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Editorial- Educational

Improving Death Certification in Bahrain

Suhail Baithun, MB, CHB, FRCPath* Khalid Al-Sindi, MBBS, MD, FRCPath** Karim Abdel Hakim, MBBCh, MSc, MD Critical Care*** Eamon Tierney, MB, BCH, BAO, FRARCSI, FJFICMI****

Many studies revealed discrepancies and inaccuracies in documenting the cause of death in medical certificates, especially in developing countries[1-5]. Death certificates frequently include inaccurate entries that do not reflect the real cause of death. These inaccuracies are more frequent in societies where autopsies are discouraged because of cultural and religious beliefs[6].

Many studies have revealed only a small percentage of doctors who have received formal training in death certification; most hospitals and medical schools provide limited training in this field[7-10].

Data from the Ministry of Health, Kingdom of Bahrain, on Health Statistics from 2010 showed that doctors in general lack training in death certification[11]. Abulfatih et al found that death certification in Bahrain should be re-evaluated and revised with the aim of increasing the awareness of physicians on the implications of inaccurate death certification[12].

Another study showed that 18.5% of physicians had some training in death certification and only 11.1% were aware of the death certificate completion guidelines[13]. They also demonstrated in this study that two-thirds of physicians made an error in death certification prior to the workshop with significant improvement in performance after the workshop[13].

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* Consultant, Histopathologist
Department of Pathology
Blood Bank and Laboratory Medicine
** Consultant & Associate Professor of Pathology
Chief of Pathology
Director, Blood Bank & Laboratory Medicine,
Diagnostic Departments, Rehabilitation & Allied Health Services
*** Consultant Intensivist
**** Director of ICU
Associate Professor of Critical Care, RCSI-MUB
King Hamad University Hospital
Kingdom of Bahrain
Email: suhail.baithun@khuh.org.bh

Death registration originated in the 15th century in Italy[14]. In 1532 in England, the first documentation of the cause of death was recorded by lay people also known as "wise women"; only complicated cases were referred to doctors[14]. The first recorded inquiry into death causation was introduced in 1837 when the Registration Act was passed in England[14].

In 1839, William Farr was appointed to be a compiler of scientific abstracts and statistician in the Registrar-General's office. He played a big role in the development and analysis of mortality statistics[15,16].

In Bahrain, registration of births and deaths is documented through different Acts. Act Number Six issued in 1970 defined the responsibilities of the Ministry of Health in the registration process. That included specific comments on the registration of births, deaths, and stillbirths[17].

Death certification consists of two parts[18]. Part I is divided into sections: A, B, C, D or E. Proper death certification must include the most recent condition at the time of death in section 1A, followed by 1B stating what the condition in part 1A was an immediate consequence of, and sections 1C, 1D and 1E refer to the oldest or most original conditions. Section 1A must be completed but it is not mandatory to fill out all sections, see table 1.

Tables 2 and 3 are examples of good practice. Table 4 shows an example of wrong, unacceptable cause of death, stating the mode of death, but not the reason leading to it. After reviewing the deceased's record, the correct death certificate was altered accordingly, see table 5.

Table 1: Template for Death Certification

Part1	A	Most recent condition or immediate cause of death
		Due to or as a consequence of:
	B	Pre-existing condition
	C	Other pre-existing condition
	D	Other pre-existing condition
Part 2		Enter significant conditions contributing to death but not the cause given in part 1

Table 2: A Good Example of a Death Certificate

Part 1	A	Cardiac tamponade
	B	Ruptured myocardial infarction
	C	Coronary artery atheroma
Part 2		Diabetes

Table 3: A Good Example of a Death Certificate

Part 1	A	Intra-abdominal hemorrhage
	B	Ruptured aortic aneurysm
	C	Severe atherosclerosis
Part 2		Ischemic heart disease

Table 4: A Bad Example of a Death Certificate

Part1	Septicemia
Part 2	Enter other significant conditions contributing to death but in the underlying cause given in part

Table 5: Correction of the Cause of Death in Table 4

Part1	A	Septicemia

	B	Peritonitis
	C	Ischemic perforation of the intestine
	D	Mesenteric artery atheroma
Part 2		Ischemic heart disease

Many doctors become aware and experience completing death certificates for the first time during their year of internship; most of these doctors have not been taught how to complete the death certificates properly [19-21].

