

CAUSES OF INCOMPLETE REPORTS OF MEDICAL CERTIFICATES OF CAUSE OF DEATH: A STUDY AT DR. CIPTO MANGUNKUSUMO NATIONAL CENTRAL PUBLIC HOSPITAL

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Abstract. The Medical Record and Admission Department of Dr. Cipto Mangunkusumo at National Central Public Hospital had 128 (11.2%) incomplete medical certificate of cause of death (MCCD) of 1,493 sheets from June to August 2021. Because of this issue, the Jakarta Provincial Health Office had a visit to the hospital and caution them. This study analyzed factors causing incomplete MCCD after the first wave of coronavirus disease of 2019 (COVID-19) pandemic at the Dr. Cipto Mangunkusumo National Central Public Hospital. This study used a mixed method by analyzing the causal factors based on the performance factor theory (motivation, opportunity, and ability). Data were collected through observation, in-depth interviews, and documentation. It was revealed that the motivation factor potentially causing incomplete MCCD included the absence of rewards given to officers. For the opportunity factor, results showed that doctor and admin were not familiar with the standard operating procedures (SOP) of filling the MCCD. The ability factor, *ie*, indiscipline and a lack of knowledge of admin and doctor also caused them to skip completing MCCD. In conclusion, the hospital needs to educate doctors and admins to improve their knowledge on how to complete MCCD. The Jakarta Provincial Health Office has to inform them about the SOP of manual or electronic MCCD.

Keywords: medical certificate of cause of death, incomplete reports, standard operating procedures

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INTRODUCTION

Medical certificate of cause of death (MCCD) is an important tool of obtaining authentic and scientific information regarding causes of mortality. Health practitioners need to mention the sequence of events in a MCCD with an international format (Akhade *et al*, 2022). They need also to choose one reason of death in the certificate even though there were two or more causes from the death. At the Dr. Cipto Mangunkusumo National Central Public Hospital, health practitioners use a code for a cause based on the disease classification system or commonly referred to as the International Statistical Classification of Diseases and Related Health Problem 10th Revisions (ICD-10) (WHO, 2016). However, the Medical Record and Admission Unit could not determine the ICD-10 code as their health practitioners left the cause of death blank. Meanwhile, the information is required for health insurance claims by the patient's family.

At the hospital, there were 128 (11.2%) incomplete MCCD out of a total of 1,493 death certificates issued during June to August 2021 which was the period of coronavirus disease 2019 (COVID-19) pandemic. The MCCD is important as it reveals the chronology of the patient's death. Based on the Regulation of the Indonesian Minister of Health concerning Medical Records in Chapter 13, medical records can be used as evidence in legal cases stipulated as or related to both criminal and civil cases (Ministry of Health, 2008). Incomplete death certificates can mislead efforts to address time-sensitive health issues and lead to incorrect conclusions from health data (Hazard *et al*, 2017).

Dr. Cipto Mangunkusumo National Central Public Hospital must send the death report to the Jakarta Provincial Health Office. When the

reports were incomplete, not only the hospital get the warning, but also the Jakarta Provincial Health Office came to the hospital for a visit and did the appraisal. Moreover, another negative consequence of incomplete MCCD is huge financial losses experienced by the hospital (Novitasari *et al*, 2020). Hazard *et al* (2017) also found poor results when introducing an international form of death certificate into Bangladesh. One of potential reasons include poor training.

These problems can be explained by a performance factor theory proposed by Robbins and Judge (2013). The difference between the previous studies and this research is that the previous studies only discussed the quality, errors and intervention of medical death certification of cause of death (Schuppener *et al*, 2020; Hazard *et al*, 2017), but this study discussed the causes of incomplete reports of MCCD using performance theory. The performance theory consists of motivation, opportunity, and ability factors. Motivation factors such as rewards and punishments are very important in motivating officers to be more qualified and responsible for the tasks given. Opportunity factors include standard operational procedures (SOPs) and training to prevent task errors. Additionally, ability factors including education, experience, knowledge, and work discipline influence the performance of a task.

Using the performance theory to explain the issue of incomplete reports of MCCD, this current study aimed to analyze factors causing incomplete MCCD after the first wave of COVID-19 pandemic at the hospital.

MATERIALS AND METHODS

The research was conducted at the Dr. Cipto Mangunkusumo National Central Public Hospital from June to August 2021. This study used a mixed method, which is a combination of qualitative and quantitative research methods. Qualitative analysis was conducted to analyze factors causing incomplete MCCD based on performance factors (motivation, opportunity,

and ability) (Robbins and Judge, 2013). Quantitative analysis was carried out retrospectively to determine the frequency distribution of MCCD which had been completed or not completed. Three components used for the quantitative analysis included patient identification, cause of death based on ICD-10, and author notarization. The sample used was 128 death certificates collected from June to August 2021.

