Resource Requirements to Fight HIV/AIDS in Latin America and the Caribbean

Inter-American Development Bank

Washington, D.C.

Sustainable Development Department Technical Paper Series

Cataloguing data provided by the
Inter-American Development Bank
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This report was prepared by Ernest Massiah, Social Development Specialist in the Social Progams Division of the Sustainable Development Department. Andre Medici (SDS/SOC), Bill McGreevey (Futures Group) and Kate Hankins (UNAIDS) provided useful comments.This report is based on a draft submitted to the Inter-American Development Bank (IDB) by Mexico's Instituto Nacional de Salud Pública (INSP), which houses the Secretariat for the UNAIDS Reference Group on Economics, and the Futures Group. Dr. Stefano Bertozzi led the INSP team, which included Juan Pablo Gutierrez, Marjorie Opuni, Fiona Greig, Sergio Bautista, and Sandra Torres. Dr. William McGreevey led the Futures Group team, which included Sarah Alkenbrack, Lori Bollinger, César Núñez, and John Stover. This paper is based on input for economists and epidemiologists from more than twenty countries who attended one of two workshops held in Cuernavaca, Mexico, in January and October 2002. UNAIDS technical staff participants included Raúl Boyle, Enrique Zelaya, and Rubén Del Prado.

As part of its work for the IDB, the Futures Group and INSP prepared a *Resource Needs Manual (RNM)* or guidebook for use in analysis of the HIV/AIDS interventions proposed in earlier analyses in collaboration with UNAIDS (Schwartlander and others, 2001). The RNM includes a full bibliography of the published and unpublished case studies on which cost estimates were based. The RNM is accompanied by a *Resource Needs Model,* which is an Excel workbook and spreadsheets that can be used by analysts to make their own estimates of HIV/AIDS spending requirements. These materials can be downloaded at www.futuresgroup.com. The manual and spreadsheets are available in English, Spanish and Russian language versions.

February 2004

This publication (Reference No. SOC-136) can be obtained from:

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Preface

This examines the resource needs for mounting a comprehensive HIV/AIDS programs in Latin America and the Caribbean up to the year 2007. The report provides information on estimated changes in the cost of selected prevention, treatment and care interventions, and gives an estimate of the annual financing gap for HIV/AIDS programs in LAC. The report fills a gap in knowledge of region-specific cost estimates for HIV/AIDS, and provides a baseline for evaluating changes in the cost and priorities of HIV/AIDS programs in LAC.

The report was prepared based on input from LAC economists, and national AIDS program personnel, at two sub-regional workshops held in 2002, as well as a background report prepared by the Futures Group International and the Instituto Nacional de Salud Publica of Mexico. I would like to thank the Governments of Denmark, Finland, Norway and Sweden, for their generous support for the study and preparation of the report, as well as UNAIDS and the Pan American Health Organization for their technical and financial inputs into the study.

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Introduction

In 2003, between 1.3 and 1.9 million people were living with HIV/AIDS in Latin America and between 350,000 and 680,000 people were living with this disease in the Caribbean (UNAIDS, 2003**).** There were more than two million people living with HIV/AIDS in the region as a whole. An estimated 200,000 (range: 165,000 to 260,000) persons acquired the virus in 2003 alone. At least 100,000 people died of AIDS in 2003. An estimated 210,000 people were receiving antiretroviral treatment at the end of 2003, representing 84 percent of those estimated to be in need.

HIV prevalence among adults aged 15 to 49 in the region reaches or exceeds two percent in Bahamas, Belize, the Dominican Republic, Guyana, Trinidad and Tobago and Haiti, where national HIV prevalence levels have been stable since the 1980s at 5 to 6 percent. In Central America, national HIV prevalence is around 1 percent in Guatemala, Honduras and Panama (UNAIDS, 2003). Sub-Saharan Africa is the only region with higher prevalence rates than those observed in the Caribbean basin.

Epidemiologists believe that if prevalence rates stay below one percent of adults, then the disease can be prevented from spreading to the general population. At low prevalence rates the negative impacts of the epidemic generally focus on vulnerable and excluded groups as sex workers, injection drug users, and men who have sex with men. Beyond one percent, however, the disease threatens to become generalized and can have negative impacts on overall socioeconomic development. Latin America and the Caribbean will not be able to reach the Millennium Development Goals (MDGs), which include poverty reduction and increased educational attainment as well as reduction of communicable disease, by 2015 if HIV/AIDS continues to spread.

