Accuracy of Medical Certification of Cause of Death at Benha University Hospitals, Egypt: A One-Year Retrospective Descriptive Study (2014)

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Abstract:
Inaccuracy of the cause of death certification can impair the national health database and the medico-legal investigations. This study aimed to assess the errors of medical certification of cause of death at Benha University Hospitals, Egypt, to suggest necessary corrective measures. Death notification forms (DNFs) of all patients (n=347) who had expired during the period from January 2014 to December 2014 were assessed. The demographic characteristics, administrative details and the medical certification of the cause of death were reviewed using an approved standardized form. Errors in the DNFs were classified into six categories, from 0 to V according to increasing severity of errors. The study recorded errors in 100% of DNFs. The high proportion (63.4%) of DNFs contained major errors (grade V), sufficiently serious to affect the accuracy and interpretation of the medical certification of the cause of death. There was an obvious confusion between the underlying cause of death and the mode of death in most (61.6%) of DNFs. The results of this study underscore the usefulness of the format database utilized by the ministry of health in Egypt. Educational, managerial and administrative interventions are urgently needed to improve the standard of DNFs completion.

Keywords: Medical certification; Cause of death; Benha; Egypt; Descriptive study.

INTRODUCTION

An accurate and verifiable system for the recording of causes of death is an essential prerequisite for meaningful collection of epidemiological data, and also an ideal safeguard against illegal practice on the part of individual practitioners (Singotn & Cottrell, 2002).

Death certificates actually play a role in medico-legal investigations, declaration of health events in medical researches, evaluation of mortality in a community, and it can also be a valuable source of census studies (Swift & West, 2002 and Lakasing & Minkoff, 2012).

Data of medical certification of cause of death are highly standardized, because they have been regulated for over 50 years by the
World Health Organization (WHO) through the International Classification of Diseases (ICD). The ICD specifies how the information on cause of death should be collected (reporting forms), processed (coded), and disseminated (tabulated). This makes mortality data from death certificates highly comparable both internationally as well as nationally (WHO, 1993 and Johansson et al., 2006).

The medical certification of cause of death allows the underlying cause of death, as well as other significant conditions unrelated to the immediate cause of death (contributing causes) to be listed (Tormey, 2011).

The underlying cause of death was conceptualized as “the disease or injury that initiated the train of morbid events leading directly to death”, which is recorded in part I of the death certificate (WHO, 1993 and Sington & Cottrell, 2002).

But, it is increasingly recognized that analysis of underlying causes of death alone might not be sufficient to represent the complex burden of multimorbidity, so contributing causes of death were conceptualized, which represent “consequences or another diseases present at the moment of death that may have contributed to death”, which are listed in part II of the death certificate (Morton et al., 2000 and Klijs et al., 2014).

The quality of the information provided in death notification forms (DNFs) “death certificates” varies according to the personnel responsible for completing it, as well as on the availability of medical records in the hospitals (Hernández et al., 2011).

International reports of inaccuracies in DNFs “death certificates” range from 20–65%. Inaccuracies can emerge from the initial entry by the attending doctor or coroner, and the assignment of codes by coders (Slater, 1993; McAllum et al., 2005 and Laurenti et al., 2008).
Many studies have shown inaccuracies in medical certification of cause of death, as those done by Jansson et al. (1997); Swift & West (2002); Johansson et al. (2006) and Johansson et al. (2009).

A WHO study put Egypt in the group of ‘low quality’ death registration data, as completeness of DNFs “death certificates” < 70% or ill-defined codes appear on > 20% of registrations (Mathers et al., 2005).

It is essential to monitor the DNFs “death certificates” completion, as it is the primary source of mortality and disease statistics in Egypt, However, no enough assessments have been conducted to establish the quality of the data of the medical certification of cause of death in Egypt.

So, this study was conducted to assess the accuracy of completeness as well as to determine the frequency of errors of medical certification of cause of death in DNFs at Benha University Hospitals, Egypt, to suggest necessary corrective measures for improvement of the quality of reporting the cause of death.

