

Do the HIV/AIDS models reproduce the level and shape of mortality being experienced in sub-Saharan countries?

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*Background:* Estimating the number of people infected with HIV/AIDS in sub-Saharan Africa has been a difficult task with most models of most countries having to rely on data drawn from an often unrepresentative sample of antenatal clinics to indicate the extent and trend of the epidemic in countries. Where countries have undertaken household prevalence surveys these have often been interpreted to be contradicting the estimates from models based solely on antenatal clinic data. By and large macro modellers have not inspected the output from their models to see if they are consistent with the level of mortality being estimated for these countries by demographers using indirect demographic techniques and data from censuses and surveys. Experience from South Africa, a country where there is sufficient data to be able to produce fairly robust estimates of mortality at the national level suggest that there may well be some inconsistency between the models and the estimates of mortality from empirical data.

*Data and Method:* Estimates of the level, if not the shape, of mortality are available for a number of sub-Saharan countries, namely, South Africa, Namibia, Zimbabwe and Kenya (Timaues and (2004), Feeney (2003), Dorrington, Moultrie and Timaues (2004), and have been estimated by the author for Swaziland, Lesotho and Botswana using data on orphanhood from censuses and surveys. These estimates are compared to estimates of mortality or number of deaths produced by the ASSA2002 urban-rural and the UNAIDS/WHO model fitted to these countries, and the UN Population Division and the US Census Bureau's projections for these countries.

*Expected findings:* The UN Population Division and US Census Bureau over estimate the mortality in all countries while UNAIDS/WHO over estimate mortality in South Africa, Swaziland, Lesotho and Botswana and under estimate it in Kenya. Calibration of the ASSA2002 model to both the prevalence and mortality suggest that exaggeration is probably due to both an over-estimate of prevalence in the population as well as an underestimate of the survival from infection in some countries which could be related to HIV Type. In the case of Kenya, it would appear that UNAIDS has over-corrected its assumed rate of adult prevalence.