

ACCESS TO HIV PREVENTION

CLOSING THE GAP

GLOBAL HIV PREVENTION WORKING GROUP

MAY 2003

GLOBAL HIV PREVENTION WORKING GROUP

CO-CHAIRS

* Helene Gayle, Bill & Melinda Gates Foundation, USA

* David Serwadda, Makerere University, Uganda

Meenakshi Datta Gosh,
National AIDS Control Organization, India

CO-CONVENER

* Drew Altman,
Henry J. Kaiser Family Foundation, USA

MEMBERS

Judith D. Auerbach,
National Institutes of Health, USA

* Mary Bassett

* Seth Berkley, International
AIDS Vaccine Initiative, USA

* Jordi Casabona,
Hospital Universitari Germans
Trias i Pujol, Spain

* Tom Coates, Center for AIDS
Prevention Studies, University
of California, San Francisco, USA

Awa Marie Coll-Seck,
Minister of Health, Senegal

J. Peter Figueroa,
Ministry of Health, Jamaica

* Geeta Rao Gupta,
International Center for
Research on Women, USA

* Catherine Hankins, UNAIDS, Geneva

* Salim Abdool Karim, University
of Natal, South Africa

* Milly Katana, Health Rights
Action Group, Uganda

* Susan Kippax, University of
New South Wales, Australia

Peter Lamprey, Family Health
International, USA

* Kgapa Mabusela, loveLife, South Africa

* Marina Mahathir, Malaysian
AIDS Council, Malaysia

William Makgoba, Medical Research
Council, South Africa

* Rafael Mazin, Pan American
Health Organization, USA

* Michael Merson, Yale School of
Medicine, USA

Philip Nieburg, Centers for Disease
Control and Prevention, USA

* Jeffrey O'Malley, International
HIV/AIDS Alliance, United Kingdom

Peter Piot, UNAIDS, Geneva

Vadim Pokrovsky, Russian Center for
AIDS Prevention and Control, Russia

* Tim Rhodes, Imperial College,
University of London, United Kingdom

* Zeda Rosenberg, International
Partnership for Microbicides, USA

Bernhard Schwartlander,
WHO, Geneva

* Yiming Shao, National Center for
AIDS/STD Prevention and Control,
China

Moses Sichone, UNICEF, Zambia

Mark Stirling, UNICEF, New York

* Donald Sutherland, Centre for
Infectious Disease Prevention and
Control, Health Canada, Canada

* Paolo Teixeira, Ministry of Health,
Brazil

Ronald O. Valdiserri, Centers for
Disease Control and Prevention, USA

* Mechai Viravaidya, Population
and Community Development
Association, Thailand

* Catherine Wilfert, Elizabeth Glaser
Pediatric AIDS Foundation, USA

* Debrework Zewdie,
World Bank, USA

Organizational affiliations are provided for identification purposes only, and do not indicate organizational endorsement.

* Members of the Working Group who have officially endorsed the report at the time of publication.

ACCESS TO HIV PREVENTION

CLOSING THE GAP

EXECUTIVE SUMMARY	1
THE HIV PREVENTION ACCESS GAP	
A REGION-BY-REGION SURVEY.....	6
SUB-SAHARAN AFRICA.....	7
ASIA AND THE PACIFIC.....	13
EASTERN EUROPE AND CENTRAL ASIA.....	18
THE CARIBBEAN AND LATIN AMERICA.....	23
NORTH AFRICA AND THE MIDDLE EAST.....	28
THE HIV PREVENTION RESOURCE GAP.....	32
RECOMMENDATIONS.....	37
REFERENCES.....	40

About this Report

This report by the Global HIV Prevention Working Group provides, for the first time, a region-by-region analysis of gaps in access to HIV prevention interventions, examines current spending levels versus projected need, and recommends funding and programmatic activities to avert 29 million of the 45 million new HIV infections projected between 2002 and 2010.

The Working Group's analysis of global HIV prevention funding finds that annual spending from all sources in 2002 was \$3.8 billion short of what will be needed by 2005. The report also finds that access to proven prevention interventions is extremely limited, and highly variable, depending on region and the intervention.

EXECUTIVE SUMMARY

THE WORST CASE SCENARIO IS AVOIDABLE

Globally, fewer than one in five people have access to basic HIV prevention programs — the information and services that can help save lives and reverse the AIDS epidemic.* But according to a research team led by UNAIDS and WHO, two-thirds of the 45 million new HIV infections that are projected to occur between now and 2010 could be averted, if proven prevention strategies, used in combination, are dramatically scaled up.¹

A Burgeoning Epidemic

More than 40 million people worldwide are infected with HIV — far more than epidemiologists predicted a decade ago — and the epidemic shows few signs of slowing.

- ▶ In sub-Saharan Africa — where one in three adults is living with HIV/AIDS in some countries — infection rates continue to rise beyond levels previously thought possible.
- ▶ China and India stand on the brink of widespread epidemics, as HIV spreads from groups at higher risk to the broader population.
- ▶ In the former Soviet Union, widespread injection drug use, earlier initiation of sexual activity among young people, and uncontrolled epidemics of sexually transmitted diseases are contributing to a swift increase in HIV infection rates.

Combination Prevention Can Reverse Spread of HIV

Despite these disturbing signs, a massive expansion of the HIV/AIDS epidemic is not inevitable. The reversal of the AIDS epidemic can happen if proven prevention interventions are used in combination and brought to scale. As this report documents, there is no single solution—no magic bullet—to prevent the spread of HIV. Instead, interventions must be used in combination to target the many diverse populations affected by HIV, and the various routes of HIV transmission. Combination prevention uses a range of science-based strategies, from encouraging delayed sexual activity to condom promotion, from voluntary HIV counseling and testing to

programs for injecting drug users. (See box, “Achieving Maximum Impact through Combination Prevention.”)

Coordinating Prevention, Treatment and Care

Prevention interventions will be even more potent if they are closely coordinated with treatment, care and support programs. Seizing the emerging opportunity to craft for the first time an integrated response to HIV/AIDS will require the rapid, coordinated and simultaneous scale-up of prevention, care and treatment programs.‡

Opportunities to forge a comprehensive approach to HIV/AIDS will likely become more numerous, as a result of sharp declines in drug prices and increased donor support for treatment initiatives. As experience in industrialized countries has shown, however, failure to combine prevention with enhanced treatment access may actually lead to an increase in risk behavior and thereby make it more difficult to curb the spread of the virus.

About the Working Group

The Global HIV Prevention Working Group — a panel of nearly 40 leading public health experts, clinicians, biomedical and behavioral researchers, and people affected by HIV/AIDS convened by the Bill & Melinda Gates Foundation and the Henry J. Kaiser Family Foundation — seeks to inform global policy-making, program planning, and donor decisions on HIV prevention, and advocate for a comprehensive response to HIV/AIDS that integrates prevention and care. In July 2002, the Working Group issued its first report, *Global Mobilization for HIV Prevention: A Blueprint for Action*.²

* Throughout this report, global and regional access estimates derive from estimates made by UNAIDS/WHO in 2002. These estimates help establish the basis for UNAIDS’ projections of minimum future resource needs in 2005 and 2007, as summarized in this report.

‡ By “scaling up,” the Working Group means achieving substantially broader implementation of HIV prevention interventions, significantly greater and sustained financial and human resources, and enhanced efforts to monitor and evaluate programs and strategies.

SUMMARY OF FINDINGS

Having reviewed the most recent evidence on HIV prevention needs and current resources, this report finds:

Access to HIV Prevention. Globally, fewer than one in five people at risk of infection have access to basic prevention services.

- ▶ **Sub-Saharan Africa.** In the region hit hardest by HIV/AIDS, where the epidemic's devastation is becoming more and more acute primarily due to sexual transmission, many young people remain unaware of basic facts about HIV/AIDS. Only six percent of people have access to voluntary counseling and testing and only one percent of pregnant women are able to obtain access to treatment to prevent mother-to-child transmission.
- ▶ **Asia and the Pacific.** In Asia, where injecting drug use is combining with unprotected sex, rising rates of sexually transmitted diseases (STDs), and other factors that accelerate the spread of HIV, only 10 percent of injecting drug users (IDUs) are benefiting from harm reduction programs* and 10 percent or fewer of the most vulnerable populations are reached by prevention interventions.
- ▶ **Eastern Europe and Central Asia.** The rapidly growing epidemic in Eastern Europe and Central Asia is primarily fueled by injecting drug use, and secondarily by increasing sexual transmission. Yet only one in nine IDUs in the region has meaningful access to harm reduction programs, and only one in six people who need STD services can obtain them.

targeted behavioral interventions, while fewer than one-third of individuals at risk are reached by AIDS awareness campaigns.

- ▶ **North Africa and the Middle East.** Harm reduction programs are extremely limited in this region where injecting drug use is a major source of transmission. Sex workers, a highly vulnerable population in the region, are similarly underserved; only about five percent of sex workers and their clients have access to targeted behavioral interventions.

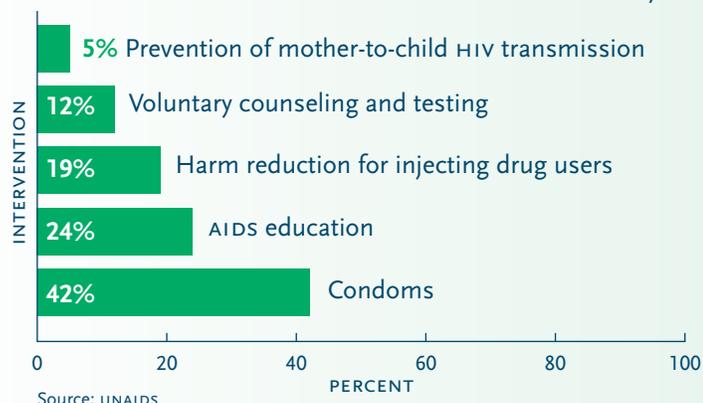
Regional Prevention Priorities. Although certain approaches — HIV/AIDS awareness campaigns, voluntary counseling and testing, and accessible STD treatment — apply to all epidemics, the global epidemic is remarkably diverse, necessitating the tailoring of combination prevention strategies to address national and local needs.

- ▶ **Sub-Saharan Africa.** Youth-targeted behavioral interventions, scale-up of programs to prevent mother-to-child transmission, and supportive interventions to address poverty and gender inequities are urgently required in this hardest-hit region, where HIV continues to spread rapidly.
- ▶ **Asia.** The region's multi-faceted epidemic requires immediate scale-up of key prevention strategies — behavioral interventions targeting especially vulnerable populations, such as sex workers and men who have sex with men, harm reduction programs for drug users, programs to curb spiraling rates of STDs, interventions to address gender inequities, programs to reach out-of-school youth, infection control in health care settings, and implementation of blood safety procedures.

- ▶ **Eastern Europe and Central Asia.** The rapidly spreading epidemic in this region is primarily driven by injecting drug use, underscoring the imperative of timely scale-up of harm reduction programs. Heightened STD control and youth-targeted awareness and behavioral interventions are also critical priorities.

- ▶ **Caribbean and Latin America.** Different parts of this region will require different emphases in scaling up HIV prevention. In the southern cone of South

Percent of Individuals At Risk with Access to Select Interventions, 2001



- ▶ **Caribbean and Latin America.** Only 11 percent of men who have sex with men, who account for the single largest share of infections in the region, have access to

* Harm reduction programs for IDUs are focused on needle and syringe programs, substitution therapy, and outreach programs, and form part of a comprehensive approach to drug use and HIV, which includes education about drug use, drug-free dependence and rehabilitation, voluntary HIV counseling and testing, treatment of sexually transmitted diseases, legal advice, and AIDS treatment, care and social support for drug-dependent people living with HIV/AIDS.

America, harm reduction programs are essential to address the growth of HIV infection among IDUs, while in other parts of the region, programs targeting MSM must be dramatically scaled up. In the Caribbean, prevention of mother-to-child transmission is a key priority, as is the scale-up of programs to curb sexual transmission (primarily heterosexual).

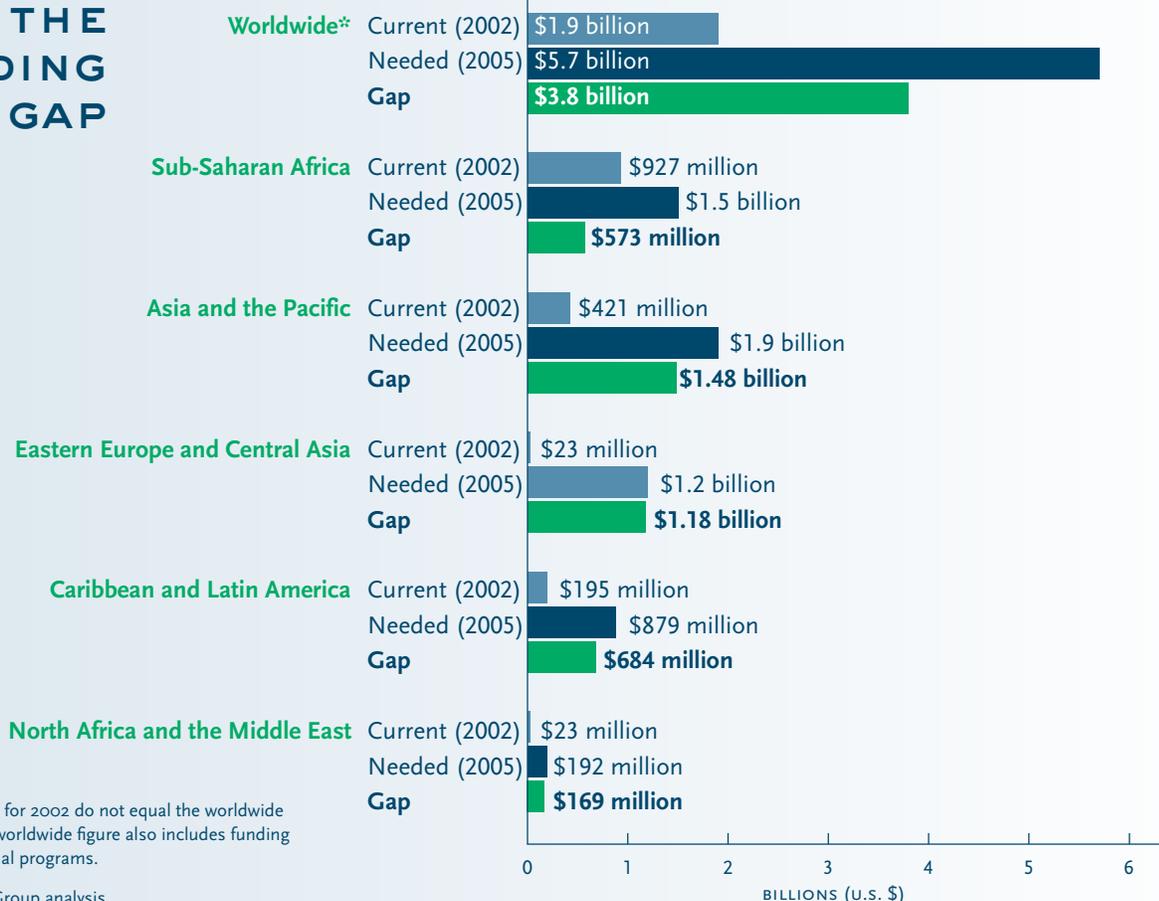
- ▶ **North Africa and the Middle East.** While HIV prevalence in this region is still relatively low, there are signs that infection rates could increase rapidly. Harm reduction programs, as well as awareness and behavioral interventions targeting sex workers, MSM and other vulnerable groups, are urgently needed to respond to growing rates of HIV/AIDS.
- ▶ **Industrialized Countries.** Strengthened prevention efforts are needed in wealthier countries, where treatment advances appear to have encouraged some sexually active people to relax their guard against infection. In particular, prevention efforts targeting people with HIV/AIDS must be scaled up and integrated into clinical settings, programs targeting minority populations and IDUs must be expanded, and behavioral programs for MSM must be reinvigorated.

Funding Gap. Despite the proven efficacy of existing prevention tools, the Working Group found that global funding for HIV prevention efforts in low- and middle-income countries in 2002 amounted to an estimated \$1.9 billion — one-third of what UNAIDS estimates will be needed annually by 2005 and only 29 percent of the annual amount required in 2007. See table below.

It is important to note that the HIV prevention spending estimates in this report are based on the best available data. Given inadequate tracking of HIV prevention spending from many sources, several assumptions have been made, which are described in detail in the spending section of this report.

In addition, the Working Group's estimates of future spending needs, based on analyses by UNAIDS, must be understood as the bare minimum of what will be required to mount a meaningful effort to curb the spread of HIV. These estimates pertain solely to funds actually needed for prevention programs at the country level and exclude both needed funds to enhance infrastructure and reasonable administrative expenses associated with external assistance.

THE FUNDING GAP



* Note: Regional estimates for 2002 do not equal the worldwide total for 2002, since the worldwide figure also includes funding for global and interregional programs.

Source: UNAIDS; Working Group analysis

Integrating Prevention and Treatment. Scale-up of treatment and care programs, itself a critical global priority, will also help maximize the effectiveness of prevention strategies. Coordinated, simultaneous expansion of prevention, treatment, and care programs will permit the development of a comprehensive response to the epidemic that minimizes program gaps and maximizes prevention and treatment opportunities.

Political Barriers. Too few national leaders, especially in regions with emerging epidemics, have fully embraced the fight against HIV/AIDS. Lack of political leadership — not only domestically, but also among key donor nations — is impeding the scale-up of effective but controversial prevention tools, such as school-based HIV prevention interventions and needle and syringe programs.

SUMMARY OF RECOMMENDATIONS

Based on its analysis of the gap between current prevention spending and the level of resources required to reverse the global epidemic, the Working Group makes the following priority recommendations:

► **FUNDING:** Global spending on HIV prevention activities from all sources should increase three-fold by 2005 to

\$5.7 billion, and to \$6.6 billion by 2007. By 2005, high-income nations should annually devote 0.02 percent of GDP to HIV prevention activities — a marginal contribution of national wealth that could save millions of lives. This level of spending is in addition to the \$5.5 billion that will be needed annually for treatment, care, and orphan support by 2005.