Much can be done now to control the HIV/AIDS epidemic and prevent its spread. Countries as varied as Thailand, Uganda, Senegal, Brazil and Australia have shown that the epidemic can be contained and reversed with comprehensive and effective prevention programs.

Even with the implementation of successful programs to prevent new infections there will be a significant increase in the needs for care and treatment as the two million people currently infected progress to later stages of the disease that require care, support, and treatment. Finding the necessary financial resources to fund effective prevention, care and treatment programs are an immediate challenge for governments and donors.

Methodology

THE UNGASS MODEL

In preparation for the United Nations General Assembly Special Session (UNGASS) in mid-2001, a team of specialists led by UNAIDS developed estimates of the financial resource requirements to respond adequately to the HIV/AIDS pandemic (Schwartlander et al., 2001). That estimate called for spending US$9.2 billion by the year 2005, with gradual scaling up from a lower base in the year 2000.[1] These estimates, which have since been extended to 2007, include additional prevention interventions that did not form part of the costing analysis presented in the UNAIDS report (UNAIDS, 2002). In November 2002, the Joint United Nations Programme on HIV/AIDS (UNAIDS) estimated that the global resource requirements to fight AIDS would rise from US$3.2 billion in 2001 to US$10.5 billion in 2005, and US$15 billion in 2007.[2] For Latin America and the Caribbean, UNAIDS estimated that by 2007 the region would need more than US$2 billion to move successfully toward the 2015 Millennium Development Goal of halting and reversing the spread of HIV/AIDS.

The UNAIDS team costed twelve prevention interventions, six care services (including assistance to orphans of those who died of AIDS), and one treatment of highly active anti-retroviral therapy (HAART). The UNGASS resource needs estimates done by UNAIDS were derived by using the *Resource Needs Model* (RNM) This model[3] calculates, at the national level, the total resources needed for HIV prevention, AIDS treatment and orphan care programs. The RNM model consists of three submodels as described below.

- *The prevention model* calculates the costs of 12 programs, including youth focused interventions, interventions focused on sex workers and their clients, social marketing of condoms, public and commercial condom provision, improving STI management, voluntary counseling and testing, workplace programs, blood safety, prevention of mother to child transmission, mass media, harm reduction programs, and interventions focused on men who have sex with men.

- *The care and treatment program* includes actions directed to palliative care, treatment of opportunistic infections (OIs), diagnostic HIV testing, prophylaxis in symptomatic patients with opportunistic infections, highly active antiretroviral therapy and its associated laboratory support.

- Orphan care includes orphanage care, community assistance and subsidies for school expenses.

The three main parameters of the RNM which drive the calculations are (i) unit cost estimates for each of the programs in the submodels, (ii) population or target groups, and (iii) coverage or access targets. The model includes default values for all three parameters that can be adjusted based on country-specialist expert opinion and available country-specific data.[4]

[1] The projected requirement falls near the upper end of the range of resources required (between US$7 billion and US$10 billion) as stated in an April 2001 speech by UN Secretary-General, Mr. Kofi Annan.

[2] All values are in current U.S. dollars unless otherwise stated.

[3] The Futures Group based the RNM on previous work done by Lilani Kumaranayake and Charlotte Watts, staff members of the London School of Hygiene and Tropical Medicine, and meta-analyses of cost-effectiveness studies managed by Bernhard Schwartlander.

[4] In its initial 2001 formulation, the model added a flat 10 percent of prevention costs to cover administrative, research, monitoring, and evaluation costs. In the revised version used for the ECA region, the model adds five percent of total direct prevention, care, and treatment costs to cover these costs, as noted in the text below.

