



## Error in Filling Death Certification on HIV Cases at a Teaching Hospital

Titin Wahyuni  
Stikes Yayasan RS dr. Soetomo  
Surabaya, Indonesia  
[wtitin.2012@gmail.com](mailto:wtitin.2012@gmail.com)

Lilis Masyfufah A.S.  
Stikes Yayasan RS dr. Soetomo  
Surabaya, Indonesia

Winarti  
Soetomo Hospital  
Surabaya, Indonesia

Sulistyoadi  
Soetomo Hospital  
Surabaya, Indonesia

Erwin Astha Triyono  
Soetomo Hospital  
Surabaya, Indonesia

### ABSTRACT

*Death certification is essential information to determine an underlying cause of death through people who is death with HIV case. The death certificate, as we know it, is used primarily to state the leading cause of death of patients with HIV cases. Moreover, data from causes of death are used as a significant part of health statistics for epidemiological research to determine intervention targets, program policies, and evaluation of HIV programs. However, a death certificate has a risk of various errors because of physician understudy how to fill it correctly. Hence, we evaluated and analyzed the mistake in the underlying cause of death statements in HIV cases indeed. This research is a descriptive study with a retrospective approach. This research conducted at Soetomo Hospital in the year 2018 and examined 86 death certification. We tested the accuracy of all of them with a review, both researcher and well-trained coder. We found writing only the immediate cause of death or mode of death rather than the underlying cause at 17 times; documenting multiple reasons on one line at 47 times; high improbable sequences at 37 times; and repeat the same diagnosis at one death certification at once. To fix it, it needs two way that provides a physician with a good knowledge of the importance of establishing a definitive cause of death and a way to fill it as correct as a rule from WHO.*

**Keyword:** Cause of Death, Error, Death certificate, Underlying Cause of Death, HIV

### I. INTRODUCTION

WHO recommends to all countries that are members to improve the quality of death data by making an accurate Medical Certificate of Cause of Death. So that, it is necessary to do promotion especially, in developing countries in which some have not reported data on causes of death to WHO, including Indonesia until 2017 (Walker, S., Rampatige, R., Wainiqolo, I. and Aumua, A., 2012).

The recording of the underlying cause of death uses several disease causes and conditions that contribute to death. The purpose of it to record the cause of the disease and the previous illness. In other words, the recording of a death certificate with a single cause does not provide information about the real cause of death (Moriyama, I.M., Loy, R.M., and Robb-Smith, A.H.T., 2015). Besides, the recording of underlying causes of death is essential to produce specific causes of death so that it can provide information on programs to strengthen death registration. Strengthening the system will be used to plan interventions to improve the health status of Indonesia and measure the success of development in the health sector (Sulistiyowati, N. and Senewe, F.P., 2014).

In Indonesia, the Medical Certificate of Cause of Death, which we know as the Medical Certificate of Cause of Death (SMPK). Guidance



on how to fill the internationally accepted SMPK standards has been regulated by WHO, 2010, in International Classification Disease- 10 (ICD-10) volume 2. Certificate of Cause of Death in Indonesia is a certificate with three causes of death, with one direct cause, one cause between death, and one underlying cause of death. The WHO recommendations for SMPK consist of 4 diagnoses and conditions, namely in Ia (the direct cause of death), Ib and Ic (the intervening cause, and Id (the underlying cause of death). How to read the table above is in part I; diagnose and condition that mention at Ia will cause Ib, Ib will cause Ic and Ic will cause Id.

A diagnosis that mentions at Id is the underlying cause of death. It means diagnosis and condition that begins the journey of illness so that the Id is also called the underlying cause of death. Whereas in Ia section is the direct cause patients died. However, death certificate at Surabaya consisted of 3 diagnoses and conditions, consisting of Ia (a direct cause of death), Ib (intervening cause) and Ic (the underlying cause of death).

One infectious disease that has fast growth is HIV. According to the Indonesian Ministry of Health in the 2017 healthy Indonesia profile, the prevalence of AIDS was 97,942 up to 2017 (the Indonesian Ministry of Health, 2017) while according to WHO, 2017 Indonesia is a country with the very rapid growth of HIV and AIDS at the age of 15-49 years. The HIV epidemic in Indonesia is commonly in groups that use drugs with syringes, sex workers, and sex with others (man sex with a man) and transgender (female transgender). And East Java is the second province with the highest prevalence after Papua Province (Ministry of Health of the Republic of Indonesia, 2017).

The cause of death that records at death certificate written by the physician in the research hospital does not continue to code with ICD-10 so that the underlying cause of death might be inaccurate, especially for HIV

death accompanied by infection opportunities, which should be the combined code. Based on the description above, We need to analyze the accuracy of the underlying causes of death from death certificate Surabaya X Hospital in 2018.

## II. METHODS

This type of research is descriptive using a retrospective approach. The study design was non-experimental using the method of observation and evaluation of death certificates in 2018 to determine the accuracy of the underlying cause of death. It had a criterion which was a death certificate that mention HIV in any row in it, it took as a sample. This study was conducted together with a team of ICD-10 trained coders and physicians to jointly determine the underlying cause of death.

## III. RESULTS

The most frequent error when writing a death certificate in the hospital where the study was conducted was multiple diagnoses in one line, 47 times the error, while the regulations for writing death certificates in ICD-10 volume 2 required the doctor as the author of the basic cause of death to only write one diagnosis per line. on the death certificate. Besides the findings in this study, doctors wrote diagnoses with high improbable sequences of 37 times the error. High improbable sequences of HIV cause of death have also been mentioned in ICD-10 volume 2 so that this error would cause errors in recording mortality data statistics, which can lead to errors in decision making by policy makers.

Frequency of Writing Errors on Death Certificates in HIV Cases at Soetomo Hospital in 2018

Writing Errors on Death Certificates	Frequency
Diagnosis on row Ic is not filled	17
Multiple diagnoses in one line	47

Writing Errors on Death Certificates	Frequency
High improbable sequences	37
Diagnosis is repeated twice in the death certificate	1

#### IV. DISCUSSION

A common mistake that occurs in death certificate documentation is writing more than one diagnosis per line (multiple causes per line). These results are following the research of Hazard et al. (2017) and also found in the book strengthening civil registration and vital statistics for births, deaths and causes of death Australia (2013) about the five most common mistakes made in documenting underlying causes of death, one of which is writing more than diagnoses per line, which ranks second-largest number two mistake that is often done (Tobergte and Curtis, 2013). While the WHO's No. 1 mistake is writing only the causes of death and intermediate causes and not state the underlying cause of death (Tobergte and Curtis, 2013). In this study also found in death certificate only state direct causes and intermediate causes, and both are two conditions that also contribute to the immediate cause of death. For example, in the direct cause, state heart failure and in the intermediate cause, state sepsis, while in the Ic section is not filled. Regarding Head of Infectious Disease Unit statement, it may be doctors still do not know the guidelines for writing basic causes of death or do not know how important it is to write accurate and specific causes of death. In a study conducted in an area in India, an error that occurred while documenting death certificate was writing down the conditions that were not feasible as a cause between cardiac arrest, cardiac shock, heart failure, sepsis, respiratory failure, numbness in the respiratory system and breathing stops (Dash, Behera and Patro, 2014). This was also stated by Tobergte and Curtis (2013). As for writing abbreviations, it is recommended to avoid them because everyone can interpret them differently.

#### V. CONCLUSION

Most errors in medical certificates that cause death with HIV cases are writing more than one sentence in one line on the cause of death medical certificate

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