Death Certification by Clinicians or How to Avoid Unnecessary Trouble When Your Patient Dies

By Dr Gilbert Lau

INTRODUCTION

First, a brief survey of the statutory aspects of death certification. To be sure, they are bone dry and unlikely to be of much interest to the stressed and harassed medical practitioner trying to navigate his way (more or less) safely through a burgeoning medico-legal minefield and who might well regret that he had ever considered a career in medicine in his younger, idealistic days.

But it is important to be aware of how important proper death certification really is, in order to avoid further harassment from the relevant authorities (who would have no choice but to press the matter) if it is done incorrectly. So, do read on...

Certification of death by registered medical practitioners is a statutory duty imposed on them, by virtue of the Registration of Births and Deaths Act (RBDA), applied in conjunction with the coronial provisions of the Criminal Procedure Code (CPC) and with reference to the statutory definition of death contained in section 2A of the Interpretation Act.

Essentially, under section 2A(1) of the Interpretation (Amendment) Act 1998, clinical death encompasses both cardiac and brain deaths, which are defined, respectively, as follows:

(i) the irreversible cessation of circulation of blood and respiration in the body of a person; or
(ii) the total and irreversible cessation of all function of the brain of the person.

The remaining sub-sections (2-8) stipulate the procedures to be observed by medical practitioners certifying death under various circumstances and the conditions which apply to each of these situations. These may expediently be summarised as follows:

(i) determination of cardiac death (in accordance with the ordinary standards of current medical practice), where there is to be no harvesting of cadaveric organs for transplantation (section 2A(2));
(ii) determination of cardiac death, where organs will be removed, as authorised under the Human Organ Transplant Act (HOTA), or the Medical (Therapy, Education and Research) Act (METRA) (section 2A(4));
(iii) determination of brain death, where no organs will be removed (section 2A(3)); and
(iv) determination of brain death, where organs will be removed pursuant to the provisions of HOTA and METRA (section 2A(5)).

It should be noted that, in situations (ii), (iii) and (iv), two medical practitioners, who are not involved in the treatment of the deceased and who possess the requisite post-graduate qualifications, are required to examine the patient in question and to complete a pro-forma specified in the schedule of the accompanying Interpretation (Determination and Certification of Death) Regulations 1998 (subsidiary legislation).

Under the RBDA, every medical practitioner has a duty to issue a Certificate of Cause Of Death (commonly referred to as the CCOD) within 12 hours of the death of any person, who, during his last illness, was attended to by the medical practitioner (section 19). Of course, this provision must be read and complied with in light of the subsequent provisions concerning post-mortem examinations and coronial inquiries (sections 20 and 21).

PRACTICAL ISSUES

But what is the significance of all these statutes? What do they really mean? In principle, a medical practitioner should only issue a death certificate if he is satisfied that:

(a) death had occurred in circumstances consistent with natural causes (i.e. trauma, poisoning, iatrogenic injury and other unnatural events have been excluded); and
(b) there is at least one natural disease which is sufficient in the ordinary course of nature to cause death (reasonable clinical or thanatological certitude, rather than strict academic or epidemiological certainty, is what is required).

The implications of both these principles (which medical practitioners might and do, sometimes, overlook to their own peril) are as follows:

(a) unnatural causes, whether proximate or antecedent or remote, must first be excluded;
(b) the events leading to death must be carefully considered;
(c) any past medical history which is to be relied upon for the purpose of death certification, must be verifiable by means of a review of the patient's medical records;
(d) death certification is not to be based on guesswork, ***especially*** when the attending clinician is faced with mounting pressure from the patient's family (often referred to as the next-of-kin) to issue a CCOD.

(I must confess that this is merely my interpretation of the matter and that the reader might wish to seek legal advice on some or all these points!)

BEWARE OF PITFALLS

If the above criteria are not satisfied, then the attending medical practitioner is well advised to refrain from issuing a CCOD, as the case may be reportable to the Coroner. Indeed, not too long ago, the Ministry of Health issued a circular (MH 20:03/3 V4, dated 18 October, 2001) on death certification (that, sadly, few have read or will read), containing, amongst other things, advice on reportable deaths. The latter is reproduced (with some minor modifications) in the side box *(see page 10)* for the convenience of readers.

It must be emphasised that good practice dictates that the certifying medical practitioner must ensure that he has had an opportunity to view and to conduct a clinical examination of the body,

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in order to ascertain the fact of death and to exclude injuries or marks which would suggest an unnatural cause of death. This is why an external examination of the body is done for every Coroner's case where an autopsy is not conducted.

