

Factsheet

The process behind India's revised AIDS estimates

India's National AIDS Control Organization (NACO) has recently completed a complex process of data collection and analysis, in order to produce revised estimates on India's AIDS epidemic.

UNAIDS has put together a set of fact sheets to explain the different steps India went through. This is the second fact sheet which explains the methodology behind the estimates.

2. Methodology and analysis

In order to consolidate the 2006 data collected from the various surveys, NACO convened two meetings in June 2007 to discuss the new estimation methodology. These meetings included members of the Technical Resource Group on Surveillance and Estimations as well as national and international experts. The meetings were co-organised by UNAIDS and WHO.

At these meetings, the group agreed on a revised methodology to make use of all available data sources to generate consolidated estimates of adult HIV prevalence, of the number of people living with HIV and related indicators.

The methodology included the following steps:

- Estimates of HIV prevalence among adults (aged 15-49) were generated for 2006 for all states in India using the latest population census data in the [WORKBOOK](#) estimation tool;
- The adult HIV prevalence for each state was initially based on the adult HIV prevalence observed in the National Family Health Survey 3 (NFHS-3). The NFHS-3 generated state-specific HIV prevalence estimates for Andhra Pradesh, Karnataka, Maharashtra, Manipur, Tamil Nadu, and Uttar Pradesh. Using urban/rural and male/female prevalence ratios, HIV prevalence was estimated for adult women and men in urban and rural areas. For states that did not have a state-specific NFHS-3 estimate, the NFHS-3 estimate for the rest of India was combined with the antenatal clinic prevalence of the specific state to inform the HIV prevalence among adults in those states;
- HIV infections occurring among groups at higher risk of HIV infection, who may have been missed by the household survey, were then added to the above HIV prevalence estimates. In low prevalence states, these groups will account for a larger proportion of all people living with HIV compared to states with high prevalence. The number of people in groups at higher risk in each state was based on a combination of the estimates of the size of these groups, based on consensus estimates used in the Integrated Biological and Behavioural Assessment data, combined with HIV prevalence data from the sentinel surveillance system;

- Ranges of uncertainty were calculated around the estimated point prevalence among adults in 2006, based on the combined information from the NFHS-3 and the groups at higher risk of HIV infection;
- HIV prevalence data from consistent antenatal clinic surveillance sites over time was examined to assess the trend in HIV prevalence over time for each state, between 2001 and 2006;
- The trend over time in prevalence between 2001 and 2006, together with the point prevalence estimate for 2006, and an assessment of the start date of the epidemic, were then used to generate smoothed epidemic curves of HIV prevalence over time since the start of the epidemic for each state, using the [WORKBOOK](#) projection feature;
- Combining the trend in adult HIV prevalence over time with programmatic information about antiretroviral treatment and programmes for preventing mother to child transmission of HIV, the [Spectrum](#) software was used to estimate for each year since the start of the epidemic, the number of adults and children living with HIV, the number of new HIV infections, the number of people in need of antiretroviral treatment, the number of AIDS-related deaths, and other indicators. Ranges of uncertainty were then calculated around these estimated indicators.

State-specific and national estimates were produced according to the above methodology by the Technical Resource Group on Surveillance and Estimations. These updated estimates will be used to inform HIV programming in India.

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