MATERIAL AND METHODS

I- Material:

This is a retrospective descriptive study that was conducted at Benha University Hospitals, Egypt. The data of the study were sourced from death notification forms (DNFs) of all patients who had expired during the period from the beginning of January 2014 to the end of December 2014.

Benha University Hospitals followed Benha Faculty of Medicine located in Benha city, Qalubia governorate, Egypt, and provide medical services for at least 5 million inhabitants.

The study did not primarily validate the cause-of-death diagnoses because no autopsy information was available. But the DNFs were examined for inaccuracies in their completion as regard the WHO standard format.
The standard international format approved for the medical certification of cause of death for hospital in-patient deaths, was used, as shown in Fig. (1) (Dash et al., 2014).

![Form No. 4: Medical Certification of Cause of Death](image)

**Figure (1):** Standard format used for medical certification of cause of death for hospital in-patient deaths (Dash et al., 2014).

**II- Methods:**

The following parameters were studied:

- **The demographic profile of the deceased:** (the full name of the deceased, age, gender; if female; “pregnant or not” etc…).

- **The health & administrative data:** (date of admission, interval between onset of disease and death, the certifying medical practitioner (full name and signature).
• The completeness of medical certification of cause of death: (the underlying cause of death, the antecedent causes, the immediate cause of death, the mode & manner of death, the contributing causes of death, and the use of illegible abbreviations in the DNFs).

Errors in the DNFs were classified into six categories, as these seemed to be relevant, clear and easy to use, from 0 to V, according to the increasing severity, Grade IV and V errors were thought to significantly change the death certificate interpretation, Table (1) (Haque et al., 2013).

Table (1): Grading scale used to assess the DNFs errors (Haque et al., 2013).

<table>
<thead>
<tr>
<th>Grade</th>
<th>Errors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade 0</td>
<td>No errors</td>
</tr>
<tr>
<td>Grade IA</td>
<td>Incomplete or inaccurate demographics only</td>
</tr>
<tr>
<td>Grade IB</td>
<td>Inappropriate health and administrative information only</td>
</tr>
<tr>
<td>Grade II</td>
<td>Comorbidities (antecedent or contributing causes) incomplete</td>
</tr>
<tr>
<td>Grade III</td>
<td>Comorbidities (antecedent or contributing causes) not listed</td>
</tr>
<tr>
<td>Grade IV</td>
<td>Inappropriate immediate cause of death or only mechanism(s) or mode of death</td>
</tr>
<tr>
<td>Grade V</td>
<td>Underlying cause of death incorrectly attributed or placed in improper sequences</td>
</tr>
</tbody>
</table>

III- Statistical design:

The collected data were tabulated and analyzed using statistical package for the social sciences (SPSS) version 16 for windows (SPSS Inc., Chicago, USA). Data were presented as number and percentages. Chi square test ($X^2$) of significance was used, P value <0.05 was considered significant.

RESULTS

The present study assessed 347 death notification forms (DNFs) of all patients who had expired during the period from the beginning of January 2014 to the end of December 2014 at Benha University Hospitals, Egypt.

I- Demographic data of the deceased patients:

The present work showed that the majority (55.6%) of DNFs were issued for male patients, of extremes of age; aged >60 years (29.7%), and

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<18 years (25.3%). Deaths mostly occurred at the intensive care unit (ICU) (53.9%) and at pediatric department (21.9%) as showed in Fig. (2) and Table (2).

**Figure (2):** Distribution of the studied death notification forms (DNFs) (n = 347), according to age and gender of the deceased.

**Table (2):** Distribution of the studied death notification forms (DNFs) (n = 347), according to the hospital department at which death occurred.

