

Editorials

The cause of death

Though the prime purpose of the physician is to cure people, diagnosis is almost always an essential preliminary. It is therefore hard to understand why many doctors, who are meticulous in their efforts to achieve a correct diagnosis during life, have such a cavalier attitude in deciding upon the cause of death. There is no doubt that the standard of death certification has fallen in recent years. This applies not only to the accuracy of the pathological diagnosis, but to the actual semantics of the entry on the certificates, where the frequent illogicality of the wording can only be ascribed to carelessness and lack of understanding.

These concerns over the deterioration of death certification have not only stimulated a considerable number of publications in the medical press, but caused two Royal Colleges to set up a Working Party and publish a report¹. Several prospective surveys have shown that there is a fairly constant error rate when clinical presumptions of the cause of death are subsequently checked by autopsy^{2,3}. About half the causes certified do not coincide with the post-mortem findings and a quarter are totally incorrect.

More than one writer on the subject has pointed out that if the diagnosis was wrong after death, it may well have been wrong before death, and Hector Cameron⁴ has claimed such errors might well cost millions of pounds annually in misplaced resources. The publication of these discrepancies stimulated a surprisingly strong reaction in the correspondence columns of the medical press. Many clinicians are indignant that their causes of death are questioned and point out that not only is the reason for a death often very indefinable and obscure, but that many autopsies seem unsatisfactory in that they do not explain why the patient died.

Though there is some truth in these complaints, much misunderstanding stems from the confusion between the mode of death and the basic pathology. It is true that an autopsy often fails to explain the dying process—in other words, why that particular patient died at that particular time. However, the underlying pathological conditions are usually demonstrable at autopsy and it is these which the Registrar-General requires on the certificate. He does not want—and he says this plainly in his accompanying notes in the book of certificates—the mode of death, which is often utterly nonspecific and is worthless from the point of view of mortality statistics and demographic use.

Deciding upon the cause of death needs the same analytical process as ante-mortem diagnosis. Whether or not there has been an autopsy, the available factual information must be reviewed and placed in the most logical sequence possible. This can be difficult, especially where the evidence is sparse or where multiple pathology is present.

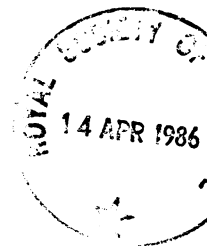
In old age, the frequent plethora of potential lesions makes the choice difficult, especially where the relative contribution of each is hard to assess. Notwithstanding the views of some practitioners, 'senility' is a perfectly acceptable cause of death, though it is best to qualify it by reference to a vital organ affected such as the myocardium, using a term such as 'senile myocardial degeneration'.

If this were not so, there would be no reason why patients should not live for 200 years, as many autopsies on aged persons reveal no specific pathology other than parenchymal degeneration of a senile nature. There is obviously a maximum survival time for the tissues of every species, and in man this is nine or ten decades. Though all tissues age thus, it is the myocardium which is the most immediately vital organ and it is therefore quite legitimate to blame it for the death when it eventually grinds to a halt.

By the same token, bronchopneumonia and coronary disease is overdiagnosed in old age. To stray into anecdote, both my own godfather and grandfather gradually faded away in their 80s and 90s, never having had the slightest symptoms of cardiac ischaemia; yet their general practitioners certified both as 'coronary thrombosis', a most unlikely diagnosis.

Where an autopsy reveals coronary disease in a middle-aged or elderly subject, it is natural in the absence of any other lethal condition to ascribe death to that lesion—assuming that the history is not inconsistent. Yet when one considers that a small but significant number of young adults die without the slightest abnormality at autopsy—and have to be certified as 'unascertainable'—why could not the older person have died of the same occult condition? His chronic arterial degeneration, probably static for months or years, may have been irrelevant in causing death, unless some fresh coronary or myocardial damage can be demonstrable. The faith of the pathologist is sometimes shaken when he ascribes death in one case to moderately severe coronary disease, then passes to the next table in the mortuary where another man of similar age, who has clearly been in a bad traffic accident, has far worse coronary lesions! However, these particular difficulties are unsurmountable and are not part of the major problem of ill-considered certification.

