

EXTENDED ABSTRACT

The impact of HIV/AIDS on adult mortality in South Africa, and the impact of antiretroviral therapy on that impact

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The rapid spread of HIV and its impact on mortality made it necessary to establish a rapid mortality surveillance system which has been extended to monitor basic details of deaths registered in the 9 provinces of South Africa. The number of deaths on the Population Register continued to increase between 2000 and 2004, whereafter a slowdown in the growth has been noticed. The increase is particularly marked for young adult ages and differs for men and women. Three distinct profiles were observed when then natural deaths by province were compared. When compared with data from cause-of-death analysis, the same age-specific pattern of deaths was observed, suggesting that there are no substantial biases introduced by this method of rapid surveillance. The comparison with estimates from a model also confirms this pattern but indicates that the slow down in the mortality is more significant than projected by the model.

1. Introduction

HIV/AIDS impacts on a population, demographically, in a number of ways but most significantly and directly through its impact on adult mortality. In order of demographic significance this is followed by its impact on infant and child mortality and fertility (both directly and more significantly, indirectly) which together impact on the numbers of children surviving in future.

In developing countries HIV/AIDS also has an indirect impact on migration both in order to access services, but also to return home for care when AIDS sick. The impact on migration is difficult to measure but is not thought to be significant in terms of overall population numbers. However, being selective, these movements can have a significant impact on the measurement of HIV/AIDS and mortality rates.

Despite the fact that about 85% of deaths are registered in South Africa (Dorrington, Moutlrie and Timaeus 2004) the cause of death statistics cannot be relied upon to provide an accurate picture of AIDS mortality due to misclassification of HIV as a cause of mortality. This fact plus the fact that release of these data was delayed for a number of years at the start of the epidemic led to the establishment of a 'rapid mortality surveillance' project to monitor deaths as they were recorded on the population register on a monthly basis. Although the cause of these deaths is recorded as only natural or unnatural, the increase in the number of deaths, the pattern

by age and the fact that all of the increase occurred in the natural causes, provide a useful measure of the state of the epidemic.

2. Structure of the paper

The paper comprises a number of sections. The first describes the data used. A data-base of deaths of people who are on the population register has been compiled based on monthly reports from the Department of Home Affairs. Deaths due to unnatural causes are identified based on keywords. The age distribution of the deaths of adult males and females (15 years and older) for the period 2000 – 2006, was compared between the 9 provinces.

The second describes the analysis undertaken to assess the completeness of the population register and to remove the impact of population growth and to examine the trend in mortality nationally by sex and provincially. The data are compared with the ASSA 2003 model (ASSA 2006), as well as data from Stats SA. The model used to assess the likely contribution of antenatal therapy on the slowing down in the growth in numbers of deaths. The final section examines the implications of these trends for the demographic impact of HIV/AIDS.

3. (Anticipated or known) Results

To date there have been 4.2 million deaths since the start of the project in 1998, 42% of which are female.

A table showing numbers of deaths by broad age group, sex, natural/unnatural for selected years, will be included. Some of the key results are as follows:

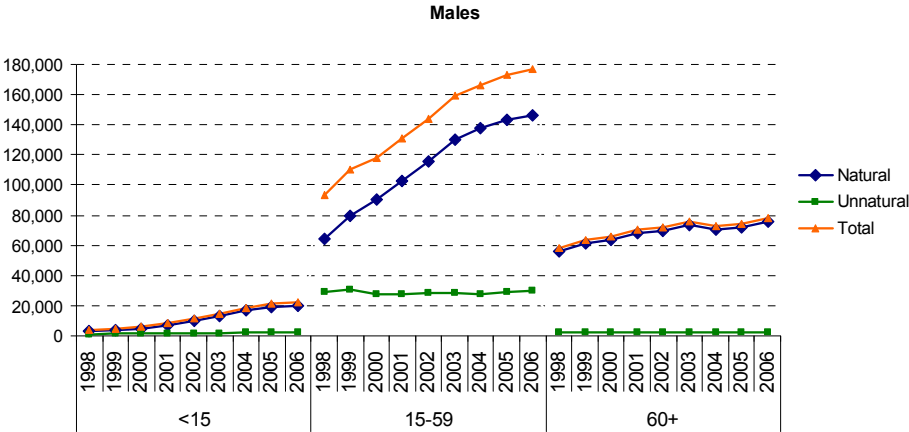


Figure 1 Number of deaths by year for three age groups (<15, 15-59, 60+): Males

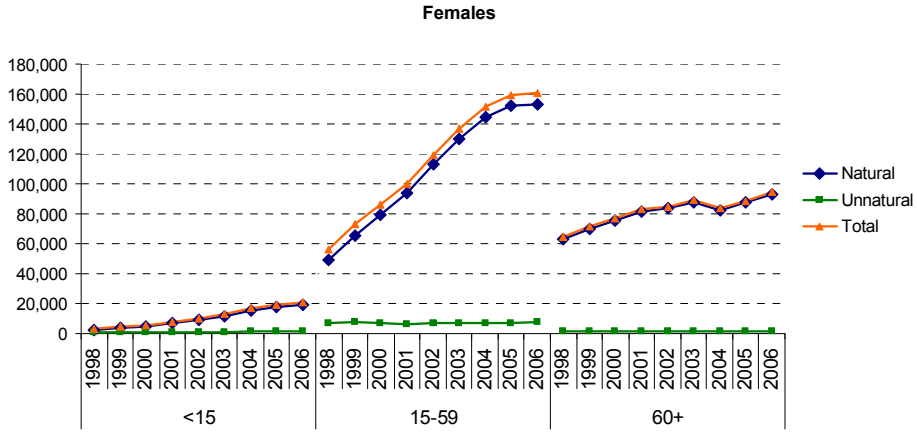


Figure 2 Number of deaths by year for three age groups (<15, 15-59, 60+): Females

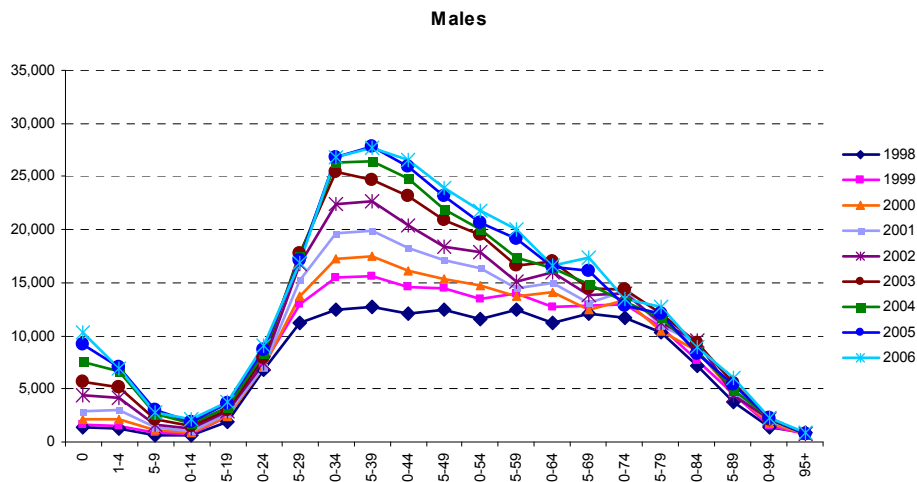


Figure 3 Number of deaths by age for each year: Males

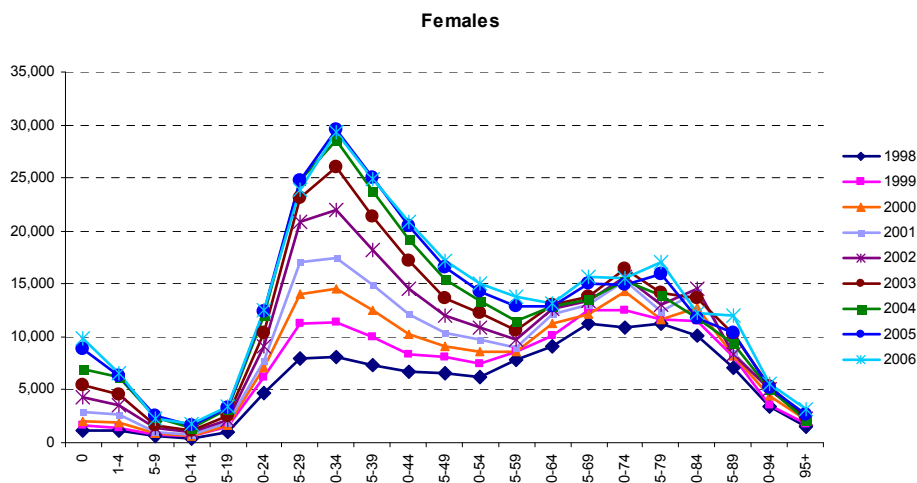


Figure 3 Number of deaths by age for each year: Females

As can be seen from Figure 4 part of the increase in the number of deaths is due to an increase in completeness of the population register, but not so for ages 25 and older.