<table>
<thead>
<tr>
<th>Hospital department</th>
<th>No. (n=347)</th>
<th>% (100.0)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intensive care unit (ICU)</td>
<td>187</td>
<td>53.9</td>
</tr>
<tr>
<td>Pediatrics</td>
<td>76</td>
<td>21.9</td>
</tr>
<tr>
<td>Cardiothoracic surgery</td>
<td>11</td>
<td>3.2</td>
</tr>
<tr>
<td>Neurosurgery</td>
<td>7</td>
<td>2.0</td>
</tr>
<tr>
<td>General surgery</td>
<td>3</td>
<td>0.9</td>
</tr>
<tr>
<td>Internal medicine</td>
<td>20</td>
<td>5.8</td>
</tr>
<tr>
<td>Obstetrics/Gynecology</td>
<td>2</td>
<td>0.6</td>
</tr>
<tr>
<td>Poison control unit</td>
<td>1</td>
<td>0.3</td>
</tr>
<tr>
<td>Cardiology</td>
<td>7</td>
<td>2.0</td>
</tr>
<tr>
<td>Emergency department</td>
<td>33</td>
<td>9.5</td>
</tr>
</tbody>
</table>

II- Details of the recorded errors:

The present study illustrated that all the studied DNFs contained errors, and 96.5% of them had at least two types of errors. All DNFs contained errors related to the medical certification of the cause of death,
96.5% of them had administrative data errors, and 22.2% had demographic data errors, as showed in Fig. (3, 4, and 5).

**Figure (3):** Distribution of the studied death notification forms (DNFs) (n = 347), according to the presence or absence of errors.

**Figure (4):** Distribution of the studied death notification forms (DNFs) (n = 347), according to the frequency of errors (one or more error types).

**Figure (5):** Distribution of the studied death notification forms (DNFs) (n = 347), according to the type of error.
The present work showed that the most common observed error among the demographic data was un-recording whether the female in the child bearing period was pregnant or not (53% %), the most common error among the administrative data was un-recording of the time interval between the disease onset and occurrence of death, meanwhile the most common error in the medical certification of cause of death section in DNFs was related to the underlying cause of death (either unrecorded at all or it was recorded but in improper sequence), as showed in Table (3).

Table (3): Distribution of the studied death notification forms (DNFs) (n = 347), according to the details of each type of errors.

<table>
<thead>
<tr>
<th>Details of errors</th>
<th>No. (n=347)</th>
<th>% (100.0)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Demographic data</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>12</td>
<td>3.5</td>
</tr>
<tr>
<td>Gender</td>
<td>49</td>
<td>14.1</td>
</tr>
<tr>
<td>Pregnancy *</td>
<td>25</td>
<td>53.2</td>
</tr>
<tr>
<td>Full name of dead</td>
<td>12</td>
<td>3.5</td>
</tr>
<tr>
<td><strong>Administrative data</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time interval</td>
<td>335</td>
<td>96.5</td>
</tr>
<tr>
<td>Certifying doctor</td>
<td>4</td>
<td>1.2</td>
</tr>
<tr>
<td><strong>Medical certification of cause of death</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contributing causes</td>
<td>214</td>
<td>61.6</td>
</tr>
<tr>
<td>Mode of death</td>
<td>16</td>
<td>4.6</td>
</tr>
<tr>
<td>Manner of death</td>
<td>37</td>
<td>10.7</td>
</tr>
<tr>
<td>Immediate cause</td>
<td>171</td>
<td>49.3</td>
</tr>
<tr>
<td>Antecedent causes</td>
<td>201</td>
<td>57.9</td>
</tr>
<tr>
<td>Underlying cause</td>
<td>216</td>
<td>62.2</td>
</tr>
<tr>
<td>Abbreviations used</td>
<td>6</td>
<td>1.7</td>
</tr>
</tbody>
</table>

*47 females in the child bearing period (15-49 years).

III- Grades of errors:

The present study illustrated that the high proportion (63.4%) of DNFs at Benha University Hospitals contained major errors sufficiently serious to affect the accuracy and interpretation of the medical certification of the cause of death; grade V errors, as showed in Fig.(6).
The present work confirmed that there was an obvious confusion between the underlying cause of death and the mode of death, as in most (61.6%) of DNFs in which mode of death was mentioned, the mode of death “cardio-pulmonary failure” was used instead of a definitive underlying cause of death, as showed in Fig. (7).

