



ACTUARIAL SOCIETY OF SOUTH AFRICA

PRESS RELEASE

NEW SOUTH AFRICAN AIDS MODEL RELEASED

The Actuarial Society of South Africa ('ASSA') has released the new version of its local AIDS and Demographic model that provides insight into the state of the HIV epidemic in each province in South Africa. ASSA2003 is the first AIDS and Demographic model to take the government's Comprehensive Plan for HIV and AIDS into account at a **provincial level**. The model has been designed by South African demographers and actuaries based on detailed South African data. Using these data, the model projects the numbers of South Africans living with HIV, new infections, AIDS deaths, AIDS sickness and many more statistics into the future. According to Dominic Liber, convenor of the ASSA AIDS Committee, "this is the most accurate model that ASSA has developed to date, that allows for differing rates of HIV spread and differing levels of intervention by province."

Differences between ASSA2003 and previous versions of the ASSA model

The previous model, namely ASSA2002, which was released by the AIDS committee of the Actuarial Society in July 2004, will be replaced by ASSA2003. The previous model was the first ASSA model to take the various government and private sector interventions at a national level into account. ASSA2003 allows for government and private sector interventions at a provincial level and can project provincial HIV and AIDS statistics. According to Rob Dorrington, actuary and professor of actuarial sciences at UCT, the ASSA2003 version is the first to model the epidemic in the provinces in a way that is consistent with the model for the country as a whole.

Sources of data

HIV prevalence data up to 2003 from the national antenatal clinic surveys was used to ensure that the model reflects the progress of the HIV/AIDS epidemic in each province as accurately as possible. HIV prevalence amongst pregnant women attending public sector antenatal clinics is measured on an annual basis and used by demographers to inform their models. Adjustments are made in the ASSA model to allow for the higher expected HIV prevalence amongst pregnant women attending public sector clinics than that amongst other women in the South African population. Other HIV prevalence data from the studies done by the Human Sciences Research Council in 2002 and the Reproductive Health Research Unit survey amongst youth has also been taken into account. Data from the censuses and the 1998 Demographic Health Survey were used to set demographic assumptions, and model estimates of deaths were checked for consistency against total reported deaths in South Africa.

Profile of the epidemic in 2005 at a national level

The total number of people living with HIV in South Africa is estimated to be 5.2 million in 2005. It is estimated that there were around 530 000 new HIV infections between the middle of 2004 and the middle of 2005 and around 340 000 AIDS deaths over the same period. As

the number of new HIV infections currently exceeds the number of AIDS deaths, the HIV prevalence is still slowly growing in South Africa. The current massive number of HIV positive individuals has resulted in an estimated 520 000 untreated South Africans who are sick with AIDS and in need of antiretroviral treatment. As at the middle of 2005, the model estimates that just over 120 000 South Africans were receiving antiretroviral treatment. ASSA2003 also estimates that around 1.5 million South Africans have died from AIDS-related illnesses since the start of the epidemic. The ASSA2003 model predicts that the total number of HIV infections in South Africa will increase slightly, from 5.2 million currently to 5.8 million by 2010. The annual number of new HIV infections is likely to remain at close to half a million over the next few years, in spite of the significant interventions that have already been introduced to limit the spread of HIV.

Profile of the epidemic in 2005 at a provincial level

The table below shows estimated total HIV infections, total HIV prevalence, HIV prevalence in 15-49 year olds, and life expectancy at birth. KwaZulu-Natal is clearly the province worst affected by the HIV/AIDS epidemic, with the highest rates of HIV prevalence, and the lowest life expectancy. Other severely affected provinces are Gauteng, Free State, Mpumalanga and North West. Differences in life expectancies between the provinces are partly due to differences in the socio-economic profiles of the populations in the different provinces, but are also largely a reflection of the differences in rates of HIV prevalence and consequent AIDS mortality.

	Total HIV (thousands)	Total HIV prevalence	15-49 HIV prevalence	Life expectancy
KwaZulu-Natal	1 520	16%	26%	43.3
Gauteng	1 370	14%	22%	52.4
Free State	380	14%	22%	47.2
Mpumalanga	440	13%	22%	46.5
North West	470	12%	20%	50.7
Eastern Cape	630	9%	17%	49.4
Limpopo	380	7%	12%	56.4
Northern Cape	60	7%	11%	57.8
Western Cape	250	5%	8%	61.8
South Africa	5 200	11%	18%	51.0

Table: Provincial indicators in 2005

According to Liber, the reasons for the different epidemics in the different SA provinces are many and varied. One reason is that some provinces are predominantly urban, and others are predominantly rural, with levels of sexual networking usually being higher in urban areas. Geographical factors are also likely to affect access to HIV prevention services. There are also cultural differences between provinces, for example circumcision has been shown to reduce the chance of becoming infected by HIV.

Access to antiretroviral treatment in the provinces

The ASSA2003 AIDS model will become a valuable tool for the provincial health departments in the implementation of the national Comprehensive HIV and AIDS plan. The model provides estimates of the expected numbers of South Africans who are entering the AIDS sick phase and who will be requiring antiretroviral treatment in the future. As at mid-2005, the proportion of AIDS cases on antiretroviral treatment ranged from 15% in KwaZulu-Natal to 50% in the Western Cape. According to Leigh Johnson, actuary and member of the AIDS Committee, these differences are in part due to differences between provinces in terms of the proportion of the population using private facilities, but are also largely a reflection of inequality in access to treatment within the public health sector.

For more information...

ASSA2003 is freely available for download from the Actuarial Society of South Africa's website: www.assa.org.za with effect from 1 December 2005. Also available on the website is an Excel workbook (ProvOutput_051125.xls) which contains the detailed results of the model for each province. A document containing these results and commentary on their implications will also be made publicly available shortly.

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