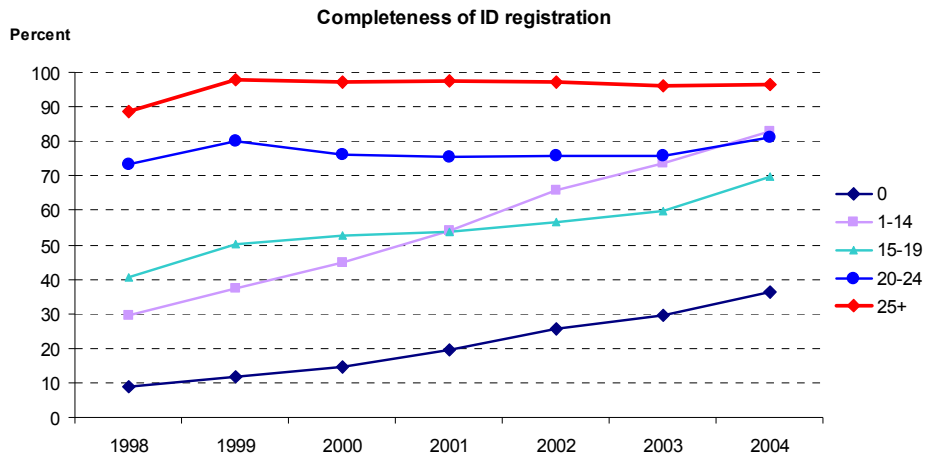


Figure 4 Completeness of the population register by age over time

The trend in natural deaths differs by age group and differs by sex. The dotted line shows the estimated trend without treatment effect.

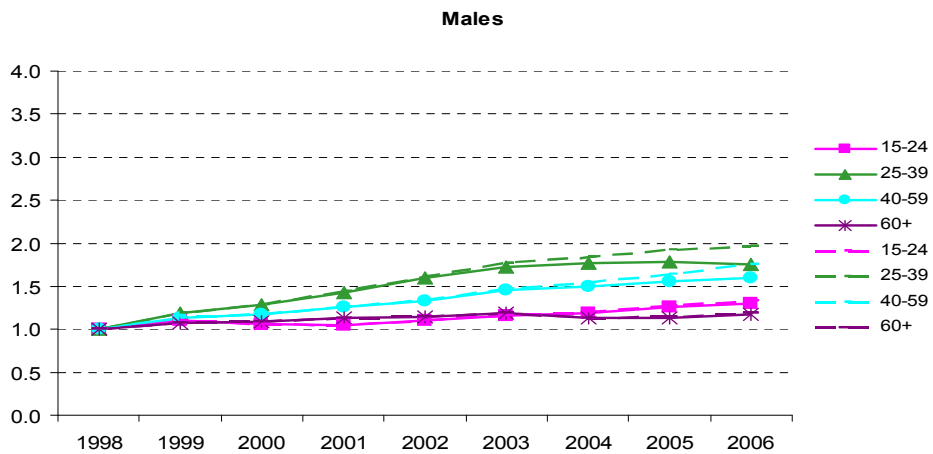


Figure 5 Ratio of number of deaths to those in 1998: Males

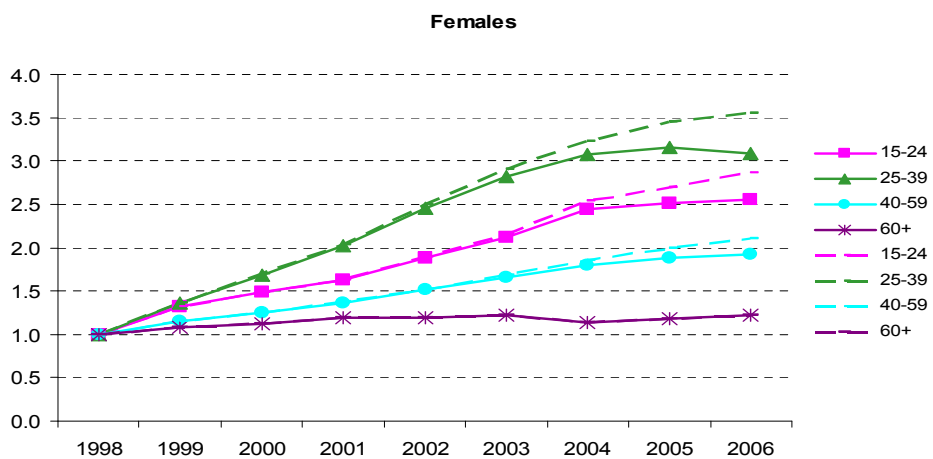


Figure 6 Ratio of number of deaths to those in 1998: Females

There considerable differences by province – using standardized rates (25-49).
 The gap between the provinces has grown as a result of AIDS