There is usually a lack of understanding of the concepts of differentiating between the immediate cause of death and the primary cause of death. The primary cause of death is the illness that resulted in the events leading to the death, while the immediate cause of death is the terminal event causing death[22,23]. An example of that is myocardial infarction (immediate cause of death) as a result of severe coronary artery atheroma (the underlying condition). The underlying condition should be specific. Conditions such as hemorrhage or sepsis are non-specific; therefore, on their own must not be accepted as the underlying causes of death[22,23]. It is not acceptable that the cause of death should be contributed to general conditions such as respiratory arrest, cardiac arrest, cardiorespiratory arrest, or asystole. These are not causes of death but are the terminal events in all cases of death.

It is common that the doctor, in certain circumstances, may not have enough information on the immediate cause of death to be able to confidently complete the death certificate, especially if the patient has not been seen or attended by the doctor for a period. For example, a patient is known to have squamous cell carcinoma of the lung but has not been seen by the doctor for a period; therefore, in this situation, unless there is an autopsy, the underlying cause of death must stand alone in part I of the death certificate, otherwise, any immediate cause of death would only be a speculation. Therefore, the cause of death in the above example should be 1A-squamous cell carcinoma of the lung.

Education on how to complete death certificates could be achieved through lectures and workshops. This training should be part of the students' curriculum in medical schools and for newly appointed medical trainees in hospitals. Several studies revealed great improvement and more consistency in the accuracy of the death certification after a workshop[13,24-27].

A doctor seeing a patient for the first time should never issue a death certificate if the patient dies almost immediately. In addition, a doctor in the emergency department should never issue a death certificate for a patient who has been brought in 'already dead'. It is mandatory that these cases should be referred to the Department of Forensic Medicine, in order to rule out foul play.

The role of autopsy is very important in improving the accuracy of the cause of death. It should be the ultimate gold standard for establishing the cause of death. There are many studies showing the discrepancy between autopsy cause of death and the cause documented in the medical notes[28]. However, unfortunately, the rate of autopsies worldwide has decreased over the last few years, due to social, cultural and religious reasons[28]. In these situations, "virtual" autopsies could be carried out with minimum interference to the anatomy of the deceased[29-33].

In January 2000, Dr. Harold Shipman, who was a general practitioner in England, was found guilty of murder of fifteen of his patients. He was known to sign the death certificates of his own patients. As a result, an inquiry was established by the British Government under the chairmanship of Dame Janet Smith, to look into the judicial activities of the different authorities involved in the above circumstances. They were to take actions on how to prevent similar circumstances from happening again[33].

In 2007, the Department of Health in England, in response to the findings and recommendation of the Shipman Committee, advocated changes to the process of death certification. It recommended the establishment of "Medical Examiners" who should be qualified and trained senior doctors who can review and scrutinize the Cause of Death documented in the medical certificates[33].

In keeping with the British recommendation, a similar process is advised to take place in Bahrain. Two consultants within the hospital, perhaps one in an acute specialty, and the other, a pathologist, should review the notes of the deceased before a death certificate is issued. It had been the personal experience of one of the authors (SB) that there was an improvement in issuing death certificates when two consultants reviewed the patient's record. For example, a cause of death in a death certificate was given as cardiac failure, which is not a satisfactory cause of death; after reviewing the patient's record by two senior clinicians, they found that the deceased had a history of cardiac failure and ischemic heart disease and diabetes mellitus. Therefore, the final cause of death was altered to congestive cardiac failure due to ischemic heart disease as a result of coronary atheroma in part I of the certificate and diabetes mellitus in Part II of the certificate.

CONCLUSION

There is a need to improve the process of death certification. This improvement could occur by instructing doctors when they should not write a death certificate. In addition, through education, instructing them on how to complete the certificates correctly. The death certification should be supervised by a team of two consultants in each hospital.

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