Death certification is a statutory duty that is strictly regulated and which must be undertaken cautiously and with due diligence. Accordingly, every effort must be made to avoid errors, which, in accordance with section 24 of the RBDA, can only be corrected upon the production of a statutory declaration (stating the nature of the error) and the payment of the prescribed fee, after death has been registered.

As a matter of interest, the RBDA (cf. Section 8(2)) and its subsidiary legislation, the Registration of Births and Deaths Rules (sections 10 and 11) also empower inspecting officers, authorised by the Registry of Births and Deaths, to certify natural causes of death (usually due to terminal illnesses) that have occurred at the residence of the deceased persons in question. In practice, the authorised officers (who, currently, are registered nurses employed as forensic death investigators by the Health Sciences Authority) would, in each case, verify the medical history of the deceased and conduct an external examination of the body at the place of death, before issuing the death certificate to the next-of-kin.

Death certification of Coroner's cases, both with and without an autopsy, consists of stating the cause of death in the Coroner's warrant upon completion of the necessary case review (inclusive of verification and documentation of the relevant medical history) and/or post-mortem examination, as the case may be.

It is advisable for clinicians to keep their causes of death as brief and concise as possible. Complex and convoluted (or possibly incomprehensible) causes of death are really the prerogative of forensic pathologists who have conducted autopsies (supplemented by the relevant ancillary investigations, including post-mortem histopathology and toxicology) on the bodies of deceased persons whose deaths were the subject of Coroner's inquiries!

INSTANCES OF IMPROPER DEATH CERTIFICATION

From time to time (more so in the past than presently), cases of improper death certification by clinicians (both general practitioners and doctors in institutional practice) are referred by the State Coroner to the Centre for Forensic Medicine (previously, Department of Forensic Medicine) for review and opinion. A sample of improperly certified causes of death is reproduced below. All but one are non-fictional, i.e. real, while the last case is simulated, but quite plausible.

Examples

1. I(a) Subdural Haemorrhage
   This, surely, should have been reported to the Coroner.

2. I(a) Multiple Fractures
   Ditto!!

3. I(a) Septicaemia due to or as a consequence of
   (b) Bronchopneumonia due to or as a consequence of
   (c) Fractured neck of the femur
   Ditto!! Note: I(a) is the proximate cause of death, i.e. the condition directly causing death, while (b) and (c) are the antecedent causes giving rise to I(a).

4. I(a) Septicaemia
   Yes, but what is the most likely source of infection? Bear in mind that septicaemia may be due to both natural, as well as unnatural causes (a common example of the latter would be a road accident).

5. I(a) Senile Debility
   Sorry, but old age per se is not a sufficient cause of death!

6. I(a) Anaemia
   What was the cause of the anaemia? Was it due to exsanguination from some injury (whether recent or past), chronic blood loss from gastrointestinal haemorrhage precipitated by the use of steroids or NSAIDS, or general debility following a severely disabling head or spinal injury or multiple trauma? It is essential to state the specific type of anaemia and to consider the antecedent causes.

7. I(a) Senile Debility
   II Hypertension
   Remember that conditions listed under "II" are contributory causes, i.e. significant conditions contributing to death, but not related to the primary disease or condition causing it. Accordingly, it would have been quite proper to list a complication of systemic hypertension, e.g. hypertensive heart disease, under I(a), if there is sufficient clinical evidence of this, and omit senile debility, altogether.

8. I(a) Pneumonia
   (b) Bleeding Stomal Ulcer
   II Compression Fracture of the Lumbar Vertebrae
   What was the cause of the stomal ulcer? Technically, it would, or at least, might have been iatrogenic in nature. Did the compression fracture of the lumbar vertebrae really contribute to the patient's demise? ***Remember that death certification is not simply a matter of listing all the diseases, syndromes and conditions that a patient had in life. The essential question is what roles these conditions played in the causation of death, if at all.***

9. I(a) Pneumonia
   (b) Urinary Tract Infection
   II Chronic Subdural Haematoma
   Diabetes Mellitus
   How did urinary infection cause pneumonia? Was it a case of break-through urological sepsis with secondary pneumonia? In any case, the existence of a chronic subdural haematoma must be regarded as prima facie evidence of a head injury, thus rendering the death a reportable one.

10. I(a) CCF
    (b) AMI
    (c) IHD
    II NIDDM, Hypertension, Hyperlipidaemia, ESRF, COAD, Pneumonia, Old CVA, Alcoholic Liver Cirrhosis, Myelodysplastic Syndrome, Benign Prostatic Hyperplasia, Sero-negative Rheumatoid Arthritis
    Firstly, refrain from using abbreviations in death certificates. Secondly, congestive cardiac failure is a mode, rather than a cause of death, and is therefore a term that should be avoided as much as possible. Thirdly, in this instance, either acute myocardial infarction or ischaemic heart disease would suffice as the primary cause of death. While it is entirely possible for a patient to

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have had all the co-existing conditions listed as contributory causes, it is best to limit these to just a few, e.g. end-stage renal failure and chronic obstructive airways disease or myelodysplastic syndrome. Otherwise, one might unwittingly give the impression that one is not quite certain of what the patient died of.

