

## Rapidly changing mortality profiles in South Africa in its nine provinces

The Second National Burden of Disease Study<sup>[1,2]</sup> has confronted the data-quality issues associated with vital registration of cause of death<sup>[3-5]</sup> and derived updated estimates of the levels and causes of mortality for 1997 - 2012 for 140 specific causes, 23 categories and four broad cause groups.<sup>[6]</sup> Estimates have been produced by age, sex, province and population group, providing unparalleled information about disease trends and health disparities in the country.

Our results show a number of successes where the health of the population has improved.<sup>[1]</sup> HIV/AIDS deaths dropped from just over 306 000 in 2006 to 154 000 in 2012 (Fig. 1). This decline in the number of deaths corresponds with the rollout of antiretroviral treatment. Even with these gains, HIV/AIDS is still the single leading cause of death in South Africa (SA), and the prevention of the spread of HIV and the provision of access to treatment are of paramount importance.

The study also highlights the fact that there are a considerable number of deaths from non-communicable diseases, exceeding the number from HIV/AIDS and tuberculosis combined by 2012.<sup>[1]</sup> Cardiovascular conditions including stroke, ischaemic heart disease and hypertensive heart disease constitute the leading category of non-communicable disease deaths in SA. However, different trends in cause-specific non-communicable diseases were observed; for example, tobacco-related mortality has declined, while deaths from diabetes and renal disease have increased.<sup>[1,7]</sup> Furthermore, injury deaths have declined since the late 1990s, with a 52% decrease in age-standardised death rates between 1997 and 2012.<sup>[1]</sup>

Interestingly, the top ten single causes of death have not changed over the 16-year period, and include causes from all four broad cause groupings, i.e. HIV/AIDS and tuberculosis, other type 1 conditions (other communicable diseases, maternal causes, perinatal conditions and nutritional deficiencies), non-communicable diseases and injuries.<sup>[1]</sup> Although the proportions and rankings of the top causes have shifted, this finding reflects a continuing quadruple burden that has characterised the disease profile in SA since the late 1990s.<sup>[8]</sup>

In addition to cause-of-death information, national and provincial reports can be found at <http://www.mrc.ac.za/bod/reports.htm> and provide trends in four key demographic indicators that reflect the status of development and health. Estimates of the infant mortality rate, the under-five mortality rate, the adult mortality rate (the probability of a 15-year-old dying before reaching 60 years) and life expectancy at birth are provided for the years 2000, 2005, 2010 and

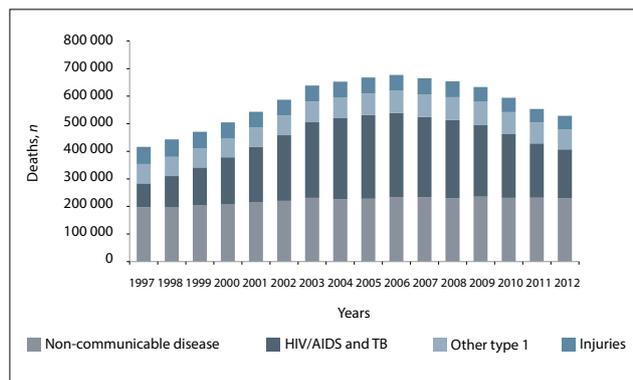


Fig. 1. Number of deaths by broad cause group, 1997 - 2012.

2012. The infant mortality rate, under-five mortality rate and adult mortality rate decreased between 2005 and 2012, and life expectancy at birth increased from 2005 onwards, consistent with the trends obtained from the Rapid Mortality Surveillance system established by the South African Medical Research Council.<sup>[9]</sup>

Our study measured premature mortality by counting the years of life lost depending on the age at which a death occurs compared with a standard life expectancy, and estimated over 10 million years of life lost due to premature mortality in 2012. Much of this premature loss of life can be avoided if appropriate action is taken, and the different provincial profiles of the causes of premature mortality should be used to guide strategies to improve health in each province. The leading causes of premature mortality for Gauteng and Limpopo provinces are shown in Fig. 2 to illustrate that while HIV/AIDS dominates as the leading cause, Gauteng Province needs to emphasise intersectoral actions in order to address the mortality of young people due to interpersonal violence, and Limpopo needs to focus on improving the quality of care in health services and access to water and sanitation by communities to address the preventable burden from infectious diseases.

Our study has produced a wealth of information that warrants further exploration and interpretation, within acknowledged limitations related to the sources of data and methodologies.<sup>[1]</sup> The Burden of Disease Research Unit invites researchers and experts

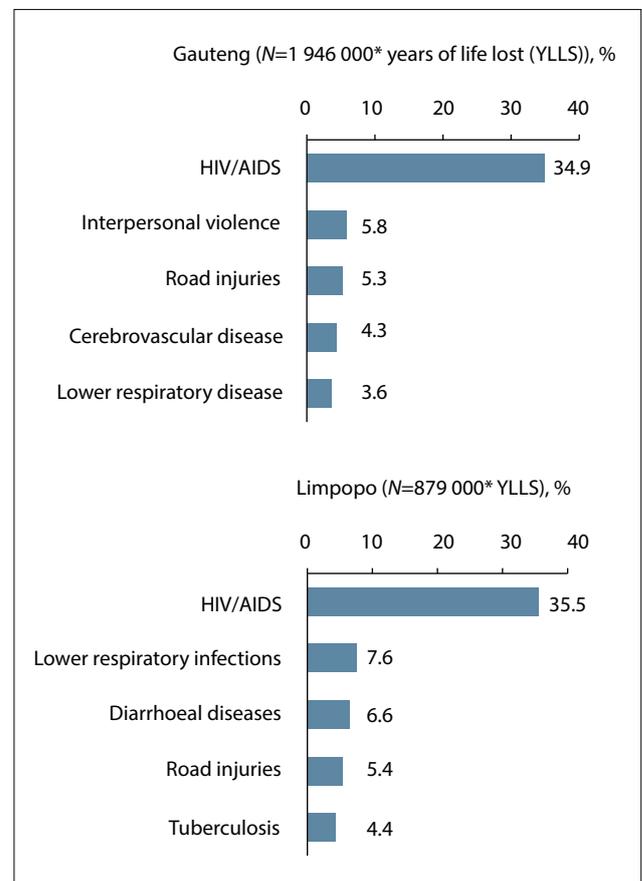


Fig. 2. Top five causes of premature mortality for selected provinces, 2012. (\*Note: Numbers rounded to the nearest thousands.)

interested in collaborating on further investigations to contact Dr Victoria Pillay-van Wyk.

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