The *unit cost* estimates for prevention, treatment and orphan care are obtained from 125 published and unpublished studies many of which were for sub-Saharan Africa. When using default values, the lower ones are used for low-income countries and the values in the upper end of the range are used for middle-income countries. The *population or target group* calculations are arrived at differently for the prevention group and the care group. For each prevention activity, the model first estimates the population target group in need of prevention services that could potentially have access to those services given existing infrastructure. For facility-based services, such as treatment for sexually transmitted infections (STIs) and voluntary testing and counseling services (VCT), access is estimated as the median of four variables: the percent of the population with access to tuberculosis treatment (DOTS), essential immunizations (DPT), attended births and prenatal care.

REVISING THE UNGASS ESTIMATES FOR LATIN AMERICA AND THE CARIBBEAN

The RNM model pays less attention to individual country characteristics and the manner in which those characteristics may affect overall costs, than would be desirable. Recognizing the advantages that could accrue to a better-informed estimate of scaling-up cost requirements for Latin America and the Caribbean, the Inter-American Development Bank and UNAIDS co-sponsored two workshops to verify the validity of the regional estimates derived from the global model. In 2002, economists and epidemiologists from more than twenty countries reviewed and revised unit costs, coverage rates, and total funding requirements year by year through 2007. They provided actual country data from the national AIDS programs and from unpublished national studies to develop regional estimates of the resource needs to provide HIV/AIDS prevention, treatment and care interventions to those populations with access to services, given current country infrastructure and human resource capacity.

The results of the first workshop, indicated the trends in unit cost and suggested that while total cost was similar to the estimates derived for UNGASS, allocations between programs would be different (Opuni and others, 2002). In all, twenty-two countries were represented by specialists (economists, epidemiologists, and AIDS program staff) knowledgeable about national programs and requirements to one or both workshops. The countries represented at the workshops account for over 90 percent of the region's population.[5]

The workshops produced revised estimates for HIV/AIDS program costs in Latin America and the Caribbean (see table 3). A number of important changes in the unit cost of selected services were identified by national specialists. Virtually all unit costs in the region were judged to be higher than in the Africa-based pilot study, and particularly so for care and treatment interventions (see table 4). Only primary teacher training, youth-focused interventions, and mass media campaigns were judged to have lower unit costs than the default values in the UNGASS model. An additional expenditure line item for special/other vulnerable groups (including, for example, persons living in institutions, ethnic minorities, and undocumented foreign nationals), was added to reflect the importance of such groups in some Latin American and Caribbean countries.

Some features of unit cost estimates bear particular attention:

- Wage costs and incomes are higher in the region compared to the pilot sites in Africa and Asia from which most of the global cost estimates were derived. This explains much of the higher unit costs.

- Costs for condoms may be high because they are imported from North America.

[5] For four countries that did not attend a workshop (Barbados, Cuba, Panama, and Suriname) project staff adjusted initial UNGASS estimates in proportion to the mean adjustments made by specialists of countries that did report new estimates. Bahamas specialists participated in the October workshop and developed estimates for that country even though the UNGASS global totals did not include Bahamas. INSP sent a staff member to Haiti in November 2002 to secure new specialist estimates in that country. The smaller states of the Eastern Caribbean, are regrettably excluded from the analysis.

- Costs for mass media and communications may be lower because of assumed subsidies from publicly owned transmission facilities.

- Specialists provided a range of costs for highly active antiretroviral theraphy that made it difficult to establish a single unit cost for that service.

As programs scale up, it may be reasonable to assume that unit costs may decline if pooled purchasing by social security institutes and health ministries covers a substantial share of requirements.