Data were collected through observation, in-depth interviews, and documentation. Observations on SOP and work discipline in filling MCCD were done among the forensic doctors, admins, and medical record officers in the reporting section. In-depth interviews were conducted with medical record officers, forensic doctors, and the person in charge of death reporting. Finally, documentation was conducted by collecting the scan of MCCD, SOP, and the information on a death report website of the Jakarta Provincial Health Office.

This study was approved by the Research Ethics Committee of Politeknik Negeri Jember (Ethical clearance number: 1181/PL17.4/PG/2022).

RESULTS

Identification of incomplete MCCD at the Dr. Cipto Mangunkusumo National Central Public Hospital

The number of patients who died at the Dr. Cipto Mangunkusumo National Central Public Hospital from June to August 2021 was 1,493 patients with an average of 16 patients dying every day. The incomplete MCCD is an issue in death reporting. Due to the outrageous COVID-19 pandemic, the number of deaths increased and so did the number of death certificates. Delay in reporting from the Forensic Department to the Medical Record Unit was one factor troubling reporting to the Jakarta Provincial Health Office. The MCCD should be handled immediately because these data are important to support the reporting to the Jakarta Provincial Health Office.

Another problem is that the hospital had poor unverified death reports due to incomplete data. Thus, the hospital received a warning from the Jakarta Provincial Health Office who also conducted a direct inspection on them. The hospital's reporting officer confirmed to the Information and Technology (IT) section of the Jakarta Provincial Health Office about the problems. Financial losses are the other disadvantages of incomplete report. This is due to the inaccurate determination of the code for the underlying basic cause of death by the coder and reporting officers. If the code for the underlying basic cause of death remains blank, the claim for insurance was also not going well (Novitasari et al, 2020).

Completeness of deceased's' information in MCCD at the Dr. Cipto Mangunkusumo National Central Public Hospital from June to August 2021

Table 1 showed 81.25% of deceased's' information was complete. More detailed information can be seen in Table 2 where it shows that complete information in the deceased's information was full name. Meanwhile, the family card number and relationship with family sections were the least completed at 7.03% and 11.70% respectively.

Table 1

Completeness of medical certificates of cause of death (MCCD) at the Dr. Cipto Mangunkusumo National Central Public Hospital from June to August 2021 (N = 128)

Component of MCCD	Complete <i>n</i> (%)	Incomplete <i>n</i> (%)
Deceased's Information	104 (81.25)	24 (18.75)
Causes of deaths based on ICD-10	2 (1.57)	126 (98.43)
Author notarization	90 (70.31)	38 (29.68)

Table 2
Completeness of deceased's' information in MCCD at the
Dr. Cipto Mangunkusumo National Central Public Hospital from
June to August 2021 (N = 128)

Deceased's' information	Complete <i>n</i> (%)	Incomplete <i>n</i> (%)
Medical record number	127 (99.20)	1 (0.80)
Full name	128 (100.00)	0 (0.00)
Social security number	114 (89.00)	14 (11.00)
Family card number	9 (7.03)	119 (92.97)
Gender	127 (99.20)	1 (0.80)
Place/Date of birth	127 (99.20)	1 (0.80)
Religion	127 (99.20)	1 (0.80)
Home address	125 (97.60)	3 (2.40)
Resident status	89 (69.50)	39 (30.50)
Relation with family	15 (11.70)	113 (88.30)
Time of death	67 (52.34)	61 (47.66)
Age of death	47 (36.70)	81 (63.30)
Place of death	41 (32.03)	87 (67.97)

MCCD: Medical Certificate of Cause of Death

Completeness of causes of deaths based on ICD-10 in MCCD at the Dr. Cipto Mangunkusumo National Central Public Hospital from June to August 2021

Results of Table 1 showed that 98.43% of the causes of deaths based on ICD-10 were not complete. More detailed information can be seen in the Table 3 where it shows that more than 90% of causes of deaths based on ICD-10 sections were incomplete, ie, underlying cause of death; direct cause of death; other disease or condition, if any, leading to death; other associated

conditions contributing to death but not related to the disease or conditions causing it. It showed that most of analysis criteria in causes sections are not filled by doctors.

