Coverage of selected services for HIV/AIDS prevention, care, and treatment in low- and middle-income countries in 2005

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One Thomas Circle NW, Suite 200
Washington, DC 20005
USA
(202) 775-9680
policyinfo@policyproject.com

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Coverage of selected services for HIV/AIDS prevention, care, and treatment in low- and middle-income countries in 2005

By John Stover and Margot Fahnestock
Constella Futures

July 2006

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EXECUTIVE SUMMARY

The Declaration of Commitment on HIV/AIDS adopted by the United Nations General Assembly Special Session on HIV/AIDS in June 2001 commits member states and the global community to taking strong and immediate action to address the HIV/AIDS crisis. It calls for achieving a number of specific goals, including reducing HIV prevalence among young men and women, expanding care and support, and protecting human rights. The Millennium Development Goals adopted at the Millennium Summit in September 2000 call for expanded efforts to halt and reverse the spread of HIV by 2015. Other important documents, such as the Abuja Declaration and Framework for Action on HIV/AIDS, Tuberculosis, and Other Related Infectious Diseases adopted at the African Summit on HIV/AIDS, Tuberculosis, and Other Related Infectious Diseases in 2001, declare regional and national commitments to confront the epidemic.

Progress toward achieving these goals requires significantly expanding HIV/AIDS programs to foster a supportive environment, to prevent new infections, to care for those already infected, and to mitigate the social and economic consequences of the epidemic. One measure of progress is the percentage of people living in low- and middle-income countries who have access to key prevention, treatment, care, and support services. This report presents the results of an assessment of the coverage of several key services for the prevention and treatment of HIV/AIDS in 2005. It updates similar reports on coverage in 2001 and 2003. This report includes results from 69 countries, including most low- and middle-income countries with more than 10,000 people living with HIV in 2005. The information presented here relies on national service statistics and expert assessment. These data focus on the quantity of services provided and do not address the quality of those services. In many countries, national consensus workshops were held to validate the data. Estimates of the population in need of each service have been derived from demographic and epidemiological statistics and may not correspond to national estimates of need, but are used here to present coverage estimates that are comparable across countries and regions. For countries that did not participate in the survey, we have used regional averages to estimate the number of people served. The results should be interpreted with caution, but are useful in indicating the progress made in the last two years toward future goals.

Separate, in-depth assessments are being conducted with the Joint United Nations Program on HIV/AIDS (UNAIDS) and United Nations Children's Fund (UNICEF) of the coverage of support services for orphans and vulnerable children and, with the United Nations Population Fund (UNFPA), of prevention services for youth. These reports will be available later this year.

Other publications also report some coverage statistics, such as *Progress on Global Access to HIV Antiretroviral Therapy: A Report on "3 by 5" and Beyond* (March 2006) from the World Health Organization (WHO) and the *2006 Report on the Global AIDS Epidemic* from UNAIDS. The statistics in these different reports are similar, but not exactly the same. One major difference is the reporting period. With rapid growth in some services, such as antiretroviral therapy (ART), a difference of a few months can be significant in some countries. Other differences may be due to which countries report data and which do not. To a large extent, though, these reports rely on the same service statistics and are generally consistent.

The results of this analysis suggest that most people in low- and middle-income countries do not have access to many key prevention services. Utilization is very low for voluntary counseling and testing (VCT), with an estimated 16.5 million visits per year or 0.5% of adults 15–49. Approximately 10 million pregnant women are offered services for prevention of mother-to-child transmission (PMTCT) of HIV, about 11% of all pregnant women in these countries.

Half of the countries involved in this study reported on services for special populations. Of those reporting, most have some programs in place, but there are large variations in coverage. Estimates of coverage are particularly difficult because good estimates of the sizes of these populations are lacking for many countries. For all regions combined, prevention services are provided to about 33% of sex workers, 9% of men who have sex with men, 34% of prisoners, and 16% of children living on the street.

Twenty-six countries reported having prevention programs for injecting drug users, most from Eastern Europe and Asia. The most common type of program was information and education on risk reduction, which is provided for about one million injecting drug users. Needle and syringe exchange programs reach less than half as many (400,000) and drug substitution programs reach only about 32,000. Estimates of the number of injecting drug users are highly uncertain, but coverage of harm reduction programs is still low in most low- and middle-income countries.

The situation is much better for AIDS education (about 73% of countries included AIDS education in primary school curricula and 80% of countries included it in secondary school curricula) and condom distribution (over 5 billion condoms distributed for disease prevention, enough to cover about one-fifth of risky sex acts), as these services are widely available now in many countries.

The level of care available to most people living with HIV does not provide all the essential elements. The services that are available are usually located in capital cities and other urban areas, but not in rural areas. Prophylaxis for opportunistic infections is not a standard part of treatment in many countries and is provided to only about 26% of those in need in the developing world.

The availability of ART has grown rapidly in the past four years from 250,000 in 2001 to 410,000 in 2003 to 1.1 million in 2005. In spite of the rapid growth, ART is only available to about 18% of those who need it.

While coverage remains low for most services, the growth since 2001 has been rapid in many cases.

- The number of people receiving VCT services has increased from 8.6 million in 2001 to 13.5 million in 2003 to 16.6 million in 2005.
- The number of pregnant women being offered PMTCT services in sub-Saharan Africa has increased from 200,000 in 2001 to 1.1 million in 2003 to 2 million in 2005.
- The number of injecting drug users receiving some type of prevention service increased from 280,000 in 2003 to 1.1 million in 2005.
- The number of sex workers receiving outreach services increased from 1.8 million in 2003 to 3.7 million in 2005.
- The number of people receiving ART increased from 250,000 in 2001 to 1.1 million in 2005.
- The percentage of countries including AIDS education in school curricula has increased to 73%-80% in 2005.

In short, significant progress has been made in most areas since 2001, but the only programs that provide access to most people who need services are AIDS education in the schools and condoms. Some regions have achieved universal access for some services, such as ART in Latin America. In most other areas, greater effort will be required to expand services to meet the goal of universal access.

FOREWORD

HIV/AIDS is the most far-reaching and damaging epidemic the world has ever seen. Within a single generation, it has grown into an individual and societal tragedy with huge implications for human security, for social and political stability, and for economic development. Originally viewed as just another disease, HIV/AIDS has long since moved beyond the boundaries of the health system. It is now generally acknowledged that addressing the epidemic requires concerted efforts across all sectors involving a wide array of actors.

Following the United Nations General Assembly Special Session (UNGASS) on HIV/AIDS in June 2001, Member States and development partners committed themselves to a wide-ranging and ambitious program of action to address the epidemic. To establish a baseline against which progress can be measured, a survey was conducted to measure services provided in 2001. The results of that survey are presented in *Coverage of Selected Health Services for HIV/AIDS Prevention and Care in Less Developed Countries in 2001* (WHO, November 2002). A second survey was conducted in 2003 to measure progress to that date. The results of that survey are presented in *Coverage of Selected Services for HIV/AIDS Prevention, Care and Support in Low and Middle Income Countries in 2003* (USAID, UNAIDS, WHO, UNICEF, and the POLICY Project, 2004). Both reports are available on the internet at www.ConstellaFutures.com. This report presents the results of the third assessment, undertaken in 2005 in preparation for the UNGASS meeting in May and June 2006. This survey covers 69 countries, including most low- and middle-income countries with more than 10,000 people living with HIV. In addition to the main survey reported here, two special surveys have been conducted—one on coverage of support for orphans and vulnerable children and one on HIV services for youth. Reports of these surveys will be available by September 2006.

The information was collected by national consultants who contacted the people most knowledgeable about these services in each country. Many respondents were officials of national HIV/AIDS programs, government ministries, HIV/AIDS service organizations, or international donors. They provided service statistics when available and also indicated their best estimate of the coverage of services when service statistics were not available. National consensus workshops were held in most countries that brought together experts in these fields to validate the data and ensure completeness. The numbers of people living with HIV and the numbers of deaths from AIDS are based on the UNAIDS/WHO estimates for 2005.

This work and the special surveys on orphans and youth have been funded by the U.S. Agency for International Development (USAID) through the POLICY Project, UNAIDS, and UNFPA. The UNAIDS Secretariat, WHO, USAID, and UNICEF were instrumental in implementing this survey by providing support to the development of the questionnaire, identification of national consultants, coordination of consensus meetings, and review of final results. The POLICY Project/Constella Futures coordinated the data collection and analysis. John Stover and Margot Fahnestock of Constella Futures coordinated the work and wrote this report.

1. THE CHALLENGE OF HIV/AIDS AND THE RESPONSE TO THE EPIDEMIC

The HIV epidemic is one of the greatest challenges ever to global well-being. About 33–46 million people were living with HIV in 2005, and millions have already died of AIDS. Many more people are affected because their parents, other family members, friends, and co-workers have died from AIDS or are infected with HIV.

International commitment

The Declaration of Commitment on HIV/AIDS adopted by the United Nations General Assembly Special Session (UNGASS) on HIV/AIDS in June 2001 commits Member States and the global community to taking strong and immediate action to address the HIV/AIDS crisis. The Declaration calls for achieving several specific goals, including reducing HIV prevalence among young men and women, expanding care and support, and protecting human rights. The Millennium Development Goals adopted at the Millennium Summit in September 2000 call for expanded efforts to halt and reverse the spread of HIV by 2015. Other important documents, such as the Abuja Declaration and Framework for Action on HIV/AIDS, Tuberculosis, and Other Related Infectious Diseases adopted at the African Summit on HIV/AIDS, Tuberculosis, and Other Related Infectious Diseases in 2001, declare regional and national commitments to confront the epidemic. The United States President's Emergency Plan for AIDS Relief sets targets for U.S. assistance to contribute to averting 7 million infections by 2010, providing antiretroviral therapy (ART) to 2 million people by 2008, and providing care and support to 10 million people living with HIV and orphans and vulnerable children by 2008. At the 2005 World Summit Outcome, world leaders committed to achieving universal access to treatment by 2010. An inclusive process of consultation with stakeholders through national and regional meetings has supported the adoption by countries of plans to achieve universal access to prevention, care, treatment, and support services for those who need them. Countries are urged to set in 2006 ambitious targets for 2010 and to develop plans to reach at least 50% of those targets by 2010.

Coverage goals

Most national programs seek to achieve their goals by expanding access to information and to high-quality services for everyone who needs them. One measure of how well a program is performing is the coverage level it achieves.

Coverage is sometimes defined as the percentage of the population needing a service that has access to the service. Access may depend on many things, such as the proximity of the nearest service point, the schedule during the week when the service is available, the cost of the service, and eligibility criteria that may be established by national guidelines or service providers. As a practical matter, it is often better to measure coverage in terms of utilization: the percentage of the population in need that actually uses the service.

Although the ideal goal may be to achieve 100% coverage for all services, such high coverage may not always be feasible or needed. For some services, increasing coverage from 80% to 100% may be very expensive or unachievable.

The Declaration of Commitment on HIV/AIDS calls for expanded programs at the national and global level, but specifies coverage targets in only two areas: education and services for youth and prevention of mother-to-child transmission (PMTCT) of HIV (Box 1). The United States President's Emergency Plan for AIDS Relief sets targets of assisting 15 focus countries to provide ART to 2 million people in 2008 (about 50% of the need), avert 7 million new infections by 2010 (about two-thirds of the expected infections without effective action), and provide care and support to 10 million people living with HIV and orphans and vulnerable children in 2008. National programs have set their own coverage goals.

Box 1. Coverage goals in the Declaration of Commitment on HIV/AIDS

"By 2005, ensure that at least *90%*, and by 2010 at least *95%* of young men and women aged 15 to 24 have access to the information, education, including peer education and youth-specific HIV education, and services necessary to develop the life skills required to reduce their vulnerability to HIV infection, in full partnership with young persons, parents, families and health-care providers."

"By 2005, reduce the proportion of infants infected with HIV by 20%, and by 50% by 2010, by ensuring that *80%* of pregnant women accessing antenatal care have information, counselling and other HIV-prevention services available to them ..."

A study prepared initially for the UNGASS meeting and updated in 2002, 2004, and 2005 estimated that about US$15 billion will be needed annually by 2006 to achieve adequate coverage of key prevention and care services rising to US$22 billion by 2008.[1,2,3,4] The coverage estimates used in those studies were intended to represent what is feasible to achieve and what is necessary to reverse the epidemic. For some prevention services (such as school-based AIDS education), the authors estimated that higher coverage levels would be needed in settings with higher prevalence. For some other services (such as workplace programs), higher coverage levels would be feasible in countries with more developed infrastructure. The prevention coverage goals used in that study are shown in Table 1.