HIV/AIDS Resource Needs Challenges in Latin America and the Caribbean

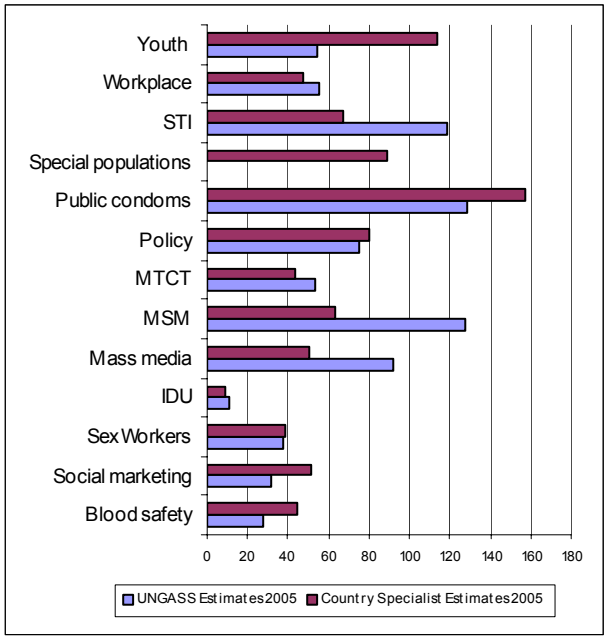
BALANCING EXPENDITURES ON PREVENTION, CARE AND TREATMENT

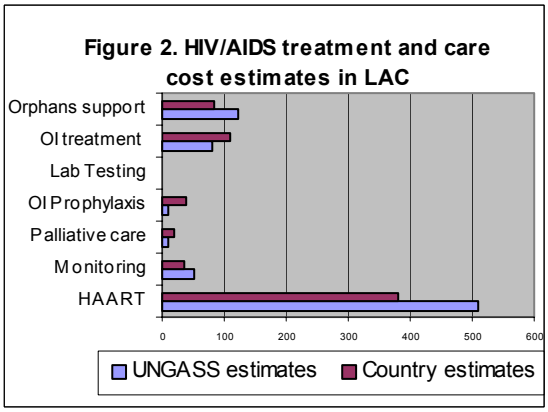
In 2005, country specialists estimate that the region will need US$1.5 billion to mount comprehensive HIV/AIDS programs. They estimate that the countries of Latin America and the Caribbean should be spending 57 percent of their HIV/AIDS resources on prevention, 38 percent on care and treatment, and 5 percent on mitigation (essentially cushioning the negative impact on orphans and vulnerable children). This translates into US$871 million for prevention, US$585 million for treatment and US$84 million for mitigation, orphans and vulnerable children. By 2007, they estimate that prevention programs alone would require US$1.13 billion (see table 3).

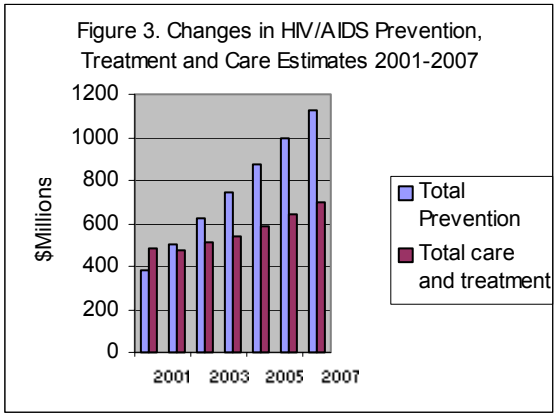
Changes in the unit cost estimates made by country specialists are shown in table 4. For 2005, the estimated budget for comprehensive HIV/AIDS programs in the region is US$1.5 billion. While this figure is close to the UNGASS estimate of US$1.6 billion, there are important differences between the two estimates. First, the country specialists reduced the expenditures on mitigation, orphans and vulnerable children by 31 percent to US$83 million, and reduced the treatment and care budget by 12 percent to US$585 million. Second, while the overall treatment estimates declined, in part due to lower costs for HAART, there is a 50 percent increase in the estimates for testing persons who are HIV positive, a 40 percent increase in the estimated budget for treating opportunistic infections, and an 18 percent reduction in the estimated resource needs for monitoring persons who are HIV positive. In addition to these changes, the new estimate shows an increase in unit cost per intervention. Third, among the prevention interventions, the provision of condoms and social marketing remain the largest item in the estimated budget, but, country specialists increased by 110 percent the budget for youth pro-

Figure 1: Comparison of Prevention Interventions

UNGASS Model Versus Country Estimates







grams and introduced special populations as an important target group, allocating US$90 million to a group that was not included in the UNGASS estimates.

As seen in figure 3, country specialists estimate that by 2007 the majority of HIV/AIDS spending will be on prevention. This assumes a small increase in the amount spent on care and treatment over the period 2004-2007 versus a 70 percent increase in prevention spending over the same period.

In contrast to these targets, 2000 SIDALAC data from National AIDS Accounts for selected Latin American and Caribbean countries show that only a quarter of HIV/AIDS spending in that year was allocated to prevention services, whereas three-quarters went to care and treatment (SIDALAC, 2003). The contrast between expert opinion and the structure of spending in 2000 underlines the policy challenge in coming years.

