

Both include data from national HIV programmes compiled by Ministries of Health as well as data collected from population-based surveys. Other sources of information include different surveys focused on specific areas—for example, drug prices and utilization, TB/HIV interventions, universal precautions in health-care settings, and harm reduction interventions.

A note about estimating need

Although the number of people receiving ART increased in 2007, so too has the estimated need for treatment. The parameters for estimating needs have changed based on updated evidence. The estimated time between treatment eligibility and death without treatment has increased from 2 to 3 years. This has resulted in a significant increase in the number of people considered to be in immediate need of treatment. Estimates of need will likely continue to evolve as more people become eligible each year and as treatment guidelines evolve.

Chapter 2: Treatment and Care of People Living with HIV

By the end of 2007 an estimated 33.2 million people worldwide were living with HIV, of whom 2.1 million were children. That same year, an estimated 2.5 million were newly-infected with HIV while 2.1 million died of AIDS. Nearly 1 million more people were receiving antiretrovirals (ARVs) at the close of 2007 than in December of 2006. This means that approximately 3 million people in low- and middle-income countries were receiving antiretroviral therapy at year's end. Moreover, the number of people receiving ART leapt by 54% in 2007 alone. Today, fully 72% of those receiving therapy in 2007 live in sub-Saharan Africa. This brings the total number of individuals taking life-saving medicines in sub-Saharan Africa to more than 2 million.

Women enjoy parity with men when it comes to treatment access, though men may be falling behind in a number of countries. Experts speculate that this may be because women are more likely to access health-care services for reproductive needs such as pregnancy and childbirth, offering greater opportunity for them to learn their HIV status.

Mortality rates have declined worldwide but still remain unacceptably high during the first six months of treatment. This is because too many people living with HIV are unable to access services until it is too late. Low rates of patient 'retention' are another obstacle to sustained scale-up. Treatment interruptions compromise patient health and may also lead to the emergence of drug resistant HIV strains. Despite this, recent surveys undertaken in 7 countries reveal that the sexual transmission of resistant HIV strains is less than 5%.

Lower prices, greater access

From 2004 to 2007, the prices of most first-line ARV drug regimens decreased by 30% to 64% in low- and middle-income countries. This dramatic drop has been an important factor behind the expansion of ART. Prices, however, still remain high in a number of Eastern European and Latin American countries. In almost all low- and middle-income countries the cost for second-line regimens remains troublingly expensive.

HIV and TB: Two scourges, one solution

Tuberculosis (TB) continues to be the leading cause of death among people living with HIV. In 2006, an estimated 700,000 people living with HIV developed TB. About 12% of deaths among people living with HIV worldwide are owing to TB. South Africa, for example, is home to less than 1 per cent of the world's population but accounts for 28% of people co-infected with HIV and TB worldwide.

Since the spread of HIV in the 1980s and 1990s, TB cases have increased between two to six-fold in sub-Saharan Africa, resulting in an enormous demand on already overburdened health services. Lack of access to co-trimoxazole, a common antibiotic prescribed to prevent and control other opportunistic infections, contributes to higher morbidity and mortality rates in those individuals co-infected with TB and HIV.

The emergence of ever-more dangerous strains of multidrug-resistant TB, including extensively drug-resistant TB (XDR-TB), represents a critical threat to global health. Half a million of the 9 million new cases of TB reported in 2007 were multi drug resistant. Eastern Europe and Central Asia reported the highest rates while in sub-Saharan Africa, only six countries were able to provide reliable data. This makes it extremely difficult to assess the true burden of co-infection.

XDR TB, which is virtually untreatable, was recorded in 45 countries in 2007, including in South Africa, which now constitutes the epicenter of the HIV epidemic. The death rate among those co-infected with HIV and XDR-TB was a staggering 95%.

Slowing and halting the impact of TB among people living with HIV will require a new focus on preventing, diagnosing and treating the disease, including a greater emphasis on the “Three Is”: Intensified case finding, Isoniazid preventive therapy, and Infection control.

Hepatitis and HIV

Chronic liver disease, a major complication of chronic hepatitis B virus (HBV) and hepatitis C virus (HCV) infection, is now a leading cause of morbidity and mortality among people living with HIV. Chronic liver disease can also significantly increase the toxicity of some antiretroviral drugs.

Of the more than 30 million people infected with HIV worldwide, about 3 million are chronically infected with HBV and between 4 to 5 million people are co-infected with HCV. Rates of HBV are high in the endemic countries of Asia and Africa, as are rates of both HBV and HCV among injecting drug users in all countries. The prevalence of chronic HCV infection among people living with HIV in Western Europe and the United States is estimated to be in the range of 25%–30%. Co-infection rates average more than 40% in Eastern Europe, and in Estonia, the Russian Federation and Ukraine, between 70%–95%. Countries need to make greater efforts to assess the magnitude of disease associated with HBV and HCV virus among people living with HIV, and to ensure that treatment is available.