For care and treatment, the authors assumed that the goal is to provide care to everyone who needs it and to ensure access to the appropriate health facilities. Estimates of those with access to appropriate facilities varied by country and were based on utilization of antenatal clinics, immunization services, and tuberculosis treatment through directly observed treatment, short course (DOTS). The authors estimated that 50–60% of those in need in low- and middle-income countries currently have access to health facilities that could provide palliative care and treatment of opportunistic infections that are easy to treat, but that less than 10% have access to the testing and advanced facilities required to provide prophylaxis for opportunistic infections and ART.

Each country needs to develop its own goals for coverage of essential HIV/AIDS services based on need, resources, and feasibility. Although national goals may vary by country, the level of coverage today is a good indicator of the current level of effort. Increases in the coverage of preventive and care services in the coming years will indicate progress. Of course, in addition to improved coverage, programs also need to improve the quality of services and demonstrate impact.

This report focuses on essential services that can be measured through service statistics. This captures many of the key services, but leaves out many others that cannot be measured through service statistics, such as programs to address stigma, improve the policy environment, and enhance the participation of people living with HIV.

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[1] Schwärtlander, B., J. Stover, N. Walker, L. Bollinger, J.P. Guitierrez, W. McGreevey, M. Opuni, S. Forsythe, L. Kumaranayake, C. Watts, and S. Bertozzi. 2001. "Resource Needs for HIV/AIDS." *Science 292*: 2,434–2,436.

[2] "Financial Resources for HIV/AIDS Programmes in Low- and Middle-income Countries Over the Next Five Years." Report to the UNAIDS Program Coordinating Board, Thirteenth Meeting, Lisbon, 11–12 December 2002.

[3] Hankins, C., J.P. Guitierrez, S. Bertozzi, W. McGreevey, L. Bollinger, R. Greener, and J. Stover. "The Need for Increased Resources for an Expanded Response to the HIV Pandemic in Low- and Middle-income Countries: New Estimates and Progress to Date." Unpublished.

[4] "Resource Needs for an Expanded Response to AIDS in Low- and Middle-income Countries." Presented at the UNAIDS Program Coordinating Board, Seventeenth Meeting, Geneva, 27–29 June 2005.

Table 1. Feasible and necessary coverage goals for prevention services in 2010 as percentages of those needing the service that should have access to it by epidemic type

	Low level	Concentrated	Generalized
Vulnerable populations			
AIDS education for primary and secondary students	30%	45%	100%
Programs focused on out-of-school youth (6-15)	10%	20%	50%
Programs focused on sex workers and clients	80%	80%	80%
Programs focused on men who have sex with men	80%	80%	80%
Harm reduction programs for injecting drug users	80%	80%	80%
Prevention for people living with HIV	80%	80%	80%
Workplace prevention	0%	3%	50%
General populations			
Percent of adults reached through community mobilization	0%	0%	70%
Number of mass media campaigns per year	2	4	5
Percent of adult population accessing VCT each year	0.1%	1%	5%
% of casual sex acts covered with condoms	80%	80%	80%
% of married people with casual partners using condoms in marital sex	30%	30%	30%
Medical services			
% of need for post-exposure prophylaxis that is met	100%	100%	100%
Safe blood (proportion of units screened for HIV)	100%	100%	100%
Safe medical injections	77%	92%	99%
Universal precautions	77%	92%	99%
Treatment for sexually transmitted infections	60%	75%	100%
PMTCT (coverage among women attending antenatal care)	80%	80%	80%

Source: "Resource Needs for an Expanded Response to AIDS in Low- and Middle-income Countries." Presented at the UNAIDS Program Coordinating Board, Seventeenth Meeting, Geneva, 27–29 June 2005.

2. MEASURING THE RESPONSE

Efforts are being organized to measure progress in fulfilling global commitments. UNAIDS and its partners produced a guide for national programs in 2000.[5] The UNAIDS Monitoring and Evaluation Reference Group has developed indicators to measure progress towards the specific commitments made in the Declaration of Commitment on HIV/AIDS.[6] The World Bank, USAID, and other donors are also developing systems to measure progress towards achieving their specific goals.

Several activities currently collect and report on HIV/AIDS indicators, including:

- biannual reports by UNAIDS/WHO on the status of the epidemic, including estimates of HIV prevalence and the number of people infected;
- the World Health Survey, which measures coverage of key health services;
- demographic and health surveys and AIDS Indicator Surveys collect information on HIV knowledge and behavior and HIV prevalence;
- UNICEF Multiple Indicator Cluster Surveys;
- the AIDS Program Effort Index[7] designed to measure national program effort;
- annual and biannual surveys of Member States by the United Nations International Drug Control Program; and
- the *2006 Report on the Global AIDS Epidemic: A UNAIDS 10th Anniversary Special Edition* (UNAIDS, 2006).

The coverage of essential services is a key element in the emerging evaluation system. Coverage is a key intermediate step towards the process of achieving behavior change and reducing the number of new infections. Coverage, along with quality of care, is an important measure of how well treatment programs are serving those who need them.

Coverage is not easy to measure. Service statistics can be used to measure coverage, but such statistics are often incomplete and the degree of incompleteness may not be known. Determining the number of different people using a service may be difficult if some use the service more than once in the time period of interest. A significant amount of effort is being made to improve health information systems. As better and more complete statistics become available they can be used to track trends in expanding coverage.

Service utilization is best measured by national population surveys (such as the coverage module of the World Health Survey), which determine the proportion of the population using a service. The availability of services can be measured by facility-based surveys that determine the proportion of all facilities of a particular type (such as district hospitals or rural health centers) that have the necessary trained personnel, equipment, drugs, and facilities to provide the service.

Population and facility surveys are being planned for many countries in the coming years. These surveys should provide good measures of coverage of essential services. However, population and facility surveys are costly and time-consuming. In the meantime, current levels of coverage need to be estimated to serve as a baseline against which future progress can be measured.

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5 UNAIDS. 2001. *National AIDS Programmes: A Guide to Monitoring and Evaluation*. Geneva: UNAIDS.

6 UNAIDS. 2002. *Implementation of the Declaration of Commitment on HIV/AIDS: Core Indicators*. Geneva: UNAIDS.

7 USAID, UNAIDS, WHO, and the POLICY Project. 2003. *The Level of Effort in the National Response to HIV/AIDS: The AIDS Program Effort Index (API).* Washington, DC: Futures Group, POLICY Project.

Purpose of this study

The purpose of this study was to measure current coverage levels for several essential prevention and care services. Similar studies were conducted in 2001 and 2003. This study used similar methods to assess progress since 2001.

Methods

This study attempted to measure national coverage for several essential services by collecting service statistics and expert assessments for 2005. The actual time periods vary for each country, but the statistics generally refer to services provided in 2005. The study included 94 low- and middle-income countries, containing 91% of all people living with HIV in the developing world. (See Annex for the list of countries included.) Data collection started in September 2005. By June 2006, data had been received from 69 countries, representing 83% of people living with HIV. The results from these 69 countries are reported here.

In each country, the information was collected through national consultants. The consultants worked with national HIV/AIDS programs and UNAIDS/WHO representatives to identify knowledgeable respondents for each service. Respondents were asked to provide statistics on the number of people receiving the service in the last year if this information was available. The consultants used a standard questionnaire which is available from the authors upon request.

Once the consultants had collected all the required information, the results were presented and reviewed at a national consensus workshop. These workshops brought together 15–30 national experts to review the results, suggest additional sources of information, and agree on the final figures to be included in this report. The majority of the reporting countries held these national consensus workshops. In most cases, they were combined with review of the national report to UNGASS.

The approach used here is relatively inexpensive and can be implemented quickly. It is consistent with similar surveys in 2001 and 2003 which allows us to monitor progress. Since it relies on service statistics and expert assessment, the information collected measures coverage less accurately than national surveys, and assessing the uncertainty associated with each estimate is difficult. This study attempted to improve accuracy by contacting only the most knowledgeable people in each country and focusing on quantitative information that does not require assessing the quality or effectiveness of services. The respondents were asked to provide a limited amount of information, for most interventions just the number of people served and the number of sites offering each service.

All the components of a national response cannot be measured easily. For many components, such as reducing stigma and protecting human rights, indicators are still being developed and tested. However, for some components the indicators are known. For example, for preventing mother-to-child transmission, coverage can be measured as the number of pregnant women offered voluntary counseling and testing (VCT) and offered prevention services if they are found to be HIV positive. This study focuses on the services that can be measured most easily.

Box 2 shows the services included in this study. A comprehensive program should include much more than the services in this list, but service statistics are not available for many services. However, measuring the coverage of the services included here provides a useful picture of the current level of coverage at the national and regional level and a starting point for measuring future progress.

Coverage is calculated by dividing the number of people using the service by the population needing the service. The population in need is different for each service, as shown in Box 3.

Box 2. Essential HIV/AIDS services included in this study

- **Voluntary counseling and testing.** Services providing pre-test counseling, testing for HIV infection, and post-test counseling for anyone wanting to know their HIV status. It does not include testing done on hospital patients for medical purposes.
- **Prevention of mother-to-child transmission.** Services that provide VCT for pregnant women and provide prevention services to those who are HIV positive. Prevention services should include treatment with zidovudine, nevirapine, or other antiretroviral drugs and may also include breastfeeding counseling and supplemental feeding.
- **Condoms**. The number of condoms distributed annually.
- **Harm reduction**. Services to reduce the risks associated with injecting drug use including risk reduction education and support, needle and syringe exchange, and drug substitution.
- **Vulnerable populations**. Outreach services for especially vulnerable populations: sex workers, men who have sex with men, injecting drug users, prisoners, and street children.
- **Education.** AIDS education for primary and secondary school students.
- **Home-base care**. Services that reach HIV-positive people in their homes and provide basic palliative care, psychosocial support, and planning services.
- **Treatment of opportunistic infections.** The standard of care available for HIV-positive patients needing treatment for specific conditions (listed in Box 4).
- **Prophylaxis for opportunistic infections.** Providing cotrimoxazole or isoniazid for people who are identified as HIV positive.
- **Antiretroviral therapy.** Treatment of HIV-positive adults or children with a combination of at least three antiretroviral drugs.

Box 3. Description of denominators for estimating coverage

- **Voluntary counseling and testing.** Adult population in 2005. (Although the entire adult population may not be in need of VCT, statistics from VCT programs indicate that clients represent a mix of risk behaviors. While VCT may be "needed" by those engaging in risky behavior, in practice it is also used by people with little or no risk. Thus, a simple ratio of the number of VCT clients to those with risky behaviors would not provide a true indication of coverage. For this reason we present coverage as a percentage of the adult population, but recognize that the goal would not be 100% coverage.)
- **Prevention of mother-to-child transmission**. Number of births in 2005.
- **Condoms.** Risky sexual contacts in 2005, defined as all sexual contacts between commercial sex workers and clients, men having sex with men, casual sex contacts, and contacts between spouses when at least one partner has outside partners, based on behavior reported in demographic and health surveys or other national surveys or regional averages for countries without such surveys.
- **Harm reduction.** Injecting drug users in 2005.
- **AIDS education.** Children enrolled in primary and secondary school in 2005.
- **Home-based care, treatment of opportunistic infections, prophylaxis for opportunistic infections, and antiretroviral therapy.** All four of the care indicators use the same estimate of people in need of care. We estimate that people need care and treatment when they are within two years of death from AIDS. The number is estimated to be twice the number of deaths from AIDS in 2005. People do not need all types of care at the same time, but we assume that most will need each type of care and treatment at some time during the course of their infection.

3. RESULTS

The low- and middle-income countries included in this study are shown by UNAIDS region in the Annex at the end of this document. The results of this survey are discussed for each type of service. Country-specific data are presented in Annex Tables 1 through 13, which are available for downloading in a separate excel file.[8] The tables in this section show coverage of services by region. These regional figures are weighted averages for the countries included in the survey. The weighting is based on the population needing the services, and the population in need differs for each service. Data are available from 69 countries for most services. Not all countries provided data for all services.

Voluntary counseling and testing

Voluntary counseling and testing (VCT) is an essential service for both prevention and treatment. People who test positively for HIV infection can immediately seek appropriate information, support, and treatment. Thus, VCT is one entry point for better care and for preventing mother-to-child transmission of HIV. High utilization rates for VCT usually indicate low levels of stigma and discrimination, since many people who are afraid of the negative social consequences of a positive HIV test avoid VCT.

