

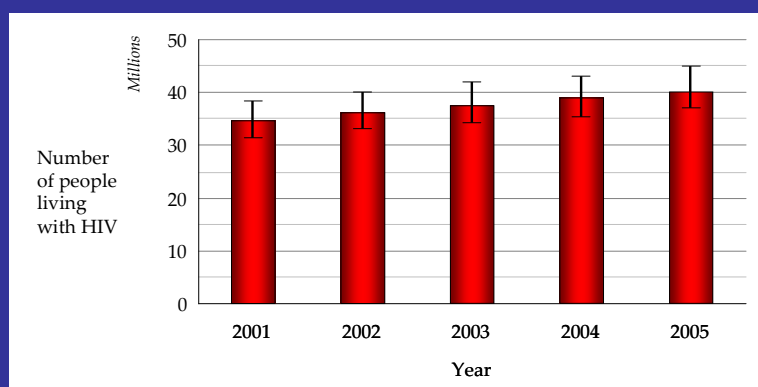
## Estimating the status of the AIDS epidemic in countries

### The state of the epidemic

The global estimate of the number of people living with HIV has come down in recent years, due to the availability of better data and, in a number of countries, due to the effectiveness of prevention efforts. UNAIDS Secretariat and WHO analyses over the past five years show that the annual rate of new HIV infections leveled off several years ago in much of sub-Saharan Africa, but at unacceptably high levels. The rate of new infections for southern Africa peaked in the late 1990s at nearly 1.5 million per year. For the last three years, there have been 1.1 million new infections each year. Globally, however, HIV prevalence is continuing to increase over time, as the epidemic expands in other parts of the world. The downward revisions of the estimates of national prevalence that were first announced in Bangkok in July 2004 reflect the current state of the art HIV estimation for all countries involved in the analysis of information, and those international institutions that support them.

Current country estimates at the end of 2005 in sub-Saharan Africa show a diverse pattern of the severity of the epidemic with Cameroon showing a prevalence of 5.4% and Zimbabwe at 20%.

### Estimated number of people living with HIV, 2001–2005



## **Estimating HIV prevalence is an evolving science**

In the face of an epidemic as deadly as AIDS, estimating the number of people living with HIV is inevitably a contentious, and often, a confusing issue. The UNAIDS Secretariat and WHO, working with both national epidemiologists and international experts, ensure that these estimates are not influenced by political and other considerations.

First of all, ascertaining the numbers is a complicated process. Numbers cannot be obtained accurately from direct counts (such as through a census), as most people do not know their HIV status. Furthermore, intense and even life-threatening stigma and discrimination around HIV often leads to denial and under-reporting.

During the early years of tracking the epidemic, researchers made the best possible assessments of the level of the epidemic with the limited information available, primarily from small studies in capital cities. Science has come a long way from the days in the 1980's, when the Global Programme on AIDS (launched in 1987 by WHO) used "Delphi" methods to develop global and regional HIV estimates. The "Delphi" method relies on getting the best estimates from a group of experts in the absence of adequate data. Since 1996 the estimation process has evolved, constantly improving in methodology. Today, information on epidemics in sub-Saharan Africa is often drawn from surveillance data from antenatal clinics, which can be measured annually and provide valuable estimates for urban settings. When available, population-based household surveys are also used. Household surveys better reflect HIV infection rates in rural areas. Countries, with the support of UNAIDS and WHO, use all available data and synthesize this information to obtain an overall picture of the epidemic. For example, the UNAIDS Secretariat and WHO recently supported Chinese officials in refining their analysis which led the government to announce improved estimates that were lower than previously published.

The UNAIDS Secretariat and WHO have been at the center of these refinements, and have worked with a large range of partners in the international community and in countries. The analytic methods used are based on recommendations by an international AIDS reference group. The group is composed of epidemiologists, surveillance experts, demographers, and public health practitioners from all over the world, including the U.S Centers for Disease Control and Prevention, the U.S. Bureau of Census, and the London School of Hygiene and Tropical Medicine. The group, with its Secretariat based at the Imperial College in the United Kingdom, meets regularly with national epidemiologists to review new research findings and surveillance data and to improve analytical methods.

These methods have been extensively published in the scientific literature and are therefore open to a process of scientific critique. UNAIDS and WHO have over a ten-year period worked with national stakeholders to enable countries to take greater control of HIV data collection and analyses. New developments are constantly shared with country level AIDS programme staff and other experts who carry out a range of studies on HIV.