Whatever disease processes are found, either clinically or at autopsy, it is the doctor's duty to assemble them in a sensible order—and the International Classification of Disease (ICD) can be of great help. Unfortunately, many doctors have little familiarity with this WHO publication—and many have never even heard of it! In a 1984 Report of the Royal College of Physicians⁵, the President, Sir Raymond Hoffenberg, complained that there was gross ignorance of the ICD amongst doctors and that there should be tuition on the ICD system in medical schools and in continuing education of hospital doctors and general practitioners.



Every pathologist has a fund of unacceptable and even ridiculous causes of death, culled from certificates completed by junior (and sometimes not-so-junior) clinical staff. Many are unsatisfactory because they offer unqualified modes of death: 'heart failure' and 'cardiac arrest' are common examples. One recent uninformative sequence seen was 'heart failure due to liver failure due to kidney failure!' Others are unsatisfactory because the clinician apparently does not understand the internationally agreed format of the death certificate, which requests a causative sequence in Part One and, if appropriate, other unrelated lethal conditions in Part Two. All too often, the certifier reverses the logical sequence in Part One. For example, he writes 'Carcinoma of the prostate - pulmonary embolism', disregarding the fact that the words 'due to' are clearly printed between the lines. This simple example can be corrected by the Registrar General's screening staff, but more complex permutations lead to further inaccuracies. Again, mixing Part One and Part Two is common, leading to entries such as 'myocardial infarction due to obstructive airways disease due to fractured femur', with 'coronary thrombosis' in Part Two! This certifier, who was completing a cremation form, did not seem to appreciate that including a traumatic condition like a fractured femur made the case referable to the coroner, and his cremation form was therefore invalid.

A change in the certification instructions was introduced in the summer of 1985. This allows unrelated conditions to be entered on the same line of the certificate if the doctor feels that he cannot differentiate between the relative contributions of each condition. For example, 'hypertension and coronary atheroma' have an insufficient aetiological relationship for one to be said to be 'due to' the other, but can now be placed equally on the same line of Part One. Of course, one could be entered in Part One and the other in Part Two, but formerly the Registrar's coders disregarded Part Two entries in constructing mortality tables. It now appears that

they have more freedom to pick what seems to be the most logical sequence from the whole certificate, but this seems a rather arbitrary method of arriving at the best result, which is better achieved by more careful thought on the part of the certifying doctor.

It is easy to be critical of these errors, but the basic remedy can only lie in better - or indeed any - instruction at both undergraduate and postgraduate level. Most medical schools have reduced or discontinued their teaching of the legal aspects of medicine. Thus many new doctors begin their first house appointment with no more idea how to certify a death, report to the coroner or arrange for a cremation, than do the paramedical staff. The importance of determining a cause of death is rarely discussed, either at student level or during the vocational training of hospital clinicians, pathologists and general practitioners. Even though the care of the living patient must obviously be paramount, no one can doubt that structured thinking about the reason for a death both instructs and clarifies the clinician's mind. The accumulation of relatively accurate mortality statistics is an epidemiological tool indispensable to those following disease trends and planning health care.

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References

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- 3 Cameron HM, McGoogan E. A Prospective study of 1152 hospital autopsies; inaccuracies in death certification. *J Pathol* 1981;133:273
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Quality of care: RCGP initiative

Since the inception of the National Health Service, general practice has slowly and insidiously developed. There have been several landmarks that have each in themselves provided a stimulus for improvement. The Charter for General Practice in 1965 encouraged an increase in preventive care in general practice. The Vocational Training Act 1976 provided further stimulus to improving standards, especially in training practices, although this has had an inevitable knock-on effect in non-training practices. The setting up of the General Practice Finance Corporation provided better resource and incentive for improvement of practice premises.

The Royal Commission 1977 stimulated the Royal College of General Practitioners (RCGP) into action. Black spots remain in inner city areas but, until Government and community can endeavour to rid society of social deprivation, one must either accept the *status quo* or derive other mechanisms of providing primary care in those areas.

Historically, general practitioners provided care in the neighbourhoods in which they lived, often in their own homes. Nowadays doctors are unwilling to bring up young families in undesirable areas, and in consequence in inner city areas general practitioners provide care from lock-up surgeries and often live several miles away from their practice. Increasingly, visiting patients in their own homes is dangerous: especially after sundown, assaults on doctors are increasingly common.