VCT is not the only form of testing that can identify people in need of treatment. Diagnostic testing is another approach where testing is offered to all patients seeking healthcare with conditions that might be related to HIV, such as tuberculosis. Diagnostic testing may or may not be voluntary and it may not include the same counseling and post-test support that is part of most VCT programs.

Counseling and testing may also be offered on other occasions, such as during visits to antenatal clinics or family planning clinics. In the last few years, there has been an effort to expand testing opportunities. These programs are often referred to as "routine offer of counseling and testing." In this approach, counseling and testing are offered to people at many points of contact with the health system. This differs from diagnostic testing in that it should include counseling and the patient has the option to refuse the test. However, service statistics do not always make these distinctions so the data reported here for routine offer of counseling and testing may include diagnostic testing as well.

Ideally, VCT services should be available to everyone who wants them. However, these programs can be difficult and expensive to implement, requiring, among other things, recruiting and training counselors, establishing appropriate facilities that protect the confidentiality of the client, establishing guidelines, and ensuring an adequate quantity of tests. Many countries are seeking to expand services in the near future as a key component of their programs.

The demand for testing varies from country to country and over time. People may seek testing for many reasons such as marriage, application for overseas training, new job applications, and just wanting to know their status. People seeking VCT are not limited to those with high-risk behavior. Therefore, the population potentially needing services is all adults. Not everyone will be tested in the same year; thus, the coverage of VCT would never reach 100%. If all adults were tested every 7 or 8 years (the average time from infection to the onset of serious symptoms) then 12–14% would be tested each year. Other testing approaches, such as diagnostic testing and PMTCT programs, may also be used to identify people in need of treatment, so the total annual need for testing at VCT sites would be considerably less.

Table 2 shows estimates by region of the coverage of VCT services in 2005. The table shows the number of VCT clients in the past year and the coverage in terms of the percentage of adults 15–49 tested in that year.

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[8] Please see: Stover, J., and M. Fahnestock. 2006. *Coverage of Selected Services for HIV/AIDS Prevention, Care, and Treatment in Low- and Middle-income Countries in 2005: Country Annex Tables.* (Excel file.) Washington, DC: Constella Futures, POLICY Project. Available at www.policyproject.com and www.ConstellaFutures.com.

For all of the countries responding in this study there were 13.5 million VCT clients in 2005. That indicates that about 0.5% of all adults in the reporting countries received VCT in 2005. In Africa, the Caribbean, and Latin America, the rate is 2% or higher. The estimated number receiving VCT for all 94 countries is 16.5 million. An estimated 7.8 million people received counseling and testing through routine offer, about half the number of VCT clients.

Table 2. Voluntary counseling and testing services in 2005 by region

Region	Coverage (weighted average)	Number of VCT clients	Number of countries reporting	Number tested through routine offer of counseling and testing
Caribbean	2.3%	110 000	1	110 000
East Asia and Pacific	0.1%	400 000	1	
Eastern Europe and Central Asia	1.3%	1 600 000	8	1 000 000
Latin America	2.0%	4 500 000	14	2 100 000
North Africa and Middle East	0.1%	150 000	5	104 000
South-East Asia	0.1%	1 200 000	13	1 900 000
Sub-Saharan Africa	2.0%	5 500 000	27	1 200 000
All reporting countries	0.5%	13 500 000	69	6 400 000
Estimated number of VCT clients for all 94 countries		16 500 000		7 700 000

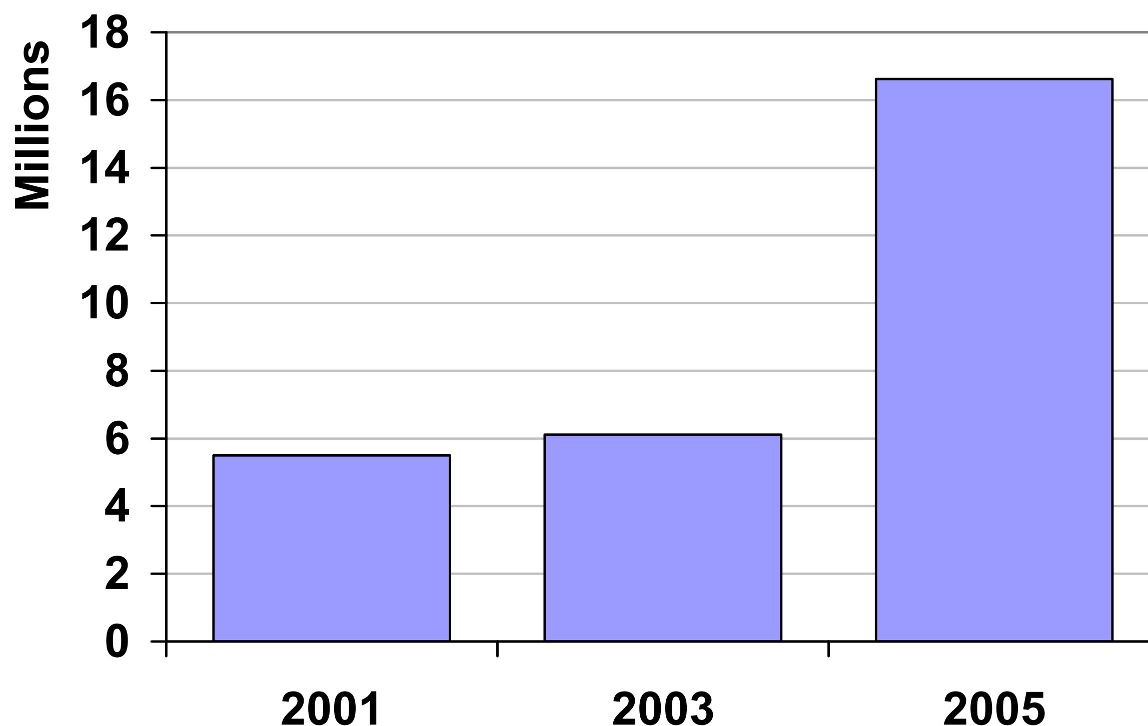
Note: Regional coverage is estimated as the weighted average of coverage for the countries included in this study reporting data. The country values are weighted by the number of adults 15–49 in 2005. The estimated number of VCT clients in all 94 countries included in this study is calculated by multiplying the regional coverage by the number of adults 15–49 in each region.

VCT is one of the many services where HIV services can be linked with other reproductive health services. To measure the extent of this linkage in practice, we asked whether family planning services or referral to family planning services are included as part of VCT services. Table 3 shows that, overall, family planning is linked to VCT services for about half of VCT clients.

Table 3. Availability of family planning services or referral at voluntary counseling and testing sites in 2005 by region

Region	Percent of countries offering family planning services or referral	Number of countries reporting
Caribbean	0%	1
East Asia and Pacific	100%	1
Eastern Europe and Central Asia	17%	8
Latin America	50%	14
North Africa and Middle East	40%	5
South-East Asia	44%	13
Sub-Saharan Africa	61%	27
All reporting countries	49%	69

Fig. 1. Number of people receiving voluntary counseling and testing in 2001, 2003, and 2005



Preventing mother-to-child transmission

The prevention of mother-to-child transmission (PMTCT) refers to services that counsel pregnant women about HIV, offer an HIV test, and provide prevention services to those who are HIV positive. Prevention services should include treatment with zidovudine, nevirapine, or other antiretroviral drugs and may also include breastfeeding counseling and supplemental feeding. Other services to prevent mother-to-child transmission include programs to prevent women of reproductive age from becoming infected with HIV, efforts to improve family planning programs to prevent unintended pregnancies, and ART for pregnant woman and mothers who are already HIV positive. This study refers only to the basic counseling, testing, treatment, and infant feeding program.

For all the countries responding to this study, 9.9 million women were offered PMTCT services. About 8.7 million (88%) million accepted an HIV test, and 348,000 received drugs to prevent the transmission of HIV to the baby.

Table 4 shows the estimated coverage in 2005. It is generally low in all regions. Many countries are expanding services rapidly while others are adjusting the way they provide PMTCT services. The challenges are different in each region. In South America, where prevalence is low, the challenge is to provide effective pre-test counseling and testing services for all women. Since few women are HIV positive, the total costs of treatment will not be substantial. In Africa, where prevalence is higher, good pre- and post-test counseling is important for prevention and for identifying those who need treatment. The costs of providing treatment and follow-up services can be substantial, although they may be offset by treatment savings when infections are averted. Attendance at antenatal clinics is low in some Asian countries, which can make reaching women for testing and counseling more difficult.

Table 4. Percent of pregnant women offered services for the prevention of mother-to-child transmission of HIV in 2005 by region

Region	Coverage (weighted average)	Number offered PMTCT	Number of countries	Annual number of births
Caribbean	49%	100 000	1	680 000
East Asia and Pacific	2%	410 000	1	17 500 000
Eastern Europe and Central Asia	25%	620 000	8	3 200 000
Latin America	51%	4 900 000	14	10 900 000
North Africa and Middle East	1%	27 000	5	5 300 000
South-East Asia	5%	1 900 000	13	46 900 000
Sub-Saharan Africa	10%	2 000 000	27	27 700 000
All reporting countries	11%	9 900 000	69	92 400 000
Estimate for all 94 countries		12 000 000	94	112 000 000

Note: Regional coverage is estimated as the weighted average of coverage for the countries included in this study reporting data. The country values are weighted by the estimated number of births in 2005. The annual number of births is for all countries in the region. The number of births is based on estimates from the United Nations Population Division as reported in: *World Population Prospects: The 2004 Revision*. New York: United Nations, 2005. The estimated number of women offered PMTCT services for all 94 countries is calculated by multiplying the regional coverage by the annual number of births in each region.

Table 5 shows the percentage of women using each type of PMTCT service. Overall, 88% of women offered PMTCT services accepted at least HIV counseling and testing. The differences by region may reflect, to some extent, differences in approaches. In Latin America, HIV testing is more likely to be offered as a routine antenatal care service or as an "opt-out" test, whereas in sub-Saharan Africa is it more likely to be offered as an option to which the woman must consent (opt-in approach). Only 72% of those found to be HIV positive received ART to prevent the transmission of HIV from mother to child. Thus, about 60% of those women offered PMTCT services who needed ART actually received it.

Counseling on breastfeeding options is common everywhere except in the Caribbean and sub-Saharan Africa. Infant formula is offered in some regions, but it is not part of most programs in sub-Saharan Africa. Only 2% of women found to be HIV positive at PMTCT sites received ART to treat their infection through those sites. The percentage of HIV-positive pregnant women actually needing ART may be in the range of 15–25%. Some of these women may be receiving ART through other clinics.

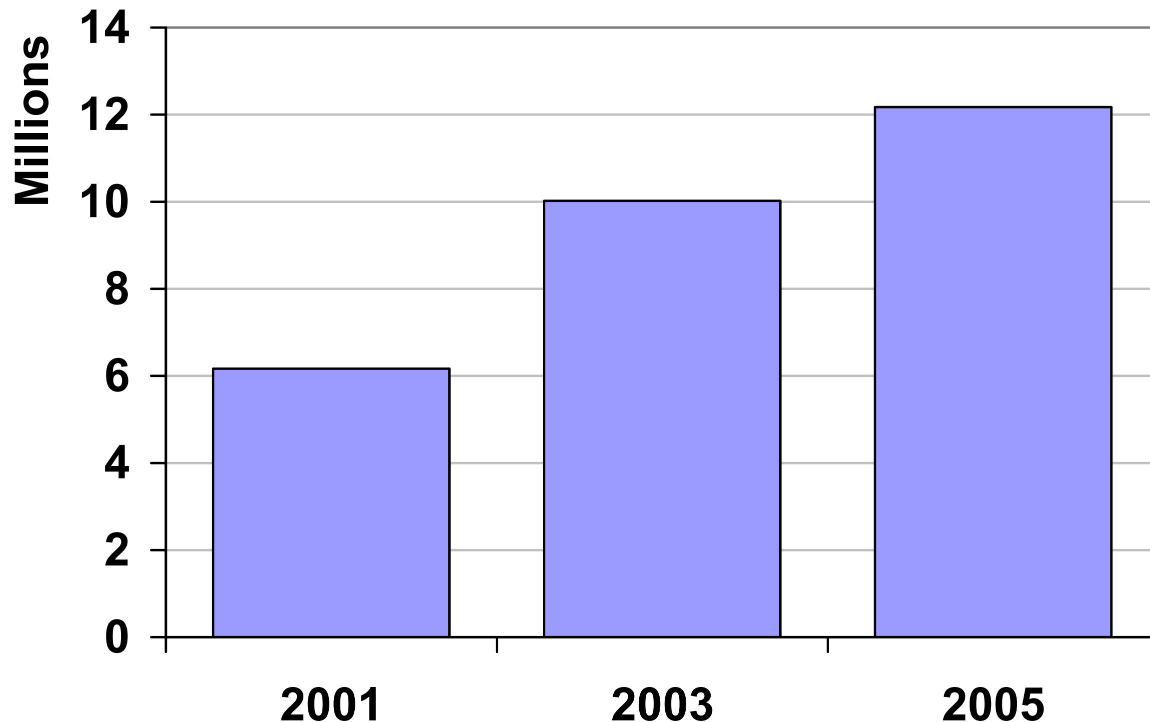
Most countries in sub-Saharan Africa reported that family planning services are offered at PMTCT sites. About two-thirds of countries in Eastern Europe and Central Asia, Latin America, and South-East Asia also reported that family planning services are available at PMTCT sites.

