Child health: HIV/AIDS

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Section 27 of the Constitution of South Africa provides that everyone has the right to have access to health care services. In addition, section 28(1)(c) gives children "the right to basic nutrition, basic health care services, and social services".

Article 14(1) of the African Charter on the Rights and Welfare of the Child states that "every child shall have the right to enjoy the best attainable state of physical, mental and spiritual health".

Article 24 of the UN Convention on the Rights of a Child says that State Parties should recognise "the right of the child to the enjoyment of the highest attainable standard of health and to facilities for the treatment of illness and rehabilitation of health". It obliges the State to take measures "to diminish infant and child mortality" and "to combat disease and malnutrition".

HIV prevalence among children

The HIV prevalence among children refers to the proportion of children, at a given period, who are HIV positive. A Human Sciences Research Council survey in 2002 showed an HIV prevalence of 5.6% in the age group 2 – 11 years. This measurement poses a challenge, as it is difficult to conduct a survey that involves performing an HIV test on children. The Actuarial Society of South Africa's (ASSA) *AIDS and Demographic* model shows the best estimate of HIV prevalence in children, taking into account a range of demographic and epidemiological data, and allowing for current interventions.

The majority of young children who are HIV positive have been infected through mother-to-child transmission. Therefore the prevalence of HIV among infants is largely influenced by the HIV prevalence among pregnant women and the interventions to prevent mother-to-child transmission (PMTCT).

HIV prevalence across provinces differs quite substantially for the period 2000 to 2006, with the highest prevalence over the five-year period in KwaZulu-Natal, Mpumalanga and the Free State. This trend is similar to the national antenatal prevalence captured by the 2006 *National HIV and Syphilis Antenatal Sero-Prevalence Survey*.

The most recent estimates from the ASSA model suggest that an overall prevalence of 1.2% in 2000 has almost doubled to 2.1% in 2006 for children under the age of 18 years. The lowest HIV prevalence among children for 2006 was in the Western Cape, which has a well-functioning PMTCT programme.

An indicator report on the demographic impact of HIV/AIDS in 2006 showed that the HIV prevalence in the 0 – 5-year-old group was 1.8 times more than the overall rate for all children (0 – 17 years) and increased from 2.2% in 2000 to 3.6% in 2006. The implementation of an effective PMTCT programme would be able to reverse this trend because the majority of children under five years are infected through mother-to-child transmission.

For children in the 6 – 12-year age group, HIV prevalence increased from 0.1% to 1.0% during the same time period. The prevalence in the 13 – 17-year age group stayed almost the same for this period – 1.0% in 2000 and 1.1% in 2006. The ASSA2003 model estimates that by mid-2006, approximately 294,000 children under the age of 15 years were living with HIV/AIDS.

TABLE 15: The HIV prevalence among children in South Africa in 2000 – 2006

Province	2000	2001	2002	2003	2004	2005	2006
	%	%	%	%	%	%	%
Eastern Cape	1.0	1.2	1.4	1.6	1.7	1.9	2.0
Free State	1.5	1.7	2.0	2.2	2.3	2.5	2.6
Gauteng	1.4	1.7	1.9	2.1	2.2	2.4	2.5
KwaZulu-Natal	2.1	2.4	2.6	2.8	3.0	3.1	3.2
Limpopo	0.8	0.9	1.1	1.2	1.3	1.3	1.4
Mpumalanga	1.8	2.0	2.2	2.4	2.5	2.6	2.6
Northern Cape	0.5	0.6	0.7	0.8	0.9	1.0	1.1
North West	1.3	1.5	1.7	1.9	2.0	2.1	2.2
Western Cape	0.4	0.4	0.5	0.6	0.7	0.7	0.8
South Africa	**1.2**	**1.5**	**1.6**	**1.8**	**1.9**	**2.0**	**2.1**

Source: Actuarial Society of South Africa (2006) *ASSA2003 Aids and Demographic Model*. Available: www.assa.org.za

TECHNICAL NOTES ON THE INDICATOR

This indicator shows the proportion of children, at a given period, who have HIV infection. It is calculated by dividing the number of children aged 0 – 17 years with proven HIV infection in a given time period by the total number of children in the child population (0 – 17 years) during that same time period.