► **REGIONAL SCALE-UP:** Because prevention efforts currently fall significantly short of what is needed in every region of the developing world, prevention scale-up must be a central priority in each region. Prevention scale-up must also address the unique needs of each region — from the newly emerging epidemics of Asia where HIV is largely contained in specific high-risk groups, to the long-established epidemics of sub-Saharan Africa, where HIV affects the general population. Spending on HIV prevention programs must increase as follows:

- Sub-Saharan Africa: from \$927 million in 2002 to at least \$1.5 billion in 2005
- Asia: from \$421 million to \$1.9 billion
- Caribbean and Latin America: from \$195 million to \$879 million
- Eastern Europe and Central Asia: from \$23 million to \$1.2 billion
- North Africa and the Middle East: from \$23 million to \$192 million

ACHIEVING MAXIMUM IMPACT THROUGH COMBINATION PREVENTION

Effective HIV prevention strategies include a combination of complementary, science-based interventions. Just as combination anti-retroviral therapy attacks HIV on multiple fronts, combination prevention uses all appropriate interventions to achieve maximum effect — from delayed sexual activity to condom promotion, from voluntary counseling and testing to programs for injecting drug users. And just as standard HIV treatment is based on the results of rigorous clinical research, successful HIV prevention uses interventions that are grounded in scientific evidence of effectiveness.

Interventions used in combination to prevent HIV include:

► **Behavior Change Programs.** In communities throughout the world, both broad-based and targeted interventions have dramatically changed sexual

behavior, encouraging delayed initiation of sexual activity, mutual monogamy, and consistent and correct condom use during sexual intercourse.³

► **STD Control.** Because untreated STDs increase the risk of HIV transmission by at least two to five times,⁴ timely measures to prevent, diagnose and treat STDs represent an essential component of effective HIV prevention.⁵

► **Voluntary Counseling and Testing (VCT).** Knowledge of infection typically leads individuals to avoid exposing others to the virus. A study involving more than 4,000 people in Kenya, Tanzania, and Trinidad found that VCT was more effective in reducing reported risk behaviors than simple provision of health information.⁶

► **Harm Reduction Programs for Injecting Drug Users.** Needle and syringe programs can help prevent major

► **HIGH-IMPACT INTERVENTIONS:** In the immediate future, prevention efforts should aggressively focus on bringing to scale especially cost-effective, high-impact interventions. Scale-up is urgently required for programs delivering VCT, harm reduction interventions, STD control, and prevention of mother-to-child transmission. And nearly \$200 million in additional funding is needed each year to ensure an adequate global supply of condoms.

► **PREVENTION AND TREATMENT:** As both prevention and treatment programs are brought to scale, these initiatives should be carefully integrated to create a single continuum of services. Health care workers should be trained to provide HIV prevention counseling, and referral and linkage mechanisms must be created to ensure swift transition from a positive test result to health care access.

► **BUILDING CAPACITY:** In addition to funding for prevention interventions themselves, donors should, in collaboration with multilateral agencies, provide extensive additional support to build long-term human capacity and infrastructure. Targeted research and other initiatives should immediately be undertaken to clarify the level of resources required to build sufficient infrastructure to support a long-term prevention effort in low- and middle-income countries.

► **DEVELOPMENT ASSISTANCE:** Development assistance and policy reforms should address the social and economic

conditions that increase vulnerability to, and facilitate the rapid spread of, HIV/AIDS. Through expanded debt relief, microfinance initiatives, more equitable global trade rules, and international efforts to prevent or ameliorate civil conflict, donor countries and multilateral institutions should recognize that the response to HIV/AIDS plays a central role in the broader development agenda. All such development efforts must be designed to reduce gender inequities and enhance economic and political opportunities for women and girls.

► **PREVENTION RESEARCH:** Research into new prevention strategies and technologies should be strengthened and accelerated. To accelerate the search for a safe and effective vaccine and microbicide, funding for each of these areas of research should increase by \$1 billion. Leading research agencies and multilateral institutions should meet regularly to identify gaps in prevention science research and develop collaborative plans for needed research. As new prevention strategies emerge, they should be rapidly integrated into national prevention efforts.

► **RESOURCE TRACKING:** All donors should focus on improving data collection regarding the magnitude and nature of HIV/AIDS spending in low- and middle-income countries. Bilateral donors, multilateral donors, NGOs and foundations should report annually to a single data collection mechanism to track and report on the flow of HIV/AIDS resources in developing countries.

outbreaks of HIV/AIDS among drug users.⁷ Programs to prevent and treat substance addiction, as well as peer outreach, also play an important role in preventing the spread of infection.⁸

► **Prevention of Mother-to-Child Transmission (PMTCT).** A package of interventions — including VCT, timely administration of antiretroviral therapy to mother and newborn, and counseling regarding breastfeeding alternatives — reduces by 50 percent or more the risk of HIV transmission from mother to child.⁹

► **Blood Safety.** By implementing measures to improve the safety of the blood supply, it is possible to nearly eliminate the risk of HIV transmission from blood transfusions.¹⁰ Recommended policies include creation of a national blood service, use of low-risk donors, routine screening of blood donations, and reduction of unnecessary transfusions.¹¹

► **Infection Control in Health Care Settings.** Adherence to universal precautions and use of safer technologies can

significantly reduce the risk of exposure to HIV in health care settings.¹²

► **Structural Interventions.** Policy reforms — such as universal primary and secondary education, legalization of the sale of syringes without a prescription, and mandating the use of condoms in brothels — help reduce the risk of transmission by altering the environment in ways that promote risk reduction.¹³ Reforms are also needed to reduce inequities experienced by women and young girls and to increase their economic, political and social power.

► **Programs for People Living with HIV.** A weakness in prevention strategies in many countries has been the failure to target intensive prevention efforts to people who have been diagnosed with HIV. A comprehensive prevention strategy must include programs to assist people living with HIV/AIDS to take measures to avoid the possibility of exposing others to infection.

THE HIV PREVENTION ACCESS GAP

A REGION-BY-REGION SURVEY

What drives the epidemic — and how combination prevention should be tailored to achieve maximum impact — differs between and within regions. Using data compiled by UNAIDS and WHO, the Global HIV Prevention Working Group has analyzed existing access to prevention and the prevention resource gap in each region of the developing world.

This section provides regional profiles that:

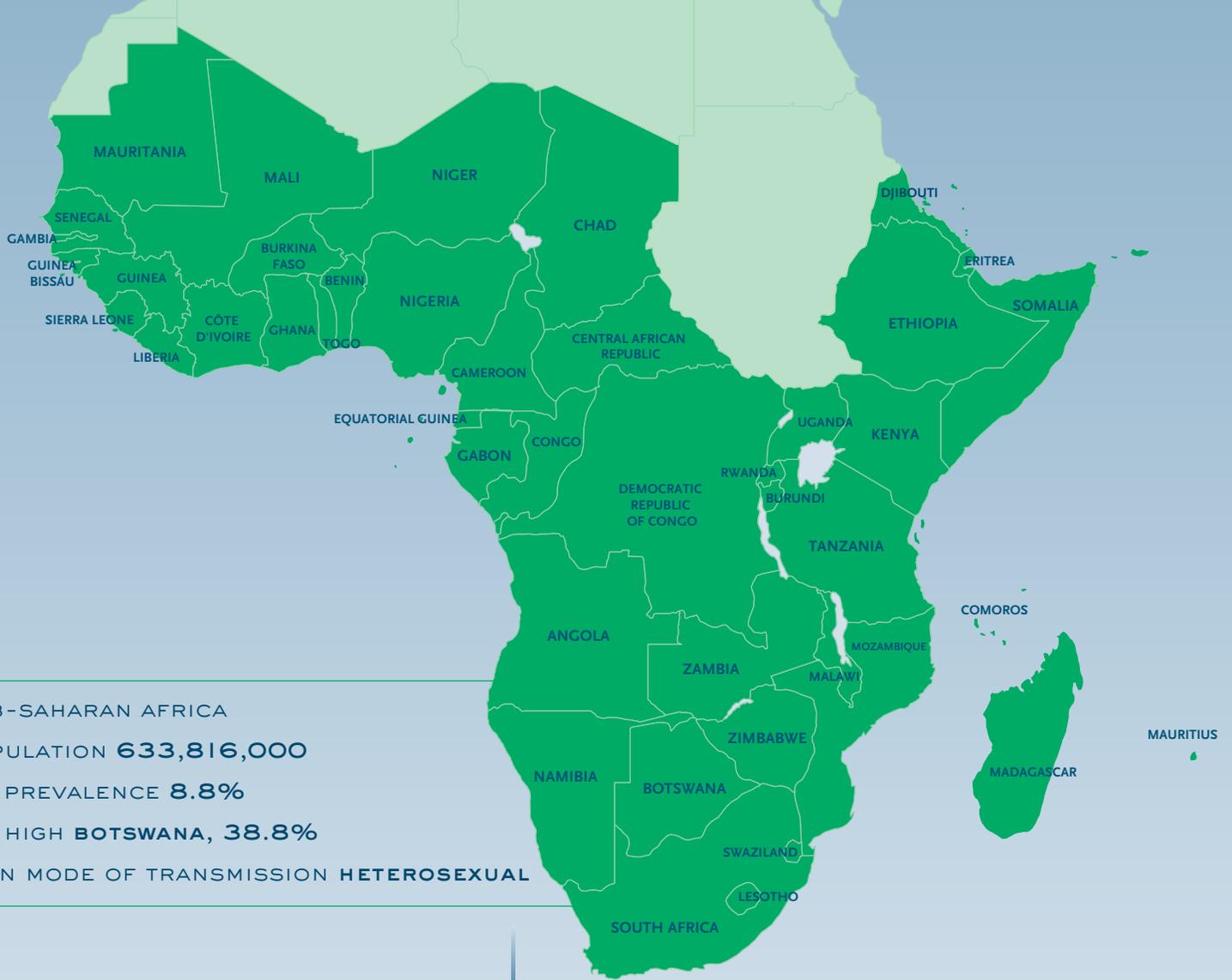
- ▶ Summarize the status of the epidemic in the region
- ▶ Identify key prevention access gaps
- ▶ Quantify the gap between resource needs and current spending in the region on HIV prevention
- ▶ Highlight prevention successes on which future strategies should build

THE GLOBAL HIV PREVENTION ACCESS GAP

Today, fewer than one in five people at risk of infection have access to basic HIV prevention services.¹⁴ To identify specific access gaps, WHO and UNAIDS convened a panel of experts in 2002 to estimate the percentage of people at risk of HIV infection in low- and middle-income countries who had access to prevention services in 2001. The results, primarily derived from UN surveys, demonstrate that basic prevention interventions remain out of reach for most people at risk.^{15*}

- ▶ **Prevention of mother-to-child HIV transmission:** Among pregnant women visiting antenatal clinics, only five percent have access to services to reduce the risk of mother-to-child transmission.
- ▶ **Voluntary HIV counseling and testing:** Only 12 percent of people who want to be tested for HIV are able to access voluntary counseling and testing services.
- ▶ **Harm reduction for injecting drug users:** Only 19 percent of injecting drug users have access to harm reduction programs.
- ▶ **AIDS education/behavior change programs:** Fewer than one in four people at high risk have meaningful access to HIV/AIDS information necessary to reduce the risk of infection.
- ▶ **Condoms:** More than 20 years into the HIV/AIDS epidemic, fewer than half (42 percent) of all people at risk of sexual exposure to HIV are able to obtain a condom.

* Although coverage of all prevention interventions must dramatically increase to influence the course of the epidemic, it is not essential to achieve 100 percent coverage for every existing prevention tool in every low- and middle-income country. Where HIV prevalence is high — either in a geographic area, such as sub-Saharan Africa or parts of the Caribbean, or in a particular population, such as injecting drug users in the Russian Federation or urban sex workers in certain Asian countries — maximum coverage will be needed in order to slow the epidemic. For high-prevalence countries, UNAIDS and WHO have established 100 percent coverage targets by 2007 for mass media campaigns, basic HIV education, prevention and treatment of sexually transmitted diseases, voluntary counseling and testing, blood safety measures, safe injection practices, and post-exposure prophylaxis for health care workers; 70 percent coverage; (50 percent by 2005) for programs to prevent mother-to-child transmission; 60 percent coverage targets for condom use during risky sex; and 50 percent coverage targets for workplace prevention programs and prevention interventions for out-of-school youth.



SUB-SAHARAN AFRICA | REVERSING WIDESPREAD HIV/AIDS EPIDEMICS

STATUS OF THE EPIDEMIC IN SUB-SAHARAN AFRICA

- **HIV Prevalence.** Approximately 29 million people — including 10 million young people (ages 15–24) and three million children under age 15 — are currently living with HIV/AIDS in sub-Saharan Africa. According to UNAIDS, one in every 11 adults in the region — one in three in some countries — is infected with HIV.¹⁶
- **Rate of Growth.** In 2002 alone, 3.5 million people in the region contracted HIV, accounting for 70 percent of the world's new infections.¹⁷
- **Epidemic History.** The epidemic in the southern and eastern parts of the region is now generalized, touching virtually every segment of society. Contrary to previous projections, infection levels in many of these countries continue to mount.¹⁸ In west and central Africa, where epidemics are less severe, the rate of new infections appears

likely to increase significantly. In eight countries in west and central Africa, adult HIV prevalence has now surpassed five percent.¹⁹ Between four and six million people are estimated to be infected in Nigeria, Africa's most populous country, and the U.S. National Intelligence Council projects that up to 15 million people (more than one quarter of the adult population) will be infected by 2010. The Council also projects that infection rates in Ethiopia will escalate from official estimates of 2.7 million infections in 2002 to up to 10 million by the decade's end.²⁰

► **Primary Modes of Transmission.** The majority of HIV transmission in the region stems from sexual behavior (largely heterosexual).²¹ Sub-Saharan Africa is also home to roughly 90 percent of the 800,000 infants who contract HIV each year before or during birth or as a result of breastfeeding, although this percentage is slowly declining as epidemics grow in other regions.²² An estimated 2.5% of new infections in Africa stem from unsafe injection practices.²³

► **Key Populations for Prevention Programs**

Women. In sub-Saharan Africa, women account for 58 percent of all HIV infections, and infection rates among young women ages 15–24 are approximately twice as high as those among young men.²⁴ The growing disparity between male and female infection rates in Africa reflects the degree to which gender inequities are now driving the epidemic in sub-Saharan Africa, as women who lack economic independence, educational

opportunities, and access to health information and services often have difficulty avoiding exposure to the virus. Gender-focused prevention programs must address the many economic, social and political disadvantages that directly increase women's vulnerability to HIV infection.²⁵

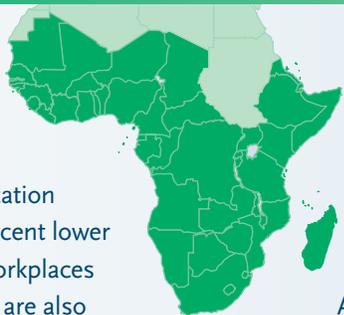
Young People. More than 40 percent of people living with HIV/AIDS in sub-Saharan Africa are between the ages of 15 and 24,²⁶ and young people account for more than half of all new infections in the region.²⁷ Surveys indicate that, on average, young people in the region begin having sex at an early age (average age of initiation is 13 for boys, 14 for girls) and generally do not use condoms.²⁸ Especially vulnerable are the more than 11 million young people in the region who have already been orphaned by HIV/AIDS.²⁹

Sex Workers. Desperate economic circumstances force many women to engage in survival sex in sub-Saharan Africa, placing them at high risk of contracting HIV and transmitting the virus to their sex partners. Studies of sex workers at truck stops in South Africa in 1996–1999 found HIV prevalence higher than 50 percent and annual HIV incidence of 20 percent.³⁰

Migrant Populations. Numerous studies have detected high infection rates among truck drivers and seasonal migrant workers in the region.³¹ In addition, sub-Saharan Africa faces numerous wars and civil conflicts, producing large numbers of refugees who also face a heightened risk of contracting HIV.³²

PREVENTION SUCCESSES IN AFRICA

► **Harnessing the Workplace.** Studies have documented the strong potential to promote effective HIV prevention in work settings. In Zimbabwe, for example, factories where peer-based HIV/AIDS education programs were implemented had a 34 percent lower rate of new infections than comparable workplaces with no such programs.⁴² Other countries are also focusing on the workplace as an essential venue for effective HIV prevention programs. The government of Côte d'Ivoire, for example, has called on all businesses with more than 50 employees to establish HIV/AIDS committees, while the government of Cameroon envisions by 2005 having agreements with 50 percent of all business requiring HIV/AIDS education for workers. In South Africa, periodic



presumptive STD treatment for mineworkers has reduced STDs among workers and among sex workers from the community.

► **Increasing Access to Condoms.** As part of the government's efforts to scale up HIV prevention, public sector distribution of condoms in South Africa increased from six million in 1994 to 358 million in 2002. An increasing number of countries are seeking to scale up condom distribution and promotion programs, and are tracking usage patterns once condoms are distributed. Researchers in South Africa surveyed nearly 400 individuals who received more than 5,500 condoms through public sector distribution. After five weeks, nearly 44 percent of the condoms had been used during sex,

GAPS IN ACCESS TO HIV PREVENTION IN SUB-SAHARAN AFRICA

Targeted Behavioral Interventions. Although Uganda, Senegal, Zambia and other African countries have made enormous strides against the epidemic by supporting interventions targeting key populations, many people at highest risk for infection cannot obtain the support they need to change their behaviors to avoid exposure to HIV.

► **Behavioral intervention gap:** Only 8% of out-of-school youth and a little more than one third of in-school youth have access to prevention programs. Fewer than one in 12 sex workers and their clients are currently targeted by behavioral programs.