Be prudent, but not overzealous when certifying death. *This is the only fictional, but not implausible, illustration of inappropriate death certification in this article.*

SOUND CLINICAL DEATH CERTIFICATION

Well, so much for the negative demonstration, an expression that many of us added to our vocabulary whilst performing national service. Here are some positive examples (notice the use of block letters, which is a requirement, specified in small print, in the instructions which appear on the CCOD):

I(a) ACUTE MYOCARDIAL INFARCTION
II TYPE 2 DIABETES MELLITUS AND SYSTEMIC HYPERTENSION

I(a) SEPTICAEMIA
(b) BRONCHOPNEUMONIA
(c) BRONCHIECTASIS

I(a) MASSIVE PULMONARY THROMBOEMBOLISM
(b) DEEP VEIN THROMBOSIS
(c) ANTI-PHOSPHOLIPID SYNDROME

I(a) SEPTICAEMIA
(b) MASSIVE BOWEL INFARCTION
(c) MESENTERIC ARTERIAL THROMBOSIS
II END-STAGE RENAL FAILURE DUE TO DIABETIC NEPHROPATHY

SOME LAST WORDS

The complexities of death certification are not meant to ensnare the unwary medical practitioner, already beset by worries about spiraling medical protection subscription fees or medical malpractice insurance premiums, as the case may be. Rather, the certification of death is best regarded as a final professional service that doctors can and should, when called upon, render to their patients and their bereaved families, if they are in a position to do so. In fact, it is not meant to be a complex matter at all, but unfortunately, avoidable complexities do arise every now and then, when causes of death are improperly certified. ■

DEATHS REPORTABLE TO THE CORONER

Note: *Please note that the following are merely guidelines and do not constitute an exhaustive list of all the possible circumstances under which deaths are reportable to the Coroner. Such a list does not exist, anywhere.*

UNNATURAL DEATHS

1. Deaths known, or likely, to have been due to, or the consequence of, any violent or unnatural event or cause, such as
i) homicide;
ii) suicide;
iii) domestic, industrial, road or any other accident;
iv) drowning;
v) asphyxia and choking; including aspiration pneumonia following the inhalation of foreign bodies;
vi) electrocution and lightning strike;
vii) burns and scalds;
viii) poisoning;
ix) drug overdose;
x) infection following any form of injury or unnatural event;
xi) pneumoconiosis, or any other occupational diseases; and
xii) want, neglect or exposure.

DEATHS RELATED TO THERAPEUTIC EVENTS

2. Deaths which occurred during, or at any time after, any operation, or any invasive diagnostic or therapeutic procedure, use of therapeutic substances (Western drugs, TCM, alternative cures), medical devices, blood or blood products, or any medical intervention, if death may be deemed, in any way, to have been caused, or contributed to, by any such procedure or treatment.
3. Deaths which may have resulted from adverse drug and/or transfusion reactions; including anaphylaxis, toxic epidermal necrolysis, Steven Johnson's syndrome, neuroleptic malignant syndrome, etc. should be reported.
4. Deaths from suspected medical mishaps, falls while in hospital which have caused serious injuries, allegations of medical malpractice or inadequate standard of care.
5. Deaths that occur in pregnancy, during delivery, or within 28 days of delivery, should be reported, as these cases often occur suddenly and are associated with multiple therapeutic events (e.g. induction of labour, artificial rupture of membranes, caesarean section and assisted delivery) and modalities. Deaths as a result of induced abortion should also be reported.

DEATHS OF PERSONS IN STATUTORY CARE

6. Such persons would include persons in police custody, detention or remand, prisoners or destitute persons detained involuntarily, regardless of the fact that death may be due to natural causes.
Note that this does not apply to a person who had been admitted to a nursing home, or otherwise institutionalised, on a voluntary basis, and that the cause of death is natural.

OTHER SITUATIONS

7. Persons brought in dead to a hospital or clinic; when the cause of death is unknown and unnatural causes cannot be excluded.
8. Unidentified persons.
9. Deaths occurring under suspicious circumstances.

Suggestions for Bedtime Reading

1. *The Criminal Procedure Code*
2. *The Registration of Births and Deaths Act*
3. *The Interpretation (Amendment) Act 1998*
4. *The Human Organ Transplant Act*
5. *The Medical (Therapy, Education and Research) Act*

Available on-line at http://agcvldb4.agc.gov.sg
Happy reading!