HIV and Health - HIV prevalence in pregnant women

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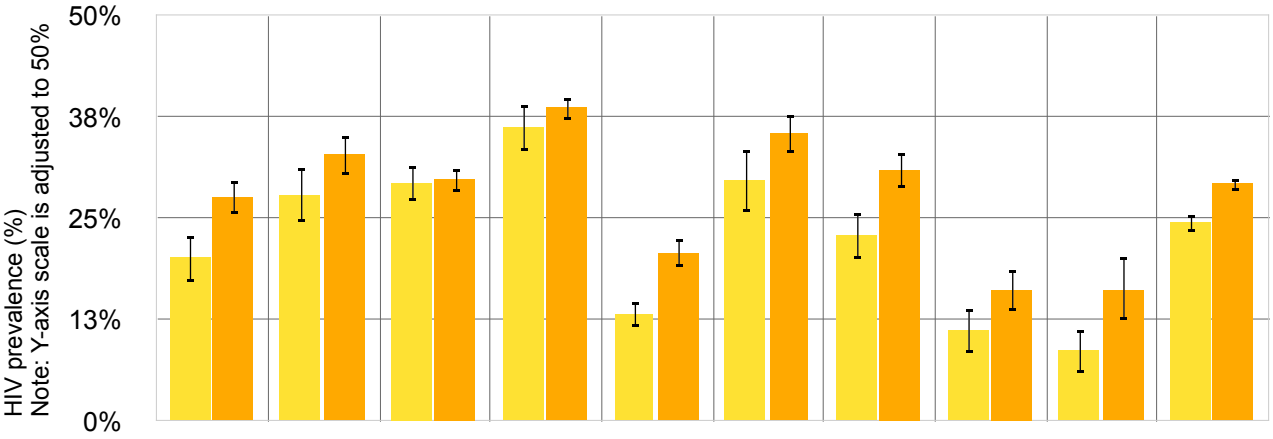
Definition

This indicator shows the prevalence of HIV that is measured in a national survey of women attending public-sector antenatal clinics for the first time in their current pregnancy.

HIV prevalence in pregnant women attending public antenatal clinics, by province (2000 & 2008)



	Eastern Cape	Free State	Gauteng	KwaZulu-Natal	Limpopo	Mpuma-langa	North West	Northern Cape	Western Cape	SOUTH AFRICA
2000	20.2%	27.9%	29.4%	36.2%	13.2%	29.7%	22.9%	11.2%	8.7%	24.5%
2008	27.6%	32.9%	29.9%	38.7%	20.7%	35.5%	31.0%	16.2%	16.1%	29.3%
	1,737,000	**813,000**	**2,958,000**	**2,841,000**	**1,404,000**	**982,000**	**925,000**	**296,000**	**1,508,000**	**13,465,000**

Source Department of Health (2001; 2009) National HIV and Syphilis Prevalence Surveys 2000 & 2008. Pretoria: DoH.

Notes Sample surveys are always subject to error, and the proportions simply reflect the mid-point of a possible range. The confidence intervals (CIs) indicate the reliability of the estimate at the 95% level. This means that, if independent samples were repeatedly taken from the same population, we would expect the proportion to lie between upper and lower bounds of the CI 95% of the time. The wider the CI, the more uncertain the proportion. Where CIs overlap for different sub-populations or time periods we cannot be sure that there is a real difference in the proportion, even if the mid-point proportions differ. CIs are represented in the bar graphs by vertical lines at the top of each bar.

What do the numbers tell us?

The HIV prevalence amongst pregnant women is the proportion of pregnant women (aged 15 – 49 years) who are HIV positive. The majority of children who are HIV positive have been infected through mother-to-child transmission. Therefore the prevalence of HIV amongst infants and young children is largely influenced by the HIV prevalence of pregnant women and interventions to prevent mother-to-child transmission (PMTCT). This indicator is also relevant to children because children with HIV-positive mothers are at risk of their mothers becoming ill and dying unless they have access to appropriate treatment.