Condom Promotion and Access. Current donor contributions are sufficient to provide roughly three condoms per year for every adult male in sub-Saharan Africa — a major shortcoming in this hardest-hit region where the epidemic is largely driven by heterosexual sex.³³ An additional 1.9 billion condoms would be needed to raise all countries to the average procurement level of the six African countries that use the most condoms.³⁴

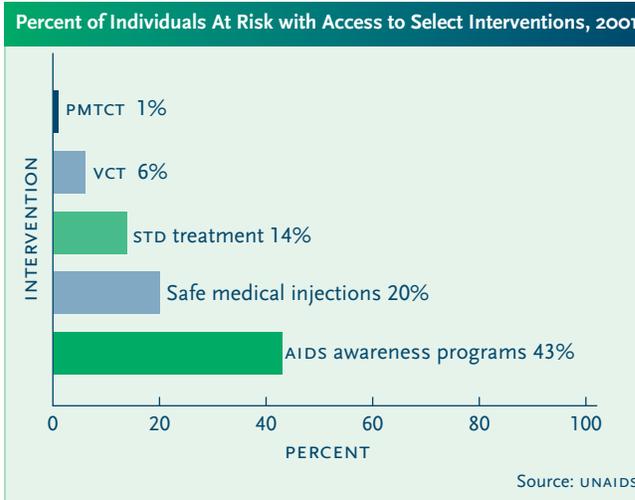
► **Condom gap:** 1.9 billion additional condoms needed annually

► **Condom promotion gap:** Fewer than one in three people

roughly 22 percent had been given away, and 26 percent were still available for use. Fewer than 10 percent of the condoms distributed by the government program had been lost or discarded.⁴³

► **Taking Youth-Oriented Prevention to Scale in South Africa.** Although research has identified a broad range of prevention projects that appear to produce significant behavior change, few such projects have been brought to scale. In South Africa — where the future course of the epidemic will largely be determined by the sexual behaviors of the 40 percent of South Africans under age 15 — a central challenge is to convert smaller-scale prevention projects into broad-based programs capable of reaching millions. loveLife — a partnership between the South

at risk have access to condom social marketing or other programs that provide condoms.



Prevention of Mother-to-Child Transmission. As sub-Saharan Africa accounts for roughly 90 percent of the 800,000 infants who acquire HIV each year, PMTCT programs represent a central prevention priority in the region. Currently, however, it is estimated that 99 percent of women who need PMTCT in the region do not have access to these services.³⁵

► **PMTCT gap:** Only 1% of women in need have access.

Diagnosis and Treatment of Sexually Transmitted Diseases. Many countries in sub-Saharan Africa have a high prevalence of STDs, accelerating the spread of HIV.

African government, more than 100 community-based organizations, U.S. foundations, and the corporate sector — is scaling up on a nationwide basis a comprehensive package of proven prevention approaches, with the goals of reducing by one-third the number of young people who engage in high-risk sex and of encouraging a substantial percentage of young people to delay initiation of sexual activity. Components of the program include youth-focused multimedia programming of unprecedented scope and intensity, as well as development of youth-friendly services in government clinics countrywide and a network of youth centers and health care delivery sites. A comprehensive evaluation of the program is underway to determine its impact on young people's sexual behaviors and on the incidence of HIV and STDs.

In rural South Africa, nearly nine percent of adults have syphilis and almost one in 20 has gonorrhea.³⁷ In Swaziland, for example, more than one-half of patients attending STD clinics tested HIV-positive in 2000,³⁸ while seropositivity among STD clinic patients in Zimbabwe exceeded 70 percent in 1995–96.³⁹

► **STD treatment gap:** only 14% of people in need of STD services can obtain them.

Voluntary Counseling and Testing. Today, only six percent of people who want HIV counseling and testing in Africa have access to it.⁴⁰ With an estimated 29 million people currently living with HIV/AIDS, it is likely that the vast majority are unaware they are infected.

VCT gap: only 6% of people who want VCT have access to it.

Infection Control and Safe Injection Practices in Health Care Settings. Use of unsterile injection equipment during mass vaccination campaigns or in other health care settings is believed to be responsible for more than 80,000 infections annually in sub-Saharan Africa,⁴⁰ underscoring the urgent need for rapid scale-up of infection control and safe injection practices in the region.

► **Gap in health care settings:** Only 18% of health care settings adhere to universal precautions, and only 20% of medical injections are safe.

Broad-Based HIV/AIDS Awareness. Notwithstanding the devastation already caused by HIV/AIDS, key population segments in some African countries do not possess basic information that could save their lives. UNICEF reports that more than one-half of all young people (ages 15–24) in more than a dozen countries (primarily African) have never heard of AIDS or have serious misconceptions about how HIV is transmitted.⁴¹

► **Awareness gap:** Only 43% of people at risk are reached by mass media awareness programs.

Supportive Initiatives. Although available interventions and technologies are highly effective in reducing transmission rates, prevention strategies will be optimally successful if they address the social and economic conditions that accentuate vulnerability to HIV. Limited educational oppor-

tunities for girls, for example, are directly correlated with higher teen pregnancy rates and earlier initiation of sexual activity. Where a woman's economic security depends on a man, she may be less able to negotiate condom use during sex. From a societal standpoint, countries that are too poor to support even a minimal health care infrastructure are unlikely to have the wherewithal to provide VCT, STD diagnosis and treatment, or PMTCT.

HIV PREVENTION RESOURCE GAP IN SUB-SAHARAN AFRICA

► **Current Prevention Resources.** Extrapolating from estimates by UNAIDS, the Working Group estimates that spending in 2002 on HIV prevention services from all sources — including donor countries, domestic governments, and affected households — amounted to approximately \$927 million.*

► **Estimated Need.** UNAIDS estimates that \$1.5 billion annually will be needed by 2005 — and \$1.65 billion by 2007 — to bring combination prevention programs to scale in the region.

► **Prevention Resource Gap:** \$573 million additional annual spending needed by 2005

* In the absence of reliable data on prevention spending in different regions, the Working Group has derived regional estimates by applying the global prevention share (54 percent) of all global HIV/AIDS spending in 2002 to each region's overall HIV/AIDS spending.

THE UGANDA STORY

COMBINATION PREVENTION IN ACTION

One of the poorest countries in the world, Uganda confronted one of the most severe early HIV/AIDS epidemics in the mid-1980s. In Kampala, the nation's major urban area, 11 percent of women attending prenatal clinics were already infected by 1985.⁴⁴



In 1986, President Yoweri Museveni became the first African leader to speak openly about HIV/AIDS. That same year, Uganda established its National AIDS Control Program, which launched an aggressive AIDS awareness campaign and began to enlist key national stakeholders, such as community leaders, civil society, and faith-based groups, in the fight against the disease. Treatment for sexually transmitted diseases was expanded, and Uganda became the first African country to provide voluntary HIV counseling and testing services.⁴⁵ As a result, overall prevalence in Uganda has declined from 15 percent in 1991 to five percent in 2001.⁴⁶

A key finding from Uganda's experience is that no single factor or intervention can adequately explain the country's extraordinary progress in reversing its potentially catastrophic epidemic. Uganda's success underscores the effectiveness of a combination of proven approaches to HIV prevention: AIDS awareness campaigns, community mobilization, targeted behavior change programs—encouraging delayed initiation of sex, mutual monogamy, and condom use—voluntary counseling and testing, and treatment of STDs.

As a result of these efforts, Uganda has made unparalleled progress in reversing its epidemic. While 50 percent of 15-year-old girls in Uganda were sexually active in 1989, fewer than 25 percent had initiated sexual activity by the same age in 1995.⁴⁷ In comparison with their counterparts in Kenya,

Zambia, and Malawi, young males (15–19) in Uganda were significantly more likely in 1995 to have never had sex, to be married and monogamous, and to have fewer sexual partners. While only 16 percent of males in Uganda reported ever using condoms in 1995, 40 percent reported condom use in 2000.⁴⁸

The impact of these behavior changes on infection rates has been substantial. In every prenatal setting in the country where HIV is tracked, the level of infection has declined significantly since 1992 — from nearly 30 percent to 11.25 percent in Kampala, and from 13 percent to 5.9 percent in clinics outside major urban areas.⁴⁹ A comprehensive study of 15 neighboring communities in the Masaka district in rural southwest Uganda found that the rate of new infections in 1995–99 was 37 percent lower than in 1990–94.⁵⁰

FIGHTING AIDS BY EMPOWERING WOMEN AND GIRLS

The HIV risk faced by women and girls is growing, as gender inequities become an increasingly prominent driving force in the epidemic. Globally, as many women are living with HIV/AIDS as men. In Africa, women now account for 58 percent of HIV/AIDS cases, and this proportion is steadily rising.⁵¹ In Asia, gender inequities play a major role in the epidemic, and infection rates among women will continue to rise.

Among the factors contributing to a heightened risk of transmission among women and girls are:

- ▶ **Limited Access to Prevention Options and Health Services.** Use of the male condom, the primary means of preventing HIV transmission among sexually active people, is not under women's control. Moreover, many women and girls lack effective access to health information or reproductive health and family planning services.
- ▶ **Legal Disenfranchisement.** In many countries heavily affected by HIV/AIDS, laws restrict the right of women to own or inherit property.⁵² These laws perpetuate women's economic dependence on men, which in turn limits the independence and autonomy they need to refuse sex or negotiate condom use. UNAIDS reports that 80 percent of HIV-positive women acquired the virus from their partners in stable, long-term relationships.
- ▶ **Diminished Educational Opportunities.** Especially in sub-Saharan Africa, many girls in families affected by HIV/AIDS are forced to drop out of school to care for family members or to work to make up for lost income. Due to limited schooling, these girls will be more dependent on men as they grow older.

▶ **Sexual Violence.** In many countries, sexual violence against women and girls is both common and a major source of HIV transmission.⁵³

▶ **Sexual Trafficking.** Many young people, especially girls, are coerced — either physically or by economic circumstances — to enter sex work.

▶ **Inter-Generational Sex.** Young women, who are physiologically more susceptible to HIV than young men, most commonly have their first sexual experiences with older men. In countries where adult HIV prevalence is high and condom use low, this results in substantial HIV transmission. In Kenya, while HIV prevalence among young men ages 15–19 was 3.4 percent, 23 percent of young girls ages 15–19 were infected.⁵⁴

Although these and other factors are deeply ingrained in many societies, experience has shown it is possible to prevent HIV transmission by empowering women.⁵⁵ To diminish the vulnerability of young people from sexual trafficking, for example, Thailand in 1992 initiated a comprehensive program to reduce the willingness of families to direct young girls toward sex work. In addition to the implementation of legal measures to suppress sexual trafficking, Thai officials worked effectively with families and with society at large to alter attitudes toward child prostitution.⁵⁶

By coupling prevention programs with energetic political and social reforms, efforts to curb the spread of HIV among women and girls can be even more effective.



ASIA AND THE PACIFIC | CURBING THE RAPID SPREAD OF HIV

STATUS OF THE EPIDEMIC IN ASIA AND THE PACIFIC

- ▶ **HIV Prevalence.** Although overall infection rates are relatively low in the region (under one percent prevalence), the actual number of people infected is already substantial — 7.2 million. Adult HIV prevalence is highest in Myanmar (3.5 percent),⁵⁷ followed by Cambodia (2.7 percent), Thailand (1.8 percent), India (0.8 percent), and Papua New Guinea (0.7 percent).⁵⁸
- ▶ **Rate of Growth.** The epidemic is rapidly expanding in Asia, with nearly one million people becoming infected in 2002,⁵⁹ compared to 700,000 in 2000.⁶⁰
- ▶ **Epidemic History.** The epidemic in the region includes countries such as Thailand, where HIV began to spread widely in the early 1980s, as well as China and India, where the epidemic initially began in the late 1980s. Asia currently

presents the greatest risk of expansion of the global epidemic. While the region currently accounts for 20 percent of current infections, experts project it will contribute 40 percent of all new infections by 2010, in the absence of a vigorous prevention response.⁶¹ In 2003, countries of major concern include:

China. The Chinese government projects that, in the absence of major new prevention efforts, the country will have 10 million HIV infections by 2010 — an estimated 10-fold increase over current levels.⁶¹ In March 2003, the Chinese state media reported that HIV infection in the country would increase by 30 percent in 2003.⁶³

India. U.S. intelligence experts believe HIV/AIDS is poised to escalate in India, a scenario that could generate up to 20 to 25 million new infections between 2002 and 2010, from 4 million today.

Indonesia. A country that until 1998 had HIV prevalence rates below 0.1 percent, even in key populations at highest risk, Indonesia is now experiencing a rapid spread of infection. Seroprevalence among IDUs attending a drug treatment center in Jakarta climbed from zero in 1998 to nearly 50 percent in 2001. Infection rates among sex workers in some parts of the country now approach five percent and are increasing.

► **Primary Modes of Transmission.** Injection drug use and heterosexual intercourse are the primary modes of transmission in the region, although substantial transmission also occurs as a result of sexual contact between men.⁶⁴ Improper blood collection practices have also caused hundreds of thousands — and some estimate that it may be millions — of infections in China.⁶⁵ In India and surrounding countries, nearly one in four new infections stems from unsafe injection practices in health care settings.⁶⁶

► **Key Populations for Prevention Programs**

Women. Although India's HIV/AIDS epidemic was initially driven primarily by transmission among male IDUs, infection is rapidly spreading to their female sex partners. In seven Indian states, HIV prevalence among women attending prenatal clinics now exceeds one percent.⁶⁷ Gender inequities significantly increase women's vulnerability to HIV/AIDS; in some parts of Asia, young girls are frequently steered by their families toward sex work.

Sex Workers. More than 30 percent of sex workers in some parts of India are infected with HIV,⁶⁸ and sentinel surveillance has detected infection rates higher than 60 percent in some sex worker populations in Cambodia.⁶⁹ In Asia, as in other parts of the world, sex workers are not only highly vulnerable themselves, but their clients often serve as a key epidemiologic bridge to the broader population.

Men Who Have Sex with Men. MSM communities in Asian countries have very high rates of infection — 14 percent in Cambodia,⁷⁰ 20 percent in India,⁷¹ and 15 percent in Thailand.⁷² Although reliable estimates are not available for China, government officials believe that MSM networks are an important contributor to HIV transmission in the country.⁷³ Not only are MSM a highly vulnerable population requiring heightened prevention attention, but there is also evidence that they serve as an important epidemiologic bridge to women in Asia, as one study of MSM in Cambodia found that 40 percent had sex with both men and women in the prior month.⁷⁴

Young People. In Asia, as in other regions, the rapid spread of HIV places young people at particular risk. According to UNAIDS, recent evidence suggests that rates of unsafe sexual behavior among Thai youth may be increasing.⁷⁵

Migrant Populations. Population mobility increases risk-taking behaviors by disrupting social support networks, contributing to depression and other mental health problems, and frequently placing individuals in risky circumstances that facilitate unsafe behavior. An estimated 100 million people in China have migrated in recent years from rural areas to the cities in search of work.⁷⁶ UNAIDS reports that in the Philippines more than one quarter of all people living with HIV/AIDS have worked in other countries.⁷⁷

GAPS IN ACCESS TO HIV PREVENTION IN ASIA AND THE PACIFIC

Targeted Behavioral Interventions. Fewer than one in 10 people belonging to especially vulnerable groups currently have access to behavior change programs.

► **Behavioral intervention gap:** Behavior change programs reach only 5% of sex workers and their clients, 3% of out-of-school youth, and 10% of MSM.

Condom Promotion and Access. Although at least \$135 million worth of condoms should be purchased annually to address HIV/AIDS in Asia, donors bought only \$17.5 million worth of condoms in 2000.⁷⁸ While India, China and other countries purchase and distribute condoms on their own, the gap between condom supply and actual need remains substantial.

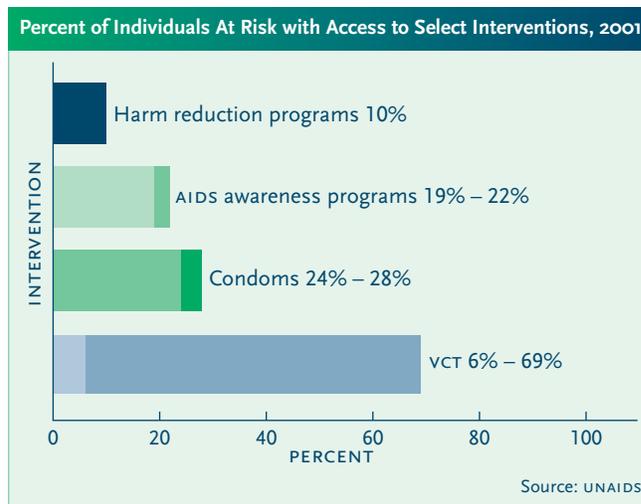
► **Condom gap:** Only 24% of people who need condoms in South and Southeast Asia — and only 28% in East Asia and the Pacific — have access to programs that provide condoms and promote their use.

Prevention Programs for Injecting Drug Users. Cheap and easily available heroin has combined with rapid social change and dislocation in much of the region to produce a dramatic rise in the number of IDUs. The government of China, for example, reports that the number of IDUs in that country rose from 70,000 in 1990 to more than 900,000 in 2001.⁷⁹ According to UNAIDS, more than half of IDUs are already infected in parts of Malaysia, Myanmar, Nepal, Thailand, and Manipur in India,⁸⁰ yet only a small fraction of IDUs in the region currently has access to harm reduction programs.

► **IDU prevention gap:** Only 10% of IDUs have access to harm reduction programs.

Diagnosis and Treatment of Sexually Transmitted Diseases. As in other countries undergoing rapid social and economic transition, China has seen STD rates rise as its economic system has been liberalized and its public health system decentralized. Between 1986 and 2000, the number of reported STDs in China increased from fewer than 24,000 to nearly 860,000.⁸¹

► **STD treatment gap:** Only one in seven people who need STD services in Asia has access to such programs.



Prevention of Mother-to-Child Transmission. In Thailand, mother-to-child transmission accounts for 4.6 percent of all reported AIDS cases,⁸² while sentinel surveillance in Cambodia detects infection rates higher than three percent among pregnant women in urban areas.⁸³ In India, 170,000 children are living with HIV/AIDS.⁸⁴ These numbers are likely to grow unless immediate efforts are undertaken to follow Thailand's lead in scaling up PMTCT services.

► **PMTCT gap:** Only 3-6% of women have access to PMTCT services.

Voluntary Counseling and Testing. Access to VCT is highly variable in the region. An estimated 69 percent of people in South and Southeast Asia who want to learn their serostatus have access to VCT. In China, by contrast, where one million or more people are infected with HIV, WHO reports that only 25,000 individuals received VCT in 2001.⁸⁵

► **VCT gap:** Although 69% of people in South and Southeast Asia who want VCT can obtain it, only 6% of people in East Asia and the Pacific have access.

Infection Control in Health Care Settings. HIV transmission through contaminated injections is most common in Asia, where more than 160,000 contracted the virus in this manner in 2000.⁸⁶

► **Health care settings gap:** Only 20% of people in the region have access to safe medical injections, and fewer than one-fifth of health care settings adhere to universal precautions.