Table 5. Availability and acceptance of PMTCT services in 2005 by type of service and region

Region	Caribbean	East Asia and Pacific	Eastern Europe and Central Asia	Latin America	North Africa and Middle East	South-East Asia	Sub-Saharan Africa	All reporting Countries
Percent of those offered PMTCT services accepting pre-test counseling	90%	100%	99%	96%	98%	91%	68%	90%
Percent of those offered PMTCT services accepting HIV testing	73%	71%	98%	98%	36%	85%	69%	88%
Percent of those testing HIV positive receiving ART to prevent transmission to the child	37%	100%	55%	59%	51%	69%	73%	72%
Percent of those testing HIV positive receiving counseling on breastfeeding options	7%	70%	85%	89%	66%	59%	7%	13%
Percent of those testing HIV positive receiving formula for infant feeding	3%	56%	31%	89%	57%	43%	1%	6%
Percent of those testing HIV positive receiving ART to treat the mother's infection	44%	0%	2%	36%	47%	6%	1%	2%
Percent of countries that offer family planning as part of PMTCT services	0%	0%	63%	62%	67%	67%	96%	76%

Figure 2 shows the estimated number of women offered PMTCT services in 2001, 2003, and 2005. Coverage has increased substantially, doubling from 6 million to 12 million between 2001 and 2005.

Fig. 2. Number of pregnant women offered PMTCT services in 2001, 2003, and 2005



Condoms

The use of condoms to prevent HIV transmission through sexual contact has been a primary prevention strategy for most countries. Condom promotion and distribution programs have been conducted nationwide in many countries for a number of years. The countries included in this study reported distributing almost 9 billion condoms in the past year. Of these, approximately 3.6 billion are used primarily for family planning rather than disease prevention.[9]

Statistics on the number of condoms distributed are generally available from government and NGO sources in most countries. This represents most condom distribution in low-income countries where commercial sales are small. In middle-income countries, the majority of condoms may be distributed through commercial outlets. Information is not generally available on commercial condom sales, outside of social marketing programs. Thus, data on total condom distribution are incomplete in the middle-income countries, particularly countries in Eastern Europe and Latin America.

Estimates of coverage levels for condoms are uncertain because of limited knowledge of the number of risky sex acts. In this report, we define a risky sex act as one with a commercial or casual partner or with a spouse if at least one partner has contacts with outside partners. This includes all commercial sex acts, contacts involving casual partners, most contacts between men who have sex with men, and spousal contacts when one partner has outside contacts. The number of risky acts can be estimated from survey data on sexual behavior,

[9] Ross, J., J. Stover, and D. Adelaja. 2005. *Profiles for Family Planning and Reproductive Health Programs: 116 Countries, 2nd Edition*. Glastonbury, CT: Futures Group.

but the result depends on respondents reporting their behavior accurately. Therefore, there is a high degree of uncertainty in the estimates provided in Table 6, but they do give some idea of the level of coverage of condom use.

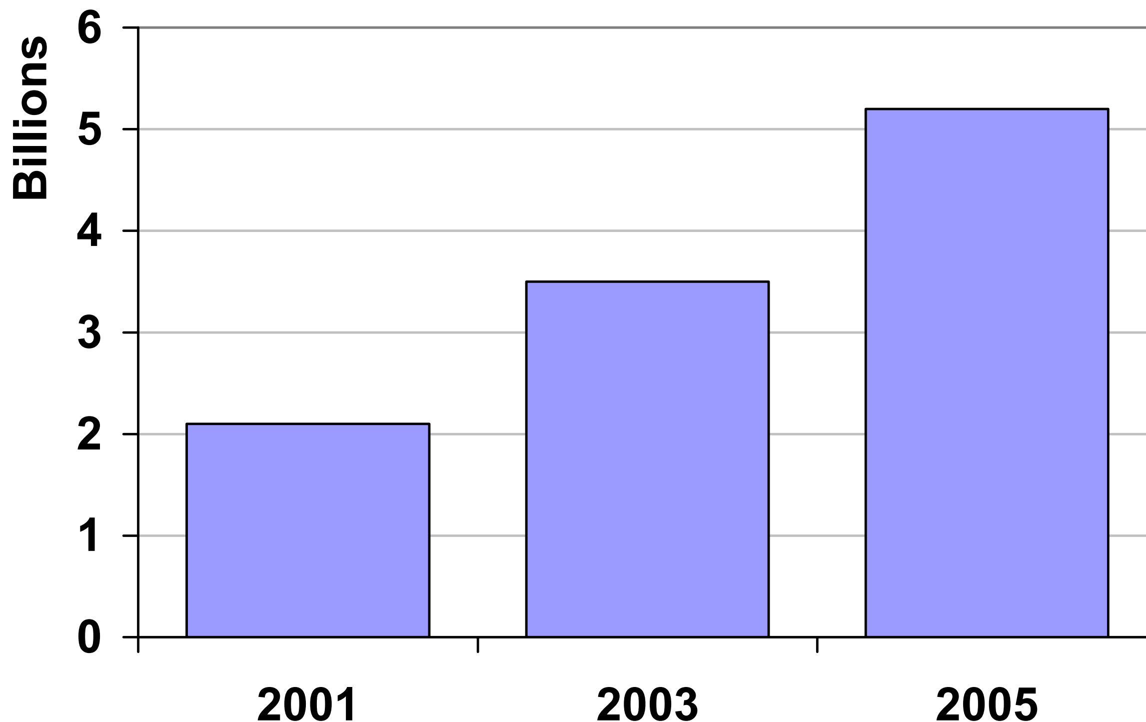
Table 6. Condoms distributed and percent of risky sex acts protected by publicly distributed condoms in 2005 according to region

Region	Coverage (weighted average)	Number of condoms distributed for HIV prevention (millions)	Number of countries	Annual number of risky sex acts (millions)
Caribbean	7%	20	3	400
East Asia and Pacific	78%	3 300	1	4 100
Eastern Europe and Central Asia	2%	30	8	1 500
Latin America	3%	200	15	5 000
North Africa and Middle East	-	-	5	1 100
South-East Asia	10%	600	13	6 700
Sub-Saharan Africa	21%	1 000	35	5 200
All reporting countries	21%	5 150	80	24 000
Estimate for all 94 countries		5 200		

Note: Regional coverage is estimated as the weighted average of coverage for the countries included in this study reporting data. The country values are weighted by the estimated number of risky sex acts in 2005. The number of risky sex acts is estimated from the percentage of men and women engaging in commercial or casual sex as reported in national behavioral surveys. The estimated number of condoms distributed for all 94 countries is calculated by multiplying the regional coverage by the annual number of risky sex acts in each region. The number of countries reporting is slightly higher for condoms because this table includes condom distribution data from 2004 contraceptive social marketing statistics.

It can be difficult to see trends in condom distribution over the short term since most public sector programs report distributions from a central warehouse, not actual use or distributions to users. Thus, there can be wide fluctuations from year to year, particularly for individual countries. Nevertheless, the aggregate data reported here do show significant increases in public sector distribution of condoms for HIV prevention. Figure 3 shows that public sector condom distribution has risen substantially from 2.1 billion in 2001 to 5.2 billion in 2005.

Fig. 3. Number of public sector condoms distributed for HIV prevention protection in 2001, 2003, and 2005



Harm reduction

Injecting drug use is a major factor in the transmission of HIV in some countries, particularly in Europe, Asia, and some countries in Latin America. There are a variety of approaches to reducing transmission through unsafe needle sharing. In this study, we focus on three major harm reduction interventions:

- **Risk reduction information, education, and counseling**. HIV and injecting drug use risk reduction advice/counseling, including professional and peer outreach.
- **Needle and syringe programs**. Needle and syringe programs increasing access to sterile injecting equipment (through exchange, distribution, or vending) or decontamination programs.
- **Drug substitution treatment**. Drug substitution treatment, including the use of methadone, buprenorphine, or other opioid agonists.

Few countries have reported on harm reduction programs. Countries do not report for a number of reasons: injecting drug use is not practiced by significant numbers of people, no data are available on treatment programs or the number of injecting drug users, or there is no program for injecting drug users. Table 7 shows that for those countries that did report on harm reduction programs, coverage is very low, about 8% overall. This is likely to be an over-estimate since countries without any programs may be less likely to report.

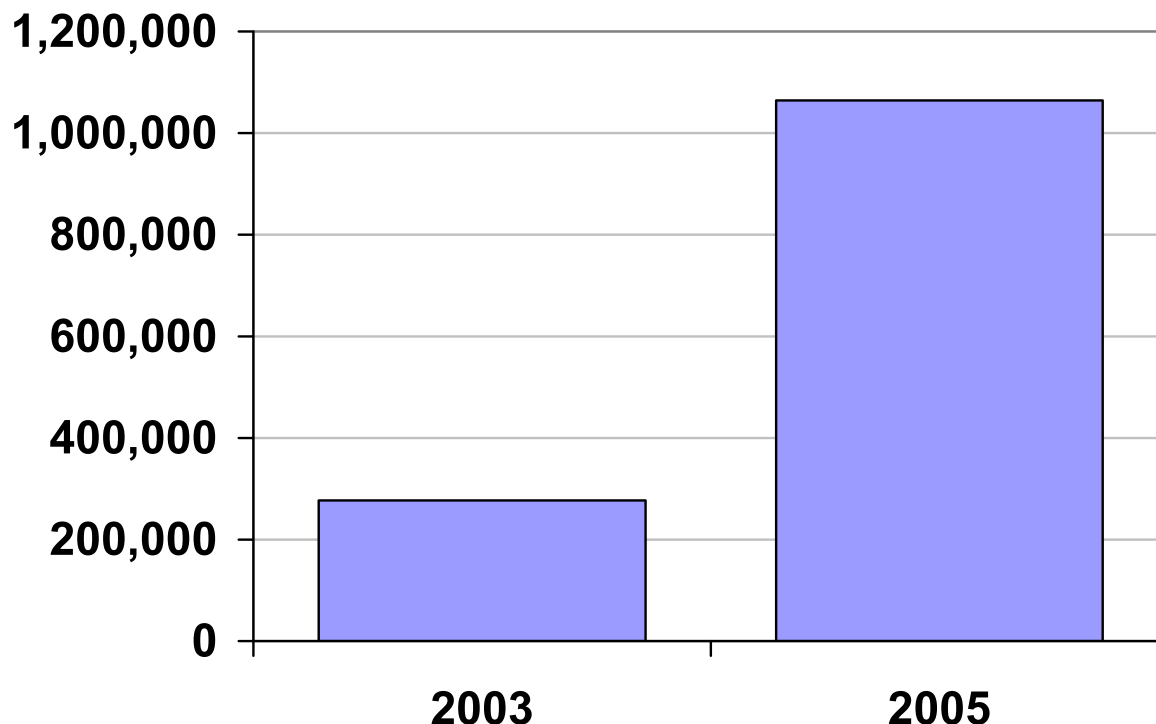
Table 7. Percent of injecting drug users covered by harm reduction programs in 2005 according to region

Region	Coverage (weighted average)	Numbers of injecting drug users receiving services			Number of countries	Estimated number of injecting drug users
		Risk reduction information, education, and communication	Needle and syringe exchange	Drug substitution		
Caribbean	100%	1 600	-	-	1	1 600
East Asia and Pacific	8%	200 000	7 500	4 800	1	2 500 000
Eastern Europe and Central Asia	9%	365 000	277 000	1 900	8	4 000 000
Latin America	93%	15 000	1 200	-	3	210 000
North Africa and Middle East	2%	800	3 800	9 300	3	210 000
South-East Asia	3%	174 000	86 000	16 000	7	5 900 000
Sub-Saharan Africa	59%	100 000	-	-	3	180 000
Total for all reporting countries	**8%**	**860 000**	**370 000**	**32 000**	**26**	**13 000 000**
Estimate for all 94 countries		**1 100 000**	**400 000**	**33 000**		

Note: Regional coverage is estimated as the weighted average of coverage for the countries included in this study reporting data. The country values are weighted by the estimated number of injecting drug users in 2005. National estimates of the number of injecting drug users were used, when provided, otherwise regional averages for the percentage of adults injecting drugs were applied to the number of adults in each country to estimate the numbers.