## **The dangers of over simplification**

Few countries have access to all the relevant data needed to make an accurate assessment of the number of HIV infections and cases of AIDS, certainly not on an annual basis. There is no single, infallible source of data.

For many years in sub-Saharan Africa, the only data available were HIV prevalence trends among pregnant women. Early community-based surveys that included HIV testing provided evidence that HIV trends among pregnant women were a good proxy for the HIV prevalence rate among adults in a country. However, in many countries the surveillance system among pregnant women did not have good coverage of women in rural areas where prevalence is usually lower than in urban areas. The recently introduced population-based surveys now provide additional information on prevalence among adult men and women (including non-pregnant women) and represent the entire country including remote rural areas.

However, each data source has its own strengths and weaknesses. Use of antenatal clinic data is less useful to estimate levels of infection in men and in rural areas. Population-based surveys that include HIV testing have been conducted in around 20 countries over the past five years and have their own inherent limitations. Population-based surveys, which sample households, can suffer from bias when a person refuses to participate. Surveys in South Africa and Botswana have had very high non-response rates of 40%, when asked to provide samples for HIV testing. An in-depth analysis of a recent survey in Ghana suggested that the survey had resulted in a slight under-estimate of the true HIV prevalence, because men who were not tested during the survey were more likely to be infected (1.9%) than men who were tested (1.6%).

In addition, population-based surveys exclude every person who does not live in a defined household, including many single adults, mobile workers, migrants, sex workers, injecting drug users and institutionalized populations, such as prisoners and those living in military barracks. These are often the groups that are most at risk of infection. For this reason, population-based surveys are not recommended in concentrated epidemics.

Experience shows that several methodologies must be used in tandem and all available prevalence data analyzed in order to achieve the best and most accurate results.

### **The value of these AIDS estimates**

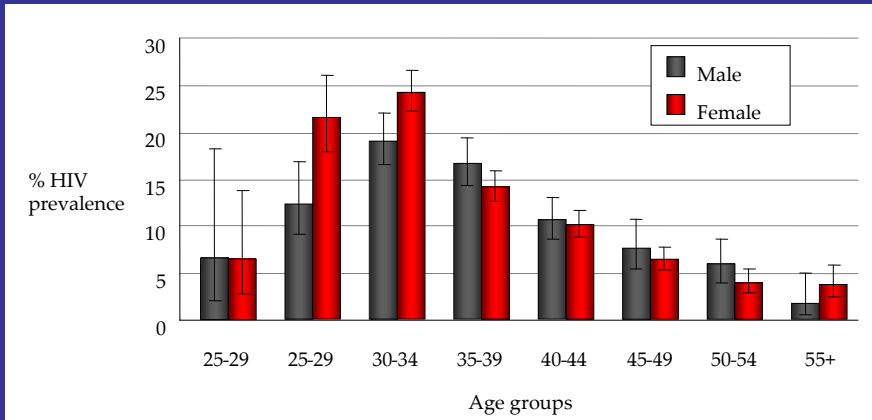
The primary purpose of developing estimates of the number of people living with HIV, their age, gender and geographic distribution is to enable affected countries to plan their AIDS responses more effectively.

Where national governments have access to reliable information and the capacity to use this information efficiently, they make better decisions of where to use their limited resources to develop effective HIV prevention, treatment and care programmes.

### **People behind the numbers**

The people who constitute these estimates are not numbers but human beings. Twenty five years into the global epidemic, it is critical to recognize the devastation wrought by HIV, directly and indirectly, on the lives of individuals and their communities., and to respond accordingly. In high prevalence countries, the impact of so many adults infected is felt not only by their families, including the orphans left behind, but also by communities and societies who depend on their productive labour and social capital. In South Africa, in 2004, over one in five teachers between the ages of 25 and 34 in the public sector was HIV-positive.

## HIV prevalence among public sector educators, by age group and gender, South Africa, 2004



Source: Factors Determining Educator Supply and Demand in South African Public Schools: The Health of our Educators, 2005 Educators Labour Relations Council, Human Sciences Research Council and Medical Research Council of South Africa.

The world must acknowledge that AIDS remains a serious global problem, and a threat even in far less acutely affected countries. The latest estimates clearly demonstrate that the world has a major and deadly epidemic on its hands, one that demands and deserves urgent attention and action.

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