PRIORITIZING INTERVENTIONS

It is unlikely that resources to finance all of the needs will be available. As a result, prioritization is and always will be an important aspect of HIV/AIDS program management. A comparison of the changes in resource needs estimates for interventions targeted at men who have sex with men with those made in other prevention areas illustrates the trade-offs and prioritization that occurs within programs. While, according to the Pan American Health Organization (PAHO/WHO and UNAIDS, 2001), men who have sex with men account for 42 percent of all HIV cases in Latin America and the Caribbean, country specialists reduced the 2005 resource needs estimate for this population by 50 percent to US$64 million. At the same time, they inceased the resource needs estimates for other programs by up to 110 percent and allocated US$89 million in 2005 to interventions targeted at newly defined special populations.

SIDALAC developed expenditure data for twelve countries on two key population groups, sex workers and men who have sex with men. These data show that per capita spending on prevention services for sex workers was consistently higher than for men who have sex with men, usually by a factor of two or more (Izazola-Licea, n.d.), even though the latter group constituted no fewer than 25 percent, and as much as 60 percent of all AIDS cases. The share of prevention spending on this group was under 20 percent in all countries except Peru and Mexico (Izazola-Licea, n.d.). The rationale for prioritization is often unrelated to epidemiological or cost effectiveness criteria, and reflects the confluence of political expediency, stigma, and manpower limitations.

ESTIMATING THE COST OF HIGHLY ACTIVE ANTI-RETROVIRAL THERAPY (HAART)

The pharmaceuticals that make up highly active anti-retroviral therapy and the related services needed to ensure that AIDS patients use them effectively are the largest cost item in the fight against HIV/AIDS and represent one quarter of total spending. The region may need to spend nearly US$380 million on HAART by 2005, and as much as US$435 million by 2007 (see table 3).

HAART pharmaceuticals account for a quarter of total spending requirements. The UNGASS estimates allocated close to 30 percent of the total resource needs to highly active antiretroviral therapy. Reductions in the price of medications may account for the declining share of estimated expenditure.

Future spending requirements for highly active antiretroviral therapy may be the most difficult element of the total resource needs to estimate with accuracy. Several unresolved issues will affect drug prices and coverage rates:

- Evolving intellectual property rights agreements under the Doha Round of trade negotiations can affect prices paid by regional governments or individuals for patented HAART drugs.

- Drug companies and governments are constantly renegotiating terms and conditions for selected pharmaceuticals.

- Compulsory licensing as a means to sidestep patent protection is under review.

- Falling production costs and economies of scale for production of generic versions of key components of the so-called triple cocktail will also affect aggregate costs.

- There may (or may not) be changes in treatment guidelines, such as those announced on December 1, 2003 as part of the WHO/UNAIDS 3 by 5 Initiative,[6] that increase (or decrease) coverage of HIV positive persons with differing opportunistic infections or CD4 cell counts.

These uncertainties suggest the need for continuous updating of information on the key factors of unit costs, coverage rates, and numbers of persons receiving highly active antiretroviral therapy.

INCREASING CONDOM PROMOTION AND DISTRIBUTION

HIV/AIDS interventions include several different mechanisms for condom distribution because condom use may be the most directly effective measure of self-protection available at the individual level. These mechanisms include the social marketing of condoms via subsidized prices, and condom promotion and distribution among key groups as sex workers, men who have sex with men, and mobile populations. Commercial sales of condoms and free public distribution to users coexist in several countries. Taken together, the country specialists expect that about US$260 million, or 17 percent of the total estimated budget, will be assigned to these disparate programs by the year 2005. Exact figures are enmeshed within the total of several different intervention approaches. Nonetheless, it is clear that condom promotion and distribution is exceeded only by HAART as a focus of resource allocation in HIV/AIDS program in the region.

INCREASING YOUTH-FOCUSED INTERVENTIONS

Country specialists doubled the estimated resource needs for youth-focused interventions in 2005 from US$54 million in the UNGASS estimates to US$114 million. By 2007, it is estimated that the region will need to spend US$151 million to support interventions targeted at youth. This was the largest change in the estimates for prevention programs. The change supports the overall thrust of the Millennium Development Goal for HIV/AIDS, which are to reduce prevalence among young people 15 to 24 years old.