By its very nature, updated prevalence data can only be obtained through surveys. The difficulty with doing these surveys on children is that taking blood in young children is a very difficult task, and other diagnostic procedures such as tests using saliva are not effective in young children. Hence the necessity of continued reliance on modelled estimates, such as those produced by the ASSA, and the need to ensure that the underlying model assumptions are adapted according to changes in the pandemic.

HIV prevalence among pregnant women and access to treatment

Prevention of mother-to-child transmission (PMTCT) is an effective and cost-efficient prevention strategy that can save tens of thousands of babies annually from becoming infected with HIV. The HIV prevalence among pregnant women indicates the proportion of women attending antenatal clinics during a specific period who test HIV positive. The Nevirapine take-up rate among pregnant HIV-positive women is the indicator that is used to establish what proportion of these women who have tested positive take this anti-retroviral drug to prevent the transmission of HIV to their infants.

Data from the *National HIV and Syphilis Antenatal Sero-Prevalence Survey* show that, between 2004 and 2006, close to one-third of pregnant women who accessed antenatal clinics were infected with HIV. This indicates the potential for the infection of babies in the absence of effective prevention of mother-to-child transmission of HIV.

There has been an increase in HIV prevalence in all provinces from 2000 to 2006. The largest increases for this period have been in the Eastern Cape (8%) and Limpopo (7%). In 2006, the provinces that recorded the highest antenatal HIV prevalence were KwaZulu-Natal (39%), Mpumalanga (32%), Free State (31%) and Gauteng (31%), all of which were above the national average of 29%. The provinces with the lowest prevalence in 2006 are the Northern Cape (16%) and the Western Cape (15%).

The HIV-testing rate in pregnant women indicates the proportion of pregnant women who are tested for HIV at antenatal clinics. Low testing rates mean that, if pregnant women are not identified as HIV positive, they cannot be offered PMTCT and risk infecting their babies during the perinatal period. The Department of Health has set a target that 100% of facilities should provide HIV testing and that 70% of all pregnant women should be tested by 2007, and 95% by 2010. Data from the District Health Barometer indicate a large variation in HIV testing in the different provinces for the 2005/2006 period, from 23.4% in one district to over 100%[1] in another.

There are no reliable data to indicate the mother-to-child transmission rate in South Africa. Estimates that may indicate the effectiveness of PMTCT must include what proportion of pregnant women are tested for HIV and how many of these actually receive Nevirapine. There is also large loss to follow up[2] of mothers and infants after delivery, which compromises accurate reporting of the actual number of infants who may test HIV positive at six weeks of age or later.

The District Health Barometer 2005/2006 shows that approximately only half of pregnant women who tested HIV positive are recorded to receive Nevirapine. This situation impacts on the effectiveness of the PMTCT programme. But more positively, the take-up of Nevirapine to babies born to women with HIV in 2005/2006 was generally high. Nevirapine as a one-dose regimen is however limited because, if missed, it leaves infants vulnerable to the risk of HIV infection. Therefore it is urgent that the PMTCT programme is upgraded to include at least a two-drug antiretroviral regimen for HIV-positive women and their babies.

1 Underreporting of antenatal bookings and women accessing testing at more than one site can result in a testing rate that exceeds 100%.
2 'Loss to follow up' refers to those mothers who choose not to continue to participate in the PMTCT programme.

TABLE 16: The HIV prevalence among pregnant women in South Africa in 2000 – 2006

Province	2000	2001	2002	2003	2004	2005	2006
	%	%	%	%	%	%	%
Eastern Cape	20	22	22	27	28	30	29
Free State	28	30	29	30	30	30	31
Gauteng	29	30	32	30	33	32	31
KwaZulu-Natal	36	34	37	38	41	39	39
Limpopo	13	15	16	18	19	22	21
Mpumalanga	30	29	29	33	31	35	32
Northern Cape	11	16	15	17	18	19	16
North West	23	25	26	30	27	32	29
Western Cape	9	9	12	13	15	16	15
South Africa	**25**	**25**	**27**	**28**	**30**	**30**	**29**

Source: Department of Health (2002; 2003; 2004; 2005; 2006) *National HIV and Syphilis Antenatal Sero-Prevalence Survey in South Africa*. Pretoria: Department of Health, Directorate: Epidemiology and Surveillance.

