



## Child mortality in South Africa – we have lost touch

Reducing child mortality is, appropriately, one of the eight Millennium Development Goals (MDGs) for reducing poverty and inequality in the world.<sup>1</sup> The target for this goal is to reduce child mortality by 2015 by two-thirds of the rate in 1990. Monitoring child mortality rates, however, is posing a challenge for low- and middle-income countries. Estimates that many countries, particularly in Africa, use to track progress in meeting this goal have to be extrapolated from earlier empirical data, since there are no up-to-date data.<sup>2</sup> Despite great strides that have been made in improving population health statistics, South Africa is unfortunately no exception. The most recent reasonably reliable estimates of child mortality for South Africa are for the mid-1990s, in other words 10 years out of date.

In an ideal situation one would use the vital registration of deaths to estimate child mortality. Statistics South Africa recently released the cause-of-death report for 1997 - 2005.<sup>3</sup> From these data it can be seen that the number of registered deaths under the age of 5 years has increased from less than 35 000 in 1997 to over 61 000 in 2005. However, this increase is difficult to interpret because it is impossible to decide to what extent it represents an increase in child mortality, as opposed to simply an increase in the completeness of registration. Regular visits to households in the Agincourt demographic surveillance site have found that over this period in this rural setting the child mortality rate increased, and that completeness in registration of child deaths also increased but remained below 30%.<sup>4</sup> The vital registration data therefore cannot tell us much about the under-5 mortality rate.

Alternative sources of mortality data have also failed to provide reliable estimates of child mortality. The South African Demographic and Health Survey (SADHS), a national household survey carried out every 5 years, includes detailed questions about the birth history of women aged 15 - 49 years. The 1998 SADHS gave an under-5 mortality rate of 61 per 1 000 live births for the period 1994 - 1998<sup>5</sup> while the preliminary report of the 2003 SADHS estimates the under-5 mortality rate to be 58 per 1 000 live births for the period 1999 - 2003,<sup>6</sup> implying, if anything, a marginal decrease in child mortality in recent years. This hardly seems plausible given that we are in the midst of an AIDS epidemic and the prevalence of HIV has reached levels of 30% among pregnant women attending public sector antenatal services. In the absence of a prevention of mother-to-child transmission (PMTCT) programme close to a third of the babies of HIV-positive mothers might be expected to become infected, and data on survival of infected children suggests that around 60% of these children can be expected to die before reaching age 5,<sup>7</sup> which should, all other things being equal, lead to an increase of around 60 per 1 000 in the under-5 mortality rates. The introduction of PMTCT could of course be expected to reduce this impact, but the roll-out and operational

effectiveness is nowhere near 100% and transmission from mother to child still occurs at disappointingly high rates.<sup>8</sup> Further inspection of the 2003 SADHS results shows KwaZulu-Natal to have an implausibly low under-5 mortality rate (33 per 1 000 live births), the lowest of all the provinces, and that there is virtually no correlation with the provincial rates observed in the 1998 SAHDS, suggesting that the child mortality rates from the 2003 SADHS cannot be relied upon.

The 2001 Census included questions of all women about the number of children born to them and the number who have died, but data quality problems make it impossible to derive a reliable estimate of child mortality from these data.<sup>9</sup> However, detailed analysis of the 1996 Census data together with the 1998 SADHS showed a consistent downward trend in child mortality since the 1970s that reversed from about 1993.<sup>10</sup> Recent studies show that a high proportion of children attending hospitals are HIV positive<sup>11</sup> and that about 40% of the deaths of children in hospitals are due to AIDS.<sup>12</sup> Thus there is no clarity on whether the increasing trend of child mortality has yet abated, and it is unlikely that we will have reliable estimates any time soon. The next SADHS is only due to take place in 2008 and although the recent Community Survey undertaken by Stats SA has asked the indirect questions which in the past might have produced estimates of child mortality, it has been shown that owing to the under-representation of deaths of children of mothers who have died of AIDS this approach does not give reliable estimates when there is a significant AIDS epidemic.<sup>13,14</sup>

The lack of reliable observed data on childhood mortality makes it necessary to resort to mathematical models of demographic trends and the impact of HIV/AIDS. The major models used for South Africa, however, produce somewhat different estimates. The ASSA2003 model, calibrated to HIV prevalence data, and the 1998 SADHS child mortality, *inter alia*, suggest that under-5 mortality rates peaked around 2001 at just under 90 per 1 000 live births and by 2004 would have fallen to 84.<sup>15</sup> The Child Mortality Coordination Group including UNAIDS, UNICEF and WHO estimate, on the basis of the Spectrum model used by UNAIDS, the under-5 mortality rate for South Africa in 2004 as 67 per 1 000 live births.<sup>2</sup> The UN Population Division estimates the level to have been on average 76 per 1 000 live births for the period 2000 - 2005.<sup>16</sup> Further investigation into the assumptions of the models suggests that the ASSA model may overestimate the impact of HIV on child mortality, and that the Population Division and hence the model used by UNAIDS (which uses the same non-AIDS assumptions) exaggerate the fall in non-AIDS mortality over time. While the models can be improved, until better empirical data are available there will continue to be uncertainty about the levels of child mortality.



Not knowing the exact level of child mortality is not grounds for complacency. All indications are that child mortality in South Africa is too high for a middle-income country and that it has been increasing. It is also clear that there are considerable inequities between urban and rural areas and between the population groups.<sup>6</sup> Data from the City of Cape Town, the only city to systematically compile mortality statistics, demonstrates high variations within the city, with the rates in the poorer suburbs being twice as high as in the better-off suburbs.<sup>17</sup>

Reaching the MDG goal in South Africa is not impossible. The framework for prioritising the health of children has never been stronger – the South African constitution has a strong rights basis incorporating the rights of children. Current government programmes such as extending the provision of basic amenities, addressing poverty and providing health care services are useful and necessary steps to improve child health. Improving delivery in the public sector has been identified as a critical factor, and, we need to address issues of inequity. If South Africa is to take the MDG goal seriously, it is essential to revitalise the child health agenda with a particular focus on reducing the burden of disease among children in rural areas and the urban poor. Reliable measurement of child mortality rates is an essential component of this effort, and government is urged to improve the vital statistics system and the quality of surveys in order to produce reliable up-to-date estimates of the rates at which our children are becoming sick and dying.

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