Broad-Based HIV/AIDS Awareness. Basic educational and awareness programs are urgently needed to fill a potentially deadly information gap in the region. More than half of all young people (ages 15–24) in Vietnam have either never heard of AIDS or do not accurately understand how HIV is transmitted.⁸⁷

► **Awareness gap: Only 22% of people at risk in South and Southeast Asia, and only 19% in East Asia and the Pacific, are currently reached by mass media awareness campaigns.**

Supportive Initiatives. HIV/AIDS remains highly stigmatized in many Asian countries, helping maintain a silence that impedes effective HIV prevention efforts. Prevention efforts in the region will be optimally effective only if they are accompanied by sustained efforts to relieve the stigma of HIV infection and eradicate HIV-related discrimination.

HIV PREVENTION RESOURCE GAP IN ASIA AND THE PACIFIC

► **Current Prevention Resources.** The world's success in turning the tide against HIV/AIDS will be determined in great part by whether the epidemic can be curbed in Asia. Not only is the region the world's most populous, but alarming increases in infection rates in India, China and Indonesia raise the prospect of a major expansion of the epidemic. The Working Group estimates that 2002 funding for HIV prevention programs in Asia from all sources was less than \$421 million.

► **Estimated Need.** International donors and Asian countries themselves have, in large measure, been slow in providing critical financial support for prevention measures. By 2005, Asia will need approximately \$1.9 billion annually to mount a comprehensive HIV prevention effort — a sum that will grow to more than \$2.4 billion by 2007. To prevent a major expansion of the epidemic into the general population of key Asian countries, a nearly six-fold increase in HIV prevention spending is needed over the next two years.

► **Prevention Resource Gap: \$1.48 billion additional annual spending needed by 2005**

PREVENTION SUCCESSES IN ASIA AND THE PACIFIC

► **Changing Social Norms in Thailand.** AIDS experts have long been familiar with the success achieved by Thailand's "100% condom" program, which mandated use of condoms in brothels. Less well-known is the success of the country's efforts to alter long-established norms regarding male patronage of commercial sex businesses. Between 1990 and 1993, the percentage of men (ages 15–49) who visited brothels during the prior 12 months fell from 19 percent to 9 percent, with an especially notable decline (35 percent to 17 percent) among young men (20–24).

► **Broad-Based Prevention in Cambodia.** Faced with a rapidly expanding HIV epidemic in the mid-1990s, Cambodia adopted and began scaling up a multisectoral HIV/AIDS strategy, with important results. Between 1995 and 1999, HIV prevalence among brothel-based sex workers declined from 40 percent to 33 percent, and sex workers and their clients significantly increased condom use.⁸⁸ Between 1997 and 2000, HIV prevalence among pregnant women declined by almost one-third.⁸⁹



► **Empowering Sex Workers in India and Bangladesh.** The innovative Sonagachi sex worker project in India develops linkages with key participants in the sex industry — including brothel owners and the police — to reduce prejudice against sex workers and promote effective care initiatives for their families and children. Designed and implemented by sex workers themselves, the Sonagachi project has been expanded to reach more than 30,000 workers in 30 red light districts in the state of West Bengal. The model has also been replicated in Bangladesh.⁹⁰

► **Scaling Up STD Control in India.** Periodic "pulse campaigns" target rural populations for STD diagnosis and treatment services in all administrative districts in India. As a result of these efforts, more than 70 million people attended health camps sponsored by the project in 2001, and three million people were treated for STDs.⁹¹

THE CONDOM GAP

ENSURING ACCESS TO AN ESSENTIAL TOOL IN THE FIGHT AGAINST HIV/AIDS

The male condom remains an essential component of a comprehensive strategy to reverse the global HIV/AIDS epidemic, but too few people at risk have access.

► Condom Access Gap

According to UNAIDS, the 6 to 9 billion condoms that are distributed each year constitute as little as one quarter of what is needed to reach those in need.⁹² The supply of condoms in Africa, for example, averages roughly three condoms per year for each adult male.⁹³

► Condom Promotion

Condoms help curb the spread of HIV only if they are used. Efforts to increase the public provision of condoms must be supported by behavior change communication for safer sex. As this report reveals, every region suffers from acute shortages of programs to promote condom usage.

► Condom Resource Gap

Such shortfalls directly stem from insufficient global financing for procurement and promotion of this essential prevention commodity. Although the United Nations Population Fund estimates that annual spending on condom purchases should equal \$239 million to satisfy the global need for the prevention of HIV and STDs, international donors spent only \$45.9 million in 2000 — roughly 19 percent of what is needed.⁹⁴

► Condom Effectiveness

Controlled scientific studies have demonstrated that condoms are up to 98 percent effective in preventing HIV transmission when used consistently and correctly.⁹⁵ Condoms were also affirmed to be highly effective in preventing HIV in an interagency review undertaken in 2001 by the U.S. Public Health Service.⁹⁶ Several U.S. studies of correct and consistent condom use show that latex condom breakage rates are less than 2 percent.⁹⁷ Although poor-quality condoms can break or tear, the vast majority of condoms distributed in low- and middle-income countries adhere to rigorous manufacturing standards.

Countries both rich and poor have effectively promoted condoms as a critical HIV prevention strategy. Thailand's condom promotion efforts, for example, played an important role in the country's success in reducing HIV infection rates by more than 80 percent. Similarly, sharp declines in the 1980s in HIV incidence among gay and bisexual men in the U.S., Europe, and Australia were directly tied to increased condom use.

► Female Condoms

Because many women at risk for HIV infection have difficulty negotiating condom use with their male partners, greater access to female-controlled prevention methods is an urgent global health need. Following studies indicating acceptability of female condoms among women and their sex partners,⁹⁸ distribution and use of such products has increased, although availability of female condoms remains substantially short of need.



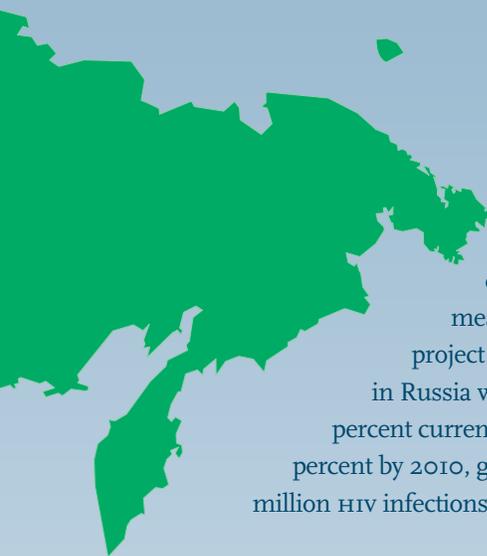
EASTERN EUROPE AND CENTRAL ASIA
 POPULATION 393,245,000
 HIV PREVALENCE 0.6%
 HIGH RUSSIA 1 – 2%
 MAIN MODES OF TRANSMISSION IDU, HETEROSEXUAL

EASTERN EUROPE AND CENTRAL ASIA

EMERGING EPIDEMICS AND COUNTRIES IN TRANSITION

STATUS OF THE EPIDEMIC IN EASTERN EUROPE AND CENTRAL ASIA

- **HIV Prevalence.** An estimated 1.2 million people are currently living with HIV/AIDS in Eastern Europe and Central Asia, reflecting region-wide prevalence of 0.6 percent among adults (15–49).⁹⁹ U.S. intelligence experts believe the actual number of infections in the region may be substantially higher than official estimates — perhaps one to two million in Russia alone.¹⁰⁰
- **Rate of Growth.** The epidemic is spreading fastest in Eastern Europe and Central Asia, with an annual rate of increase above 25 percent. In 2002 alone, 250,000 people in the region became infected with HIV.¹⁰¹ Without



implementation of effective prevention measures, intelligence experts project that adult HIV prevalence in Russia will surge from one to two percent currently to between six and 11 percent by 2010, generating as many as eight million HIV infections during that time.¹⁰²

- ▶ **Epidemic History.** The epidemic is relatively new in the region, dating to the early 1990s.¹⁰³
- ▶ **Primary Modes of Transmission.** Injection drug use — abetted by the cheapness of heroin, the existence in the region of major drug trafficking networks, and social dislocation caused by rapid economic and political change — drives the epidemic in the region, accounting for 90 percent of reported cases in Russia.¹⁰⁴

▶ **Key Populations for Prevention Programs**

Injection Drug Users. Injection drug users, now the driving force in the region’s emerging HIV epidemic, require sustained behavioral interventions to encourage them to adopt safer injecting behavior, reduce or eliminate drug use, and use condoms during sexual intercourse.

Young People. In addition to the risk of transmission through increasingly prevalent drug-using practices, young people in the region face the growing risk of sexual acquisition of HIV. Accompanying the rapid social and economic changes in the region has been a marked change in sexual behaviors. UNAIDS reports that young people in the former Soviet Union are now having sex at an earlier age and that social strictures against premarital sex are easing. Youth-appropriate prevention programs, coupled with investment in basic sex education, are needed to prevent an escalation in sexual transmission among the region’s young people.

Men Who Have Sex with Men. Although only limited data exist on HIV prevalence among MSM in the region, studies indicate that most MSM do not typically use condoms and many engage in sex work.¹⁰⁵

Sex Workers. Seroprevalence among some urban sex worker populations in Russia exceeds 15 percent, according to studies in 1999 and 2000.¹⁰⁶ In Eastern Europe, as in many other regions, many sex workers also inject drugs.

Sex Partners of IDUs. According to the U.S. National Intelligence Council, IDUs are often well integrated into Russian society. Without swift scale-up of prevention services for the sex partners of IDUs, HIV/AIDS could rapidly spread to the population at large.

Correctional inmates. An estimated 20 to 25 percent of correctional inmates in Russia are infected with HIV, and infections have also been reported in correctional populations in other countries in the region.¹⁰⁷ Periodic amnesty programs and the normal release of prison inmates mean that the correctional population, in addition to being highly vulnerable itself, also functions as a potentially significant bridge to the broader population.

GAPS IN ACCESS TO HIV PREVENTION IN EASTERN EUROPE AND CENTRAL ASIA

Prevention Programs for Injecting Drug Users. An estimated one percent of the adult (15–49) population in Russia inject drugs regularly, with estimates as high as three percent in some urban areas.¹⁰⁸ Among young people, the rates may be even higher.¹⁰⁹ Drug use is a source of great stigma in the region, encouraging governments to address HIV transmission among IDUs from a criminal justice standpoint rather than as a public health matter. Leading donors have also resisted funding needle and syringe programs.

- ▶ **IDU prevention gap: Only 11% of IDUs have access to harm reduction programs.**

Targeted Behavioral Interventions. Current efforts to change sexual behavior reach only a fraction of those in

need. This is especially troubling with respect to young people, who currently account for the overwhelming majority of infections in the region.

► **Behavioral intervention gap:** Forty percent of in-school youth, and only 3% of out-of-school youth, are reached by behavior change programs. Targeted behavioral interventions reach only 4% of sex workers and their clients, and only 9% of MSM.

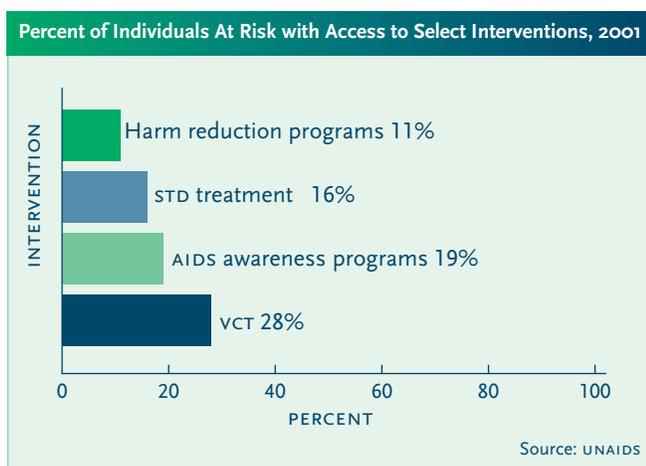
Diagnosis and Treatment of Sexually Transmitted Diseases.

Earlier initiation of sex among young people and the increasing prevalence of premarital sex have helped accelerate epidemics of STDs in Eastern Europe and Central Asia. Syphilis incidence increased 12-fold in the Ukraine between 1990 and 1995.¹¹⁰ According to UNAIDS, between 200,000 and 400,000 cases of syphilis are reported annually in Russia,¹¹¹ with syphilis incidence more than 37 times higher in 2000 than in 1987.¹¹²

► **STD treatment gap:** Only 16% of people who need STD services can obtain them.

Voluntary Counseling and Testing. To help break through the silence and denial that surrounds the epidemic in much of the region, it is important to expand the number of people who know their serostatus. Unfortunately, accessible voluntary counseling and testing services are currently in short supply.

► **VCT gap:** Only 28% of people who want VCT have access.



Broad-Based HIV/AIDS Awareness. Governments in the region have yet to emphasize the seriousness of the HIV/AIDS threat or to underwrite broad-based awareness campaigns. More than one-half of young people in Ukraine, for example, have either never heard of AIDS or do not accurately understand how it is transmitted, and only 28 percent of young women in the country use a condom the first time they have sex.¹¹³

► **Awareness gap:** Only 19% of people at risk are reached by mass media campaigns on HIV/AIDS.

Supportive Interventions. Rapid societal transitions in the region have been accompanied by a significant deterioration of basic public health infrastructure, which must quickly be repaired to maximize the effectiveness of prevention interventions. Sustained efforts are also needed to reduce the stigma associated with the disease and to prevent discrimination against people living with HIV/AIDS.

HIV PREVENTION RESOURCE GAP IN EASTERN EUROPE AND CENTRAL ASIA

► **Current Prevention Resources.** In 2002, the Working Group estimates that only \$23 million was spent on HIV prevention measures in the region.

► **Estimated Need.** To combat the spread of HIV in Eastern Europe and Central Asia, more than \$1.2 billion in prevention spending will be required by 2005. By 2007, prevention resource needs will increase to \$1.6 billion.

► **Prevention Resource Gap:** \$1.18 billion additional annual spending needed by 2005

PREVENTION SUCCESSES IN EASTERN EUROPE AND CENTRAL ASIA

► **Harm Reduction Programs.** Just as introduction of HIV into networks of IDUs can lead rapidly to extremely high prevalence, timely introduction of effective prevention programs has the capacity to yield important dividends. In 1996, early evidence pointed to the presence of HIV in Keraganda Oblast, an administrative region of Kazakhstan. Joint efforts by the government of Kazakhstan and UN agencies, however, led to the swift establishment of a multi-faceted prevention initiative targeting drug use, including efforts to enhance access to sterile injection equipment, as well as awareness campaigns targeting IDUs, health professionals, the public and private sectors, and the general public. School-based prevention programs were initiated focusing on the HIV transmission risks of drug use, and legal reforms were implemented to reduce police harassment of people possessing needles and syringes. Results of this initiative have been impressive — the level of HIV infection among people injecting less than a year (i.e., “recent injectors”) declined from 15 percent in 1997 to roughly five percent in 1999.¹¹⁴

► **Youth-Oriented HIV/AIDS Prevention in Ukraine.** With funding from the UN Foundation, and a partnership with UNDP and UNAIDS, the Ukraine has implemented a nationwide program (reaching all 27 administrative regions) to provide young people with HIV prevention and health education. The program trains teachers, who in turn provide educational sessions to young people and train youth to become peer educators. Between 2000 and 2002, the program trained more than 1,600 teachers,



substantially more than the original target for the intervention. Although surveys prior to initiation of the program indicated that young people in Ukraine had little knowledge of HIV/AIDS, evaluators found that the program significantly increased HIV-related knowledge and substantially reduced young people’s inaccurate impressions of injecting drug users and people living with HIV/AIDS. There are currently plans to expand the project to reach 70 percent of all young people in Ukraine.¹¹⁵

► **HIV Prevention Among Incarcerated Populations in Kazakhstan.** In response to evidence indicating that incarcerated populations are at high risk of infection in the region, the national government’s Ministries of Internal Affairs and of Justice initiated various policy changes to promote effective management of the epidemic in correctional facilities. Free STD treatment was provided; condoms, disinfectant and educational materials were made available; peer educators were recruited and trained from among the inmate population; mandatory HIV testing was banned; and segregation of HIV-infected inmates was ended. After the policy had been in place for one year, inmates at four different correctional institutions were surveyed. Results indicated significant increases among inmates in their understanding and perception of personal risk, understanding of the proper methods for condom use and sterilization of injection equipment, and awareness of opportunities for recovery from substance abuse. Corresponding increases were also recorded in the knowledge and perception of correctional staff.¹¹⁶

HIV PREVENTION

A SOUND GLOBAL INVESTMENT

Even with recent declines in the price of antiretroviral therapy, lifetime costs for treating a case of HIV infection in a developing country will nevertheless be substantial. Unless the anticipated growth in new infections is prevented, the burden on treatment and care systems in low- and middle-income countries will be unsustainable over the long run, even with dramatically greater global assistance for the purchase and delivery of drugs. To preserve the hope of effective long-term treatment for the 40 million people currently living with HIV/AIDS, prevention efforts must be redoubled.