Chapter 3: HIV Testing and Counselling

Access to HIV testing and counselling is a prerequisite for accelerating access to other HIV interventions. Between 2006 and 2007, the number of facilities providing HIV testing and counselling services increased substantially. Uptake, however, remains low. According to population-based surveys undertaken in low- and middle income countries between 2005 and 2007, a median of:

- 10.9% of women and 10.3% of men surveyed in 17 countries had ever received an HIV test.
- 20% of those living with HIV/AIDS in 12 countries knew their HIV status.

In the highest prevalence countries, the percentage of health facilities offering testing and counselling services varies widely. For example, while 100% of health facilities in Botswana offer testing and counselling, that number drops to 68% in Swaziland, and only 31% in Burkina Faso.

Client- and provider-initiated testing and counselling

In countries with available data, the numbers of individuals who have been tested increased in 2007. This could be because treatment is now more widely available and testing has become more convenient and

has been a lack of international leadership and advocacy to address issues surrounding HIV transmission and access to health services for men who have sex with men. The health sector should include representatives from this population in national health sector programming priorities, build links with community support organizations, advocate for the decriminalization of same-sex acts and lobby for legislation against discrimination based on sexual orientation.

Prisoners: While most prisoners living with HIV contract the virus outside of prison, transmission during incarceration is high owing to sharing contaminated injecting equipment and the prevalence of coerced or unprotected sex. A comprehensive 2007 WHO review of HIV prevalence and risk behaviour in prisons provides extensive evidence that needle and syringe programmes, STI treatment, condom distribution, opioid substitution therapy and other drug dependence treatment programmes are feasible and effective. Prisons should be an important focus of health sector HIV interventions.

Male circumcision: In 2007, WHO and UNAIDS recommended that male circumcision be recognized as an important additional strategy for the prevention of heterosexually-acquired HIV infection in men in countries with high HIV prevalence and low levels of male circumcision. Three randomized controlled trials in sub-Saharan Africa reported a strong protective effect against HIV acquisition among heterosexual men receiving circumcision, with an approximately 60% reduction in the risk of acquiring HIV. Mathematical models predicted that male circumcision could avert two million new HIV infections and prevent 300 000 deaths over the next ten years if widely applied in sub-Saharan Africa.

It is still uncertain exactly how circumcision affects the likelihood of HIV transmission from HIV-positive men to HIV-negative women, or among men who have sex with men. WHO and UNAIDS recommend that men undergo HIV testing and counselling prior to surgery. Circumcision is only recommended for men and boys who are HIV-negative. WHO and partners also recommend that health-care practitioners warn patients that circumcision does not confer 100% protection.

Many high-burden countries are exploring how and whether to scale up male circumcision programmes based on expert consultations.

Preventing HIV transmission in health-care settings

Within health-care settings, HIV transmission continues to be a serious problem owing to the lack of universal quality-assured screening of blood supplies and to the use of unsafe injection equipment. Sharps injuries are estimated to cause between 200 and 5 000 new HIV infections among health-care workers each year, and about 4% of all HIV infections in health-care workers are thought to arise from occupational exposure. Post-exposure prophylaxis (PEP), a WHO-recommended short-term course of antiretroviral therapy designed to reduce the likelihood of HIV infection after potential exposure, is available in 35% of health facilities located in 50 reporting countries.

Chapter 5: Scaling Up HIV Services for Women and Children

Women represent approximately half of all people living with HIV worldwide and more than 60% of people living with HIV in sub-Saharan Africa. An estimated 2.1 million children under the age of 15 years are living with HIV, more than 90% of whom were infected through mother-to-child transmission. Children account for 6% of all HIV infections, 17% of new infections, and 14% of all HIV/AIDS-related mortality.

Every year, an estimated 1.5 million HIV-positive women give birth in low- and middle-income countries. In 2007, approximately 33% of HIV-positive pregnant women received ARVs to prevent HIV transmission to their child, up from 10% in 2004. Between 2004 and 2007, West and Central Africa showed the highest gains with an almost six-fold increase in the number of women receiving ART prophylaxis and a four-fold increase occurred in East and Southern Africa.

safety, providing financial and non-financial incentives to remain in the health workforce, and introducing measures to address health worker migration.

Specifically, WHO and partners have targeted the following areas for health system strengthening:

Task shifting

In 2007, 28 of 73 low- and middle-income countries had developed policies to shift tasks from health-care workers to trained non-professional workers. A recent South African study found that after 6 months of follow-up, outcomes such as virologic suppression, adherence, and retention of patients at sites with doctors were similar to those at sites without doctors.

Procurement and supply management

Many health systems are undermined by weak procurement and supply management systems. This has resulted in frequent shortages (stock-outs) of ARVs and other essential commodities. Of 66 low- and middle-income countries surveyed, 25 reported one or more stock-out of key ARVs. Worldwide, fully 18% of all reporting treatment sites experienced at least one ARV stock-out in 2007.

Surveillance and monitoring

A recent evaluation of data collection and surveillance systems found that 56 of 137 low- and middle-income countries had fully implemented surveillance systems; 32 had partially implemented them and the remaining 49 countries had systems in place, albeit poorly performing ones. Overall, this represents only a slight improvement in the quality of surveillance systems worldwide.