**Figure (6): Distribution of the studied death notification forms (DNFs) (n = 347), according to the grade of errors.**

**Figure (7): Distribution of the studied death notification forms (DNFs) in which mode of death was mentioned (n = 331, 95.4% of DNFs), in relation to the underlying cause of death.**
DISCUSSION

Death certification, a practice with a history dating back to the 12th century, continues to be a legal obligation for a doctor attending a decedent during their terminal illness (Swift & West, 2002).

Every physician’s duty is bounded to issue the certification of cause of death. Incomplete or inaccurate entry in these certificates can significantly impair the precision of a national health information database and the medico-legal investigations (Armour & Bharucha, 1997; Lahti & Penttila, 2001; Haque et al., 2013 and Dash et al., 2014).

In most countries, death notification forms (DNFs) or “death certificates” constitute the largest disease-related source of information and thus have a significant effect on public health research and policy-making (D’Amico et al., 1999 and Álvarez et al., 2009).

The present work showed that of the total studied 347 DNFs the majority were issued for male patients (55.6%), of age extremes; aged >60 years (29.7%), and <18 years (25.3%). Deaths mostly occurred at the intensive care unit (ICU) (53.9%) and at pediatric department (21.9%).

This was in accordance with Dash et al. (2014) who reviewed a total of 151 death certificates at Bhubaneswar, India. The majority of them were issued for patients in the extremes of the age >60 years (30.5%) and <10 years (27.8%), of them 60.26% were males and 39.74% were females.

Also, Katsakiori et al. (2007) analyzed 487 death certificates in Greece, of which 51.5% were for males and 48.5% females (median age 82 years, range 5-103 years; and 83 years, range 1-104, respectively).

Meanwhile Burger et al. (2012) assessed 703 DNFs in Cape Town, South Africa, and found that most (38.0%) of the cases were aged between 14 and 45 years and most (60.7%) of them were males.
Álvarez et al. (2009) in Hermosillo, Mexico found that the majority (58%) of deaths occurred in pediatric departments.

Accurate completion of death certificates is generally poor. Studies have shown that death certificate error rates are high, particularly in the developing countries (Myers & Farquhar, 1998; Lakkireddy et al., 2004; Mathers et al., 2005; Pritt et al., 2005 and Degani et al., 2009).

The present study illustrated that all the studied DNFs contained errors, and 96.5% of them had at least two types of errors. All DNFs contained errors related to the medical certification of the cause of death, meanwhile 96.5% of them had administrative data errors, and 22.2% had demographic data errors.

This was in agreement with many previous studies that recorded a high error rates as with Haque et al. (2013) in Pakistan who reported that 99% of reviewed death certificates contained at least one error, about 77% certificates had 3 or more errors and only 1% certificates were free of errors, and they confirmed that the most frequent errors pertaining to patients’ demographics (92%) followed by medical certification of cause of death (87%), and errors in administrative data were found in 49% of cases. Burger et al. (2007) in South Africa recorded errors in 91.7% of DNFs, 43.4% had at least one major error, most commonly (72.3%) involving the completeness of medical certification of cause of death, and among the minor errors irrelevant demographic information in 13% of cases.

Meanwhile other studies recorded a relatively low error rates as with Swift & West, (2002) in United Kingdom, who revealed that 55% of DNFs were completed logically and appropriately, however, 35% contained incomplete data, and nearly 10% were completed to a poor standard, being illogical or inappropriately completed. Cina et al. (1999) in Wilford Hall
Medical Center, Lackland Air Force Base, USA, found that among the studied 98 death certificates, errors were found in 37% of them. Other earlier studies recorded errors rates in certification of underlying cause of death ranging from 16% to 40%, as in studies of Gjersoe et al. (1998) in a medical hospital department in Denmark, and Jordan & Bass, (1993) in a London, Ontario teaching hospital respectively.