HIV prevention interventions are some of the most cost-effective health measures available in poor countries. A 2002 meta-analysis of 57 studies and 9 literature reviews confirms that HIV prevention services in high-burden countries in sub-Saharan Africa are remarkably inexpensive.¹¹⁷

COST-EFFECTIVENESS OF SELECT HIV PREVENTION INTERVENTIONS IN AFRICA

Intervention	Context of Intervention	Cost Per HIV Infection Prevented in Sub-Saharan Africa (U.S. \$)*
Peer Education	Sex Workers in Cameroon (21 percent HIV prevalence)	\$79–\$160
Diagnosis and Treatment of STDs	Tanzania (four percent HIV prevalence)	\$271
Voluntary Counseling and Testing	Tanzania and Kenya, (20 percent HIV prevalence)	\$393–\$482
Rapid Testing to Screen Blood Transfusions	Zimbabwe (19 percent HIV prevalence)	\$62

* Cost per infection will be higher in regions where HIV incidence is lower

Source: Creese et al, *Lancet*, 2002



THE CARIBBEAN AND LATIN AMERICA
 POPULATION 520,520,000
 HIV PREVALENCE 2.4%
 HIGH HAITI 6.1%
 MAIN MODES OF TRANSMISSION HETEROSEXUAL, MSM, IDU

THE CARIBBEAN AND LATIN AMERICA ADDRESSING THE WORLD'S SECOND MOST AFFECTED REGION

STATUS OF THE EPIDEMIC IN THE CARIBBEAN AND LATIN AMERICA

► **HIV Prevalence.** With an adult HIV prevalence rate of 2.4 percent, the Caribbean and Latin America has the second highest rate of infection in the world.¹¹⁸ Prevalence ranges from 0.1 percent in Bolivia to 6.1 percent in Haiti.¹¹⁹

- ▶ **Rate of Growth.** Levels of HIV infection in the region are increasing more than 10 percent annually, with an estimated 210,000 contracting HIV in 2002.¹²⁰
- ▶ **Primary Modes of Transmission.** The epidemic in the Caribbean and Latin America is especially diverse, driven by heterosexual transmission in the Caribbean, and sex between men and injecting drug use in other parts of the region.
- ▶ **Epidemic History.** The epidemic in the Caribbean and Latin America can be traced to the late 1970s and early 1980s.¹²¹
- ▶ **Key Populations for Prevention Programs.** Key populations in need of prevention services include:

MSM. While MSM account for the single largest share of cumulative AIDS cases in the region as a whole (42 percent), they make up only about 10 percent of cases in the Caribbean and Central America.¹²² Studies indicate that significant percentages of MSM in the region have sex with both men and women, suggesting that the population may serve as an important bridge to the broader population.¹²³ A seven-country study in Central America detected HIV infection rates among MSM between 8 percent and 18 percent. Surveys of MSM in other parts of the region have found similarly disturbing HIV prevalence rates: 18 percent in Peru, 15 percent in Mexico, 12 percent in Argentina, and 11 percent in Brazil.¹²⁴

IDUs. Injection drug use plays only marginal role in the epidemic's spread in some countries, while accounting for more than one-third of cases in some parts of South America.¹²⁵

Sex Workers. In comparison to sub-Saharan Africa and Asia, HIV prevalence among sex worker populations in Latin America and the Caribbean has generally remained below five percent.¹²⁶ Prevention efforts targeting sex workers must be sustained and strengthened, however, as they represent both a highly vulnerable population and one that can serve as a bridge to other populations.

Correctional Inmates. HIV prevalence among correctional inmates in Argentina rose from 18 percent to 23 percent between 1998 and 2001. In Honduras, nearly 7 percent of all male prisoners in three urban correctional settings tested HIV-positive.

Migrant Populations. Millions of people from the Caribbean and Latin America work in the U.S. and Europe, frequently returning to their native homes (either temporarily or permanently). Studies indicate that migrants typically engage in much higher risk behaviors when they are away from their families and normal surroundings.¹²⁷ Especially in some rural Mexican states, there is also evidence that some migrant male workers transmit HIV to their wives or girlfriends upon returning from the U.S.¹²⁸

GAPS IN ACCESS TO HIV PREVENTION IN THE CARIBBEAN AND LATIN AMERICA

Prevention Programs for Injecting Drug Users. In countries of South America's Southern Cone, injection drug use is a central factor in the spread of HIV/AIDS. IDUs comprise 40 percent of all new infections in Argentina and nearly three in 10 new cases in Uruguay. Despite the important contribution of injecting drug use to the spread of HIV in the region, few IDUs in the region currently have access to harm reduction programs.

▶ **IDU gap: Only 11% of IDUs have access to harm reduction programs.**

Targeted Behavioral Interventions. Although transmission among MSM drives the epidemic in much of Latin America, only one in nine MSM are reached by safer sex programs. Other vulnerable groups are similarly underserved.

▶ **Behavioral intervention gap: Only 11% of MSM, 4% of out-of-school youth, 38% of in-school youth, and 6% of sex workers and their clients have access to behavior change programs.**

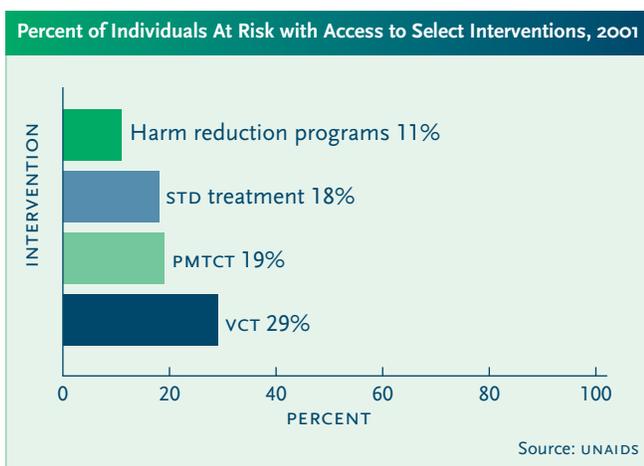
Diagnosis and Treatment of Sexually Transmitted Diseases. Evidence is limited in the region regarding the prevalence and incidence of key STDs that might facilitate HIV transmission. A multi-center study in Honduras found that more than one percent of pregnant women, nine percent of sex workers, and four percent of MSM had active syphilis.¹²⁹ In Guyana, 25 percent of male patients

and 18 percent of female patients at an STD clinic in Georgetown tested HIV-positive in 1997.¹³⁰

► **STD treatment gap:** Only 18% of people who need STD services are able to obtain them.

Voluntary Counseling and Testing. Despite the fact that the region has one of the world's oldest epidemics, most people with HIV remain unaware of their serostatus.¹³¹

► **VCT gap:** Only 29% of people who want VCT have access.



Prevention of Mother-to-Child Transmission. For the region as a whole, mother-to-child transmission accounts for fewer than two percent of all AIDS cases reported in the region. In some countries, however — especially in the Caribbean, where heterosexual intercourse is the primary mode of transmission and the epidemic has been established longer — mother-to-child transmission represents a significant percentage of new infections, necessitating the rapid scale-up of PMTCT projects.¹³²

► **PMTCT gap:** Only 19% of mothers in the region (only one in eight in the Caribbean) have access to PMTCT programs.

Broad-Based HIV/AIDS Awareness. UNAIDS reports that HIV transmission in the region is driven, in part, by “a combination of unequal socioeconomic development and high population mobility,” leading to a growing concentration of the epidemic among socially marginalized groups.¹³³ Not only are members of these populations likely to have the least access to critical health information, but they are often on the move in search of work, further complicating efforts to provide essential prevention information.

► **Awareness gap:** Fewer than one-third of people at risk for HIV are reached by mass media awareness efforts.

HIV PREVENTION RESOURCE GAP IN THE CARIBBEAN AND LATIN AMERICA

► **Current Prevention Resources.** In 2002, the Working Group estimates that total prevention spending in the region equaled approximately \$195 million.

► **Estimated Need.** By 2005, total annual expenditures of \$879 million will be required to scale up proven prevention programs. By 2007, \$964 million will be needed.

► **Prevention Resource Gap: \$684 million additional annual spending needed by 2005**

PREVENTION SUCCESSES IN THE CARIBBEAN AND LATIN AMERICA

► Integrating Prevention and Care

in Brazil. Brazil provides the clearest example of the potential synergy between prevention and treatment initiatives. Brazil combined targeted prevention programs, general awareness campaigns, ready access to vCT, universal access to ARVs and other treatments, and supportive policies to reduce stigma and enhance the effectiveness of prevention and care initiatives. The country has recorded marked reductions in HIV-related morbidity and mortality, as well as significant declines in risk behaviors and new infections.¹³⁴

► Harm Reduction Programs in South America.

A study of five harm reduction projects in Brazil found that up to 60 percent of IDUs who participated in the projects for six months were consistently using their own injection equipment.¹³⁵ Harm reduction projects may also affect



condom usage. One recent study found that condom use by IDUs in Brazil increased between 1999 and 2000 from 42 percent to 65 percent.¹³⁶

► Targeting Young People in Haiti.

The Fondation pour la Santé Reproductive et l'Education Familiale (FOSREF) has established seven medical centers to deliver comprehensive services and education to young people at risk for HIV infection, including contraceptive counseling, HIV/STD prevention services, HIV-related counseling, prenatal care and support services. As of 2002, the project had reached more than 1.5 million young people with messages about HIV and STDs, training 800 youth as HIV/STD peer educators who together have visited more than 1,300 schools nationwide.¹³⁷

INTEGRATING HIV PREVENTION AND TREATMENT

Substantially increased attention is being paid to the major disparities between rich and poor countries in access to HIV/AIDS treatment. Prices of ARVs have significantly declined, and WHO has certified a number of low-cost ARVs as “essential drugs.”

Donors, too, are showing leadership in helping to expand treatment access. The U.S. government has proposed to provide ARV access to two million people in 14 countries over the next five years, and proposals approved by the Global Fund to Fight AIDS, Tuberculosis and Malaria will permit ARV therapy for an additional 500,000 people.

Although substantial work remains to be done, there is reason for optimism that regions that have historically seen little or no access to standard HIV therapy will have the wherewithal to significantly increase treatment access in the foreseeable future. Greater treatment access will offer critical opportunities to strengthen global HIV prevention efforts — by encouraging knowledge of serostatus, facilitating use of clinical settings to deliver and bolster prevention programs, reducing stigma, and potentially reducing the biological likelihood that a single act of sexual intercourse will lead to HIV transmission.

The world should seize this new opportunity to forge a comprehensive approach to HIV/AIDS by integrating prevention and treatment. Experience in industrialized countries has shown that failure to combine prevention with enhanced treatment access may actually lead to an

increase in risk behavior and thereby make it more difficult to curb the spread of the virus. (As a result, many industrialized countries are actively working to improve the integration of prevention and care.)

Conversely, countries like Brazil have demonstrated that carefully integrating prevention and care can yield many benefits:

- ▶ **Encouraging Knowledge of Serostatus.** When countries have no meaningful services to offer infected individuals, there is little incentive to learn one’s HIV status, diminishing the potential impact of VCT as an HIV prevention measure.
- ▶ **Using Clinical Settings to Deliver HIV Prevention Services to People Living with HIV/AIDS.** Because so few people with HIV/AIDS in developing countries attend health care settings on a regular basis, it is difficult, if not impossible, to target prevention services specifically to people living with the disease to help them protect others from infection. Where health care services are available, however, clinical settings become an ideal venue for targeted prevention initiatives. In particular, as treatment access increases, health care workers will need training in prevention counseling skills.
- ▶ **Reducing Stigma.** Experience in Brazil, as well as in industrialized countries, indicates that the availability of effective treatments helps normalize HIV/AIDS and diminishes the stigma that impedes effective prevention measures.



NORTH AFRICA AND THE MIDDLE EAST | THE POTENTIAL FOR RAPID GROWTH OF HIV/AIDS

STATUS OF THE EPIDEMIC IN NORTH AFRICA AND THE MIDDLE EAST

- ▶ **HIV Prevalence.** The level of HIV infection in the adult population is lower in North Africa and the Middle East than in other regions — approximately 0.3 percent.
- ▶ **Rate of Growth.** Although the numbers are still relatively small and surveillance systems rather undeveloped, evidence indicates three times as many people are living with HIV/AIDS in the region than three years ago. The number of people in the region living with HIV/AIDS increased by roughly 20 percent in 2002, bringing the total number to an estimated 550,000.¹³⁸

► **Epidemic History.** The HIV/AIDS epidemic in North Africa and the Middle East began only in the late 1980s. Currently, low HIV/AIDS awareness and increasing risk behavior are combining to generate the potential for significant growth in HIV transmission.

► **Primary Modes of Transmission.** Injection drug use appears to be the principal driving force in the epidemic; in Iran, for example, IDUs make up nearly two-thirds of all reported HIV/AIDS cases.¹³⁹

► **Key Populations for Prevention Programs**

IDUs and Their Sex Partners. Most IDUs in the region are male, and nearly one third are married. Condom use among IDUs is rare, however, creating potential opportunities for infection to spread to their sex partners.¹⁴⁰

Correctional Inmates. UNAIDS reports that 10 percent of correctional inmates in Iran inject drugs, with more than 95 percent of such individuals sharing injection equipment with others. Infection rates among prisoners rose six-fold between 1996 and 1999,¹⁴¹ and by 2001, one in eight drug-injecting inmates in the country was HIV-positive.

Other Populations. Although public health surveillance in the region is generally weak, surveys have detected notable infection rates among MSM and among sex workers and their clients.¹⁴²

GAPS IN ACCESS TO HIV PREVENTION IN NORTH AFRICA AND THE MIDDLE EAST

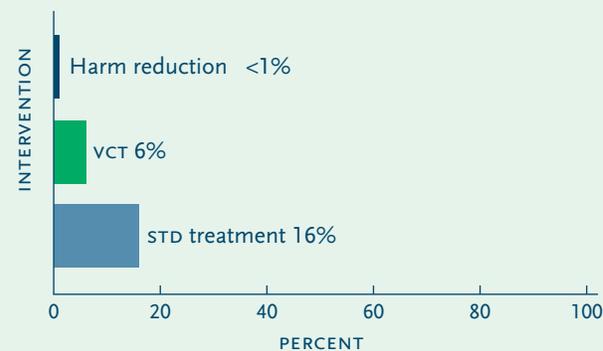
Harm Reduction Programs for Injecting Drug Users.

Injection drug use appears to be a growing problem in North Africa and the Middle East, increasing the region's vulnerability to a significant increase in HIV/AIDS.

► **IDU gap:** Access to harm reduction programs is almost non-existent in the region.

Targeted Behavioral Interventions. The potential for growth in infection rates is underscored by the scarcity of behavior change programs for highly vulnerable populations.

Percent of Individuals At Risk with Access to Select Interventions, 2001



Source: UNAIDS

► **Behavioral intervention gap:** Only 5% of sex workers and their clients, 10% of MSM, 2% of out-of-school youth, and 27% of in-school youth have access to behavioral interventions.

Diagnosis and Treatment of Sexually Transmitted Diseases.

According to UNAIDS, STDs in Iran significantly increased between 1995 and 1998.¹⁴³ In Morocco, a country of approximately 30 million people, nearly 350,000 cases of STDs were reported in 2001.¹⁴⁴

► **STD treatment gap:** Only 16% of people who need STD services are able to obtain them.

Voluntary Counseling and Testing. According to WHO and UNAIDS, North Africa and the Middle East is the most underserved region with respect to VCT.

► **VCT gap:** Only 6% of people who want VCT have access.

Broad-Based HIV/AIDS Awareness. As a result of the relative newness of the epidemic and the lack of a political response, few people in the region perceive themselves to be at risk for HIV infection.

► **Awareness gap:** Fewer than one-fifth of people at risk have access to HIV/AIDS information through the media.

HIV PREVENTION RESOURCE GAP IN NORTH AFRICA AND THE MIDDLE EAST

- ▶ **Current Prevention Resources.** The Working Group estimates that, in 2002, \$23 million was spent on HIV prevention activities in the region.
- ▶ **Estimated Need.** To respond to the growing epidemic in North Africa and the Middle East, annual expenditures of \$192 million will be required for HIV prevention activities by 2005. Nearly \$210 million in annual spending will be needed in the region by 2007.

Mounting the kind of prevention response capable of preventing a significant outbreak of HIV/AIDS in the region will require a 10-fold increase in spending.

- ▶ **Prevention Resource Gap: \$169 million additional annual spending needed by 2005**

PREVENTION SUCCESSES IN NORTH AFRICA AND THE MIDDLE EAST

▶ **An Integrated Prevention Approach in Morocco.** Beginning in 1996, AMSÉD, a Moroccan NGO, established a program to prevent HIV and STD transmission that has grown to involve more than 30 community organizations. Building on initial efforts to increase awareness, access to condoms, and linkages to STD prevention and treatment services among female sex workers and MSM, the program has since collaborated with the Moroccan government to integrate HIV, sexual health, and gender awareness into the government's literacy programs. Based on the success of these 30 community-based pilot projects, Morocco's country coordination mechanism for the Global Fund to Fight AIDS, Tuberculosis and Malaria has agreed to seek substantial new funding to bring these programs to scale.¹⁴⁵

▶ **Behavioral Interventions for IDUs in Iran.** In Kermanshah, a mountainous province bordering on Iraq, the first case of HIV infection was detected in 1995, but numbers grew, reaching 1,228 in 2001. With most of these cases stemming from needle sharing during injecting drug use, the government implemented a multi-faceted program to promote behavior change to reduce new infections among the region's drug-using population. The behavioral model implemented in Kermanshah focuses on the related epidemics of HIV, STDs and drug dependence. The program



seeks to create a policy environment that is conducive to HIV prevention activities among IDUs, and actively cultivates and supports networks of people living with HIV/AIDS. Evaluators report significant behavior changes among IDUs served by the program, including reductions in drug use, needle sharing and unsafe sex. Based on the success of Kermanshah's initiative, two similar behavioral projects have recently been initiated in Teheran.¹⁴⁶

▶ **Promoting HIV Prevention Among MSM in the Maghreb.** ALCS, a Casablanca-based NGO, has pioneered efforts to establish peer education and health service programs for MSM, including men who engage in sex work, as well as men living with HIV/AIDS. Working with the International HIV/AIDS Alliance, ALCS has collaborated with other NGOs in the region to replicate these approaches in Algeria, Mauritania, Tunisia, and other countries of the Maghreb region. After early experience with these programs demonstrated that stigma within NGOs can impede effective prevention programming for MSM, a new programmatic strategy was adopted to focus on community organizing of MSM and people living with HIV/AIDS. These efforts are supporting communities in the development of peer outreach, self-help collectives, and partnerships with other NGOs.¹⁴⁷

INDUSTRIALIZED COUNTRIES PREVENTING A RESURGENCE OF HIV TRANSMISSION

While 95 percent of all infections occur in low- and middle-income countries, the fight against the epidemic is not over in wealthier countries. Prevention efforts in North America, Western Europe, and Australia must also be strengthened and reinvigorated in order to prevent another wave of infections.