INCREASING ACCESS TO SPECIAL AND VULNERABLE POPULATIONS

Many country specialists added special groups to their estimates. For 2005 they estimate that US$90 million would have to be spent on these groups. Special groups, which differ from country to country, include occupational categories such as mineworkers, truckers and transport workers. They also include identifiable ethnic groups that may have an unusually high incidence and prevalence of HIV/AIDS, possibly linked to the greater incidence of poverty. These special categories also allow for the inclusion of prisoner populations in some country cases, or long-term resi-

[6] See http://www.who.int/3by5/en/

dents of hospital and mental health facilities. For example, country specialists from Guyana identified prisoners and miners as key groups requiring special programs. Country specialists from Colombia noted the presence of significant numbers of undocumented aliens.

COMMUNICATIONS AND MASS MEDIA

The costs and utility of mass media campaigns and related efforts at communicating the need for behavioral change to the population at large have been analyzed in several countries. Country specialists in Latin America and the Caribbean appear to accord a somewhat low priority to these interventions, planning for expenditures of US$50 million in 2005, rising by 10 percent in 2007 to $61 million. For smaller countries, some of which have ready access to national broadcast television systems at no cost to HIV/AIDS programs, these lower cost estimates may be quite reasonable. In addition, some of the mass media programs may be included in the social marketing of condoms line item.

IMPLEMENTATION, MONITORING AND EVALUATION CAPACITY

Irrespective of the source of funds (external grants, loans, national resources, or out of pocket expenditures), implementation capacity remains one of the biggest challenges facing HIV/AIDS programs in Latin America and the Caribbean. There are issues of manpower limitations, organizational capacity (especially when the public and private sectors need to be coordinated) and evaluation capacity. Country specialists estimate that in 2005, the region will require *a minimum* of US$80 million, rising to US$102 million in 2007, for expenditures on policy, administrative and program research/evaluation. At that time, this category will be the third costliest item in the prevention budget.

ADJUSTING PRIORITIES, REALLOCATING RESOURCES, FOCUSING ON POVERTY

Economic resources and the capacity to finance and deliver HIV/AIDS services are distributed unevenly across the region. Eighteen countries, accounting for 91 percent of the region's population, spent US$1.2 billion on HIV/AIDS in 2000 (Izazola-Licea et al., 2003). Much of that spending was by and for middle-income groups in the upper-middle-income countries. The low- and lower-middle-income countries experience substantial gaps between resources needed and funds available. Success in the fight aginst HIV/AIDS could be restricted because:

- There are inadequate public resources to support prevention interventions in the low-income countries.
- Specific key groups (especially men who have sex with men, but also mobile and prison populations) get too little prevention, care, and treatment services.
- The poor (including both ethnic minorities in some countries and persons with AIDS who have lost their jobs) lack access to social security and public assistance in low income countries.

Many persons living with HIV/AIDS are too poor to finance their own care and treatment. In parallel to the unequal distribution of income and wealth, there is an unequal distribution of HIV/AIDS spending that leaves many persons unserved.

MEETING THE FINANCING GAP FOR HIV/AIDS

By 2007, an expenditure of US$2 billion will constitute an effective financing base for the fight against HIV/AIDS in Latin America and the Caribbean.[7] Over the period 2004-2007, public expenditure is expected to increase from US$1.2 to US$1.3 billion, while out-of-pocket spending

[7] The region's total economic product in 1999 exceeded US$2 trillion, or US$3.2 trillion expressed in PPP dollars. At this level of output in 2007, the cost of prevention, care, mitigation, and treatment for HIV/AIDS would not exceed a thousandth part of total product. Health spending in the region exceeds US$200 billion; with a similar level of health expenditure in 2007, HIV/AIDS requirements total no more than one percent of the health sector's total expenditure.

should rise from US$350 million to US$400 million. External assistance will provide a relatively small proportion of HIV/AIDS resources in the region. In 2004, it is estimated that the region will receive US$90 million in external assistance, rising to US$120 million in 2007. Even assuming that public expenditure is maintained at this level, it is estimated that in 2004, the region will face an annual financing gap of approximately US$80 million rising to US$150 million in 2007.