Completeness of author notarization in MCCD at the Dr. Cipto Mangunkusumo National Central Public Hospital from June to August 2021

Author notarization is a proof of the record validity which can be a signature, or stamp alongside a doctor's title or professional title to be considered legally accountable. This study also showed that 29.68% of author notarization of MCCD had incomplete information (Table 1). More detailed information can be seen in Table 4 where it shows that 81.30% name of diagnostician and 79.70% signature of diagnostician were left incomplete.

Table 3

Completeness of causes of deaths based on ICD-10 in MCCD at the Dr. Cipto Mangunkusumo National Central Public Hospital from June to August 2021 (N = 128)

Causes of death based on ICD-10	Complete <i>n</i> (%)	Incomplete <i>n</i> (%)
Underlying cause of death	1 (0.78)	127 (99.22)
Direct cause of death	2 (1.56)	126 (98.44)
Other disease or condition, if any, leading to death (1)	1 (0.78)	127 (99.22)
Other disease or condition, if any, leading to death (2)	1 (0.78)	127 (99.22)
Other associated conditions contributing to death but not related to the disease or conditions causing it	1 (0.78)	127 (99.22)

MCCD: Medical Certificate of Cause of Death

Table 4

Completeness of author notarization in MCCD at the Dr. Cipto Mangunkusumo National Central Public Hospital from June to August 2021 (N = 128)

Component of author notarization	Complete <i>n</i> (%)	Incomplete <i>n</i> (%)
Name of MCCD recipient	125 (97.60)	3 (2.40)
Name of the doctor in charge of the patient's care	113 (88.20)	15 (11.80)
Signature of doctor in charge of the patient's care	124 (96.80)	4 (3.20)
Signature of MCCD recipient	126 (98.40)	2 (1.60)
Name of diagnostician	24 (18.70)	104 (81.30)
Signature of diagnostician	26 (20.30)	102 (79.70)

MCCD: Medical Certificate of Cause of Death

Identification of factors causing incomplete MCCD based on motivation, opportunity, ability

Motivation analysis

This study defined motivation as rewards or punishments given to officers. A reward is a compliment or award certificate given by the person in charge of death reporting to the admin, accounting their standards and procedures applied.

"Nothing yet, just a thank-you note" (Medical Record Officer)

"It's not explicitly seen yet, but what is usually done once a year is intended as a group, not individually." (Forensic Doctor)

From in-depth interviews with two informants, it was concluded that the medical record officer and forensic doctor felt that they never received

a praise for obeying standards and procedures. However, they received remuneration monetary reward every month.

“The officers had remuneration” (The person in charge of death reporting)

“The reward here is remuneration every month. The officer has the assessment on a logbook. If the officer performs well, he gets one point, otherwise zero. The remuneration is also quite higher than officers who do not receive any rewards”. (The person in charge of death reporting)

Meanwhile, poor quality of work may lead officers to get punishment. Punishment is a warning or advice given by a leader to staff as a motivational tool to avoid repetitive mistakes. The hospital was known to provide no punishment for their officers.

“If MCCD for patients at the Dr. Cipto Mangunkusumo National Central Public Hospital, of course, is made by doctors in each service unit, there should be a warning from each unit. However, usually mistakes in the filling process were missed until we recognized them in the final check. If they are only small mistakes, then no action will be taken, but if they cause service problems, we will discuss them internally.” (Forensic doctors)

“There isn’t any punishment.” (Medical record officer)

“It’s more of a reminder if there is an error entry, such as the date format or the cause of death. That’s all.” (The person in charge of death reporting)

Opportunity analysis

Opportunity in this study refers to SOPs and training given to forensic doctors and medical record officers. SOPs are related to procedures in filling MCCD, while training is professional development useful to support tasks of doctors and medical record officers.

"Yes, it's clear. There are so many SOPs, but I doubt one of those is about how to fill MCCD." (Forensic doctor)

"So far I have never received any training about SOP on MCCD." (Medical Record Officer)

"There isn't any training yet." (The person in charge of death reporting)

The interview showed the admin, forensic doctor, and person in charge of death reporting did not recognize the SOP deeply for issuing MCCD and coding, action, and death diagnosis. Doctors only knew about the SOP without understanding its contents, while the admin only knew how to input the MCCD by learning from the senior admin. Besides, the person in charge also confirmed that they never received any training.

"Never, I've never followed any training, so I learned independently. Anyway, I was rarely taught data entry, and that's all. When I asked the Health Office about this, they also explained that. However, I still don't get it since it was explained on WhatsApp." (The person in charge of death reporting)

The hospital's SOP for issuing MCCD were published on 3 February 2019, and SOP for coding, action, and death diagnosis were published on 6 April 2015. The first SOP has been revised three times with a document number of 228/TU.K/79/VI/2012. Meanwhile, the second SOP has been revised seven times with a document number of 947/TU.K/79/I/2008.