An increasing body of evidence indicates that people in developed countries, especially MSM, have increased risk behaviors in recent years.¹⁴⁸ In several cities in North America and Europe, HIV infection rates among MSM appear to be on the rise, and African-American MSM have infection rates that rival those seen in parts of Africa.¹⁴⁹

Studies in industrialized countries strongly suggest that people who feel most optimistic about HIV therapies are most likely to engage in unprotected sex.¹⁵⁰ In addition, substantial percentages — often one-half or more — of MSM involved in recent syphilis outbreaks in several urban areas in the U.S. are HIV-positive, underscoring the importance of effective prevention programs for people already living with HIV.¹⁵¹

To strengthen prevention efforts in industrialized countries, the following actions are needed:

- ▶ **Prevention Programs for Positives.** Many wealthier countries are now recognizing the importance of specifically targeting people living with HIV/AIDS with appropriate prevention interventions. In particular, enhanced efforts are needed to use clinical settings to deliver and reinforce HIV prevention interventions.
- ▶ **Identifying Prevention Models for the Treatment Era.** Although overwhelming evidence demonstrates the effectiveness of available prevention strategies, existing approaches were designed at an earlier stage

of the epidemic, when HIV infection invariably meant rapid disability and death. With significantly fewer people now dying of the disease in industrialized countries, enhanced research efforts are needed to identify new strategies and program models that effectively communicate the continued seriousness of HIV/AIDS in areas where effective treatments are widely available.

- ▶ **Strengthened Prevention Efforts Targeting MSM.** The earliest prevention success in the epidemic occurred among MSM in industrialized countries, who dramatically lowered infection rates by altering their sexual practices. With the epidemic now in its third decade, greater prevention efforts are especially needed for young MSM, who never experienced the height of the epidemic, and for MSM from racial and ethnic minorities, who are often at substantially greater risk of infection. In addition, research is needed to identify effective strategies to renew and reinvigorate prevention efforts to older MSM who may be experiencing “prevention burnout” due to two decades of exposure to risk reduction messages.
- ▶ **Voluntary Counseling and Testing.** Nearly 20 years after development of the HIV antibody test, lack of knowledge of serostatus continues to impede effective prevention and treatment efforts in wealthier countries. In the U.S., for example, officials estimate that 19 to 33 percent of people infected with the virus are unaware of their HIV status.¹⁵²
- ▶ **Enhanced Prevention Funding.** In recent years, funding for HIV prevention activities has flattened, or even declined, in many industrialized countries. Reinvigorating prevention efforts in these countries will require new resources. In the U.S. alone, it is estimated that an additional \$300 million in annual prevention spending is needed to mount an effective, comprehensive prevention effort.¹⁵³

THE HIV PREVENTION RESOURCE GAP

In every region, substantial gaps exist in access to essential HIV prevention interventions. Closing the HIV prevention access gap — worldwide and in specific regions — will require significant new outlays from both developed and developing countries. In short, a major effort to mobilize unprecedented resources for HIV prevention programs, coupled with the scale-up of treatment programs, will be needed to reverse the global epidemic.

Such sums, however, must be placed in perspective. For relatively modest amounts, gaps in access to key interventions could be rapidly narrowed or even eliminated.

- ▶ For less than one dollar per year for every American (\$252 million), the global community could ensure effective worldwide access to voluntary counseling and testing.
- ▶ Optimal worldwide access to harm reduction interventions would require annual expenditures of only \$46 million, less than one euro per year per person in France.
- ▶ One euro per year for every German (\$82 million) could ensure that all students in developing countries receive school-based HIV education and prevention programs.

Overall, according to an expert panel of economists convened by UNAIDS, prevention resource needs for low- and middle-income countries will amount to

approximately \$5.7 billion in 2005, while spending on antiretrovirals and treatment for opportunistic infections should increase to \$4.5 billion.

The challenge facing the global community is to immediately marshal sufficient resources to ensure rapid scale-up of life-saving prevention strategies. With sufficient resources, existing strategies can effectively reverse the epidemic by decade's end. In the absence of such global commitment, the epidemic will continue its expansion.

CURRENT SPENDING ON HIV PREVENTION

UNAIDS estimates that resources available from all sources for HIV/AIDS programming of any kind (i.e., prevention, care, support and treatment) at the country level in 2002 amounted to \$3.5 billion.

In tracking resources, UNAIDS distinguishes between funds that have been committed by donors in a particular year and resources that are actually available for use in any given year at country level, tracking only the latter. UNAIDS estimates also omit pledges for future spending (for example, to the Global Fund to Fight AIDS, Tuberculosis, and Malaria), as the analysis is limited to resources

SOURCES OF FUNDING FOR HIV/AIDS PROGRAMS IN 2002 (U.S. \$)

Funding Source	Total Spending on HIV/AIDS Programs	Estimated Spending on Care and Support	Estimated Spending on HIV Prevention
Developing Countries	\$1.7 billion	\$918 million	\$782 million
Bilateral Donors	\$1.3 billion	\$520 million	\$780 million
Foundations/ NGOs	\$200 million	\$40 million	\$160 million
United Nations System	\$150 million	\$50 million	\$100 million
World Bank	\$95 million	\$31 million	\$64 million
TOTAL	\$3.5 billion	\$1.6 billion	\$1.9 billion

Source: UNAIDS; Working Group analysis

actually available in a given year for prevention programs. In addition, UNAIDS estimates seek to track only spending that can be traced to a package of standard interventions, excluding such items as public health surveillance or infrastructure capacity development.*

Using initial UNAIDS figures for overall HIV/AIDS spending of \$3.5 billion in 2002, the Working Group undertook subsequent investigation to obtain estimates of spending specifically for standard HIV prevention measures. The absence of reliable tracking mechanisms for spending made it impossible for the Working Group to identify current spending with a high degree of precision. **Yet based on the best available information, the Working Group estimates that a total of \$1.9 billion was spent in 2002 on HIV prevention measures** — 54% of total AIDS spending. A total of \$1.6 billion was directed to care and support programs for those infected and affected by HIV/AIDS.‡

Developing Country Sources

Developing countries themselves account for the single largest share of spending on HIV/AIDS programs in low- and middle-income countries, contributing an estimated \$1.7 billion in 2002 for prevention, treatment, care and support programs. Financial support for HIV/AIDS interventions at country level are attributable to two sources of roughly equal size — outlays by the private sector, primarily from affected households, and expenditures by domestic governments.

Differentiation between prevention and other forms of HIV/AIDS spending from domestic sources is challenging due to lack of reliable data. Given the limited or frequently non-existent access to basic health care, combined with the inevitable pressures on affected households and domestic governments to prioritize care for people who are seriously ill, it is reasonable to assume that most domestic HIV/AIDS spending focuses on treatment, care and support over preventive measures, although in middle-income countries private outlays for condom purchase, blood screening and other prevention items are likely to be considerable.

* In the case of HIV prevention, interventions tracked by UNAIDS include (1) in-school prevention programs for youth, (2) prevention interventions for out-of-school youth, (3) targeted interventions for sex workers and their clients, (4) social marketing, (5) condom provision, (6) enhanced STD control activities, (7) VCT, (8) workplace prevention programs, (9) blood safety interventions, (10) PMTCT, (11) mass media awareness interventions, (12) harm reduction programs, (13) targeted interventions for MSM, (14) post-exposure prophylaxis, (15) safe injections, (16) universal precautions in health care settings, and (17) policy, administration and research.

‡ In the case of care and support, interventions tracked by UNAIDS include (1) palliative care, (2) HIV testing, (3) treatment for opportunistic infections, (4) prophylaxis for opportunistic infections, (5) ARV therapy, and (6) orphan support, including community support, orphanages, and school fees.

According to UNAIDS, Latin America has historically accounted for the vast majority of domestic spending on HIV/AIDS. Recently, however, other middle-income countries, most notably South Africa and Thailand, have significantly increased their spending on HIV/AIDS programs. In 2002, for example, UNAIDS estimates that South Africa allocated \$100 million toward HIV prevention measures.

Latin America and the Caribbean is the only region for which it is possible to make a reasonable estimate of the breakdown between prevention and non-prevention spending. According to a five-country study of HIV/AIDS spending patterns in Latin America, 46 percent of all domestic spending (public and private) on HIV/AIDS in the region focuses on HIV prevention interventions. In the absence of other reliable data sources, the Working Group has estimated that domestic government and household spending in other countries follows a similar pattern, leading to an overall estimate of \$782 million for developing country spending on HIV prevention in 2002.

Bilateral Programs Administered by Donor Countries

In 2002, UNAIDS projects that bilateral donors contributed more than \$1.3 billion in funding for all HIV/AIDS interventions in developing countries, making these donors the second largest source of financial support for HIV/AIDS programs. Roughly two-thirds of bilateral HIV/AIDS spending in 2002 derived from two donors — the U.S. (\$514 million) and the United Kingdom (\$300 million).

Categorizing HIV/AIDS spending is challenging, as most donors do not report spending by program category (e.g., prevention, care, treatment, support, etc.). Although prevention historically accounted for the large majority of USAID spending on HIV/AIDS, the share of prevention spending has fallen in recent years with the scale-up of care and support services. Prevention interventions, including prevention of mother-to-child transmission, currently account for approximately 57 percent of the USAID HIV/AIDS portfolio.¹⁵⁴

The U.K. Department for International Development approaches its HIV/AIDS work at country-level in a cross-cutting, multisectoral manner that makes it difficult to establish a percentage specifically for HIV prevention. As DFID reports that the bulk of its programming focuses on prevention, the Working Group has assumed that two-thirds of DFID's HIV/AIDS spending — 67 percent — can be categorized as prevention.

Using the weighted average of the share of prevention spending in the U.S. and U.K. HIV/AIDS portfolios (60 percent), the Working Group has applied this percentage

ESTIMATED SPENDING IN 2002 BY SELECT DONOR COUNTRIES FOR GLOBAL AIDS PROGRAMS

Country	Total for HIV/AIDS Programs (U.S. \$ millions)	Total for Global HIV Prevention (U.S. \$ millions)	Share of GDP for HIV/AIDS Programs*	Share of GDP for Global HIV Prevention*
United Kingdom	300	200	0.021%	0.014%
Norway	35	21	0.021%	0.013%
Netherlands	55	33	0.014%	0.009%
Canada	39	23	0.006%	0.003%
United States	514	293	0.005%	0.003%
Sweden	11	6‡	0.005%	0.003%
Germany	55	33	0.003%	0.002%
Japan	100	60	0.002%	0.001%
France	25	15	0.002%	0.001%

* Figures for national GDP derive from the World Bank's World Development Indicators 2002. | ‡ Estimated spending in 2001; 2002 figures unavailable. | Source: DFID, Paul Delay, Working Group analysis

to resources available from other bilateral donors. Altogether, the Working Group estimates \$780 million in bilateral funding for HIV prevention interventions at country level. As the chart above demonstrates, however, the level of support for HIV prevention among leading donor countries varies considerably.

While bilateral support for prevention clearly must increase, these data also highlight the need for increased spending for care and support.

Foundations and NGOs

UNAIDS estimates that foundations and NGOs contributed \$200 million in financial support for HIV/AIDS programs in developing countries in 2002. At present, no database exists to permit differentiation of prevention from other forms of spending by foundations and NGOs.

The Working Group obtained information regarding 2002 spending on programs in developing countries from four leading foundations — the Bill & Melinda Gates Foundation, Henry J. Kaiser Family Foundation, Rockefeller Foundation, and United Nations Foundation. Prevention research funding was excluded from this analysis. With the exception of Rockefeller Foundation, which in 2002 prioritized grants for care and treatment, most spending in 2002 by these foundations focused on HIV prevention. Altogether, these four foundations provided approximately \$100 million in funding for HIV prevention programs in developing countries in 2002. On the basis of its analysis of spending by these leading foundations, the Working Group estimates that 80 percent, or \$160 million, of amounts spent by founda-

tions and NGOs on programmatic interventions in 2002 were allocated to HIV prevention.

United Nations Agencies

UNAIDS estimates that the UN system (excluding the World Bank) provided \$150 million in financial support for HIV/AIDS programs in developing countries in 2002.

The Unified Budget and Workplan of UNAIDS — which combines and harmonizes activities of the UNAIDS Secretariat and eight UNAIDS Cosponsor agencies — supports global and regional activities of the joint UNAIDS program, as well as UNAIDS support for governments to develop and implement national multisectoral HIV/AIDS strategies.

In addition to regional and global activities and national strategic planning through UNAIDS, various UN agencies also support national efforts to mount HIV/AIDS programs. Prominent among these UN sources of funding for national efforts are UNDP, UNESCO, UNFPA, UNICEF, the World Health Organization, and the Department of Peacekeeping Operations of the UN Secretariat.

No methodology currently exists to determine with precision the magnitude of UN system resources for country-level prevention programs. An analysis of budget documents for country-level activities of UNAIDS Cosponsors, however, indicates that country-level assistance provided by these key UN agencies is weighted strongly toward HIV prevention, including condom promotion and distribution, prevention of mother-to-child transmission, expansion of school-based HIV prevention programs, and targeted prevention programs for vulnerable populations. Accordingly, the Working Group esti-

mates that two-thirds of the \$150 million provided by UN agencies for HIV/AIDS programs in 2002 (or \$100 million) may be classified as HIV prevention.

World Bank

According to UNAIDS, the World Bank provides \$95 million in direct support for HIV/AIDS programming in 2002, calculated as a combination of outright grants to countries and the financial value of the concessionary portion of World Bank HIV/AIDS loans. An analysis of the World Bank portfolio of HIV/AIDS programming indicates that roughly two-thirds of the Bank's HIV/AIDS assistance to countries is for HIV prevention, although the degree to which such disease control spending finances actual interventions, as opposed to surveillance and capacity-building, is unclear. In addition, the World Bank has categorized several programs as HIV prevention even though they support both HIV and TB control activities. Using the two-thirds assumption, the Working Group estimates that the Bank contributed nearly \$64 million for HIV prevention programs at country level in 2002.

RESOURCES NEEDED TO MOUNT AN EFFECTIVE RESPONSE

Recent work by an expert panel of economists convened by UNAIDS indicates that resource needs for HIV prevention in low- and middle-income countries will amount to approximately \$5.7 billion annually in 2005. By 2007, \$6.6 billion in annual prevention spending will be required to address global needs, representing 39 percent of total HIV/AIDS resources needed in 2007.* These estimates must be understood as minimums, as they do not include spending on capacity building, supportive interventions, or reasonable administrative expenses associated with any efficient form of external assistance.

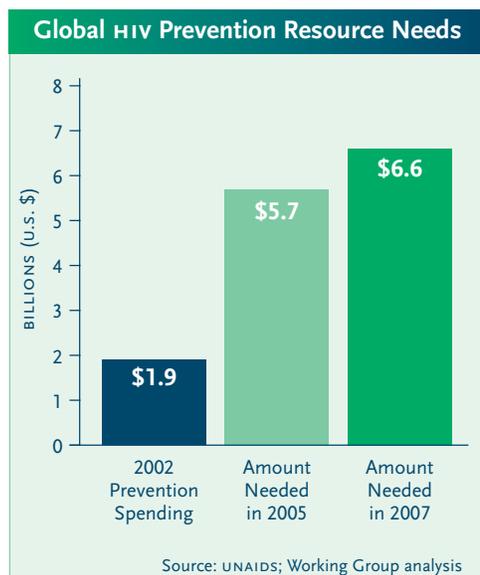
Reaching these spending targets is a matter of overriding global importance. According to UNAIDS, WHO and leading epidemiologists and health care economists, such a comprehensive prevention effort would prevent 29 million

of the 45 million new infections projected in this decade.¹⁵⁵

In 2007, sub-Saharan Africa and Eastern Europe will each require between 20 and 25 percent of projected resources for HIV prevention; Asia and the Pacific will require 35 to 40 percent; Latin America and the Caribbean approximately 15 percent; and North Africa and the Middle East roughly three percent.

The urgent prevention spending increases needed must occur in the context of sharp, sustained increases in all forms of HIV/AIDS spending. UNAIDS estimates that minimum financing needed to bring to scale treatment programs for opportunistic infections will amount to \$2.6 billion by 2005. Given the rapidly growing global population of people for whom antiretroviral therapies are clinically indicated, annual outlays for the purchase, delivery and monitoring of ARVs should grow to \$1.9 billion by 2005 and to \$3.75 billion by 2007. According to UNAIDS, programs to support AIDS orphans and others made vulnerable by the epidemic will require at least \$1 billion annually.

There are important indications that spending on HIV prevention and other HIV/AIDS programs is on the rise, although the rate of increase must accelerate further still if the 2005 and 2007 funding targets are to be met.



The Global Fund to Fight AIDS, Tuberculosis and Malaria, which only became operational in 2002, expects to deliver several hundred million dollars for programmatic scale-up in affected countries in 2003. As of March 2003, the Global Fund had collected \$3.4 billion in financial pledges.

In January 2003, U.S. President George W. Bush announced a proposed initiative that would triple U.S. financial support for HIV/AIDS programs, generating \$10 billion in new HIV/AIDS spending over the next five years. The initiative would commit substantial new funds to

scaling up both prevention and treatment programs in 14 countries in Africa and the Caribbean.

* The decline in the prevention share of overall HIV/AIDS spending from current patterns (54 percent) to the proper prevention share in 2007 (39 percent) as part of a comprehensive global approach to HIV/AIDS stems from at least two factors. First, global coverage for ARVs (4 percent) is even lower than coverage rates reported for key prevention interventions, requiring an even steeper scale-up in future years for treatment. Second, because long-term ARV therapy is more costly than most prevention interventions, the balance between prevention and care/treatment resources will inevitably change as global scale-up occurs. In any event, achieving spending targets for prevention in 2007 will nevertheless require a nearly four-fold increase in available resources, underscoring the global urgency of rapid scale-up of both prevention and treatment programs.

ACCELERATING PREVENTION RESEARCH

Although existing prevention strategies are highly effective, the global peril posed by HIV/AIDS demands that urgent efforts be undertaken to devise new strategies to for the combination prevention portfolio. Unfortunately, only 10 percent of medical research spending is devoted to diseases that primarily affect poor countries and cause 90 percent of the global health burden.¹⁵⁶ Moreover, prevention research has historically garnered a relatively small share of research spending.

No comprehensive database currently exists to track spending on HIV prevention research. The U.S. National Institutes of Health, the largest single source of funding for HIV-related research, provided \$977 million in support for HIV prevention research (domestic and international) in its 2002 fiscal year, including more than \$329 million for HIV vaccine research. In 2001, the U.S. Centers for Disease Control spent approximately \$79 million for HIV prevention research, including nearly \$14 million on research outside the U.S. The Bill & Melinda Gates Foundation disbursed \$139 million in 2002 to support HIV prevention research. Other governments and multilateral agencies also support behavioral, intervention and operational research relevant to global HIV prevention efforts.