The recorded high error rates were all in the developing countries like Egypt, South Africa and Pakistan, meanwhile the recorded law error rates were issued in the developed countries like USA and United Kingdom, as they had an established proper system for fulfilling the medical certification of cause of death. Mathers et al. (2005) in a WHO study found that few countries have good-quality death registration systems mostly were developed countries, but completeness of DNFs “death certificates” in many developing countries like Egypt was < 70%.

The present work showed that the most common observed error among the demographic data was un-recording whether the female in the child bearing period was pregnant or not (53% %), the most common error among the administrative data was un-recording of the time interval between the disease onset and occurrence of death, meanwhile the most common error in the medical certification of cause of death section in DNFs was related to the underlying cause of death (either unrecorded at all or it was recorded but in improper sequence).

Dash et al. (2014) at Bhubaneswar India found that in 2.65% certificates the gender of the patient was missing, in 5.30% the age of the deceased was not mentioned, the interval between the onset and terminal event of various conditions was missing in 62.25% of cases. About 26.5% had inaccurate cause of death (these include various inappropriate terms.
such as cardiac arrest, cardiac shock, sudden cardiac failure, sepsis, respiratory failure, respiratory paralysis, and respiratory arrest), incomplete antecedent & underlying cause of death was found in 23.18% & 55.63% respectively, and in 43.71% there was use of abbreviations.

**Burger et al. (2007)** in South Africa found that the time interval between the onset of disease and death was not mentioned in 81.5% of cases, while other health professional’s details were completed in most cases. There was no underlying cause of death after mechanism in 13.5%, none acceptable cause of death in 14.8%, competing causes of death in 15.3%, incorrect sequencing in 28.7%, abbreviations were used in 23.7%.

**Cina et al. (1999)** in Wilford Hall Medical Center, USA, found that the most prevalent error type was the use of a nonspecific diagnosis as the underlying cause of death (61%). No errors were found in the listed manner of death.

The present study illustrated that the high proportion (63.4%) of DNFs at Benha University Hospitals contained major errors sufficiently serious to affect the accuracy and interpretation of the medical certification of the cause of death i.e. grade V errors. While grade IV errors involving immediate cause of death were 17.9%, antecedent or contributing causes were incomplete in about 10.6% (grade II), and they were not listed in 8.1% of DNFs (grade III).

**Haque et al. (2013)** in Pakistan concluded that the most frequent errors were grade IA errors (92%) involving patients’ demographics and Grade V errors regarding underlying cause of death (87%), while grade IV errors involving immediate cause of death were 62%, comorbidities not mentioned in about 33% (grade III), and they were incomplete in 18% of
certificates (grade II), about 49% of errors involving administrative data (grade IB), and only 1% death certificates had no errors (grade 0).

Correct certification of the cause of death requires: 1) awareness of the distinction between "cause" and "mechanism" of death, and 2) understanding the meaning of the concepts "immediate cause of death" and "underlying cause of death", both of them included in the standard WHO format of the medical section of a death certificate (Villar & Perez-Mendez, 2007).

Dash et al. (2014) cleared that cause of death includes any disease or injury responsible to initiate a chain of events resulting in death, whereas mode of death is the process of death and may be initiated by the failure of any of the three vital systems of the body.

Katsakiori et al. (2007) stated that the mechanism of death is a physiologic derangement or a biochemical disturbance produced by the cause of death.

These differences are explicitly mentioned in textbooks and literature and are taught extensively to undergraduates. Although the cause of death should not be confused with the mode of death, it is disturbingly seen in a significant proportion of the certifying doctors (Dash et al., 2014).

Megrane et al. (1997) and Katsakiori et al. (2007) recommended that due to their lack of etiologic specificity, mechanism (s) or mode of death should not appear on death certificates.

While, Swift & West, (2002) stated that modes of death—for instance heart failure, respiratory failure, liver failure, or cardiac arrest—are unacceptable alone. Modes may only be used if qualified by an appropriate cause of death.
The present work confirmed that there was an obvious confusion between the underlying cause of death and the mode of death, as in most (61.6%) of DNFs in which mode of death was mentioned, the mode of death “cardio-pulmonary failure” was used instead of a definitive underlying cause of death.

