

HIV and Health - HIV prevalence among children

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Definition

This indicator refers to the proportion of children, at a given period, who are HIV positive.

What do the numbers tell us?

South Africa is currently the country with the largest number of people living with HIV in the world. Many children are HIV positive or have become ill and died due to AIDS. The majority of children are infected before and during the birth process and some later through breastfeeding. Children may also become infected through sexual intercourse, including sexual abuse.

It is important to have an estimate of the number of children in the country infected with HIV to plan for health services to meet their needs adequately. In addition, knowing the prevalence from year to year also helps to monitor the epidemic and gives an indication of the effectiveness of prevention measures such as the prevention of mother-to-child transmission (PMTCT) programme.

In a 2008 national household survey conducted by the Human Sciences Research Council, the prevalence of HIV measured in children aged 2 – 14 was 2.5% (95% CI: 1.9 – 3.5%). This was slightly lower than the proportion who tested positive in a similar survey in 2005 (3.3%, 95% CI: 2.3 – 4.8%), though not significantly so. An earlier survey, conducted in 2002, suggested that the HIV prevalence in the 2 – 14 age group was 5.6%, but this is likely to be an over-estimate, because this survey used a testing algorithm with relatively low specificity (a single saliva test with no confirmatory testing of positive specimens).

The HSRC survey reports provincial prevalence of HIV in children 2 – 14 years old. However the related 95% confidence intervals are extremely wide, and thus little can be inferred from the data. In both the 2005 and 2008 surveys, the Western Cape is identified as the province with the lowest HIV prevalence in children.

Although the ASSA2003 AIDS and Demographic model has been widely used in the past for the purpose of estimating HIV prevalence in children, recent evidence suggests that this model may be understating the HIV prevalence in children. This is partly because the model does not take into account vertical transmission from mothers who become infected in late pregnancy or while breastfeeding. It is also partly because the model assumptions about the expansion of the prevention of mother-to-child transmission (PMTCT) programme are too optimistic. It is also possible that the model may be over-estimating the mortality rate in HIV-infected children. The paediatric HIV assumptions in the ASSA2003 model are currently under review and are likely to change in the next version of the model that is released.

Technical notes

The 2005 and 2008 HSRC household surveys were both nationally representative surveys that followed a stratified cluster-based sampling design. Census enumeration areas were randomly sampled, and within each sampled enumeration area, a number of visiting points (households) were randomly sampled. For each

household that consented to participate in the survey, questionnaires were completed in respect of one randomly selected child in the household (aged 2 – 14), as well as for youth, adults and (in the 2008 survey) children under the age of two. HIV testing was conducted in individuals who consented to be tested. The rate of test acceptance was lower in children aged 2 – 14 (58.9%) than among youth aged 15 – 24 (67.8%) and older adults (68.6%).

Strengths and limitations of the data

The HIV prevalence estimates obtained from the Human Sciences Research Council household surveys do not include children under the age of two, as standard antibody tests are not reliable in this age group (a child may have its mother's HIV antibodies even if the child is not itself infected with HIV). In the most recent household survey (2008), PCR HIV tests were also conducted in children under the age of two, but HIV prevalence has not yet been reported for the whole of the 0 – 14 age group.

The child HIV-prevalence estimates obtained in the 2005 and 2008 HSRC surveys can be considered reliable, since antibody tests were performed on blood specimens, and all initially reactive specimens were retested to verify the accuracy of the results, with a third test being conducted in cases where the first two tests produced discrepant results. However, the 2002 survey results are less reliable, as there was no confirmatory testing of initially reactive specimens, and the accuracy of the saliva-based test in children is unclear.

References and related links

Shisana O, & Simbayi LC (2002). South African national HIV prevalence, behavioural risks and mass media. Household survey 2002. Cape Town: HSRC Press.

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Shisana O, Rehle T, Simbayi LC, et al. (2005) South African National HIV Prevalence, HIV Incidence, Behaviours and Communication Survey, 2005. Cape Town: HSRC Press.

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