Current sums, however, are clearly inadequate to meet the challenge posed by HIV/AIDS. The global community must devote substantial new resources to the search for new prevention tools to add to the “combination prevention” inventory.

► **Vaccines.** Twenty years after research into a preventive vaccine began, only one candidate vaccine has been tested for efficacy and numerous promising avenues for HIV vaccination are not being pursued due to lack of public and private support.¹⁵⁷ The International AIDS Vaccine Initiative estimates that an increase of \$1 billion in public and private sector support for vaccine research will be needed to pursue potentially promising research avenues that are currently not being addressed.¹⁵⁸ Public sector policies are also urgently needed to provide pharmaceutical and biotech companies with financial incentives to increase their involvement in HIV vaccine research.

► **Microbicides.** A safe and effective microbicide would provide protection against HIV when a condom is not used — a potential benefit of particular importance to women who may not be able to negotiate condom use with their partners. Lack of public and private sector

support for microbicide research has made it difficult to move promising candidates through the R&D pipeline, although six products are ready to enter large scale effectiveness trials soon.¹⁵⁹ Experts in the microbicide field estimate that at least \$1 billion in additional spending is needed to accelerate R&D efforts.¹⁶⁰

► **Antiretroviral Therapies.** As plasma viral load has been closely associated with likelihood of transmission, studies are beginning to examine whether widespread ARV therapy will reduce rates of new infections. Additional research is also ongoing to improve ARV regimens for the prevention of mother-to-child transmission, and to examine whether pre- and/or post-exposure administration of ARVs can help prevent transmission.

► **Behavioral Intervention Research.** Although overwhelming data demonstrate the effectiveness of existing interventions in reducing the frequency of behaviors that facilitate HIV transmission, additional research is needed to identify effective strategies to reach marginalized populations (such as injecting drug users, men who have sex with men, and sex workers) in diverse cultural settings.

► **Female Barrier Methods.** Another relatively new area of research focuses on whether female diaphragms or other alternative female-controlled barrier methods might offer protection against HIV transmission.

► **Circumcision.** Numerous studies have found that men who were circumcised as infants are significantly less likely to contract HIV.¹⁶¹ No study, however, has examined whether adult circumcision would be effective in reducing the risk of transmission. Three studies in Africa (Kenya, South Africa, and Uganda) are being initiated to examine this question.

► **STD Control.** Although STD prevention, diagnosis and treatment are universally recognized as central components of an effective HIV prevention strategy, complicated methodological questions remain about which STDs should be targeted and which STD control strategies should be prioritized to reduce the risk of HIV transmission.¹⁶² Trials have been planned to look into such questions, but additional clinical and operational research will be needed.

RECOMMENDATIONS

To mount the response needed to reverse the global epidemic, the Working Group makes the following recommendations and urges their rapid implementation:

Global spending on HIV prevention activities from all sources should increase three-fold by 2005 to \$5.7 billion, and to \$6.6 billion by 2007.

- ▶ Donor nations, which currently contribute less than one-half of all spending on HIV/AIDS programs in developing countries, should substantially increase their assistance to low- and middle-income countries by contributing a minimum of 0.02 percent of GDP to HIV prevention activities by 2005. The Working Group estimates that this would yield an additional \$5 billion in annual resources for HIV prevention measures, yet the relative cost to industrialized nations would be marginal.*
- ▶ This spending increase for prevention should occur in the context of a dramatic, comprehensive scaling-up of support for all HIV/AIDS efforts, including care, treatment and support programs. Annual spending on treatment of opportunistic infections should increase to \$2.6 billion by 2005, while annual outlays for scale-up of antiretroviral treatment should grow to \$1.9 billion by 2005 and to \$3.75 billion by 2007. Programs to support AIDS orphans will require at least \$1 billion annually.
- ▶ Because prevention services will benefit from a range of strong, flexible funding sources, significant new funding from donor nations, foundations and the corporate sector should be directed toward the Global Fund to Fight AIDS, TB and Malaria. Donors should contribute at least \$2 billion to the Global Fund in 2003 and at least \$4.6 billion in 2004 to permit the Fund to help countries scale up HIV prevention and treatment, as well as tuberculosis and malaria programs.

- ▶ Current debt relief mechanisms should be aggressively used (by both debtor and creditor countries) and additional relief should be approved to free domestic resources to underwrite HIV prevention activities.
- ▶ With WHO advising that developing countries contribute a third of the amounts required to meet funding targets in 2005 and beyond, affected countries should prioritize HIV prevention in their budget allocations. Increased support by international donors is needed to reduce or eliminate the need for HIV-related household outlays in least developed countries.
- ▶ Given the difficulties in tracking HIV prevention spending discovered in this analysis, spending on HIV prevention and other HIV/AIDS spending should be reported and tracked much more carefully to ensure transparency, to allocate funds most strategically, and to facilitate analysis of spending trends to ensure that spending meets global needs.

Because prevention efforts currently fall short of what is needed in every region of the developing world, prevention scale-up must be a central priority in each region.

- ▶ By 2005, annual spending on HIV prevention activities in sub-Saharan Africa should increase from \$927 million to \$1.5 billion. Particular emphasis should be placed on prevention programs targeted to youth, who represent the future of the epidemic in hardest-hit Africa.
- ▶ By 2005, annual spending on HIV prevention activities in the Caribbean and Latin America should increase from \$210 million to \$879 million.

* UNAIDS/WHO advise that affected countries themselves should cover one-third of the cost of the response to HIV/AIDS. This would imply that the prevention share in 2005 for donor countries and other sources would be \$3.8 billion. The Working Group recommends that donor nations contribute \$5 billion in order to help cover other essential costs that are not included in the financing of interventions themselves, such as infrastructure support, human capacity-building, and supportive interventions.

- ▶ By 2005, annual spending on HIV prevention activities in Asia must increase from 2002 levels by \$1.4 billion. To prevent HIV from rapidly spreading into the broader population, programs in Asia should prioritize high-risk populations.
- ▶ By 2005, an annual increase over current spending levels of \$1.17 billion is required to scale up combination prevention in Eastern Europe and the countries of the former Soviet Union.
- ▶ Political, religious, business and other leaders must actively embrace the fight against HIV/AIDS in all regions, but especially in Asia and Eastern Europe, where fast-growing epidemics are now emerging. Leaders must speak publicly about the urgent need for prevention scale-up, and support a sound, science-based response to the epidemic. In particular, leadership is needed to assist countries in overcoming resistance to non-coercive prevention programs addressing the needs of IDUs. Due to the relative newness of the HIV/AIDS threat in these regions, substantial investment is immediately needed in both broad-based and targeted HIV/AIDS awareness campaigns.

In the immediate future, prevention efforts should aggressively focus on bringing to scale especially cost-effective, high-impact interventions.

- ▶ **VCT:** Donor nations, affected countries, multilateral institutions, foundations and NGOs should collaborate in the rapid scale-up of accessible VCT programs, making optimal use of rapid testing technologies.
- ▶ **Harm reduction for IDUs:** Scale-up of harm reduction programs should be urgently prioritized, as they have been proven to be highly effective in curbing the spread of HIV/AIDS in areas where injecting drug use is common. Globally, such a scale-up would cost only \$46 million annually, yet the approach could help prevent the projected explosion of cases in Russia, China, India, Eastern Europe and Central Asia.
- ▶ **STD control:** Scale-up of STD control programs is especially critical in Asia, where spiraling STD rates are accelerating the spread of HIV/AIDS into the broader population.

- ▶ **PMTCT:** Global efforts should be strengthened and accelerated to bring to scale programs to prevent mother-to-child transmission. By strengthening the prenatal care infrastructure of low-income countries, PMTCT scale-up would have additional, long-term benefits apart from HIV prevention.
- ▶ **Condom supply:** Donor nations, foundations and multilateral agencies should collaborate in the development and rapid implementation of an emergency plan to ensure an adequate supply of condoms to meet the demands created by scaled-up prevention efforts. Additional spending of almost \$200 million annually is required to ensure an adequate global condom supply.

As both prevention and treatment programs are brought to scale, these initiatives should be carefully integrated to create a single continuum of services.

- ▶ As VCT programs are scaled up, referral and linkage mechanisms must be established and monitored to ensure that individuals who test HIV-positive are rapidly integrated into care programs.
- ▶ Health care workers in HIV/AIDS care settings in low- and middle-income countries should receive comprehensive and periodically reinforced training in HIV prevention counseling. Clinical settings should maintain up-to-date lists of community prevention resources and make referrals, where needed.
- ▶ Prevention programs specifically designed for people living with HIV/AIDS should be provided in settings where such individuals receive medical and support services.
- ▶ As treatment programs are scaled up, health care workers should receive training in standard infection control procedures. Donors should provide funding for state-of-the-art technologies to prevent blood exposures.

In addition to funding prevention interventions themselves, donors should, in collaboration with multilateral agencies, provide extensive additional support to build long-term human capacity and infrastructure.

- ▶ Substantial new resources, over and above amounts needed for programs themselves, should be allocated for the building of long-term human and physical capacity to mount HIV prevention efforts. Research should be urgently initiated to identify the level of financial resources required to underwrite needed capacity building to support long-term HIV prevention efforts.
- ▶ Substantial new resources should specifically be allocated annually for training local personnel, transferring key prevention technologies, and supporting international mechanisms to share prevention expertise across national borders.
- ▶ Planning for human capacity development in developing countries should take account of the fact that the epidemic itself will significantly diminish human capacity at country-level in future years, underscoring the importance of a long-term commitment by donors to capacity-building programs.

Development assistance and policy reforms should address the social and economic conditions that increase vulnerability to, and facilitate the rapid spread of, HIV/AIDS.

- ▶ Donor nations should ensure that official development assistance equals at least 0.7 percent of GDP.
- ▶ Donor countries should reduce trade barriers that impede economic development of poor countries and take active steps to expand trade with developing countries.
- ▶ Available debt relief mechanisms should be effectively used, and additional relief mechanisms should be explored, to maximize the amount of domestic resources available to support HIV/AIDS programs and other health initiatives.
- ▶ Recognition of the role of gender inequality in perpetuating HIV/AIDS and poverty should be integrated into all international development efforts. In particular, donor nations should provide substantially increased

support for women's microfinance programs, girls' education initiatives, and other programs that empower women and girls.

Research into new prevention strategies and technologies should be strengthened and accelerated.

- ▶ Public sector funding for research and development should increase by \$1 billion for HIV/AIDS vaccines and by \$1 billion for microbicides.
- ▶ Key research agencies and multilateral institutions should meet annually to assess the state of prevention science research and to identify gaps that should be addressed.
- ▶ Key multilateral institutions — such as WHO and UNAIDS — should be prepared to provide swift guidance on implementation of new prevention strategies as they emerge.
- ▶ National HIV/AIDS strategies should anticipate and plan for the rapid introduction of new prevention tools as they emerge.

Substantial and sustained efforts by all donors should focus on improving data collection regarding the magnitude and nature of HIV/AIDS spending in low- and middle-income countries.

- ▶ Bilateral donors, multilateral donors, NGOs and foundations should report annually to a single data collection mechanism regarding the magnitude of funds available for HIV/AIDS programming at country level, the precise types of programs supported by such funding, and the countries, districts or urban areas targeted by such programs.
- ▶ Donors should increase their support to UNAIDS to enhance its capacity to track and report on the flow of HIV/AIDS resources in developing countries.

REFERENCES

1. J. Stover et al., Can we reverse the HIV/AIDS pandemic with an expanded response? *Lancet* 2002;360:19-20.
2. Global HIV Prevention Working Group, *Global Mobilization for HIV Prevention — A Blueprint for Action*, 2002.
3. M. Merson et al., Effectiveness of HIV prevention interventions in developing countries, *AIDS* 2000;14(Supp. 2):S68-S84; UNAIDS, *Sexual Behavior Change for HIV: Where Have Theories Taken Us?*, UNAIDS Best Practice Collection, 1999; E. Sogolow et al., Effects of US-based HIV interventions on safer sex: Meta-analyses, overall and for populations, age groups, and settings, Abstract No. 14283, XII International AIDS Conference, Geneva, 1998; Janz et al., Evaluation of 37 AIDS Prevention Projects: Successful Approaches and Barriers to Program Effectiveness, *Health Education Quarterly* 1996;23:80-97.
4. S. Mehendale et al., Incidence and predictors of human immunodeficiency virus type 1 seroconversion in patients attending sexually transmitted disease clinics in India, *J Infect Dis* 1995;172:1489-1491; M. Laga et al., Condom promotion, sexually transmitted disease treatment, and declining incidence of HIV-1 infection in female Zairian sex workers, *Lancet* 1994;344:246-248; I. De Vincenzi et al., A longitudinal study of human immunodeficiency virus transmission by heterosexual partners, *New Eng J Med* 1994;331:341-346. See Centers for Disease Control and Prevention, HIV Prevention Through Early Detection and Treatment of Other Sexually Transmitted Diseases — United States, Recommendations of the Advisory Committee for HIV and STD Prevention, *MMWR* 1998;47:No. RR-12; Institute of Medicine, *The Hidden Epidemic: Confronting Sexually Transmitted Diseases*, 1997.
5. UNAIDS/WHO, *Consultation on STD Interventions for Preventing HIV: What is the Evidence?*, UNAIDS Best Practice Collection, 2001.
6. Voluntary HIV-1 Counseling and Testing Efficacy Study Group, Efficacy of voluntary HIV-1 counseling and testing in individuals and couples in Kenya, Tanzania, and Trinidad: a randomized trial, *Lancet* 2000;356:103-112.
7. D. Des Jarlais et al., Maintaining Low Seroprevalence in Populations of Injecting Drug Users, *JAMA* 1995;274:1226-1231.
8. R. Needle et al., HIV Prevention with Drug-Using Populations — Current Status and Future Prospects: Introduction and Overview, *Public Health Reports* 1998;113(Supp. 1):4-18; D. Metzger et al., Drug Abuse Treatment as AIDS Prevention, *Public Health Reports* 1998(Supp. 1):97-106.
9. L. Guay et al., Intrapartum and neonatal single-dose nevirapine compared with zidovudine for prevention of mother-to-child transmission of HIV-1 in Kampala, Uganda: HIVNET 012 randomised trial, *Lancet* 1999;354:795-802.
10. E. Sloand et al., Safety of the Blood Supply, *JAMA* 1995;274:1368-1373.
11. UNAIDS, *Blood safety and HIV*, UNAIDS Best Practice Collection, 1997.
12. E. Wong, Are Universal Precautions Effective in Reducing the Number of Occupational Exposures Among Health Care Workers? *JAMA* 1991;265:1123. See J. Gerberding, Surgery and AIDS — Reducing the Risk, *JAMA* 1991;265:1572.
13. R. Parker et al., Structural barriers and facilitators in HIV prevention: a review of international research, *AIDS* 2000;14(Supp.1):S22-S32. See R. Parker, The global HIV/AIDS pandemic, structural inequalities, and the politics of international health, *Am J Pub Health* 2002;92:343-347.
14. P. Jha, et al., Improving the Health of the Global Poor, *Science* 2002; 295:2036-39.
15. 2001 coverage estimates for select HIV prevention interventions provided by C. Hankins, UNAIDS, 2003. See UNAIDS, *Financial resources for HIV/AIDS programmes in low- and middle-income countries over the next five years*, Report submitted to UNAIDS Programme Coordinating Board, 11-12 November 2002, available at www.unaids.org/about/governance/governance.html#pcb_meet (“UNAIDS Funding Report”).
16. UNAIDS, *AIDS Epidemic Update*, 2002.
17. *Ibid.*, UNAIDS, *AIDS Epidemic Update*, 2002.
18. *Ibid.*, UNAIDS, *AIDS Epidemic Update*, 2002.
19. *Ibid.*, UNAIDS, *AIDS Epidemic Update*, 2002.
20. U.S. National Intelligence Council, *The Next Wave of HIV/AIDS: Nigeria, Ethiopia, Russia, India, and China*, ICA 2002-04D, 2002.
21. *Ibid.*, UNAIDS, *AIDS Epidemic Update*, 2002.
22. UNAIDS, *Children and Young People in a World of AIDS*, 2001. See UNAIDS, *Paediatric HIV Infection and AIDS*, UNAIDS Best Practice Collection, 2002.
23. A. Hauri et al., The Global Burden of Disease Attributable to Contaminated Injections Given in Health Care Settings, *Int J STD & AIDS* (in press).
24. *Ibid.*, UNAIDS, *AIDS Epidemic Update*, 2002.
25. *Ibid.*, UNAIDS, *AIDS Epidemic Update*, 2002.
26. UNAIDS, *Report on the Global HIV/AIDS Epidemic*, 2002.
27. *Ibid.*, UNAIDS, *Children and Young People in a World of AIDS*.
28. *Ibid.*, UNAIDS, *Children and Young People in a World of AIDS*.
29. *Ibid.*, UNAIDS, *Report on the Global HIV/AIDS Epidemic*, 2002.
30. G. Ramjee et al., Acceptability of a vaginal microbicide among female sex workers, *S Afr Med J* 1999;89:693-676.
31. See M. Lurie et al., The Impact of Migration on HIV-1 Transmission in South Africa: A Study of Migrant and Non-Migrant Men and Their Partners, *Sexually Transmitted Diseases* 2003;30:149-156.
32. *Ibid.*, UNAIDS, *Report on the Global HIV/AIDS Epidemic*, 2002.
33. United Nations Population Fund, *Reproductive Health Essentials: Securing the Supply*, 2002.
34. J. Shelton & B. Johnston, Condom gap in Africa: evidence from donor agencies and key informants, *Brit Med J* 2001;323:139-141.
35. World Health Organization, *The Health Sector Response to HIV/AIDS: Coverage of Selected Services in 2001 — Preliminary Assessment*, 2002.
36. M. Colvin et al., Asymptomatic Sexually Transmitted Infections in a Rural South African Community, *Int J STD & AIDS* 1998;9:548-550.
37. UNAIDS, *Epidemiologic Fact Sheet on HIV/AIDS and Sexually Transmitted Diseases: Swaziland*, 2002, accessed 8 February 2002 at www.unaids.org/hivaidinfo/statistics/fact_sheets/index_en.htm.
38. UNAIDS, *Epidemiologic Fact Sheet on HIV/AIDS and Sexually Transmitted Diseases: Zimbabwe*, 2002, accessed 8 February 2002 at www.unaids.org/hivaidinfo/statistics/fact_sheets/index_en.htm.
39. *Ibid.*, World Health Organization.
40. *Ibid.*, A. Hauri et al.
41. *Ibid.*, UNAIDS, *Children and Young People in a World of AIDS*.
42. D. Katzenstein et al., Peer education among factory workers in Zimbabwe: providing a sustainable HIV prevention intervention, Abstract No. 33514, XII International Conference on AIDS, Geneva, 1998.
43. L. Myer et al., The Fate of Free Male Condoms Distributed to the Public in South Africa, *AIDS* 2001;15:789-793.
44. Uganda STD/AIDS Control Program, *HIV/AIDS Surveillance Report*, 2001.
45. U.S. Agency for International Development, *What Happened in Uganda? Declining HIV Prevalence, Behavior Change, and the National Response*, 2002; UNAIDS, *HIV Prevention Needs and Successes: A Tale of Three Countries — An Update on HIV Prevention Success in Senegal, Thailand and Uganda*, 2001.
46. *Ibid.*, U.S. Agency for International Development, *What Happened in Uganda?*
47. *Ibid.*, UNAIDS, *A Tale of Three Countries*.
48. *Ibid.*, U.S. Agency for International Development, *What Happened in Uganda?*
49. UNAIDS, *Epidemiologic Fact Sheet on HIV/AIDS and Sexually Transmitted Diseases: Uganda*, 2002, accessed 8 February 2002 at www.unaids.org/hivaidinfo/statistics/fact_sheets/index_en.htm.

