of the study revealed that preliminary components of the certificate viz. deceased full name, age, sex, address, time of admission and time of death were not correctly entered in all the cases. It was very shocking that in 47 (30.92%) cases MCCD were blank except preliminary components and all were dully signed by doctors. In those case when we spoken to doctors they said, MCCD will be filled by them when Covid report released by the microbiology department. In 78 (51.31%) cases immediate cause of death was filled incorrectly. It was mentioned as CRA (Cardio Respiratory Arrest) with ? Covid-19. It is absolutely wrong that Covid-19 never ever be immediate cause of death. In MCCD physician has to write Covid suspect if history, symptoms and signs were present. Antecedent cause of death was filled incorrect in 82(53.94%) cases including they wrote ? Covid-19 in the said column.(Table 2)

Table: 1 Distribution of brought dead and died during treatment.

	No	%
Brought dead	47	23.61%
Death during hospitalisation and during treatment at hospital	152	76.38%
Total	199	100

Table 2: Type and frequency of errors in MCCD (N= 152).

Type of Error	No.	%
Major errors		
Wrong form of MCCD	0	0%
Blank MCCD and duly signed	47	30.92%
Wrong immediate cause of death (including Covid-19 written as immediate cause of death)	78	51.31%
Wrong antecedent cause of death (?? Covid-19 written as cause of death)	82	53.94%
Significant condition contributing to death	54	35.52%
Improper sequencing	56	53.94%
Lack of ICD -10 coding	152	100%
At least one major error	152	100%
Minor errors		
Absence of time intervals	152	100%
Use of abbreviations	100	65.79%
Illegible handwriting	3	1.97%
At least one minor error	152	100%

Followings are the other errors:

1. Immediate cause of death: in most of certificates cardio-respiratory arrest (often used as abbreviation- CRA) was written as immediate cause of death with ?? Covid.
2. Abbreviations are used frequently in almost 65.79% cases.
3. Significant condition contributing to death has been kept blank in 54 (35.52%) cases
4. Time interval between onset of the symptoms and death is vacant in 152 cases.
5. Signature of the hospital authority was in almost every MCCD but the name of doctor was not there in all 152 cases.
6. Improper sequencing of onset of symptoms to event causing death is not proper in 82 (53.94%) cases.
7. ICD-10 coding of Covid-19 is missing in almost every MCCD
8. At least minor error was found in each and every MCCD.
9. Illegible handwriting was in 3 MCCD only.
10. The part which used to give to relatives was with incomplete filling in each and every MCCD.

Discussion

It is very important in our study that correct MCCD form was used by treating doctors it may be due to that our institute is government institute where format is already printed by senior authority and same has been provided to the doctors. As we know due to lack of forensic knowledge physician used to do mistakes while filling MCCD, during Covid-19 pandemic raised this kind of issues and more confusion found amongst the doctors. In our study we observed blank MCCD was found in 30.92% cases which shocked us how a doctor can

send a blank certificate to us; in any other study it is not observed as the other study does not faced any pandemic like Covid-19. In our study as body was sent to covid-19 dedicated mortuary to keep it while in waiting of covid-19 report from microbiology department. The doctors who were doing that were informed as per WHO guidelines it is wrong method.

As far as concern wrong immediate cause of death we found that 51.31% MCCD were filled with incorrect immediate cause of death, Study done by Patel N et al[9] observed that 79.24 % were had error and study done by Bamburia et al 97.16% cases immediate cause of death was incorrect.[10] In our study we include the medical college related deaths and their MCCD, also done by Patel et al but study done by Bamburia et al includes general hospital, civil hospital deaths where doctors are untrained in terms of MCCD.[10]