While the financing gap is not large, compared to overall health sector spending, it will fall most heavily on low-income countries. Effective social security systems in the upper middle-income countries help assure that they can meet the challenge of HIV/AIDS care and treatment.

Low-income countries, in contrast, especially those with HIV prevalence above one percent, will need external technical and financial assistance. The fiscal conditions of most of the region's economies suggest that financing HIV/AIDS programs will be a challenge for most countries.

For the region as a whole, HIV/AIDS spending will have to grow by nearly six percent per annum, according to country specialist estimates. Much of that expansion will have to occur in the lower income countries and be financed either by the public sector or external assistance. Domestic public resources will be extremely limited. A financing gap of US$150 million in the year 2007 looms as a potentially large barrier against success. Bridging that gap will required expanded resource mobilization efforts by donors and the international financial institutions.

Conclusion

Country specialists estimate that, given current infrastructure and human resource capacity, US$1.5 billion will be needed by 2005 to provide HIV/AIDS prevention, treatment and care to populations with access to health care services. Approximately US$2 billion will be needed to support HIV/AIDS interventions by 2007. Latin America and the Caribbean is already spending substantial amounts of domestic resources on HIV/AIDS programs. About one quarter is allocated to prevention and three-quarters to care and treatment. The prevention-care balance needs to shift from a 25:75 to a 50:50 ratio to assure better results in response to the epidemic. More attention to key groups (especially men who have sex with men) and to underserved groups living in poverty (such as ethnic minorities, mobile populations, and prisoners) is essential.

Total resources need to increase by over 6 percent per annum, nearly doubling between the year 2000 and the year 2007, the limit of projections produced by the country specialists.

The aggregate sums required over the next several years, reaching $US2 billion by 2007, are within the financial capabilities of the region. In 2000, only 2.1 percent of financial support for HIV/AIDS interventions came from outside the region (Izazola-Licea et al., 2003). The financing required for 2007 will be less than a thousandth of the projected gross national income for that year in Latin America and the Caribbean. Since health expenditures in the late 1990s topped US$200 billion annually, it is safe to predict that HIV/AIDS spending will be less than one percent of total health spending. These comparisons underline the conclusion that there is no financial reason to shortchange the fight against HIV/AIDS. Yet, even if *on average* the region can finance HIV/AIDS interventions, the low-income countries, especially those with a high prevalence of HIV/AIDS, will depend fundamentally on external financial assistance.

Although it is important to increase the absolute amount of resources available to address HIV/AIDS in Latin America and the Caribbean, this must be accompanied by strong efforts to ensure that the resources are allocated to interventions that can have maximum impact on halting the spread of the disease. The contrast between projected resource needs and actual expenditure patterns suggests that prevention programs are not receiving adequate resources compared to treatment interventions. Moreover, within prevention programs, interventions targeted at key populations (such as men who have sex with men) are projected to continue to receive limited resources compared to the impact of the epidemic on these groups.

While it is recognized that estimates from country experts have their limitations and uncertainties, it is important to note that published information in many Latin American and Caribbean countries is limited and, as a result, these estimates they are the best available data. All of the parameters used in the model have validity problems, but this is especially so for the estimates of the unit costs for prevention and care. The model estimates a scaled-up response in Latin America and the Caribbean; yet, how unit costs change as programs scale up is relatively unknown. Thus, it is important to observe changes in units cost as programs are implemented.

Lastly, increased resources do not resolve the challenges associated with implementation. The region needs additional resources to address HIV/AIDS, but to be effective these resources must be accompanied by strong and consistent political support for HIV/AIDS programs, clear prioritization of resources, and consistent monitoring and evaluation of program interventions.