This was in accordance with Agarwal et al. (2010) in India who confirmed that the confusion between the “cause of death” and “mode of death” was seen in 86% of the certificates, and Meel (2003) in Umtata, South Africa who revealed that 79% of DNFs had ‘Cardio-respiratory failure’ as a cause of death. This made the WHO to put South Africa in the group of ‘low quality’ death registration data (Mathers et al., 2005).

Also, Katsakiori et al. (2007); Lakkireddy et al. (2007) and Degani et al. (2009) confirmed that the most common error in death certificate completion committed by physicians was the confusion between cause of death and mechanistic terminal events “mode of death”.

Meanwhile El-Nour et al. (2007) in Sudan observed that 47% of certificates listed mode of death in place of cause of death, and Dash et al. (2014) in India found that this confusion was evident in 26.5% of death certificates. On contrast a national study in Taiwan revealed only 7% of such errors (Lu et al., 2001).

Hanzlick (1996) and Haque et al. (2013) concluded that these errors originated from a lack of knowledge among physicians on how to identify, select and differentiate between the underlying cause, direct (immediate) cause and antecedent cause(s) of death.

While Lu et al. (1996) confirmed that physicians usually confuse the cause of death with the mechanism(s) or mode of death; probably because the target of the medical treatment is more often the mechanism(s).
On the other hand, *Middleton et al. (2011)* stated another possible explanation contributing to these mistakes which was the length of illness that leads to death. If a person dies after a long, well-characterized illness, the cause of death on the certificate is likely to be more accurate than a sudden or unobserved death with lack of adequate information about the decedent’s disease history.

Without knowing the reasons for high error rates in death certificate completion, it is hard to design a relevant intervention program to improve the quality of death certification (*Lu et al., 2001*).

Many studies have reported that most problems with reliability of death certificates arise from the limited formal training and medical inexperience of personnel in death-certification or disease-coding procedures as well as perceived lack of certificate importance (*Myers & Farquhar, 1998; Morton et al., 2000; Nowels, 2004; Pritt et al., 2005 and Degani et al., 2009*).

In the majority of teaching hospitals, resident physicians are responsible for death certificate completion, but only a small percentage receives sufficient formal training (*Barber, 1992; Lakkireddy et al., 2007 and Wexelman et al., 2013*).

Various studies have reported that a brief educational intervention and sensitization can significantly reduce the rates of major and minor errors in the completion of death certificates (*Pain et al., 1996; Abos et al., 2006; Katsakiori et al., 2007; Selinger et al., 2007; Villar & Perez-Mendez, 2007 and Pandya et al., 2009*).

*Swift & West (2002) and Dash et al. (2014)* stated that part of the legal obligation as well as ethical responsibility of a treating doctor is to complete a death certificate in accordance with the WHO recommendations.
To ensure correct completion and valid comparisons within and among countries, the used DNFs “death certificates” should follow the WHO standard form. Failure to follow the requirements of the standard form would be expected to adversely affect the accuracy and usefulness of cause of death statistics (*Lu et al., 2001*).

Counter-signing of DNFs by senior medical staff, multidisciplinary mortality meetings and querying programs (as used in parts of the USA and Europe) could also be considered to reduce errors in death registration (*Burger et al., 2007*).

Few countries have good-quality mortality registration data. There is an urgent need for countries to implement death registration systems, or enhance their existing systems in order to improve knowledge about the most basic of health statistics: *who dies from what?* (*Mathers et al., 2005*).

**The study concluded that:**

1. All DNFs at Benha University Hospitals, Egypt, contained completion errors. The high proportion (63.4%) of them was major errors sufficiently serious to affect the accuracy and interpretation of the medical certification of the cause of death.
2. There was an obvious confusion between the underlying cause of death and the mode of death, in most (61.6%) of DNFs.
3. The results of this study underscore the usefulness of the standard format database utilized by the ministry of health in Egypt.
4. Educational, managerial and administrative interventions are urgently needed to improve the standards of DNFs completion.