These data indicate a substantial rise in the number of injecting drug users reached with at least some services, from less than 200,000 in 2003 to over 1 million in 2005, as shown in Figure 4.

Fig. 4. Number of injecting drug users reached with at least some harm reduction services in 2003 and 2005



Programs for vulnerable populations

Vulnerable populations are those that have a special risk for HIV infection due to their circumstances. These may include populations such as truck drivers, military personnel, and migrants. Injecting drug users are discussed above. This section focuses on four additional populations of special interest: sex workers, men who have sex with men, prisoners, and children living on the streets. Countries were asked to provide estimates of the number of people in each population and the percentage that are covered with prevention services. In most cases, the coverage figures are not based on service statistics, but on the judgment of those interviewed so they are more uncertain than other coverage estimates in this report. Only about half of the countries in this study provided data on these special populations and in some regions the number of countries reporting is very low or zero. As a result, these estimates have a high degree of uncertainty when used to represent the entire region. Recent work by the UNAIDS Reference Group on Estimates, Models, and Projections reviewed the available evidence on risk group size and presents regional averages that countries may use until they have conducted their own surveys.[10]

Tables 8 through 11 present the information on sex workers, men who have sex with men, prisoners, and children living on the streets. In each case, estimates of the size of the population in each region are based on applying ratios from those countries that did provide data to the population of the whole region. These tables refer to prevention programs reaching the target population through some kind of outreach program, that is, to populations directly reached through personal communications. The number affected by national policies, such as 100% condom use in brothels, or mass media programs may be much higher.

[10] See *Sex Transm Infect 82* (Suppl 3) (2006) for articles on estimates of population sizes for sex workers, clients of sex workers, men who have sex with men, and injecting drug users.

Only about half of the countries reported information on services for special populations. Coverage levels calculated from these data have been applied to non-reporting countries to estimate the total number receiving services. However, countries that did not report may be less likely to have services. Thus, these estimates may over-state the true amount of services provided.

These data indicate that the percentage of sex workers reached through outreach prevention programs doubled from 2003 to 2005, as shown in Figure 5, and that the coverage of men who have sex with men, prisoners, and street children remained about the same, as shown in Figures 6, 7, and 8. About one-third of sex workers and prisoners are now reached with prevention programs, but only 9% of men who have sex with men and 16% of street children.

Table 8. Percent of sex workers covered by outreach prevention programs in 2005 according to region

Region	Coverage (weighted average)	Number of sex workers reached	Number of countries	Estimated number of sex workers
Caribbean	30%	21 000	1	260 000
East Asia and Pacific	38%	2 250 000	1	6 000 000
Eastern Europe and Central Asia	8%	14 200	7	580 000
Latin America	35%	350 000	12	1 900 000
North Africa and Middle East	19%	600	2	28 000
South-East Asia	20%	260 000	12	1 600 000
Sub-Saharan Africa	23%	98 000	14	1 400 000
Total for reporting countries	33%	3 000 000	49	9 000 000
Estimate for all 94 countries		3 700 000		11 700 000

Note: Regional coverage is estimated as the weighted average of coverage for the countries included in this study reporting data. The country values are weighted by the estimated number of sex workers in 2005. The estimated number of sex workers in the final column includes all 94 countries. For countries that did not provide estimates of the number of sex workers estimates were made by applying the regional average of the percentage of the adult population 15–49 as calculated from the countries providing data.

Fig. 5. Percentage of sex workers reached with outreach programs in 2003 and 2005

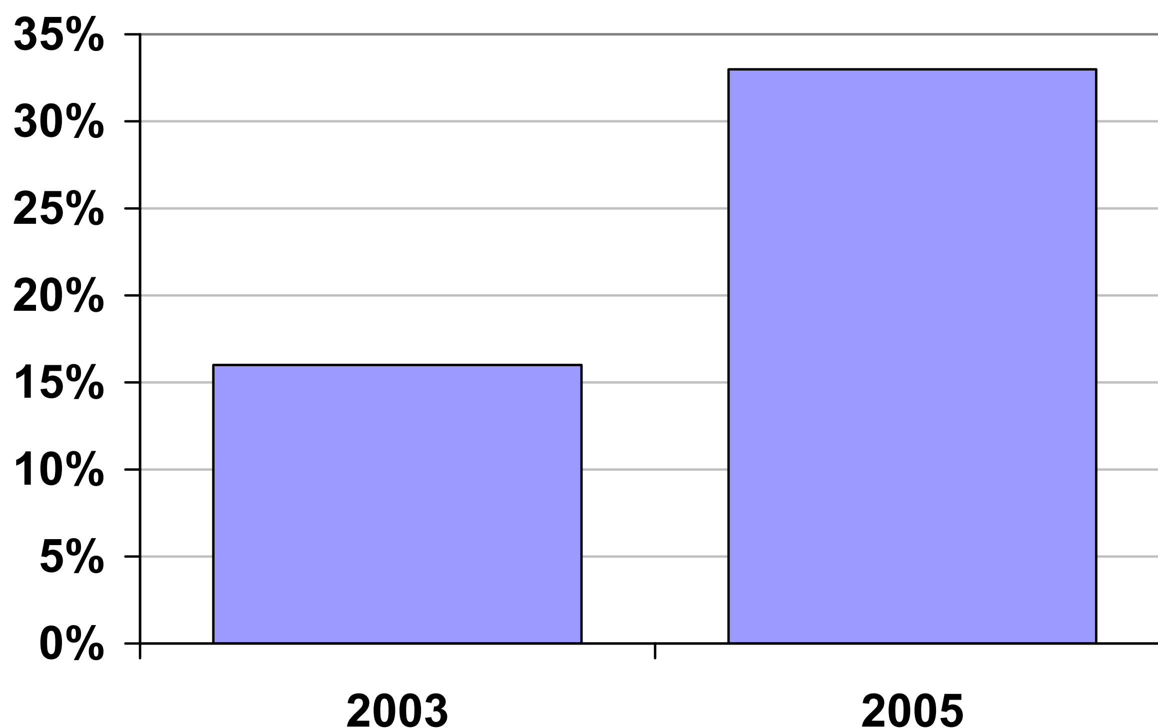


Table 9. Percent of men who have sex with men covered by prevention programs in 2005 according to region

Region	Coverage (weighted average)	Number of men who have sex with men reached	Number of countries	Estimated number of men who have sex with men
Caribbean	10%	65 000	3	900 000
East Asia and Pacific	8%	300 000	1	4 000 000
Eastern Europe and Central Asia	1%	30 000	7	2 900 000
Latin America	27%	880 000	13	3 800 000
North Africa and Middle East	1%	500	4	290 000
South-East Asia	2%	120 000	11	6 300 000
Sub-Saharan Africa	18%	1 700	10	580 000
Total for reporting countries	9%	1 400 000	49	15 300 000
Estimate for all 94 countries		1 700 000		18 700 000

Note: Regional coverage is estimated as the weighted average of coverage for the countries included in this study reporting data. The country values are weighted by the estimated number of men who have sex with men in 2005. The estimated number of men who have sex with men in the final column includes all 94 countries. For countries that did not provide estimates in 2005, but did provide them in 2003, the 2003 estimates were used. For countries that did not provide estimates of the number of men who have sex with men, estimates were made by applying the regional average of the percentage of the adult population 15–49 as calculated from the countries providing data.

Fig. 6. Percentage of men who have sex with men reached with outreach programs in 2003 and 2005

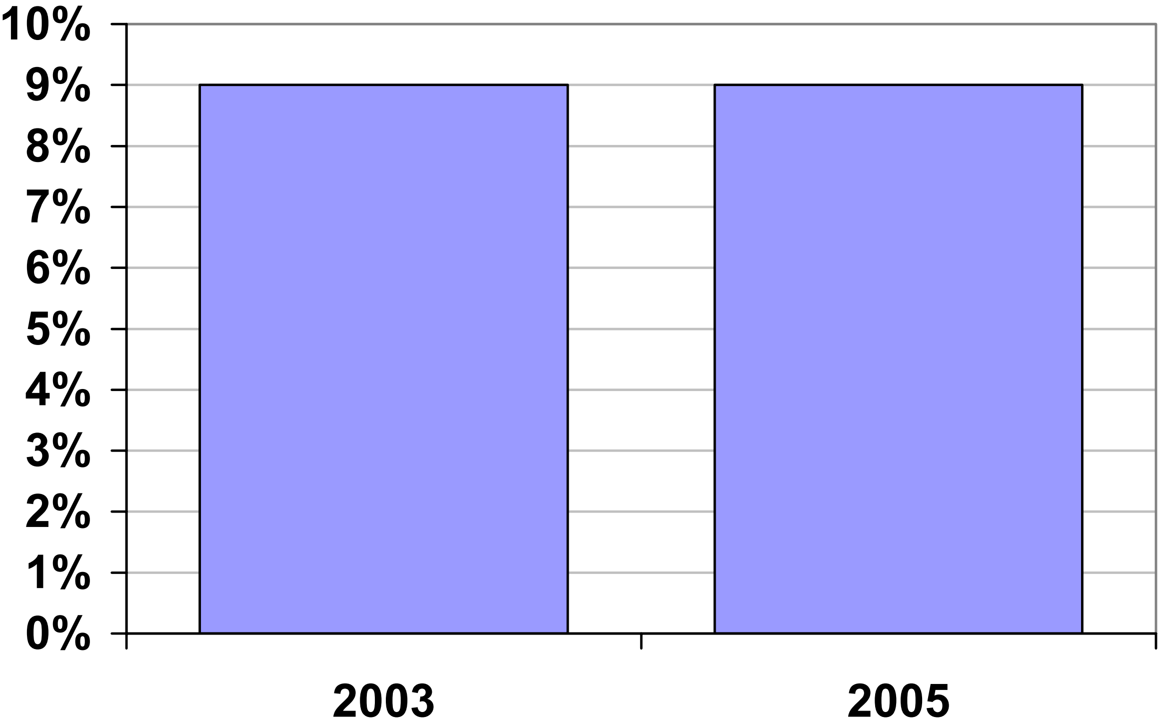
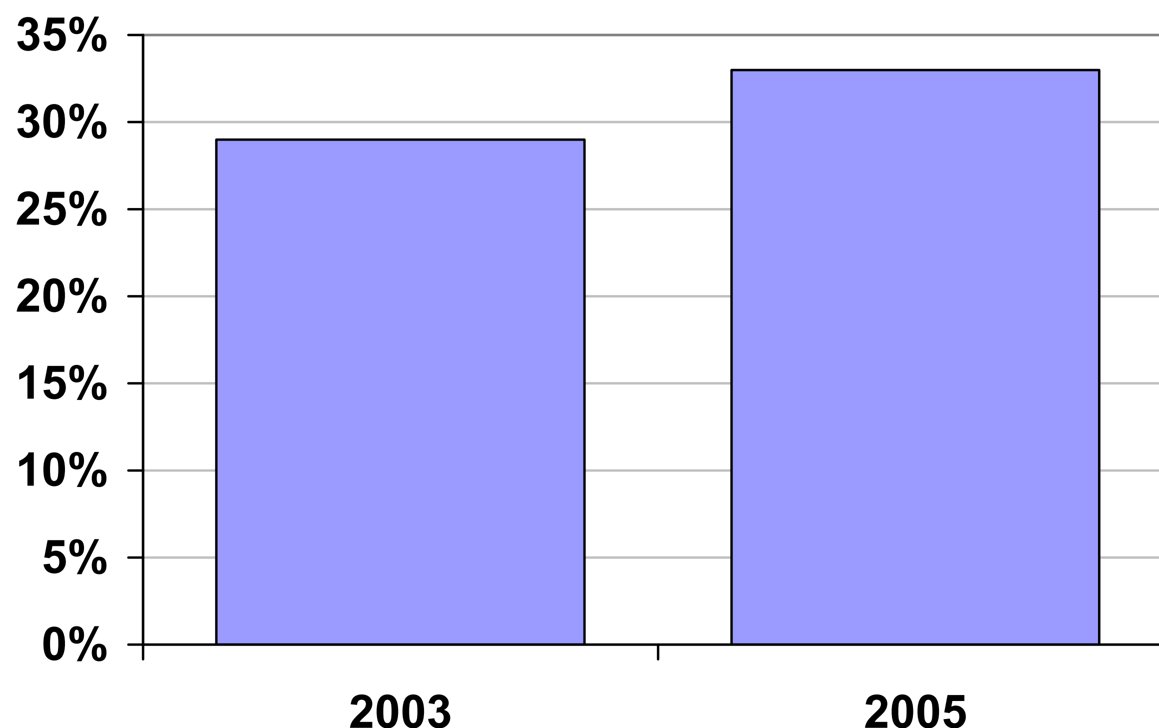


Table 10. Percent of male prisoners covered by prevention programs in 2005 according to region

Region	Coverage (weighted average)	Number of prisoners reached	Number of countries	Estimated number of prisoners
Caribbean	44%	9 500	3	49 000
East Asia and Pacific			1	2 500 000
Eastern Europe and Central Asia	23%	280 000	9	1 200 000
Latin America	46%	240 000	14	700 000
North Africa and Middle East	24%	34 000	4	350 000
South-East Asia	31%	220 000	10	1 400 000
Sub-Saharan Africa	46%	350 000	27	980 000
Total for reporting countries	34%	1 100 000	68	6 200 000
Total for all 94 countries		1 600 000		7 200 000

Note: Regional coverage is estimated as the weighted average of coverage for the countries included in this study reporting data. The country values are weighted by the estimated number of prisoners in 2005. The estimated number of prisoners in the final column includes all 94 countries. For countries that did not provide estimates of the number of prisoners, estimates were made by applying the regional average of the percentage of the adult population 15–49 as calculated from the countries providing data.