TECHNICAL NOTES ON THE INDICATOR

The indicator reflects the percentage of pregnant women who attend public antenatal clinics in South Africa who test HIV positive. The data are based on an annual survey of a randomly selected sample that is proportionally representative of all nine provinces.

This indicator is calculated by dividing the number of pregnant women who attend public antenatal clinics and who are HIV positive by the total number of pregnant women who attend public antenatal clinics.

The antenatal sero-prevalence is seen as a good and reliable indicator of the overall progress of the HIV pandemic. The extrapolation to the rest of the population is not as reliable as having direct sero-prevalence rates at a population-wide level. However, internationally it has been deemed a credible and reliable method for extrapolating to the general population.

The main limitation of this data is that it only reflects on women who attend antenatal clinics within the public health sector. The pattern of the pandemic in women who are unable to access antenatal clinics is not known. These tend to be women who live in rural areas, live far away from clinics and who are too poor to afford the transport to and from health care facilities and who may be affected by the pandemic differently from women who are able to access facilities.

In addition, the numbers of women who attend private health care facilities and who are not included in the survey are not known. Direct results for children and men are also not known; hence the need to use this indicator to estimate what the effect of the pandemic is on the overall population.

The proportion of children starting antiretroviral treatment

The Department of Health in 2004 issued guidelines for antiretroviral treatment, which included the treatment of children. A year later, the guidelines for the management of HIV-infected children were released and these acknowledge the rights of children to survival and to equitable treatment and care. However, the HIV pandemic has progressed at a rapid pace over the last decade, and adequate health services have not been put in place to serve the needs of infected children. This has resulted in not all children being able to access antiretroviral treatment (ART).

Monitoring the number of HIV-infected children, those who are progressing to AIDS and the number of children receiving ART is critical for future health service planning to positively influence the under-five mortality rate. However, the actual number of children who are HIV positive and those who qualify for antiretroviral therapy are not known. The government's National Comprehensive HIV and AIDS Plan Statistics are incomplete and omit some provinces, resulting in a much lower estimate than the data displayed in the table below, which are projected estimates from the *ASSA2003 AIDS and Demographic Model* of the Actuarial Society of South Africa.

The data show the number of AIDS deaths among children younger than 15 years, taking into account the rate of the pandemic as well as the roll out of ART for children. It also shows the number of children on ART, and the number of children who are progressing to AIDS and who are receiving antiretroviral treatment as a proportion of the total number of new AIDS cases in the same year.

TABLE 17: The number of child deaths due to AIDS*, children receiving antiretroviral therapy (ART)*, and the proportion of children starting ART in South Africa in 2001 – 2006

Province	2001			2002			2003		
	Number		%	Number		%	Number		%
	Deaths due to AIDS	Children on ART	Children starting ART	Deaths due to AIDS	Children on ART	Children starting ART	Deaths due to AIDS	Children on ART	Children starting ART
Eastern Cape	6,042	58	2.5	6,516	173	3.6	6,689	335	4.3
Free State	2,898	53	4.6	3,100	157	6.8	3,166	304	7.8
Gauteng	8,257	155	5.1	9,163	493	7.6	9,530	997	8.9
KwaZulu-Natal	15,342	177	2.9	16,280	522	4.3	16,520	1,004	5.0
Limpopo	3,907	110	7.0	4,181	329	10.2	4,284	639	11.4
Mpumalanga	4,342	93	5.3	4,560	274	7.8	4,612	526	8.9
Northern Cape	358	3	2.3	399	9	3.4	417	18	5.8
North West	3,492	49	1.6	3,753	147	2.3	3,830	284	2.8
Western Cape	1,317	24	5.9	1,439	83	9.1	1,365	176	38.8
South Africa	**43,674**	**619**	**4.0**	**46,607**	**1,910**	**6.0**	**47,590**	**3,798**	**8.0**

* Deaths due to AIDS and children on ART refer to children younger than 15 years of age.
\+ No data on the proportion of children starting ART are available for this year.

