

Methods and results from the national assessment of vital registration completeness in the Global Burden of Disease Project

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Abstract

Background Complete vital registration (VR) systems count all deaths in a population, thereby producing accurate death numbers that can aid policy-makers in allocating resources. This ongoing research estimates completeness over time for death registration in adult age groups and children under age five using all available VR data and the most up-to-date methods for over 100 countries. Beyond this research's inherent value, it is also a critical tool to adjust mortality rates in the overall estimation of mortality burden in the Global Burden of Disease Project.

Methods The VR database was compiled from a variety of sources, including the World Health Organization (WHO), Human Mortality Database, Demographic Yearbook by the United Nations Statistics Division, and country-specific statistical agencies. Completeness was calculated using Death Distribution Methods (DDM) for adults between 15 and 59 years. Completeness of under-five death registration was calculated by comparing the probability of survival from birth to age five (${}_5q_0$) with the final Global Burden of Disease Study ${}_5q_0$ country-specific estimates. A full time-series of completeness estimates for both adults and under-five deaths were calculated from 1990 to 2013.

Findings There were 110 countries reporting deaths using VR systems in 2004, the most abundant year for country reporting in our database. In 1990 there were a total of 103 countries reporting deaths with VR systems. Major information gaps persist worldwide, especially in Africa. In 2004, our VR database has information for three countries in Africa, with no representation from Central or Western Sub-Saharan Africa. This is in stark contrast to the information available in Western Europe where 22 countries reported for 2004. The number of countries with under 50% completeness decreased from 1990 to 2004 while the number with over 90% completeness has increased. Of the 56 countries with both under-five and adult VR in 1990 and 2004, 33 improved completeness while 23 experienced some decrease in completeness.

Interpretation Strengthening VR systems is essential to accurately measure the number of deaths in a country. This study found that in the period analyzed, VR completeness improved slowly, but decreases in completeness were seen in some countries and regions. Complete death registration will allow countries to accurately measure their burden of mortality and monitor progress, and should therefore be prioritized.

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Conflicts of interest There are no conflicts of interest.