

ISSUES IN MEDICINE

Improving the quality of medical certification of cause of death: The time is now!

V Pillay-van Wyk, D Bradshaw, P Groenewald, R Laubscher

Cause of death statistics are an essential data source for monitoring the health of populations, identifying health priorities and planning health service delivery. The case for improving the quality of cause of death statistics for South Africa (SA) has been echoed for the past decade.¹⁻⁴ A detailed analysis of the cause of death data identified the following key challenges: (i) the quality of medical certification by doctors; (ii) challenges in obtaining cause of death for injury deaths; and (iii) headman certifying cause of death in rural areas.

An unacceptably high proportion of deaths (13.7%) is reported as due to ill-defined causes (*International Statistical Classification of Diseases*, 10th revision (ICD-10) codes R00 - R99). However, ill-defined conditions constitute only part of what the Global Burden of Disease (GBD) experts call 'garbage' causes. In addition to the chapter of ill-defined signs and symptoms, other ICD-10 codes considered to be garbage include risk factors (e.g. hypertension), intermediate causes of death (e.g. septicemia), mechanisms of death (e.g. cardiac arrest) or partially specified causes (e.g. cancer with unknown site).⁶

We report the number and proportion of deaths in SA certified as garbage causes for 1998 and 2008⁷ (Table I). The majority of these causes fall into the first GBD category, which includes ill-defined signs and symptoms that are not actually a cause of death. This category accounted for 15.3% of the deaths in both years. A total of 39.1% of the deaths were coded to garbage causes in 1998, and this decreased to 29.5% in 2008. This decrease is mainly due to a reduction in the 'not clearly specified' category of garbage. The decrease of this category from 14.1% to 5.1% of deaths was largely due to improvement in the specification of external causes of injuries.

Even with the observed improvement, nearly a third of the deaths in 2008 had the underlying cause of death certified as a garbage cause. The quality of cause of death data is therefore still inadequate to monitor the health status of the nation and understand the burden of disease, without adjustment. For cause of death statistics to become more useful for policy makers, it is imperative *not* to certify the

underlying cause of death as a garbage cause. The quality of cause of death information can be improved if doctors use the international guidelines⁸ when certifying the death. The causal sequence leading to death should be stated in part I of the medical certificate of cause of death, with the immediate cause of death on the top line followed by the morbid conditions giving rise to this cause, and stating the underlying cause of death (the condition or injury that started the sequence of events leading directly to death) on the lowest completed line. A guideline developed for South African doctors can be found on the Internet (<http://www.mrc.ac.za/bod/codcapril09.pdf>). The public health objective of preventing premature deaths can only be realised if accurate information on the underlying cause of death is available.

Statistics SA has recognised the inadequacies in cause of death data and in collaboration with the National Department of Health and the Department of Home Affairs is planning to provide 'train the trainer' courses on medical certification of cause of death for doctors. In addition, the Western Cape Department of Health, with the support of the Department of Forensic Pathology of Stellenbosch University and the MRC Burden of Disease Research Unit, has already embarked on a training intervention aimed at doctors in the public sector health facilities. The aim of this training is to highlight the international guideline for medical certification and reporting of the underlying cause of death on the death notification form. The need to report HIV appropriately is also emphasised. It is anticipated that this will result in better quality cause of death data in South Africa, which is key to deriving accurate and useful burden of disease estimates for policy decisions.

Acknowledgement. Statistics South Africa is acknowledged for providing the deaths data.

Victoria Pillay-van Wyk, Debbie Bradshaw, Pam Groenewald and Ria Laubscher are currently working on the second National Burden of Disease Study being conducted by the MRC Burden of Disease Research Unit. They have extensive experience in the analysis and interpretation of cause of death statistics.

1. Burger EH, Van der Merwe L, Volmink J. Errors in the completion of the death notification form. *S Afr Med J* 2007;97:1077-1081.
2. Bah S. Improving the quality of cause of death statistics in South Africa – some practical steps. *S Afr Med J* 2005;95(12):902-903.
3. Pieterse D, Groenewald P, Bradshaw D, Burger EH, Rohde J, Reagon G. Death certificates: let's get it right! *S Afr Med J* 2009;99(9):643-644.
4. Nojilana B, Groenewald P, Bradshaw D, Reagon G. Quality of cause of death certification at an academic hospital in Cape Town, South Africa. *S Afr Med J* 2009;99(9):648-652.
5. Bradshaw D, Pillay-van Wyk V, Laubscher R, et al. Cause of death statistics for South Africa: Challenges and possibilities. Cape Town: Burden of Disease Research Unit, 2010. http://www.mrc.ac.za/bod/cause_death_statsSA.pdf (accessed 9 May 2011).
6. Naghvi M, Makela S, Foreman K, O'Brien J, Pourmalek F, Lozano R. Algorithms for enhancing public health utility of national causes of death data. *Population Health Metrics* 2010;8:9.
7. Statistics South Africa. Mortality and causes of death in South Africa, 2008: findings from death notification. Statistical Release PO309.3. Pretoria: Statistics South Africa, 2010. <http://www.statssa.gov.za/publications/PO3093/PO30932008.pdf> (accessed 9 May 2011).
8. World Health Organization. *International Statistical Classification of Diseases and Health Related Problems*. 10th revision. Volume 2. 2nd ed. Geneva: World Health Organization, 2004. http://www.who.int/classifications/icd/ICD-10_2nd_ed_volume2.pdf (accessed 9 May 2011).

Corresponding author: V Pillay-van Wyk (victoria.pillayvanwyk@mrc.ac.za)

Table I. Number and proportion of deaths in garbage categories in 1998 and 2008, South Africa

Type ⁶	Garbage category	1998 (N=365 853)		2008 (N=592 073)	
		n	% of total	n	% of total
1	Ill-defined conditions that are not causes of death/risk factors	55 853	15.3	90 410	15.3
2	Intermediate causes of death	30 314	8.3	48 609	8.2
3	Mechanisms	5 037	1.4	5 400	0.9
4	Not clearly specified	51 533	14.1	30 453	5.1
Total garbage		142 737	39.1	174 872	29.5

Source: Authors' own analysis of data from Statistics South Africa.