Fig. 7. Percentage of male prisoners reached with prevention programs in 2003 and 2005



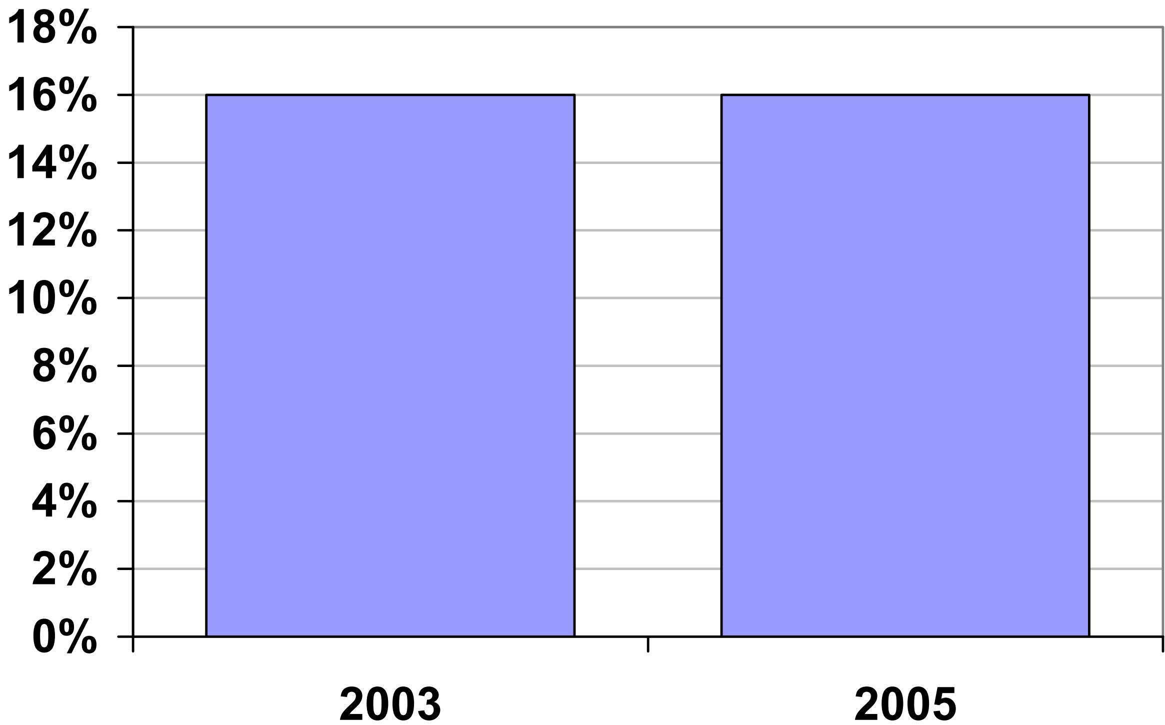
Note: The 2003 coverage figure has been recalculated based on the number of prisoners reached in 2003 and the new estimate of the number of prisoners in 2005.

Table 11. Percent of children living on the streets covered by prevention programs in 2005 according to region

Region	Coverage (weighted average)	Number of street children reached	Number of countries	Estimated number of street children
Caribbean	12%	24 700	4	240 000
East Asia and Pacific	10%	50 000	1	500 000
Eastern Europe and Central Asia	65%	30 100	4	1 200 000
Latin America	4%	5 700	10	280 000
North Africa and Middle East	18%	6 500	4	89 000
South-East Asia	26%	130 000	12	630 000
Sub-Saharan Africa	15%	174 000	26	2 200 000
Total for reporting countries	**16%**	**410 000**	**61**	**3 000 000**
Estimate for all 94 countries		1 400 000		5 200 000

Note: Regional coverage is estimated as the weighted average of coverage for the countries included in this study reporting data. The country values are weighted by the estimated number of street children in 2005. The estimated number of street children includes all 94 countries. For countries that did not provide estimates of the number of street children, estimates were made by applying the regional average of the ratio of the number of street children to the number of all children 0–14 as calculated from the countries providing data.

Fig. 8. Percentage of children living on the streets reached with prevention programs in 2003 and 2005



Note: The 2003 coverage figure has been recalculated based on the number of street children reached in 2003 and the new estimate of the number of street children in 2005.

Education

A large portion of new HIV infections occur among youth. One key to winning the battle against HIV is supporting young people to protect themselves from infection. Programs for youth generally focus on providing knowledge and skills to protect themselves by remaining abstinent until marriage, delaying sexual debut, having only one faithful partner, or consistently using condoms. Information and support can be provided to youth in a number of ways, including peer counseling, group activities, community leadership, parental involvement, mass media, and school-based education. Most of these activities are dispersed across many community groups and are difficult to measure. This report focuses on school-based education as one essential service that is easier to measure. Country respondents were asked whether AIDS education is a formal part of the primary and secondary school curricula. They were also asked to estimate the percentage of students that are exposed to AIDS education in the schools. Tables 12 and 13 and Figure 9 present the findings. More countries now include AIDS in their primary curriculum (73%) than in 2003, but the estimated percentage of primary students receiving AIDS education is only 24%. Coverage is higher for secondary students (80%), about the same as in 2003.

Table 12. Coverage of AIDS education in primary schools in 2005 according to region

Region	Percent of countries where AIDS is part of primary school curriculum	Estimated percent of primary students receiving AIDS education	Number of countries	Number of primary school students (thousands)
Caribbean	0%	3%	1	4 000
East Asia and Pacific	100%	8%	1	134 000
Eastern Europe and Central Asia	63%	17%	8	21 000
Latin America	83%	35%	12	79 000
North Africa and Middle East	20%	24%	5	27 000
South-East Asia	50%	32%	12	270 000
Sub-Saharan Africa	89%	46%	28	105 000
Total for reporting countries	73%	24%	67	355 000
Estimate for all 94 countries				640 000

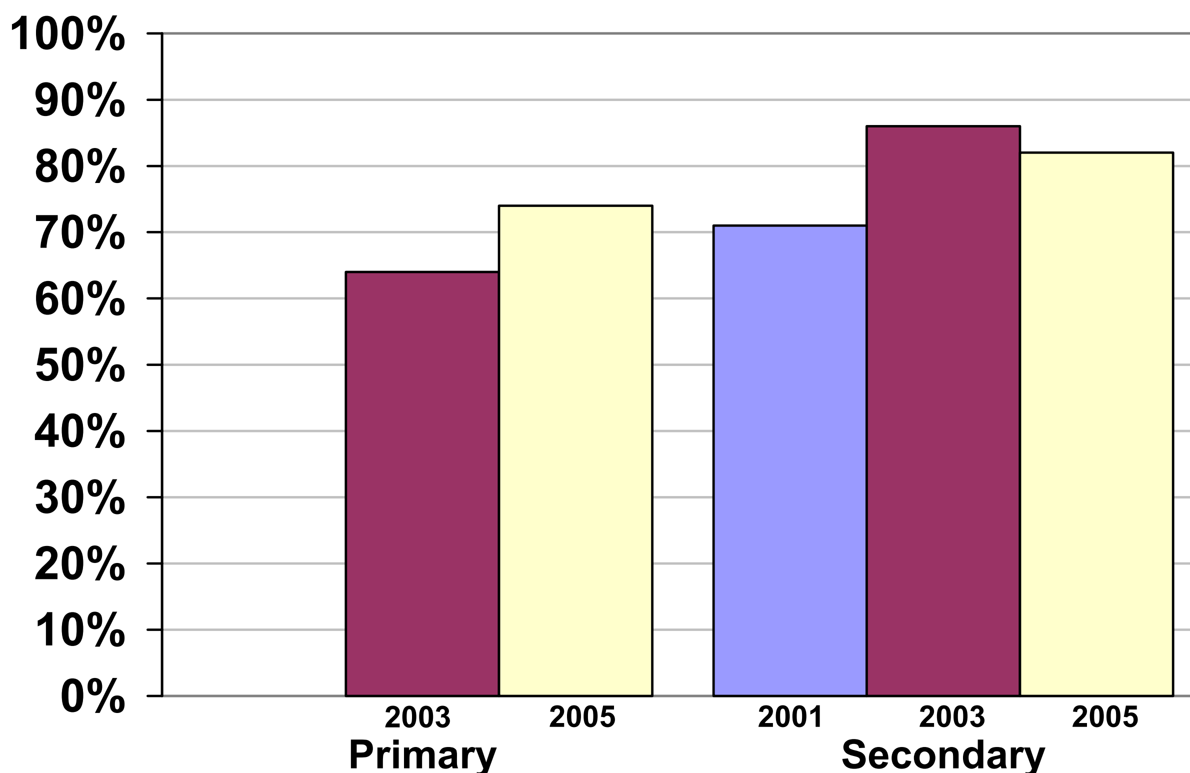
Note: Estimates of coverage are based on the weighted average of coverage for the countries included. The country values are weighted by the number of primary students.

Table 13. Coverage of AIDS education in secondary schools in 2005 according to region

Region	Percent of countries where AIDS is part of secondary school curriculum	Estimated percent of secondary students receiving AIDS education	Number of countries	Number of secondary school students (thousands)
Caribbean	0%	70%	1	3 200
East Asia and Pacific	100%	8%	1	92 000
Eastern Europe and Central Asia	75%	54%	8	24 000
Latin America	83%	53%	12	54 000
North Africa and Middle East	60%	48%	5	21 000
South-East Asia	92%	65%	12	133 000
Sub-Saharan Africa	78%	75%	27	32 000
Total for reporting countries	80%	44%	66	302 000
Estimate for all 94 countries				360 000

Note: Estimates of coverage are based on the weighted average of coverage for the countries included. The country values are weighted by the number of secondary students.

Fig. 9. Coverage of AIDS education in primary and secondary schools in 2001, 2003, and 2005



Home-based care

Home-based care is external support to chronically ill individuals and their families. It may include counseling, medical care, supplies for medical care, clothing, extra food, help with household work, companionship, financial support, legal services, training for care-givers, school fees, shelter, and other medical or social services.