In our study wrong antecedent cause of death observed in 53.94% cases in most of the cases treating doctors confused with Covid-19 reports. They were confused whether they have to write Covid-19 ?? or Covid-19 suspect. As per WHO guidelines doctor should not wait for Covid-19 confirm laboratory report. He has to write Covid-19 suspect if symptoms and signs were observed in patients. In study done by Bamburia et al they did not comment on antecedent cause of death10 study done by Patel et al observed that out of 50 cases column were left blank in 6 cases and incompletely filled in 28 cases almost 70% MCCD were with error.[8] Lack of ICD-10 coding and at least one major error was present in almost in all MCCD while study done by Bamburia et al observed[10] same findings also study done by Patel et al observed same.[9] There are absence of time interval in 100 % cases and atleast one minor error in 100 % cases., Study done by Patel et al revealed that 92.5 % MCCD were not with time interval[9] and study done by Bamburia et al said that they found absence of time interval in 98.11% cases.[10] At least one minor error in 100% MCCD. It may be due to that many times patients referred from primary health centres when they were in terminal stage of disease.[11] In Covid 19 relatives not used to come with patient and rapid response team used to bring the patient to hospital it is very difficult to reveal the exact time interval of associated disease. MCCD will be a medical and legal document after covid era it is essential for doctors so they learn at least how to fill the MCCD correctly as per WHO guidelines. The main reason behind the deficiency is lack of proper orientation, training, changeable guideline by WHO in Corona day to day, fear of corona in doctors and lack of supervision by the unit heads.

Conclusion

MCCD always a important one to maintaining uniformity of issuing the cause of death certificate by doctors. MCCD is an essential and mandatory part of reporting of vital statistics of a hospital. In our study which is done at important corona era suggest that single MCCD was not perfect even if major error were also present. As we were dealing with Covid dedicated mortuary improper MCCD may lead conflict between treating doctor and us. Sometimes we confused whether dead body was corona positive or corona suspect. To avoid all of this, proper training, straight guidelines, proper supervision by seniors faculty and strict knowledge is essential.

Recommendations: The following guidelines are recommended:

1. After death, the attending doctor will play the role of pronouncing physician and hand over the death slip to the attendant of the deceased.
2.. The lower part of form 4 (death slip) should be signed by the concerned hospital authority with hospital seal.
3. The attending physician should seek the academic guidance from the concerned seniors
4. It's recommended that the undergraduates be highlighted the importance of MCCD during their training.
5. Interns posted in the wards dealing with the cases should be properly trained.

References

1. Patel A, Rathod H, Rana H, Patel V. et. al. Assessment of Medical Certificate of Cause of Death at a New Teaching Hospital in Vadodara. National J. Of Community Med. Vol 2, Issue 3, Oct-Dec-2011, pg 349–353.
2. Office of the Registrar General of India, Vital Statistics Division. Physicians' Manual on Medical Certification of Cause of Death. 4thedi. New Delhi: Ministry of Home Affairs, Govt. Of India; 2000.
3. World Health Organisation. International statistical classification of Diseases and related health problems, tenth revision (ICD–10), Vov.1,2 and 3; 2ndedi. Geneva: WHO;2004.
4. Gupta B, Trangadia M, Mehta R, Vadgama D et al. Death Certificate: Ignorance and Facts; J Indian

Acad Forensic Med. July– Sept 2013, Vol.35, No.3 pg 259–261.

5. Govt. Of India, Ministry of Home Affairs; The Registration of Birth and Deaths Act,1969. Section 10(3).
6. Pandya H, Bose N, Shah R et al; Educational intervention to improve death certification at a Teaching hospital. The National Medical Journal of India,Vol. 22, No.6, 2009. pg 317–319.
7. Kotabagi R, Chaturvedi R, Benerjee A; Medical Certification of Cause of Death. MJAFI 2004;60: 261–272.
8. Degani A, Patel R, Smith B, et.al. The effects of students training on accuracy of completion of death certificates. Med Edu online 2009; 14:17.
9. Patel N, Patel S, Vidua R.K. Arora A, Tamaria KC. How to evaluate the medical certification of death in hospital: an analysis of 53 death certificates at AIIMS, Bhopal, India. Int J Community Med public Health 2017; 3:797–802.
10. Bamboria BL, Surwade VB, Gupta BD. Pattern of filling up of Medical Certification of Cause of death(MCCD) at a Tertiary Care Hospital:Pitfalls and suggestions, JIAFM 2017; 39(3): 283–286.
11. Degani AT, Patel RM, Smit BE, Grimsteg E. The effects of students training on accuracy of Completion of death certificate. Med Edu online 2009; 14:17, Available from http;//med-ed-online.net/index.php.meo.2009 res00315.