Chapter 7: Towards universal access: The way forward

Overall, progress towards scaling up the health sector response to meet universal access targets for HIV prevention, treatment, care and support has accelerated. Nevertheless, despite the current rate of scale-up, few countries are on course to meet the 2010 universal access goal or the 2015 Millennium Development Goals. To achieve these, countries and partners must focus on:

- **Strengthening the role of the health sector in HIV prevention.** This means scaling up the implementation of proven preventive interventions such as male circumcision, harm reduction strategies, condom use, safe blood supplies and the integration of HIV prevention into TB, reproductive and maternal health programming. It also means targeting at-risk populations such as sex workers, injecting drug users, prisoners and men who have sex with men with evidence-based prevention services tailored specifically to their needs.
Patients and health-care personnel still continue to face unacceptable risks in hospital and in other health-care settings. Countries need to ensure universal precautions against HIV infection, the screening of blood supplies and the implementation of safe injection practices. Infection control strategies to prevent TB infection also need to be scaled up.
- **Increase awareness of HIV status:** Universal access will never be achieved unless more people are made aware of their status. Provider- and client-initiated testing and counselling represent a critical opportunity to expand ART coverage and to access prevention services and other interventions.
- **Strengthening and sustaining efforts to scale up HIV treatment and care:** Low- and middle-income countries must continue to provide lifelong access to those now receiving ART and to expand services to the many millions of individuals in need. This includes at-risk populations such as injecting drug users, prisoners, men who have sex with men, sex workers and their clients and hard-to-reach rural populations. International partners need to support and encourage high-prevalence countries to adopt a public health approach based on simplified clinical decision-making, standardized regimens and decentralized and integrated service delivery.

This must also include greater efforts to ensure timely access to ART and that patients be encouraged to remain in treatment and regularly monitored for signs of resistance as well as TB infection. Reducing the cost of second-line regimens should also be a priority. Expanding access to co-trimoxazole prophylaxis to all infected adults, including HIV-exposed infants, and to services to prevent and treat TB is essential.

Accelerating access to HIV prevention and care for women and children: Maternal, newborn and reproductive health services are a critical entry-point into HIV prevention, treatment and care programming. High rates of antenatal care coverage offer an excellent opportunity to expand provider-initiated HIV testing and counselling. More HIV-positive pregnant women must also be assessed to determine whether they need antiretroviral therapy for their own health, and if necessary, a referral for treatment services. The difficulty of diagnosing HIV in infants is also hampering progress.

Overcoming health system weaknesses: HIV programmes can strengthen health systems provided that they are appropriately integrated with other health services and aligned with national health care planning. Countries need to train more health-care workers, decentralize service delivery and address worker shortages through task-shifting and other approaches.

Improving strategic information to guide the health sector response: Although the availability and quality of epidemiological data are improving, more investment and analysis are needed. This includes expanding data relating to HIV incidence, testing and counselling, sexually-transmitted diseases, and access to health services for populations most at-risk. More data regarding the impact of HIV interventions on mortality, incidence, prevalence and the health system should also be a priority.

Conclusions

- Nearly a million more people (950 000) were receiving ART in low- and middle-income countries by the end of 2007 compared to the end of 2006—bringing the total number of people receiving ARV therapy to approximately 3 million—a seven-fold increase in just four years.
- The '3 by 5' target of 3 million living in low- and middle-income countries receiving treatment by the end 2005 has been achieved—albeit two years late. This underscores the necessity and utility of setting targets and working towards them.
- While the availability of HIV testing and counselling in health facilities increased almost three-fold between 2006 and 2007 in countries with comparable data, the majority of people living with HIV/AIDS are still unaware of their status, meaning they remain unable to access prevention, treatment and care services. Although global data are unavailable, surveys undertaken in 12 high-prevalence countries reveal that the median percentage of HIV-positive people who know their status is only 20%.
- Improved follow-up of those individuals diagnosed with HIV and greater access to care, beyond access to ARVs, are required to maximize the health of people infected and help prevent HIV transmission to others.
- Successful examples of HIV prevention among high-risk populations such as sex workers and their clients, injecting drug users, men who have sex with men, as well as prisoners, highlight the need to further scale up access to prevention interventions, strengthen surveillance and monitoring, and to ensure that policies and legislation create an environment that encourages effective health service delivery.
- In 2007, 33% of HIV-positive pregnant women received antiretrovirals to prevent transmission to their children, as compared to 10% in 2004. That same year the number of pregnant women tested for HIV rose to 18% globally from 16% in 2006 and 10% in 2005.

Strengthening health services to fight HIV/AIDS

- Today, more children are accessing care and treatment services than in previous years. In 2007, 200 000 children living with HIV received antiretroviral therapy, as compared to 127 000 in 2006 and 75 000 in 2005. However, the difficulty of diagnosing HIV in infants remains an obstacle to further gains.
- Despite substantial progress in 2007, most low- and middle-income countries are still far from achieving universal access goals. Obstacles include weak health-care systems, a critical shortage of human resources and a lack of sustainable, long-term financing. Countries also require monitoring systems in order to track progress and increase the effectiveness and impact of HIV programmes.