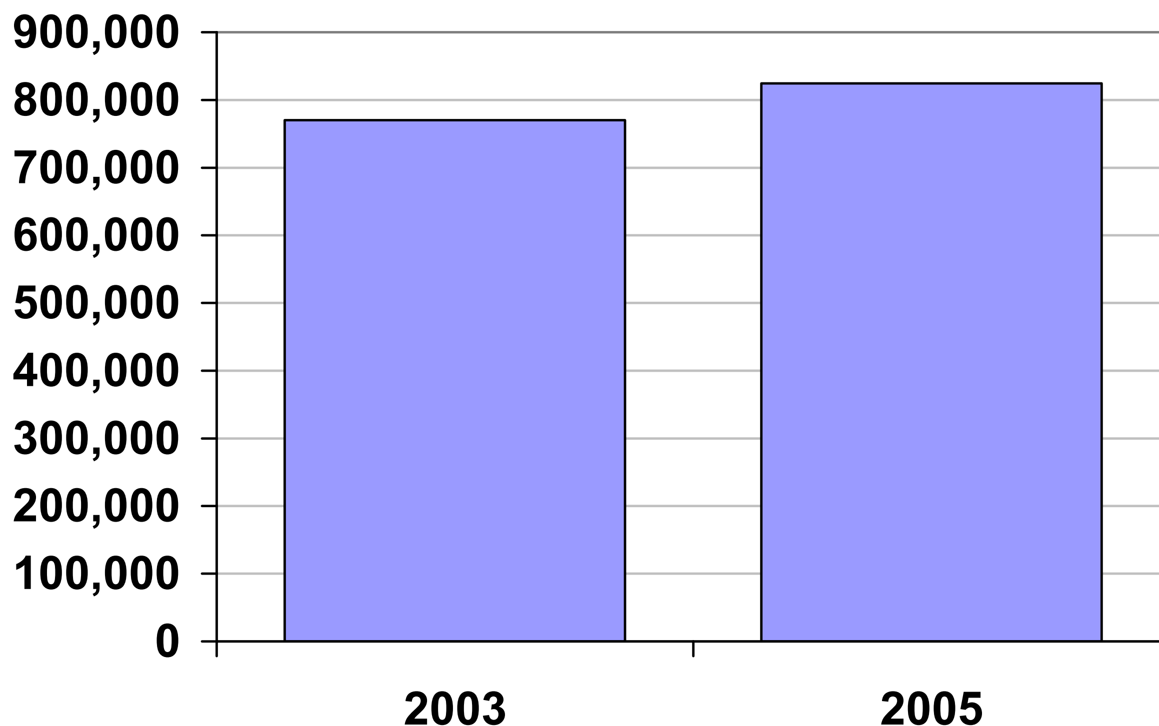
In many programs, home-based care is not centralized, but is provided by a number of community-based groups. As a result, service statistics available at the central level may under-estimate the actual amount of care provided. Estimates of the number of people needing home-based care are also uncertain. Not everyone infected with HIV needs home-based care, but most will eventually need some of the components of home-based care during the course of their infection. Table 14 shows the need for home-based care estimated as those people who are in the last two years of life if they do not receive ART. Overall, coverage is low at only 14%. The number receiving home-based care has increased slightly from 2003, as shown in Figure 10.

Table 14. Percent of those in need receiving home-based care in 2005 according to region

Region	Coverage (weighted average)	Number receiving home-based care	Number of countries	Estimated need for home-based care
Caribbean	24%	3 200	1	55 000
East Asia and Pacific	65%	40 000	1	62 000
Eastern Europe and Central Asia	4%	5 700	6	130 000
Latin America	22%	6 300	4	120 000
North Africa and Middle East	2%	1 400	3	75 000
South-East Asia	9%	114 000	7	1 300 000
Sub-Saharan Africa	15%	450 000	24	4 000 000
Total for reporting countries	14%	620 000	46	4 500 000
Estimate for all 94 countries		830 000		5 800 000

Note: Regional coverage is estimated as the weighted average of coverage for the countries included in this study reporting data. The country values are weighted by the estimated number needing home-based care in 2005. The estimated number of people needing home-based care in the final column includes all 94 countries.

Fig. 10. Number receiving home-based care in 2003 and 2005



Treatment of opportunistic infections

Care and treatment is a broad topic that includes not only care for those infected with HIV, but also support for their families and communities to cope with the consequences of HIV/AIDS and prevent further transmission. WHO and UNAIDS have defined a number of care and treatment needs and categorized them into packages of essential, intermediate, and advanced services (Box 4). Essential activities represent the basic services that all health systems should strive to provide. The intermediate and advanced activities represent more advanced levels of care that may be more costly and require a more developed health infrastructure.

For this assessment, we asked national experts to rate the type of care available to the majority of the population in the capital city, in other urban areas, and in rural areas. Table 15 shows the distribution of regional populations by the type of care most available.

Box 4. HIV/AIDS care and support activities according to need, complexity, and cost

Essential care package

- HIV voluntary counseling and testing
- HIV screening of blood for transfusion
- Psychosocial support for people living with HIV and their families
- Palliative care
- Treatment of common HIV-related infections: pneumonia, diarrhea, oral thrush, vaginal candidiasis, and pulmonary tuberculosis
- Nutritional care
- Prevention of sexually transmitted infections (including by using condoms) and care
- Family planning
- Preventing mother-to-child transmission of HIV
- Cotrimoxazole prophylaxis among HIV-infected people
- Universal precautions
- Health policy activities, such as regulating care delivery and the supply of drugs
- Recognizing and facilitating community activities that mitigate the impact of HIV infection (including legal structures against stigma and discrimination)

Intermediate: care and support activities of intermediate complexity and/or cost

The essential care package plus:

- Intensified case finding and treatment for tuberculosis, including for smear negative and disseminated tuberculosis among HIV-infected people
- Preventive therapy for tuberculosis among HIV-infected people
- Systemic antifungal agents for systemic mycosis (such as cryptococcosis)
- Treatment of HIV-associated malignancies: Kaposi's sarcoma, lymphoma, and cervical cancer
- Treatment of extensive herpes
- Post-exposure prophylaxis of occupational exposure to HIV and for rape
- Funding of community efforts that reduce the impact of HIV infection

Advanced: care and support activities of high complexity and/or cost

The essential care package and intermediate activities plus:

- Highly active antiretroviral therapy
- Diagnosis and treatment of HIV-related infections that are difficult to diagnose and/or expensive to treat, such as atypical mycobacterial infections, cytomegalovirus infection, multiresistant tuberculosis, and toxoplasmosis
- Advanced treatment of HIV-related malignancies
- Specific public services that reduce the economic and social effects of HIV infection

Source: adapted from *Key Elements in HIV/AIDS Care and Support* (WHO/UNAIDS, 2000).

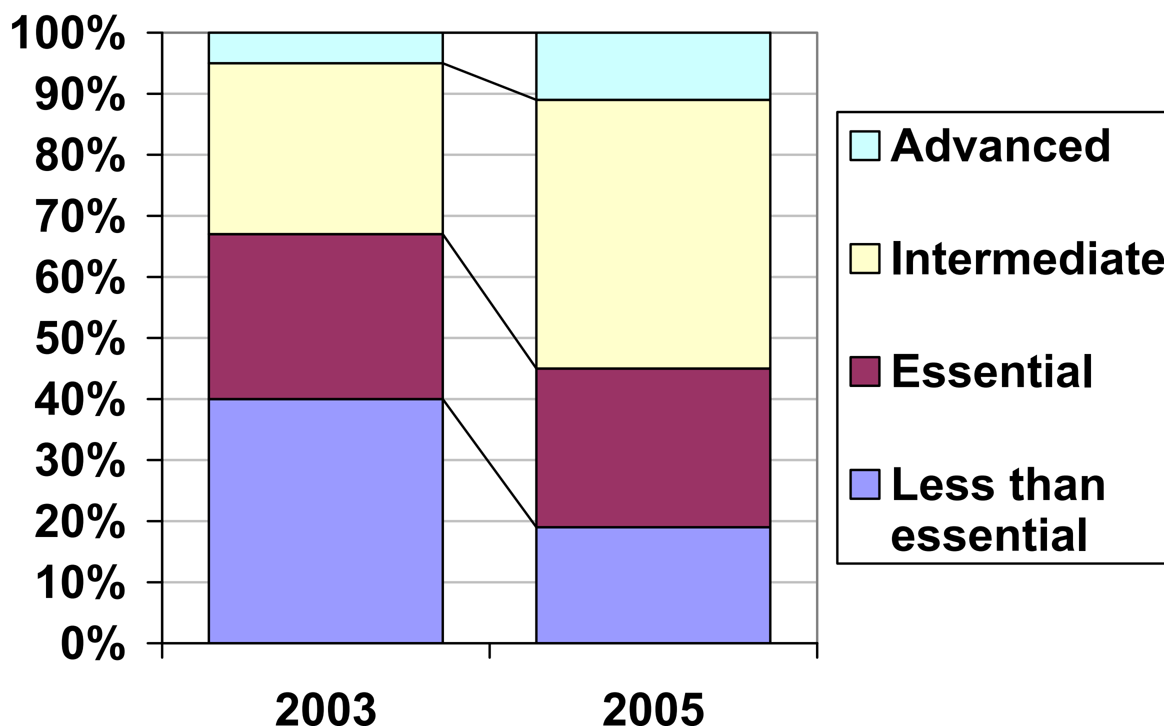
Table 15. HIV/AIDS care and treatment in 2005 according to region

Region	Distribution of population by standard of care available			
	Less than essential	Essential	Intermediate	Advanced
Caribbean	0%	39%	0%	61%
East Asia and Pacific	0%	0%	99%	1%
Eastern Europe and Central Asia	23%	22%	47%	8%
Latin America	5%	18%	17%	60%
North Africa and Middle East	0%	34%	49%	17%
South-East Asia	30%	47%	17%	6%
Sub-Saharan Africa	47%	26%	19%	8%
Total for reporting countries	19%	26%	44%	11%

Note: These estimates are based on the weighted average of coverage for the countries included in this study reporting data. Estimates of coverage in the capital city, urban areas, and rural areas are weighted by the total population in each region to calculate national averages. The country values are weighted by population size to determine regional averages. The estimates may not add to 100% in each region due to rounding.

About half of the people in Sub-Saharan Africa receive care that is less than the essential package described by WHO and UNAIDS. In other regions, most people receive essential or intermediate care. As shown in Figure 11, there has been a significant change since 2003 in the proportion receiving better levels of care.

Fig. 11. Distribution of provision of care and support activities by need, complexity, and cost in 2005



Prophylaxis against opportunistic infections

HIV infection weakens the immune system and makes people susceptible to infections that can normally be controlled when the immune system is healthy. For example, many people are infected with latent tuberculosis, but the immune system keeps this infection from developing into active tuberculosis. However, in people with advanced HIV infection, this protection is weakened and active tuberculosis occurs more frequently. Drugs can prevent some common HIV-related diseases. Cotrimoxazole can protect against many of the causes of pneumonia and diarrhea. Isoniazid can prevent active tuberculosis. These drugs are inexpensive and effective in HIV-positive individuals.

Prophylaxis against these common infections can extend life and improve the quality of life for many individuals. Prophylaxis is also cost-effective, since preventing these infections costs less than treating them. Prophylaxis is particularly effective for children and is currently recommended for all children born to HIV-positive mothers until their infection status can be confirmed, usually at 18 months of age, and all symptomatic HIV-positive children.[11] As Table 16 shows, in 2005, prophylaxis with cotrimoxazole was provided to a larger proportion of individuals who could benefit from it (26%) than in 2003 (4%). Isoniazid, however, is still provided to only a small proportion of those who could benefit from it.