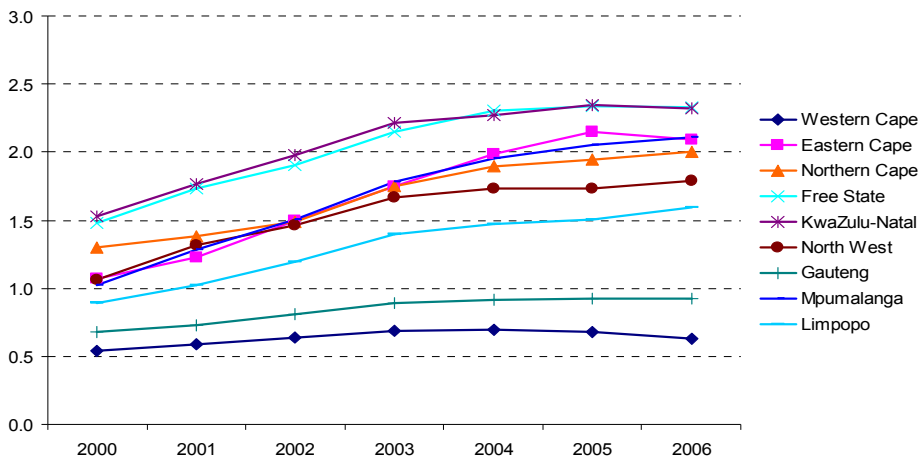


Figure 7 Ratio of the number of deaths to that in 1998 by province over time: Males

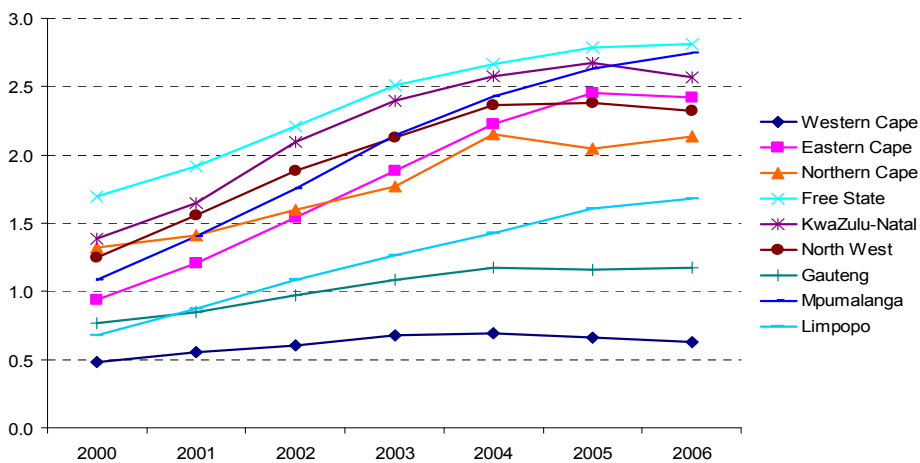


Figure 8 Ratio of the number of deaths to that in 1998 by province over time: Females

The mortality rates for Gauteng province, the economic centre with no rural districts, in particular, are lower than might be expected, given the high level of prevalence in that province. Investigation suggests that the reason for this is that people with AIDS are returning to province of origin for care (and ultimate death).

4. Relevance

The distinct age pattern in the increase from 1997 – 2002 is in keeping with the HIV/AIDS. However, there has been a slowing down in some provinces since 2003. This slowing down appears to match the roll-out of ART

AIDS appears to have widened the gaps in mortality between provinces

The burden of mortality in SA is still extremely high – and preventing the spread of the epidemic is critical. Antiretroviral therapy has a significant impact on mortality, at least in the short term, but access is not even across all provinces. This study shows that administrative data can be used for rapid surveillance and is a useful public health surveillance tool, which, when separated into the natural and unnatural, provides extremely valuable information. It would be ideal if it could be extended to smaller geographic areas.