In the first SOP, MCCD is made after the doctor examines the deceased one. The doctor who treats the patient has to read over the MCCD given by the Mortuary Room Unit before signing it. However, none of cause diagnosis and doctor's signature were found in MCCD.

"Ever, such as ascertaining the cause of death, anatomical pathology and maybe other types of examinations from a complete examination." (Forensic doctor)

“There isn’t any SOP yet, more like a relay. The person in charge taught us the steps of filling out MCCD, but no training is given. They only taught us concepts or work instructions for inputting MCCD to the system.” (Medical record officer)

Furthermore, the information about the data entry of MCCD to the Jakarta Provincial Health Office website was not explained clearly.

“I’ve done it before, but they didn’t go into detail about the data entry. In the past, I asked the Health Office, and there was already a manual book. I tried to directly upload 300 MCCD data. I thought I could upload a lot of them, but it turns out that I could only upload 100 data at a time. If there are 400 MCCD data a month, we upload it four times. We contacted their staff via WhatsApp, but they did not clearly explain it. Then, I contacted the IT department of the Health Office. They gave clearer and easier information because they checked our data before giving us advice.” (The person in charge of death reporting)

Ability analysis

This study described ability as officer knowledge, experience, and work discipline in filling out and reporting MCCD. It could be related to the educational qualifications of doctors and medical record officers. This hospital required a graduate of a forensic specialist for doctors and a bachelor of epidemiology with a medical record diploma for admins. Based on the qualifications, the doctors had relevant educational background, but the admins had irrelevant educational background to what is needed.

“My educational background was not related with my job. However, before taking a bachelor’s degree, I had taken a medical record diploma.” (Medical record officer)

Furthermore, most of the admins and doctors had worked as writers and recorders of MCCD for five years or more.

Even though they have worked for more than 5 years, there was a

difference between admin and doctor knowledge of MCCD. Both had different perceptions of the MCCD function.

"MCCD is created for the administration of funerals, heirs, inherited wealth." (Medical record officer)

"MCCD is useful for communication because the MCCD that we published must be acceptable to all countries." (Forensic doctor)

The admin's knowledge of MCCD functions was lacking due to insufficient training on MCCD. Although they have obtained medical record diplomas, they never received specific training on how to report MCCD. MCCD was only assumed to be funeral and inheritance documents. Another mentioned MCCD as a communication tool that addresses the chronology of death.

Moreover, results showed that the admins did not routinely work on MCCD because they alternately worked as recorders and research officers.

"No, because I have a double main duty. So, so I just filled out a death report when other jobs were free." (Medical record officer)

"Yes, it should be, depending on the case as well. If there is a direct case we handle usually the patient from the external (outside the hospital) we immediately write a death certificate, if internal, it's charging to the doctor who treats a patient in each unit." (Forensic doctor)

DISCUSSION

Patient identification, at least, must contain a full name and medical record number. These data help health workers in identifying the owner of medical record, preventing patient mistreatment, and providing accurate medical information to ones who need it. Based on the Regulation of the Indonesian Minister of Health No. 269/MENKES/PER/III/ 2008 about Medical

Records in Chapter II Point 2, patient identification is a sub-component of the medical record that must be clearly completed (Ministry of Health, 2008). In electronic medical records, author notarization can be substituted by a personal identification number (PIN) (Rusli *et al*, 2006). With many incomplete author notarization details, it is necessary for the Forensic Department and the Medical Record and Admission Unit to inform doctors about the SOP of MCCD.

Motivation analysis

This study result revealed that motivation is the causing factor of the doctors and admins performance in completing MCCD. Doctors and admins would be stimulated for completing MCCD if they got reward. However, due to their perception that there was no reward, they were not stimulated to complete the MCCD even though they received remuneration/monetary reward every month. Meanwhile, there was no punishment as a warning or advice given by a leader to staff.

According to Aprilia *et al* (2020), reward is a form of appreciation given for what we accomplish. It can be given as a praise, for example a certificate, or others that are more priceless than money. Praise can be given in a meeting when officers do a great job. Reward may give them motivation. As stated by Ningsih *et al.*, 2022, motivation aims to foster a work spirit to achieve the organization's goals. High work motivation will affect the quality of work in an organization. Rewards that give long positive impacts may also reduce work stress.

