

Review

Medical certification of death and indications for medico-legal autopsies: The need for inclusion in continue medical education in Nigeria

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A study of medical doctor's attitude to filling of the death certificate was carried out by administrating questionnaire to medical doctors at a national conference which was attended by 300 doctors. Out of this, 114 of them responded with 111 being males and 3 females. Results show that 50% of the respondents had practiced for 6 - 15 years and 71% of them never had training in filling of the death certificate. 55% of the doctors were exposed to death certificate at the post-graduate level. The registrars (resident doctors) filled death certificate in 44.71% of cases. Only 2.63% of the doctors were able to list more than 7 reasons for medico-legal post mortem examination while 29% of them were correct in knowing the cause of death of the clinical case provided. This study has strongly supported the need to include formal training on death certificate completion and indications for medico-legal autopsies as part of continue Medical Education in Nigeria.

Key words: Death certification, continue medical education, coroners (medico-legal autopsies), Medical doctors, Nigeria.

INTRODUCTION

In 1538, King Henry VIII of England, in an attempt to escape the plague, commanded communities to register christenings, marriages, and burials. In the mid-1800s, William Farr developed the International Classification of Disease through which trends in specific causes of death could be compared within and between populations. In 1850, the 7th census of the United States was largely devoted to reporting the causes of death by age, gender, ethnicity, season, occupation, duration of illness, and slave status. And in 1900 the National Death Registry was started in the US, with the various states joining when they could assure the accuracy of their data (Medical certificate of cause and manner of death, 2003).

Today, mortality statistics derived from the cause of death section of the death certificate are used to assess

the general health of the population, to examine medical problems which may be found among specific groups of people and to indicate areas in which medical research may have the greatest impact on reducing mortality. Also, allocation of medical services, funding, and other resources are carried out with information provided by mortality statistics. For these reasons, the cause of death is the most important piece of public health information available on the death certificate.

Because the information derived from death and fatal death certificate can be no more accurate than the data on the certificate, it is very important that all persons concerned with the registration of deaths strive not only for complete registration, but also for accuracy and promptness in reporting these events. If the manner of death is unnatural, a medical examiner, coroner or justice of the peace should certify the cause of death. The US Medical examiner system has evolved over the past 100 years. Historically, the investigation of unusual or unnatural death has been the job of persons elected or

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Table 1. Showing the area of specialization of the medical doctors who participated in this study.

Area of specialization	%
Obstetric and Gynaecology	18.41
Physicians	18.41
General Practitioner	28.93
Surgeons	10.52
Pediatricians	2.63
Pathologist	7.80
Dentist	5.26
Anesthesiologist	2.63
House Officers	3.63
Psychiatrist	2.63

Table 2. Showing the medical officers who fill the death certificate normally.

Medical officers	%
House Officer	34.19
Registrar	44.71
Consultant	3.16
Medical Officer	17.96

appointed by the coroners. The subspecialty of forensic pathology was established in part to assist appointed non-specialty coroners and physician medical examiner. Procedures for death investigation vary considerably from state to state in the US. Most states have enacted legislation that when an unusual cause is responsible for death, the death is subject to investigation by the medical examiner/coroners (Magrane et al., 1997).

This study was carried out in order to sensitize the medical educationists and curriculum developers on the need to include death certification/coroners study as part of the continue medical education programme not only for medical students but for residents, since there is dearth of knowledge on the important of accurate death certification and record keeping in our medical institutions.

METHOD

This cross sectional survey of doctors was conducted during the May 2003 annual general meeting of the Nigerian Medical Association held in Owerri, Imo State. A 14 item self structured questionnaire along with a brief clinical history was administered to a randomly selected 120 doctors who attended the 2003 Annual Delegates Meeting of the Nigerian Medical Association held at Owe-ri. Out of the 300 doctors that were in attendance, 114 of them responded. The questionnaire sought to elicit dem-ographic data, to assess the knowledge of use of death certificate, find out who fills and to find out the level of knowledge of medico-legal cases. The need to include death certificate and indications for medical legal autopsy continue education services were also sought.

Data were analyzed by IBM computable computer using SPSS/EPI Info.Ver 6.04 and descriptive statistics for frequency and means were determined.

Table 3. Showing number of medico-legal cases and percentage of doctors who were able to list them.

Number of cases mentioned	%
0	5.23
1	28.93
2	21.04
3	18.41
4	13.15
5	5.26
6	2.63
7	2.63

Table 4. Showing performance of the doctor's at filling primary and secondary causes of death.

Performance	%
Rightly	29
Wrongly	71

RESULTS AND DISCUSSION

There were 114 doctors who responded with their ages ranges from 25 to over 50 years of age with the mean age of was 35 - 39 years. There were 111 male and 3 female doctors giving a male to female of 37:1 Table 1 shows the areas of specialization of the individual doctors. They had between 1 - 30 years of experience on the job with about 50% of them having been in the profession for between 6 - 15 years. The results showed that 28% had some form of training on filling of death certificates. Of those that had training, 36% were trained on death certification during undergraduate levels while 64% of them were trained during postgraduate studies. The doctors were required to generate a 10 item list of cases reference to the coroners which are listed in Table 3. Table 4 shows that only 29% of the doctors at the meeting were able to fill in the primary and secondary causes of deaths correctly, while 71% filled them wrongly.