Source: Actuarial Society of South Africa (2005) *ASSA2003 AIDS and Demographic Model*. Available: www.assa.org.za

TECHNICAL NOTES ON THE INDICATOR

This indicator reflects the number of new cases of children (0-17 years) in any given year who are progressing to AIDS and receiving antiretroviral therapy as a proportion of the total number of new cases of children in the same year who are progressing to AIDS. Data on the number of AIDS-related child deaths, and the numbers of children on ART are also provided for purposes of comparison.

The proportion of children starting ART is calculated by dividing the number of new cases of children progressing to AIDS who are receiving antiretroviral treatment by the number of new cases of children who are progressing to AIDS (it includes all HIV-positive children, namely those who are on antiretroviral therapy and those who are not).

The difficulty with the indicator on the proportion of children starting ART is that the denominator is not known. The actual numbers of children that are HIV positive, as well as the number of those children who are in need of ART, are not known nationally. Accurate data on AIDS-related deaths and on children receiving ART are also unknown or are not collected adequately. Thus all the figures presented are based on modelled estimates.

The model projects a small reversal of deaths due to AIDS from 2004 that is consistent with the national roll out of ART. It shows that, at the same time, there has been a large increase in the number of children accessing ART from 4% in 2001 to 30.4% in 2005, consistent with initiation of the provision of antiretrovirals to children sick with AIDS. Nevertheless it is clear from the number of AIDS deaths that current access to ART is not sufficiently meeting the actual need of thousands of HIV-infected children.

There remain provincial discrepancies in the delivery of ART, which indicates a lack of capacity for service delivery in some provinces. The model projects that KwaZulu-Natal had the highest number of deaths (15,209) due to AIDS in 2006, as well as the highest number of children on ART in that year. According to estimates for this province, a cumulative number of 6,378 children were on ART by 2006 compared with a projected number of over 15,000 AIDS deaths for the same year.

Interestingly, the model shows that in 2006 Gauteng had the second highest number of child deaths due to AIDS after KwaZulu-Natal, but that in the same year it had the highest number of children on ART (6,992).

According to the ASSA2003 model, the number of deaths due to AIDS in the Western Cape province increased from 1,287 in 2005 to 1,434 in 2006. However, this province by 2005 provided ART to close to two-thirds (60.7%) of children who progressed to AIDS.

	2004			2005			2006+	
Province	Number		%	Number		%	Number	
	Deaths due to AIDS	Children on ART	Children starting ART	Deaths due to AIDS	Children on ART	Children starting ART	Deaths due to AIDS	Children on ART
Eastern Cape	6,398	510	21.5	6,195	1,654	27.2	6,392	3,007
Free State	3,102	458	17.4	3,019	853	25.1	3,024	1,415
Gauteng	9,029	1,544	28.4	8,419	3,642	38.9	8,283	6,383
KwaZulu-Natal	15,812	1,509	19.3	15,161	3,958	25.8	15,209	6,992
Limpopo	4,215	953	22.0	4,135	1,633	29.5	4,202	2,539
Mpumalanga	4,546	782	15.9	4,429	1,285	24.3	4,386	2,061
Northern Cape	379	34	37.4	359	164	39.2	386	286
North West	3,609	427	22.1	3,444	1,166	27.3	3,523	1,992
Western Cape	1,245	668	57.3	1,287	1,401	60.7	1,434	2,144
South Africa	**45,867**	**6,255**	**23.3**	**44,183**	**14,782**	**30.4**	**44,663**	**25,318**

ADDITIONAL SOURCES FOR CHILD HEALTH: HIV/AIDS

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