Despite giving remuneration, officers still need praise to be more professionally acknowledged in the team. Errors in data entry often occurred because there were no strict regulations about that. Maulani *et al* (2021) stated that punishment gives a deterrent effect after one conducts a violation of discipline or work rules. With the existing issue, the hospital needs to implement punishment mechanism for those conducting errors.

Opportunity analysis

This study revealed that opportunity causing the doctors and admins to perform poorly in MCCD. Doctors only knew about the SOP without understanding its contents, while the admin only knew how to input the MCCD by learning from the senior admin. Besides, the person in charge also confirmed that they never received any training.

This is supported by the results in Table 3 that more than 90% of cause sections were incomplete. Forensic doctors only filled MCCD for patients referred from other hospitals. However, MCCD for patients that come from the hospital itself were managed by doctors in each service unit. Procedures in completing MCCD must be informed earlier to make them understand the urgency of this component.

The person in charge of death reporting confirmed that they never received any training. According to the Regulation of the Indonesian Minister of Health Number 56 of 2014 about Hospital Classification and Licensing in Chapter 78, the provincial government and the regional government have to provide guidance and supervision to the hospital, according to their respective duties, functions, and authorities, to improve the quality of hospital administration (Ministry of Health, 2014). While information on WhatsApp was not enough for the officers to understand, a technical manual was given. However, this method does not guarantee the process as they might still face some problems.

Both education and training contribute to employee performance. Suhartatik and Rochman (2015) mentioned that poor document management is caused by incompetent human resources. According to Robbins and Judge (2013), education equips a person with theory, logic, general knowledge, analytical skills as well as character and personality development. Educated one is expected to find out more information about the profession to succeed at work. Even though some officers had fit education background, they still needed workshops at regular intervals. Such workshops may keep their work standardized.

To solve these challenging issues, the hospital needs to increased better documentation and consider training on MCCD for their officers. The hospital may consider the Indonesian Law Number 13 of 2003 concerning Manpower in Chapter 1 for recommendations (Republic of Indonesia, 2003). This regulation explains job training may give, acquire, improve, and develop work competencies, productivity, discipline, attitudes, and work ethics at a certain level of skills and expertise according to the level and qualifications of the job position.

Ability analysis

This study revealed that ability causing the employee to perform poorly in MCCD. Based on the qualifications, the doctors had relevant educational background, but the admins had irrelevant educational background to what is needed. Based on the interview, doctors already had skills in MCCD entry. The admins who previously worked at the Logistics Department were concurrently recorders at the reporting section and research officers. Research by Saputra and Octaria (2021) stated that education is accessible not only from educational background, but also through training, seminars, technical guidance, and workshops. Although, the admins had irrelevant educational background, they still could improve their ability in filling MCCD through training.

The doctors and admins have worked for more than 5 years. Work experience is also the most influential factor on performance. According to Gunawan (2021), the length of work shows more experience and skills in the field. According to Robbins and Judge (2013), work experience is one's level of knowledge and skills at work and a basis for estimating employee performance.

Moreover, ability here is related to work discipline in filling out and reporting MCCD. Most of the MCCD were incomplete because doctors and admins left some sections blank (underlying basic cause of death, direct

cause of death, and signature of diagnostician). Results showed that the admins did not routinely work on MCCD because they alternately worked as recorders and research officers (double job). Double job causes a person to be undisciplined in completing his/her work discipline in filling out and reporting MCCD. Cognitive Resource Theory (CRT) suggests that under high levels of stress, employees are more prone to committing indiscipline (Tucker et al, 2009).

It could be concluded that some factors causing the doctors and admins to perform poorly in MCCD, ie, admins assumed never receiving a praise for obeying standards and procedures applied. However, they received remuneration/ monetary reward every month. The hospital was known to provide no punishment for their officers although officers had poor quality of work. The officers did not recognize the SOP deeply for issuing MCCD and coding, action, and death diagnosis. There was no training given to medical record officers. The person in charge of death reporting only taught the concepts or work instructions for inputting MCCD to the system. There was the difference between admin and doctor knowledge of MCCD. Moreover, the admins did not routinely work on MCCD because they alternately worked as recorders and research officers. Therefore, the hospital needs to give understanding to the officers that remuneration is also a reward. Another motivation could be given as praise to their officers to perform better. Thus, they will realize that all this time they have been rewarded as a form of motivation. Training or workshops are also recommended to improve officer experience and knowledge about MCCD. Lastly, the related units have to provide amenable policies on MCCD to support the standardization of performance.

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CONFLICT OF INTEREST DISCLOSURE

The authors declare that there is no conflict of interest in this study.

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