Executive Summary

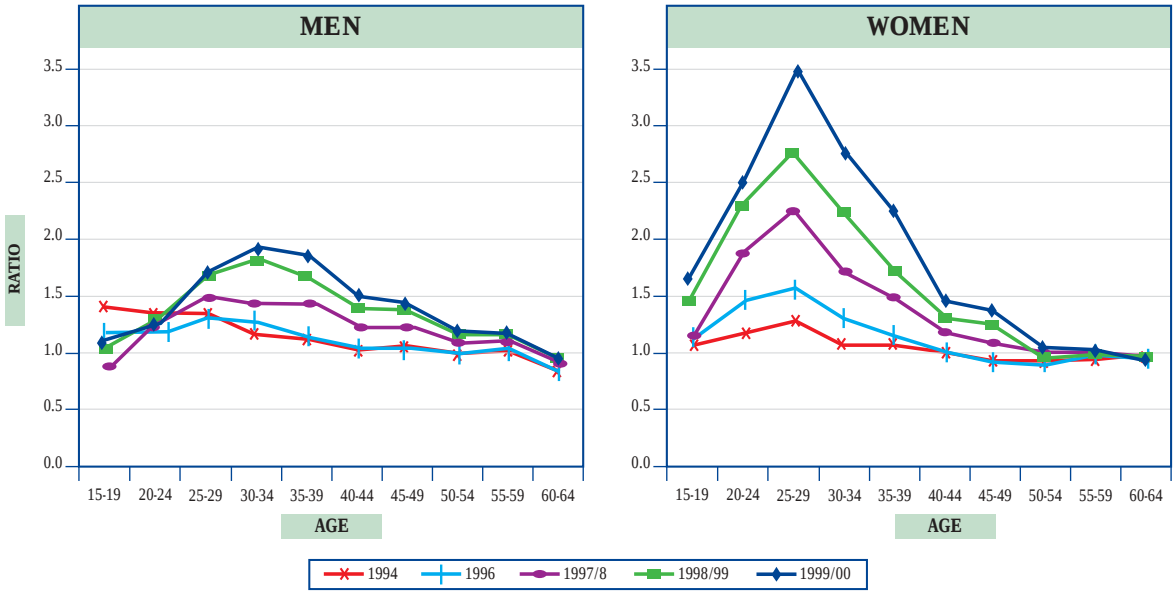
South Africa is experiencing an HIV/AIDS epidemic of shattering dimensions. The main source of information about the epidemic is the antenatal clinic HIV seroprevalence surveys conducted by the Department of Health. Reliable statistics on HIV/AIDS deaths in South Africa are not available despite Government's extensive, and largely successful, efforts to improve the national vital registration system. The most recent official death statistics available are those for 1996. By 1996 the proportion of deaths due to AIDS was too low to tell us much about the shape of things to come. Even if the numbers of AIDS deaths were substantial, vital registration statistics may well be an unreliable source of cause of death information because the true cause of death of someone who died of AIDS can be expected to be frequently misreported.

Demographic projections of the epidemic indicate that HIV/AIDS will cause a rapid change in the age and sex pattern of deaths. A system to rapidly monitor the age pattern has been developed by the Medical Research Council. Details of registered deaths are obtained directly from the Population Register maintained by the Department of Home Affairs.

Standard indirect techniques have been adapted for estimating the extent of under-reporting of deaths to allow for different levels of completeness at different ages which can be expected in South Africa, in order to estimate the extent of under-registration in both the routine vital statistics reported by Stats SA as well as the data obtained from Home Affairs. The coverage of adult death registration appears to have improved from 54% of deaths occurring in 1990 being reported to 89% of adult deaths (in those older than 15 years) occurring in the 12-month period to the end of June 2000 being reported. This is a clear sign of the success of the extensive efforts on the part of Government to improve vital registration. While this system provides good information on adults, deaths among children are under-represented as a relatively high proportion of children are not recorded on the Population Register.

The data show that there has been a steady increase in adult mortality during the 1990s. The mortality of young, adult women has increased rapidly in the last few years with the mortality rate in the 25-29 year age range in 1999/2000 being some 3.5 times higher than in 1985 (see graph). The mortality of young men has also increased,

Estimated increase in adult death rates relative to the 1985 death rates



however, the pattern suggested that this may be a combination of a rise during the early 1990s in injury-related deaths, that typically occur among men in their twenties, that began to fall in the late 1990s, and a more recent increase in deaths due to AIDS in a slightly older age group. Mortality in the 30-39 year age range in 1999/2000 was nearly 2 times higher than in 1985 (see graph), but obviously this is off a much higher base.

The pattern in the empirical data is largely consistent with that predicted by models of the AIDS epidemic, in particular the ASSA600 model developed by the Actuarial Society of South Africa, suggesting that it is reasonable to interpret an increase in young, adult mortality as being essentially a consequence of HIV/AIDS. We looked at alternative explanations for these patterns and found none of them plausible. In addition, we cite evidence from a number of sources in support of our interpretation.

While there is inevitably some degree of uncertainty because of the assumptions underlying both the model and the interpretation of the empirical data, we estimate that about 40% of the adult deaths aged 15-49 that occurred in the year 2000 were due to HIV/AIDS and that about 20% of all adult deaths in that year were due to AIDS. When this is combined with the excess deaths in childhood, it is estimated that AIDS accounted for about 25% of all deaths in the year 2000 and has become the single biggest cause of death. The projections show that, without treatment to prevent AIDS, the number of AIDS deaths can be expected to grow, within the next 10 years, to more than double the number of deaths due to all other causes, resulting in 5 to 7 million cumulative AIDS deaths in South Africa by 2010.

This study has demonstrated the value of supplementing the routine vital statistics with rapid mortality surveillance, making use of administrative data from the Population Register. The system needs to be formalized as rapidly as possible with the data being released routinely to inform research and policy. Further work to improve models and data is needed to develop the surveillance tool to meet the needs of provinces and local government and for assessment of the impact of interventions. Although there is an impressive consistency between the pattern of total deaths by age projected by the ASSA600 model and those captured on the Population Register, the discrepancies suggest that the model can be improved in a number of ways. Among these it is suggested that no allowance be made for a reduction in adult mortality since 1985 when estimating the non-AIDS mortality. In addition, the results suggest that the estimates of prevalence based on the early antenatal clinic survey data probably exaggerated the prevalence in those years. Various other recommendations are made including extending this work to the provincial level. It is also important to develop a mechanism to monitor the impact of the AIDS epidemic on the mortality of children.

The rapid change in the empirical death rates confirms predictions of the profound impact of AIDS on mortality. These shocking results need to galvanise efforts to minimize the devastation of the epidemic.