



## Getting the facts of death right

Medical doctors are, quite rightly, more concerned with what they can do for the living than for the dead. Public health, however, has a keen interest in death and its causes because knowing *what* people die from, particularly those who die prematurely, enables appropriate preventive action. Medical doctors have a crucial role to play in this. They know *what* caused the death of their patients, and by accurately sharing this knowledge on the death notification form, can assist in preventing future deaths.

According to the *International Classification of Diseases* (ICD) guidelines,<sup>1</sup> all the causes of death must be listed on the death notification form in a specific order and a single underlying cause is then selected from these based on the ICD rules. This single underlying cause is used for mortality statistics, as public health aims to prevent this precipitating cause. Accurate medical certification of the cause of death requires knowledge of pathology and an understanding of the ICD-10 guidelines for certification and coding. However, it is recognised that doctors worldwide need more training in death certification and its importance for public health,<sup>2,4</sup> and the study by Burger *et al.*<sup>5</sup> shows that South Africa is no exception.

While the quality of cause of death certification is very important in an assessment of the utility of death data, completeness of death registration is also essential. The World Health Organization (WHO) ranks South African data as of low quality when considering criteria such as completeness, coverage and the proportion of ill-defined codes.<sup>6</sup> After 1994, however, the new South African government started improving its vital registration system. This included introducing a new death notification form in 1998, which complied with WHO standards for the certification of cause of death, as well as efforts to extend registration of deaths to all areas of the country. Good progress has been made in improving the completeness of death registration, with over 90% of deaths of adults estimated to be registered in recent years.<sup>7</sup> The completeness of registration of child deaths, however, is less certain. Statistics South Africa has also improved the production of cause of death statistics markedly, overcoming a 5 - 6-year backlog and currently producing statistics within 2 years.

These improvements notwithstanding, studies show that the accuracy of death certification in South Africa is still poor. Many deaths are ill-defined, misclassified to the immediate cause of death, or certified using a mechanism of death without stating the underlying cause.<sup>8,11</sup> Unnatural deaths are particularly problematic, as the specific external cause and manner of death is rarely recorded on the death notification.<sup>8</sup> The National Injury Mortality Surveillance System (NIMSS)

was introduced to address this deficiency but is still not nationally representative.<sup>12</sup> Despite these limitations, cause of death data in South Africa has recently provided important public health information. Data have highlighted the rapid increase in young adult mortality related to an increase in infectious diseases due to AIDS during the 1990s,<sup>13,14</sup> and pointed to an increase in child mortality.<sup>15</sup> In Agincourt, a rural sentinel surveillance site, analysis of cause of death data collected by verbal autopsy documented evidence of the health transition in rural Africans, with cerebrovascular disease accounting for 10.3% of deaths among 35 - 64-year-olds.<sup>16</sup> Analysis of death data from the vital registration system and the NIMSS has highlighted the extremely high injury burden in South Africa, due mainly to violence and road traffic injuries. Homicide rates are about 8 times the global rate and road traffic injuries almost double.<sup>17</sup> In the Western Cape cause of death statistics have revealed profound inequalities in health status by health sub-district. With careful analysis of the available death data it is therefore possible to provide reasonable estimates of the broad mortality profile in the country,<sup>8</sup> however, much work remains to improve the quality of cause of death data.

The first step in addressing a problem is to describe it, and we welcome the study by Burger *et al.*,<sup>5</sup> which investigates the frequency and types of errors in the cause of death sequence and the completeness of other epidemiological information. Frequent errors are demonstrated in cause of death certification, with major errors that could affect the accuracy of cause of death coding found in 43% of death notification forms and minor errors in 86%. This is of concern and indicates that medical doctors need better training. Factors influencing the frequency of major errors included the number of lines completed in the causal sequence, age, gender, type of facility and area of residence. The first four factors are intuitive but the influence of area of residence less so. One possible explanation might be differing cause profiles in the two areas, with more non-communicable diseases, which are less easy to certify accurately, occurring in Bonteheuwel than in Langa. The study did not identify the lack of a specific external cause of death, e.g. car accident or homicide, in the case of an unnatural death as a major error, as it would be regarded according to ICD guidelines. Since the manner of death must be determined by inquest in South Africa and the death notification form is regarded as a legal document, forensic pathologists are understandably reluctant to pre-empt the inquest findings. The vast majority of unnatural deaths in South Africa therefore have no specific external cause or manner of death recorded in the vital statistics. This needs urgent attention in view of the extremely high burden of injuries in South Africa.



We strongly endorse the recommendations made by Burger *et al.*, and agree that the training of medical doctors in death certification is the first priority. Simple educational steps have been shown to significantly improve the accuracy of death certification and legal compliance.<sup>2,18,19</sup> We are developing and evaluating an educational intervention called 'Getting right the facts of death', which includes a didactic session and self-study educational material. Medical students must be competent in death certification and understand its public health importance. Ongoing in-service training and certification examinations to assess competence in this area are needed to ensure that this knowledge is retained and used. High-quality death certification should be seen as part of good clinical practice and included in postgraduate studies and in programmes of continuous professional development (CPD).

The vital registration system can and should play an important role in ensuring high-quality cause of death data. Bah has suggested the implementation of a medical assessor and a querying system.<sup>20</sup> While supporting a query system, which is a common method of addressing vague or incomplete information on death certificates,<sup>21,22</sup> given the enormity of the task of processing more than half a million death notification forms at national level, we feel that this could best be done at local level.

Recognition of the importance of accurate cause of death information internationally has led to global efforts to improve the cause of death statistics which can provide support and training resources for countries wanting to improve their death data: The Health Metrics Network Monitoring of Vital Events (MOVE) initiative launched in 2005 to strengthen the availability and quality of vital statistics is making good progress. The WHO has prioritised the strengthening of vital registration systems and the WHO Family of International Classifications (WHOFIC) network has recognised the need for training in death certification and mortality coding and is developing training resources.

It is indeed time for South African health professionals to take the cause of death seriously!

**Pam Groenewald**  
**Desirée Pieterse**

*Burden of Disease Research Unit  
South African Medical Research Council  
Tygerberg  
Cape Town*

*Corresponding author: P Groenewald (prenaud@compnet.co.za)*

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