50. S.M. Mbulaiteye et al., Declining HIV-1 incidence and associated prevalence over 10 years in a rural population in south-west Uganda: a cohort study, *Lancet* 2002;360:41-46.
51. *Ibid.*, UNAIDS, *Report on the Global HIV/AIDS Epidemic*, 2002.
52. J. Walsh, *Double Standards: Women's Property Rights Violations in Kenya*, Human Rights Watch, 2003.
53. J. Fleischman, *Suffering in Silence: The Links Between Human Rights Abuses and HIV Transmission to Girls in Zambia*, Human Rights Watch, 2002.
54. *Ibid.*, UNAIDS, *Report on the Global HIV/AIDS Epidemic*, 2002.
55. See UNAIDS, *Gender and HIV/AIDS: Taking Stock of Research and Programmes*, UNAIDS Best Practice Collection, 1999.
56. UNAIDS, *Reducing Girls' Vulnerability to HIV/AIDS: The Thai Approach*, UNAIDS Best Practice Collection, 1999.
57. C. Beyrer et al., Assessing the Magnitude of the HIV/AIDS Epidemic in Burma, *JAIDS* 2003;32:311-317.
58. UNAIDS, *Report on the Global HIV/AIDS Epidemic*, 2002.
59. *Ibid.*, UNAIDS, *AIDS Epidemic Update*, 2002.
60. UNAIDS, *AIDS Epidemic Update*, 2000.
61. *Ibid.*, Stover et al.
62. Unpublished data provided by the Ministry of Public Health, China (2002): Projection of HIV/AIDS Epidemic in China.
63. Agence France Presse, March 26, 2003.
64. *Ibid.*, UNAIDS, *Report on the Global HIV/AIDS Epidemic*, 2002.
65. B. Gill, Center for Strategic and International Studies, China's HIV/AIDS Crisis: Implications for Human Rights, the Rule of Law and U.S.-China Relations, Testimony before the U.S. Congressional-Executive Commission on China, Roundtable on HIV/AIDS, 9 September 2002, available at www.csis.org.
66. *Ibid.*, A. Hauri et al.
67. UNAIDS, Epidemiologic Fact Sheet on HIV/AIDS and Sexually Transmitted Diseases: India, 2002, accessed 8 February 2002 at http://www.unaids.org/hivaidinfo/statistics/factsheets/pdfs/India_en.pdf.
68. *Ibid.*, UNAIDS Epidemiologic Fact Sheet: India.
69. UNAIDS, Epidemiologic Fact Sheet on HIV/AIDS and Sexually Transmitted Diseases: Cambodia 2002, accessed 8 February 2002 at www.unaids.org/hivaidinfo/statistics/factsheets/index_en.htm.
70. *Ibid.*, UNAIDS, *Report on the Global HIV/AIDS Epidemic*, 2002.
71. *Ibid.*, UNAIDS Epidemiologic Fact Sheet: India.
72. UNAIDS, Epidemiologic Fact Sheet on HIV/AIDS and Sexually Transmitted Diseases: Thailand 2002, accessed 8 February 2002 at www.unaids.org/hivaidinfo/statistics/factsheets/index_en.htm.
73. CSIS Task Force on HIV/AIDS, *The Second Wave of the HIV/AIDS Pandemic: China, India, Russia, Ethiopia, Nigeria*, December 2002.
74. Monitoring the AIDS Pandemic Network, *The Status and Trends of HIV/AIDS/STI Epidemics in Asia and the Pacific*, 2001.
75. *Ibid.*, UNAIDS, *AIDS Epidemic Update*, 2002.
76. *Ibid.*, B. Gill, CSIS, September 2002 testimony. See B. Gill et al., China's HIV Crisis, *Foreign Affairs* March/April 2002:96-106.
77. *Ibid.*, UNAIDS, *Report on the Global HIV/AIDS Epidemic*, 2002.
78. United Nations Population Fund, *Global Estimates of Contraceptive Commodities and Condoms for STI/HIV Prevention 2000-2015*, 2002.
79. *Ibid.*, CSIS Task Force on HIV/AIDS.
80. *Ibid.*, UNAIDS, *Report on the Global HIV/AIDS Epidemic*, 2002.
81. *Ibid.*, CSIS Task Force on HIV/AIDS.
82. *Ibid.*, UNAIDS Epidemiologic Fact Sheet: Thailand.
83. *Ibid.*, UNAIDS Epidemiologic Fact Sheet: Cambodia.
84. *Ibid.*, World Health Organization.
85. *Ibid.*, World Health Organization.
86. *Ibid.*, A. Hauri et al.
87. *Ibid.*, UNAIDS, *Children and Young People in a World of AIDS*.
88. National Center for HIV/AIDS, Dermatology and STDs, *Cambodia's Behavioral Surveillance Survey — 1997-1999*, 2001.
89. UNAIDS, *Report on the Global HIV/AIDS Epidemic*, 2002.
90. *Ibid.*, UNAIDS, *Report on the Global HIV/AIDS Epidemic*, 2002.
91. Information provided by Ministry of Health and Family Welfare, India, May 2002.
92. *Ibid.*, UNAIDS, *Report on the Global HIV/AIDS Epidemic*, 2002.
93. United Nations Population Fund, *Reproductive Health Essentials: Securing the Supply*, 2002.
94. *Ibid.*, UNFPA, *Global Contraceptive Estimates*.
95. See Saracco et al., Man-to-women sexual transmission of HIV: Longitudinal study of 343 steady partners of infected men. *J Acquir Immune Defic Syndr* 1993; 615:497-502. Also see Deschamps et al., Heterosexual transmission of HIV in Haiti. *Ann Intern Med* 1996; 125:324-330.
96. See CDC, *Fact Sheet for Public Health Personnel: Male Latex Condoms and Sexually Transmitted Diseases*, November 2002, accessed May 8, 2003 at <http://www.cdc.gov/nchstp/od/condoms.pdf>.
97. CDC, *HIV and Its Transmission*, July 1999.
98. K. Sapiro, The female condom (Femidom)—a study of user acceptability, *S Afr Med J* 1995;85(Supp.10):1081-1084; M. Monny-Lobe et al., Acceptability of the Female Condom Among a High Risk Population in Cameroon, *Family Health International*, 1991. See UNAIDS, *The Female Condom and AIDS*, UNAIDS Best Practice Collection, 1997. See also *ibid.*, UNFPA, *Reproductive Health Essentials*.
99. *Ibid.*, UNAIDS, *AIDS Epidemic Update*, 2002.
100. *Ibid.*, U.S. National Intelligence Council.
101. *Ibid.*, UNAIDS, *AIDS Epidemic Update*, 2002.
102. *Ibid.*, U.S. National Intelligence Council.
103. *Ibid.*, UNAIDS, *AIDS Epidemic Update*, 2002.
104. N. Schwalbe & P. Harrington, HIV and tuberculosis in the former Soviet Union, *Lancet* 2003;S1:19-20.
105. Monitoring the AIDS Pandemic Network, *The Status and Trends of the HIV/AIDS Epidemics in the World*, 2002.
106. *Ibid.*, MAP, 2002.
107. *Ibid.*, U.S. National Intelligence Council.
108. Information provided by T. Rhodes, Imperial College London, April 2003.
109. *Ibid.*, MAP, 2002.
110. UNAIDS, Epidemiologic Fact Sheet on HIV/AIDS and Sexually Transmitted Diseases: Ukraine 2002, accessed 8 February 2002 at www.unaids.org/hivaidinfo/statistics/factsheets/index_en.htm.
111. *Ibid.*, UNAIDS, *AIDS Epidemic Update*, 2002.
112. UNAIDS, Epidemiologic Fact Sheet on HIV/AIDS and Sexually Transmitted Diseases: Russian Federation 2002, accessed 8 February 2002 at www.unaids.org/hivaidinfo/statistics/factsheets/index_en.htm.
113. *Ibid.*, UNAIDS, *Report on the Global HIV/AIDS Epidemic*, 2002.
114. N. Kerimi, WHO Regional Office for Europe, Substance Abuse in Central Asia: An Old Problem with a New Twist, accessed 2 April 2003 at www.eurasianet.org/policy_forum/kerimi_pg3.shtml. See also www.undcp.org/odccp/report_2001-08-31_1_page018.html, accessed 2 April 2003.
115. Unpublished data provided by UNAIDS, March 2003.
116. UNDP/UNAIDS and Implementing NGO Project Reports, 2002.

117. A. Creese et al., Cost-effectiveness of HIV/AIDS interventions in Africa: A systematic review of the evidence, *Lancet* 2002;359:1635-1642.
118. *Ibid.*, UNAIDS, *AIDS Epidemic Update*, 2000.
119. *Ibid.*, UNAIDS, *Report on the Global HIV/AIDS Epidemic*, 2002.
120. *Ibid.*, UNAIDS, *AIDS Epidemic Update*, 2002.
121. *Ibid.*, UNAIDS, *AIDS Epidemic Update*, 2002.
122. C. Cáceres, HIV among gay and other men who have sex with men in Latin America and the Caribbean: a hidden epidemic? *AIDS* 2002;16(Supp.3):S23-S33.
123. *Ibid.*, C. Cáceres.
124. J.M. Garcia Calleja et al., Status of the HIV/AIDS epidemic and methods to monitor it in the Latin American and Caribbean region, *AIDS* 2002;16(Supp. 3):S3-S12.
125. *Ibid.*, Calleja et al.
126. *Ibid.*, Calleja et al. See also UNAIDS Epidemiologic Fact Sheets on HIV/AIDS and Sexually Transmitted Infections, 2002, for Argentina, Brazil, Dominican Republic, Haiti, available at www.unaids.org/hivaidinfo/statistics/fact_sheets/index_en.htm.
127. M. Bronfman et al., Mobile populations and HIV/AIDS in Central America and Mexico: research for action, *AIDS* 2002;16(Supp.3):S42-S49; J. Chittick, Migrating youth at increased risk for HIV/AIDS, Abstract No. 13333, XII International Conference on AIDS, Geneva, 1998; M. Bronfman & S. Lopez Moreno, Perspectives on HIV/AIDS Prevention Among Immigrants on the U.S.-Mexico Border, in *AIDS Crossing Borders: The Spread of HIV Among Migrant Latinos*, 1996.
128. M. Bronfman, Mexico and Central America, *International Migration* 1998;36(4):609-639.
129. UNAIDS, Epidemiologic Fact Sheet on HIV/AIDS and Sexually Transmitted Diseases: Honduras 2002, accessed 8 February 2003 at www.unaids.org/hivaidinfo/statistics/fact_sheets/index_en.htm.
130. UNAIDS, Epidemiologic Fact Sheet on HIV/AIDS and Sexually Transmitted Diseases: Guyana 2002, accessed 8 February 2003 at www.unaids.org/hivaidinfo/statistics/fact_sheets/index_en.htm.
131. *Ibid.*, World Health Organization.
132. *Ibid.*, Calleja et al.
133. *Ibid.*, UNAIDS, *AIDS Epidemic Update*, 2002.
134. *Ibid.*, UNAIDS, *Report on the Global HIV/AIDS Epidemic*, 2002.
135. T. Caiffa et al., Provenção do HIV em Populações em Uds e Ptojeto Ajude-Brasil, in *Consumo de drogas desafios e perspectivas* (F. Mesquita & S. Seibel, editors), 2000, cited in C. Magis Rodríguez et al., HIV and injection drug use in Latin America, *AIDS* 2002;16(Supp.3):S34-S41.
136. *Ibid.*, UNAIDS, *AIDS Epidemic Update*, 2002.
137. Information provided by Bill & Melinda Gates Foundation, March 2003.
138. *Ibid.*, World Health Organization.
139. UNAIDS, Epidemiologic Fact Sheet on HIV/AIDS and Sexually Transmitted Diseases: Iran, 2002, accessed 8 February 2002 at www.unaids.org/hivaidinfo/statistics/fact_sheets/index_en.htm.
140. *Ibid.*, UNAIDS, *AIDS Epidemic Update*, 2002.
141. *Ibid.*, UNAIDS, Epidemiologic Fact Sheet: Islamic Republic of Iran, 2002.
142. *Ibid.*, UNAIDS, *AIDS Epidemic Update*, 2002.
143. *Ibid.*, UNAIDS, Epidemiologic Fact Sheet: Islamic Republic of Iran, 2002.
144. UNAIDS, Epidemiologic Fact Sheets on HIV/AIDS and Sexually Transmitted Infections: Morocco, 2002 accessed 8 February 2002 at www.unaids.org/hivaidinfo/statistics/fact_sheets/index_en.htm.
145. Information provided by International HIV/AIDS Alliance, April 2003.
146. M.S. Kumar, *Comprehensive HIV/AIDS Prevention and Care Among Injecting Drug Users: Experience from the Islamic Republic of Iran*, WHO/EMRO Good Practices Collection (in press).
147. Information provided by International HIV/AIDS Alliance, April 2003.
148. CDC, Outbreak of Syphilis Among Men Who Have Sex With Men — Southern California, 2000, *MMWR* 2001;50:117-120; C. Gomez & Seropositive Urban Men's Study Team, Sexual HIV Transmission Risk Behaviors Among HIV-Seropositive (HIV+) Injection Drug Users and HIV+ Men Who Have Sex With Men: Implications for Interventions, Abstract No. 180, National HIV Prevention Conference, Atlanta, 1999. See *ibid.*, UNAIDS, *Report on the Global HIV/AIDS Epidemic*, 2002; R. Wolitski et al., Are We Headed for a Resurgence in the HIV Epidemic Among Men Who Have Sex with Men? *Am J Public Health* 2001;91:31-36; M.H. Katz et al., Impact of highly active retroviral treatment on HIV seroincidence among men who have sex with men: San Francisco, *Am. J. Public Health* 2002;92(3):388-94; R.S. Hoggs et al., Increasing incidence of HIV infection among young gay and bisexual men in Vancouver, *AIDS* 2001;15(10):1321-1322; J. del Romero et al., Time trend in incidence of HIV seroconversion among homosexual men repeatedly tested in Madrid, 1988–2000, *AIDS* 2001;15(10):1319-1321.
149. CDC, HIV Incidence Among Young Men Who Have Sex With Men — Seven U.S. Cities, 1994–2000, *MMWR* 2001;50:440-444.
150. J. Kelly et al., Protease Inhibitor Combination Therapies and Perceptions of Gay Men Regarding AIDS Severity and the Need to Maintain Safer Sex, *AIDS* 1998;12:F91-F95. See J. Dilley et al., Are Advances in Treatment Changing Views About High Risk Sex? *New Eng J Med* 1997;337:501-502.
151. New York City Department of Health and Mental Hygiene, Health Alert: Syphilis Rates Continue to Rise in New York City, 30 January 2003, accessed 14 April 2003 at www.nyc.gov/html/doh/html/public/press03/pr007-0130.html; *ibid.*, Centers for Disease Control, Outbreak of Syphilis Among Men Who Have Sex With Men— Southern California, 2001.
152. Fleming P, et al. HIV Prevalence in the United States, 2000. 9th Annual Conference on Retroviruses and Opportunistic Infections; February 24-28, 2002. Seattle, wa. Abstract 11.
153. D. Holtgrave et al., Estimating the Cost of Unmet HIV-Prevention Needs in the United States, *Am J Prev Med* 2002;23:7-12.
154. Information for 2002 provided by Paul Delay, former head of the HIV/AIDS program at USAID.
155. *Ibid.*, J. Stover et al.
156. World Health Organization, *10/90 Report on Health Research*, 2002.
157. A. Schultz & J. Bradac, The HIV vaccine pipeline, from preclinical to phase III, *AIDS* 2001;13:S147-S158.
158. International AIDS Vaccine Initiative, Scientific Blueprint 2000: Accelerating Global Efforts in AIDS Vaccine Development, 2000.159. Rockefeller Foundation Microbicide Initiative, *Mobilization for Microbicides: The Decisive Decade*, 2001.
160. See Rockefeller Foundation Microbicide Initiative, Pharmacoeconomics Working Group, *The Economics of Microbicide Development — A Case for Investment*, 2002.
161. D. Cameron et al., Female to male transmission of human immunodeficiency virus type 1: risk factors for seroconversion in men, *Lancet* 1989;2:403-407. See UNAIDS/WHO, *Consultation on STD Interventions for Preventing HIV: What is the Evidence?* UNAIDS Best Practice Collection, 2001 ("WHO/STD Consultation").
162. P. Hitchcock & L. Fransen, Preventing HIV Infection: Lessons from Mwanza and Rakai, *Lancet* 1999;353:513-515. See also *ibid.*, WHO/STD Consultation.