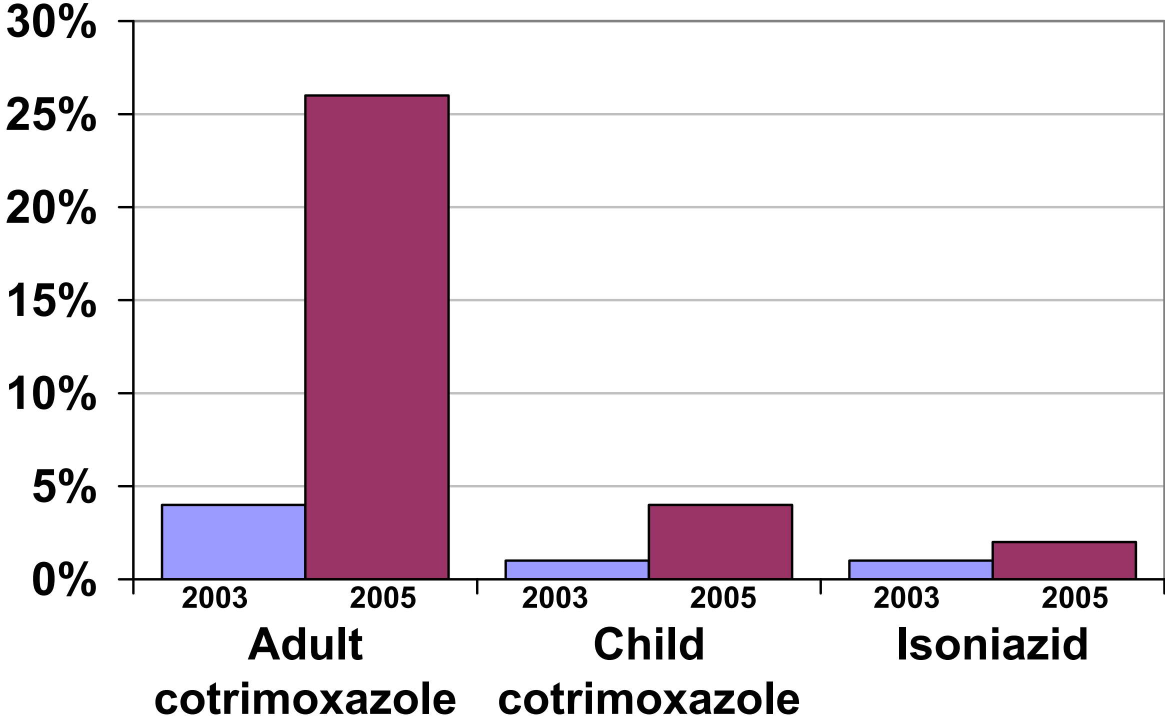
Table 16. Prophylaxis against opportunistic infections in 2005 by region

Region	Coverage of cotrimoxazole		Coverage of isoniazid	Number needing prophylaxis	
	Adults	Children	Adults	Adults	Children
Caribbean	46%	18%	14%	54 800	29 000
East Asia and Pacific	1%	NA	NA	62 000	14 300
Eastern Europe and Central Asia	3%	4%	5%	130 000	24 200
Latin America	59%	8%	17%	120 000	66 900
North Africa and Middle East	1%	NA	1%	75 000	52 900
South-East Asia	50%	4%	1%	1 350 000	326 000
Sub-Saharan Africa	29%	2%	1%	4 000 000	3 700 000
Total for reporting countries	**26%**	**2%**	**1%**	**4 500 000**	**946 000**
Estimate for all 94 countries				5 800 000	4 200 000

Note: Estimates of coverage are based on the weighted average of coverage for the countries included in this study reporting data. The country values are weighted by the estimated number of HIV-positive adults in 2005. The number needing prophylaxis is for all countries in each region and includes all children living with HIV and the adults living with HIV who are within two years of dying from AIDS without ART.

[11] WHO. 2006. *Guidelines on Co-Trimoxazole Prophylaxis for HIV-related Infections Among Children, Adolescents, and Adults in Resource-limited Settings: Recommendations for a Public Health Approach*. Geneva: WHO.

Fig. 12. Percentage of those in need receiving prophylaxis in 2003 and 2005



Antiretroviral therapy

Treatment with advanced antiretroviral therapy (ART) can extend life and enhance the quality of life for many people living with HIV. Antiretroviral drugs are generally available to most people who need them in affluent countries through government subsidies, private insurance, or personal resources. In the developing world, the availability of ART has been quite limited until recently because of the costs of the drugs and time to train providers and update facilities. In the past few years, more resources have become available and prices have dropped considerably, especially for the poorest countries.

Table 17 shows the estimated coverage of ART in 2005. It is highest in Latin America where treatment is available to most who seek it in many countries. Coverage is still low in the other regions. The total number of people receiving ART in all 66 countries reporting data is 940,000 in 2005. If the regional coverage figures from the reporting countries can be used to represent all countries in the region, then the total number of people receiving ART in these 94 countries is estimated at 1.1 million. These figures differ somewhat from those reported by WHO[12] because they refer to different months in 2005. Since many countries are rapidly scaling up coverage even a difference of a few months in reporting can lead to significantly different estimates of coverage.

Although coverage is still low in 2005, it has expanded rapidly in the past few years, from just 250,000 patients in 2001 and 410,000 in 2003. With a total need of around 6 million, coverage needs to continue to expand rapidly to provide access to all who need ART.

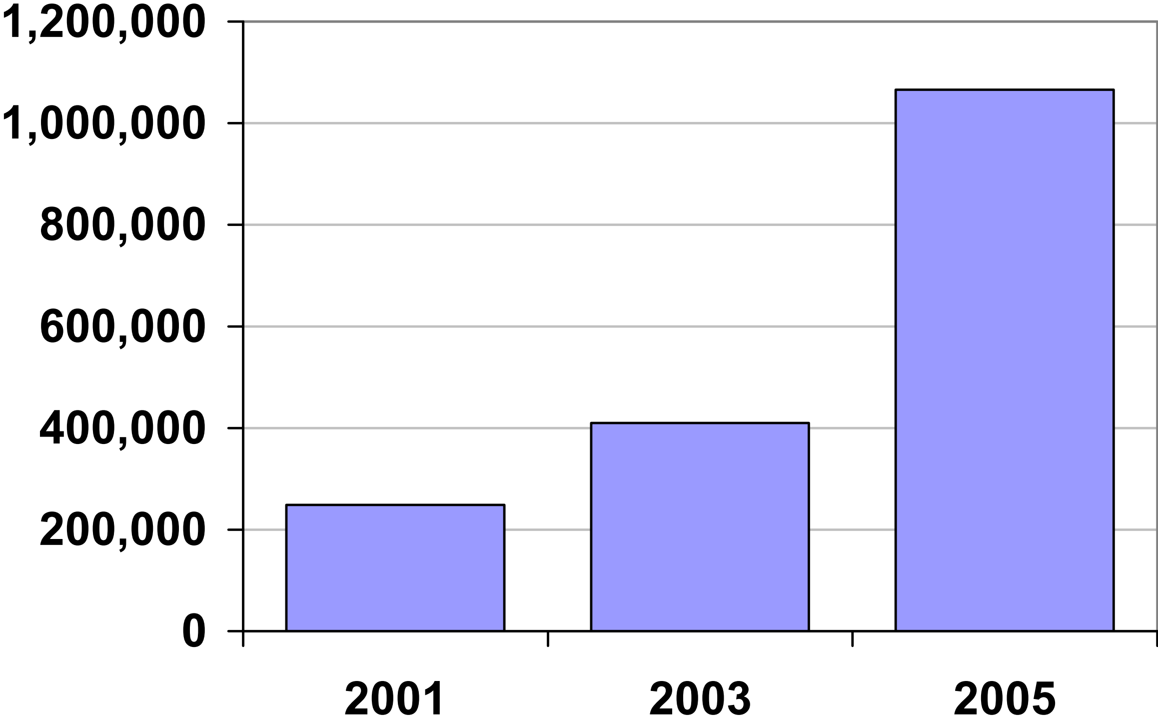
Table 17. Coverage for antiretroviral therapy for HIV in 2005 according to region

Region	Coverage (weighted average)	Number of patients receiving ART	Percent of ART patients that are female	Number of countries	Number of people needing ART
Caribbean	16%	2 200	46%	1	55 000
East Asia and Pacific	26%	16 000		1	62 000
Eastern Europe and Central Asia	9%	12 000	42%	8	139 000
Latin America	95%	276 000	8%	12	300 000
North Africa and Middle East	2%	1 800	15%	5	75 000
South-East Asia	10%	138 000	37%	13	1 400 000
Sub-Saharan Africa	15%	500 000	39%	27	4 000 000
Total for reporting countries	18%	950 000	37%	67	5 200 000
Estimated number for all 94 countries		1 100 000			6 000 000

Note: Regional coverage is estimated as the weighted average of coverage for the countries included in this study reporting data. The country values are weighted by the estimated number of HIV-positive adults needing ART in 2005. The estimated number needing services is for all countries in each region. The number needing ART is estimated as all adults living with HIV who are within two years of dying from AIDS without ART. The estimated need for all 94 countries is calculated as the regional coverage levels multiplied by the number needing ART in each region.

[12] WHO. 2006. *Progress on Global Access to HIV Antiretroviral Therapy: A Report on "3 by 5" and Beyond*. Geneva: WHO.

Fig. 13. Number of people receiving antiretroviral therapy in 2001, 2003, and 2005



4. CONCLUSIONS

This survey indicates that most people in low- and middle-income countries still do not have access to several key prevention, care, and treatment services, but that access has increased remarkably since 2001. Access is low for VCT, PMTCT, and outreach to vulnerable populations (including injecting drug users, men who have sex with men, sex workers, prisoners, and street children). Condom use is more widespread, but still covers only about one-fifth of risky sex acts. AIDS education in the schools is the most widespread prevention intervention reaching 73–80% of students. There are important regional differences that reflect different epidemic types and responses to the epidemic.

For care and treatment, coverage levels are still low, but have also shown important increases in the last few years. A larger proportion of patients are receiving more advanced care than in 2001. The most rapid increases have occurred in ART coverage, which has saved a large number of lives in the past few years. Even larger increases are needed in the future to bring the benefits of ART to most who need them. Unfortunately, the use of prophylaxis for adults and children is still not widespread, aside from the slight increase from 2003 in the use of cotrimoxazole for adults. This is troubling since prophylaxis with cotrimoxazole is effective and inexpensive. Recently, UNICEF has launched a major initiative to improve treatment for children that aims to raise awareness about the need for and benefits of child treatment. Although coverage levels are still low for most services, there is evidence of significant increases since 2001. The annual number of VCT clients has doubled, the number women offered PMTCT has increased by 83%, the number of people receiving ART has increased by 56%, and the number of secondary school students receiving AIDS education has nearly tripled.

A major development over the past few years is the rapid increase in the use of ART; use has quadrupled since 2001. The growth of coverage has also been rapid for some prevention services, especially VCT, PMTCT in sub-Saharan Africa, and outreach programs for injecting drug users and sex workers. Change has been much less for outreach to other vulnerable populations and the use of prophylaxis. Even more rapid growth will be required in all areas to achieve the goal of universal access to prevention and treatment in the near future.

Data collection systems have improved in the last few years. Most countries now have good statistics on the number of people receiving services such as VCT, PMTCT, and ART. The commitment to one monitoring and evaluation system for each country has helped to standardize indicators and get more resources into monitoring. Nonetheless, there are still some important gaps, especially in knowledge of the size of vulnerable population groups and the availability of key services for them. These data show us how well we are doing and where problems persist. As programs continue efforts to rapidly scale up services, it is important to also improve monitoring systems to provide more comprehensive coverage, better reporting, and more information on the quality of services.

5. ANNEX

Countries included in this study according to region

Caribbean
Bahamas
Barbados
Cuba
Dominican Republic
Haiti
Jamaica
Trinidad and Tobago

East Asia and Pacific
China

Eastern Europe and Central Asia
Albania
Belarus
Croatia
Kazakhstan
Latvia
Republic of Moldova
Romania
Russian Federation
Ukraine
Uzbekistan

Latin America
Argentina
Belize
Bolivia
Brazil
Chile
Colombia
Costa Rica
Ecuador
El Salvador
Guatemala
Guyana
Honduras
Mexico
Nicaragua
Panama
Paraguay
Peru
Uruguay
Venezuela

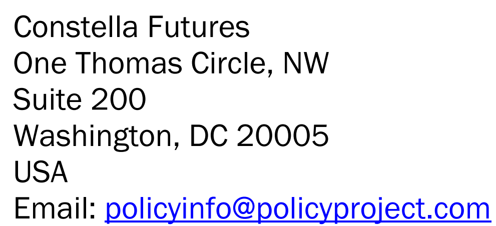
North Africa and Middle East
Egypt
Iran
Morocco
Oman
Sudan*
Tunisia

South-East Asia
Bangladesh
Bhutan
Cambodia
India
Indonesia
Lao People's Democratic Republic
Malaysia
Myanmar
Nepal
Pakistan
Philippines
Sri Lanka
Thailand
Viet Nam

Sub-Saharan Africa
Angola
Benin
Botswana
Burkina Faso
Burundi
Cameroon
Central African Republic
Chad
Congo
Côte d'Ivoire
Democratic Republic of Congo
Eritrea
Ethiopia
Gabon
Gambia
Ghana
Guinea
Kenya
Lesotho
Madagascar
Malawi
Mali
Mauritania
Mauritius
Mozambique
Namibia
Niger
Nigeria
Rwanda
Senegal
South Africa
Swaziland
Tanzania, United Republic of
Togo
Uganda
Zambia
Zimbabwe

Note: Countries listed in *italics* are included in the estimates for all 94 countries, but did not provide data for this survey. *Data were collected separately for North Sudan and South Sudan, but are presented together here.

For orders, contact:



Constella Futures
One Thomas Circle, NW
Suite 200
Washington, DC 20005
USA
Email: policyinfo@policyproject.com