**Recommendations:**

1. Reporting the data of medical certification of cause of death in a new DNF designed to ensure registration of medical cause of death according
to the standard format of the WHO guidelines as showed in this article. This could make mortality data from death certificates in Egypt firstly accurate and precise, secondly highly comparable both internationally as well as nationally (N.B.: the already used format in Egypt is insufficient to fulfill the WHO guidelines, especially in section of medical certification of cause of death as part I and part II not included at all), as showed in Fig. (8).

Figure (8): Format used for medical certification of cause of death for hospital inpatient deaths in Egypt (Template 32a, Ministry of Health, Egypt, 2015).

2. This study suggested a need for improvement of the training of death certifiers, particularly resident and house officer physicians, as specific training (interactive workshops & regular death review meetings) offered
to them can lead to dramatic improvement in the accuracy of completion of DNFs.

**This study had some limitations:** firstly, it’s retrospective design. Secondly, it was conducted in a single teaching hospital, and it only reflected a single institutional practice. Further studies needed at a national level to correctly evaluate this medical issue.

**ACKNOWLEDGEMENT**

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**REFERENCES**


الملخص العربي

دقة الشهادة الطبية لسبب الوفاة بمستشفيات بنها الجامعية، مصر: دراسة مرجعية وصفية لمدة عام (2014)

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إن من صميم واجبات و مسئولية كل طبيب كتابة شهادة الوفاة الطبية بطريقة صحيحة. وإن ادخال بيانات غير مكتملة أو غير دقيقة في شهادة الوفاة الطبية يمكن أن يضعف إلى حد كبير من قاعدة البيانات الصحية الوطنية و يؤثر تأثيرًا سلبيًا على تحقيقات الطب الشرعي. من هنا هدفت هذه الدراسة إلى تقييم مدى دقة إكمال وكذلك تحديد وتيرة الأخطاء في شهادة الوفاة الطبية (إخطار الوفاة) بمستشفيات بنها الجامعية، مصر، لأقتراح التدابير التصحيحية اللازمة. وقد أجريت هذه الدراسة الوصفية المرجعية على 347 نموذج لإخطار الوفاة (نموذج 32 أ), لجميع المرضى الذين توفوا خلال الفترة من بداية يناير 2014 إلى نهاية ديسمبر 2014, وتم تقييم مدى صحة البيانات الديموغرافية والتفاصيل الإدارية ودقة تسجيل السبب الطبي للوفاة باستخدام النموذج الموحد المعتمد لمنظمة الصحة العالمية. تم تصنيف الأخطاء في شهادة الوفاة الطبية (إخطار الوفاة) إلى ست فئات, من 0 إلى 5 وفقا لشدة الخطأ. وقد أوضحت نتائج هذه الدراسة ما يلي: (1) وجود أخطاء في جميع شهادات الوفاة الطبية (إخطارات الوفاة), معظمها (63.4%) من الأخطاء الكبرى (الدرجة الخامسة), و هي خطيرة بما فيه الكفاية للتأثير على دقة وتفسير الشهادة الطبية لسبب الوفاة, كما أوضحت الدراسة وجود خلط واضح بين سبب الوفاة وطريقة الوفاة في معظم (61.6%) من شهادات الوفاة الطبية (إخطارات الوفاة). وتؤكد نتائج هذه الدراسة عدم كفاءة النموذج المستخدم من قبل وزارة الصحة في مصر لتسجيل سبب الوفاة الطبي، وعلى وجود حاجة ملحة لتثقيف و تعليم الأطباء الطريقة الصحيحة لكتابة شهادة الوفاة، وكذلك على أهمية التدخلات التنظيمية والإدارية لتحسين مستوى دقة الشهادة الطبية لسبب الوفاة.

Madboly A. G. and Metwally E.S. June, 2015