HIV prevalence is measured in the National HIV and Syphilis Prevalence Survey of the Department of Health, which targets pregnant women aged 15 – 49 years who attend a public health facility. The most recent estimate (2008) of HIV prevalence in pregnant women is 29%. Prevalence rates increased steadily from 25% in 2000 to 30% in 2005 and have remained at around this level since. Results are reported in five-year age bands, and show that HIV-prevalence rates are consistently high amongst women in their early 30's (a prevalence rate of 40% in 2008) followed by those in their late 20's (38%).

There are substantial differences in HIV prevalence between South Africa's provinces. KwaZulu-Natal has consistently had the highest HIV rates, with prevalence in excess of 35% since 2002. In contrast, the Western Cape has had an HIV prevalence of around 15% in recent years. Other provinces with relatively low HIV prevalence are the Northern Cape and Limpopo, with HIV-prevalence levels at 16% and 21% respectively in 2008.

These inter-provincial differences are partly a reflection of differences in HIV prevalence between different racial and cultural groups. For example, male circumcision is believed to be a major factor explaining inter-regional differences in HIV prevalence within Africa, [1] and its prevalence differs substantially between South Africa's provinces [2]. Other factors such as differences in urbanisation, migration, socio-economic status and access to HIV-prevention and treatment services could also explain some of the differences in HIV prevalence between provinces.

The survey does not include pregnant women who attend private health facilities, or women who deliver at public health facilities without having made a booking visit. Women seeking antenatal care in the private health sector have a relatively low prevalence of HIV. [3] Thus the surveys over-estimate HIV prevalence in pregnant women generally.

Technical notes

The surveys are conducted in October of each year. The 95% confidence intervals reflect the random variation in prevalence, as well as the variation attributable to the stratified cluster sampling methodology. Concerns have been raised about the validity of the published 2007 prevalence estimates, and revised estimates of HIV prevalence in 2007 are likely to be published by the Department of Health.

Strengths and limitations of the data

South Africa's antenatal clinic data are among the best in Africa. In most other African countries, HIV-prevalence levels are reported in individual clinics or districts, and there is no attempt to draw a nationally representative sample of clinics from which national antenatal clinic prevalence rates can be calculated. This Department of Health survey follows a stratified cluster sampling methodology, with clinics being sampled on a probability proportional to size basis. The overall sample sizes are very large, at around 30,000, making this HIV-prevalence dataset one of the largest in the world.

The survey is conducted among pregnant women who attend public health antenatal clinic services during pregnancy. It does not include pregnant women who attend private health facilities, or women who deliver at public health facilities without having made a booking visit. Women seeking antenatal care in the private health sector have a relatively low prevalence of HIV, [4] and thus the surveys over-estimate HIV prevalence in pregnant women generally. It would also be expected that there would be differences in sexual behaviour

between pregnant women and non-pregnant women, and the levels of HIV prevalence observed in the antenatal clinic surveys should therefore not be seen as representative of those in the general female population. After controlling for age differences, HIV prevalence in pregnant women tends to be substantially higher than that in women in the general population. [5]

It should also be noted that – in accordance with UNAIDS guidelines [6] – women are tested using a single ELISA antibody test, and there is no confirmatory testing of positive specimens. This may bias the results slightly, as the test can produce false positive results in a small proportion of HIV-negative women. Although this bias is generally thought to be of minimal significance when the population prevalence exceeds 10%, recent South African studies have suggested that the false positive rate could be around 2%. [7] This would imply over-estimation of the true HIV prevalence in pregnant women by about 2%.

References and related links

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[7] Amirfar S, Hollenberg JP & Abdool Karim SS (2006) *Modeling the impact of a partially effective HIV vaccine on HIV infection and death among women and infants in South Africa.* Journal of Acquired Immune Deficiency Syndromes, 43(2): 219-225.

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