The problems of death certification in hospital deaths many be a consequence of inadequate training of physicians. The Medical information on the death certificates is often incomplete which increases the rate of ill-defined cause of death. Most US states have no formal training for certifying death or preparing physicians who wish to be medical examiners (Maudsley and Williams, 1993; Mac Cormack et al., 1994; Prahlow and Lantz, 1995; Wetti and Rao, 1998). In this study, 71% of the doctors

had no formal training on the filling of death certificates. This compares favorably with the work of Magrane et al. (1997) who reported that more than 50% of general practitioners felt they were not sufficiently instructed about death certification and most physicians do not receive formal training in determining the cause and manner of death but simply giving this responsibility during residency training or employed as medical officers (Magrane et al., 1997). Dhanunjay et al. (2001) in their study had found that only 23% of the resident doctors with formal training were more comfortable with their abilities of filling the death certificates.

It is worthy of note that of the 29% that had training on death certification, 36% of them had the training as medical students and 64% of them while on their post-graduate training. In this study, 34.0% of the death certificate were filled by the House Officers as oppose to the findings of Jordan and Bass where majority death certificate (89.4%) were completed by house staff (Jordan and Bars, 1993). 44.7% of the death certificate were filled by registrar while the consultants and Medical Officers filled the death certificate in 3.16 and 17.96% respectively.

The result shows only 2.63% of the respondents were able list up to 7 cases referable to the coroners for post-mortem examination. This is a clear indication that majority of doctors in Nigeria are practicing without the knowledge of Medico-legal cases. When dead results from the under-listed cases, it is referred to medical examiner/coroner to investigate and complete the death certificate (Di Maio and Maco, 1989; Wetti and Rao, 1998; Hanzhick, 1994):

- (1) Death within 24 h of admission into the hospital.
- (2) Sudden and unexpected.
- (3) Suspicious circumstances.
- (4) Gunshot injuries.
- (5) Suicide cases.
- (6) Accident road traffic accident /air crash.
- (7) IDS-Infant death syndrome.
- (8) In police custody/prison yards.
- (9) During surgery or anesthesia.
- (10) Without medical doctor's attention.
- (11) Rape.
- (12) Poisoning.
- (13) Electrocutation.
- (14) Fall from a height of a building or tree.
- (15) Collapse of the wall of the well or burned alive.
- (16) Death in labour rooms.
- (17) Drowning.
- (18) Therapeutic misadventure.
- (19) Criminal abortion.
- (20) Stab injuries.
- (21) Death on arrive in the hospital (D.O.A).
- (22) Brought in dead without death certificate (B.I.D).
- (23) Burns.

It is the responsibility of the medical examiner/coroner,

not the primary care physician to investigate these cases and completes the death certificate. In rural areas where forensic pathologists are not available, the medical examiner collects important information for the health care system. In rural areas, the family physician can perform this service for the community. The family physician can investigate natural deaths in all age groups and make medical observation in unnatural deaths. Results of the scene investigation, external examination of the body and review of recent events often provide critical information for the physicians certifying an unexpected or unusual death.

In filling the primary and secondary causes of death on the clinical scenario provided, 29% of the respondent was able to write the correct causes of death. Previous studies have reported 80.9% (Lahti and Pentilla, 2001), 71% (Izegbu et al., 2003), 61% (Cina et al., 1999), 68% (Jordan and Bass, 1993), and 67.1% (Myer and Farguhan, 1998) where the death certificate were filled out in acceptable fashions.

The outcome of the study has strongly supported the fact that there is need for medical post-graduate training in filling death certificate and it is our opinion that the accuracy of death certificate can be improved with the implementation of a simple educational intervention.

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REFERENCES

- Cina SJ, Selly DM, Clerk B (1999). Accuracy of death certificate in two tertiary care Military hospitals. *Mi. Med.* 164(12): 897-9.
- Dhanunjay Lakkireddy, Manohar Gowda, James Vacell. (2001). Resident Physician proficiency in death certificate preparation: Impact of training and experience. Missouri chapter ACP-Associate Poster concept. PP. 1-4
- Di Maio DJ, Maco VJ (1989). *Forensic Pathology*. New York: Elsevier, pp: 1-4,
- Hanzhick R (1994). *The Medical cause of death manual: instructions for writing cause of death statements for death due to natural causes*. Northfield, Ill: College of American Pathology. 1 Ed. pp. 60-64
- Izegbu MC, Inem VA, Shittu LAJ, Olajobi FO (2003). Death certificate – Errors made by physicians in filling the primary and secondary causes of death in Lagos Nigeria. *Nig. Med. Pract.* 43(5): 112-114.
- Jordan JM, Bars MJ (1993). Errors in death certificate completion in a teaching clinic. *Clin. Interest Med.* 16 (4): 245-55.
- Lahti RA, Pentilla A (2001). The validity of death certificates: routine validation of death certificate and its effect on mortality statistics. *Forensic Sci. Int.* 115 (1) :15-32.
- Mac Cormack JN, Mclean ATA (1994). Change in death registration. How to fill out the amended North Carolina death certificate. *NC Med J.* 55: 544-6.
- Magrane BP, Gilliland MGF, King DE (1997). Certificate of death by family physician, October 1, pp. 1-8.
- Maudsley G, Williams EM (1993). Death certificate by house officers and general practitioner practice and performance. *J. Public Health Med.* 15: 192-201.
- Medical certificate of cause and manner of death (2003) Death Certifi-

cate CME p. 1.

Myers KA, Farguhar DN (1998). Improving the accuracy of death certification. CMAJ 158: (1317-23).

Prahlow JA, Lantz PE (1995). Medical examiner/death investigator training requirements in state medical examiner systems. J. Forensic

Sci. pp. 55-8.

Wetti C, Rao VJ (1998). Practical forensic pathology. New York: Igakushoin. pp. 1-23.