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Tables

Table 1. Prevention Activities, Target Populations, Default Coverage Rates and Unit Costs

Category	Activity	Target population	Default Coverage (Varies by severity of epidemic or level of economic development)	Default Unit Costs US$ at 2000 prices (May vary by region)
Youth-focused interventions -In-school youth -Out-of-school youth	-Teacher training, peer education -Peer education	-Primary and secondary students -Out-of-school youth ages 6-11 and 12-15	-10-33% of primary teachers -2-12% of secondary teachers -10-50% of out-of-school youth	-$26-84 per primary teacher trained -$15-50 per secondary teacher trained -$8 per out-of-school youth reached
Sex workers (SW) and their clients	Male and female condoms	Sex workers	-60% of SWs reached -60-80% condom use by those reached -5% are female condoms	-$15.83 per SW reached -$0.10 per male condom distributed -$1.00 per female condom distributed
Public and commercial sector condoms	Condom promotion	Single and married men with casual partners	-20-60% of casual sex acts use condoms -10-30% of married couples with casual partners use condoms in marital sex -70-80% of condoms distributed by public and commercial sector	-$0.15 per male condom distributed
Condom social marketing 	Condom promotion	Single and married men with casual partners	-10-20% of condoms distributed through CSM -10% of condoms are female condoms	-$0.12-0.25 per male condom distributed -$1 per female condom distributed
Sexually transmitted infections (STIs)	Treatment of STIs	Men and women with symptomatic STIs with access to health system services	-60-100% of symptomatic STI cases with access to health facilities -60-100% of pregnant women with syphilis attending ante-natal clinics	-$8.34-9.26 per STI case treated -$0.91 per woman screened for syphilis at ante-natal clinics -$8.34-9.26 per syphilis case treated at ante-natal clinics
Voluntary counseling and testing (VCT)	Testing and counseling	Those desiring to be tested	Estimated as twice the number of people infected with HIV, with access to health facilities, tested every five years	$10.60 per person counseled and tested
Workplace prevention	-Condom promotion -Treatment of STIs	-Men employed in the formal sector with casual partners -Men and women employed in the formal sector with symptomatic STIs	-3-50% for peer counseling -70% of employees with symptomatic STIs treated -10% of all condoms distributed through workplace programs	-$3.36 per employee reached with peer education -$8.34-9.26 per STI case treated -$0.10 per male condom distributed
Blood safety	Screening blood for transfusions	Units of blood required for transfusion	100% of blood tested	$4.88-15.00 per safe blood unit available
Prevention of mother-to-child transmission of HIV (MTCT)	-Testing -Short course anti-retroviral treatment, replacement feeding	-Pregnant women attending ante-natal clinics -HIV+ pregnant women attending ante-natal clinics	-10-50% of women attending ante-natal clinics tested -90% of those found to be HIV+ accept treatment -50% of those found to be HIV+ use replacement feeding	-$3.80 per woman screened -$18.70 per woman receiving ARV regimen (includes drugs and service strengthening) -$50 per women receiving formula
Mass media	Mass media campaigns	Country	2-6 campaigns per country per year	$490,000 per campaign
Harm reduction	Harm reduction programs	Injection drug users (IDUs)	25-75% of IDUs	$3.21-12.50 per person reached
Men who have sex with men (MSM)	Peer counseling	Men who have sex with men	-60% of MSMs reached by peer counseling -60-80% condom use among those reached	-$15.83 per person reached -$0.10 per male condom distributed

Table 2: Default Care and Treatment Activities and Unit Costs, UNGASS model

Category	Activities	Annual costs US$US2000 per person
Palliative care	Symptomatic care and support provided to those people nearing death	75+
OI treatment	Medications and medical care for the common opportunistic infections associated with HIV	300+
Diagnostic HIV testing	Testing of symptomatic patients prior to the provision of prophylaxis for the prevention of opportunistic infections or HAART	5
OI prophylaxis	Isoniazid – to prevent reactivation of latent TB and cotrimoxazole – to protect against the pathogens responsible for pneumonia and diarrhea	32
HAART	Treatment with three antiretroviral drugs	350-2900, depending on country wealth
	Laboratory testing to enable monitoring of HAART treatment	140
+ *Lifetime costs*		

Table 3. Country Specialists' Estimates, Annual Expenditures Required, All Interventions, 2001-07, US$millions

Interventions	2001	2002	2003	2004	2005	2006	2007
Total Prevention	**379**	**499**	**622**	**745**	**871**	**999**	**1,129**
Youth	39	61	80	97	114	133	151
Sex workers	12	18	24	31	39	47	50
Condom social marketing	8	13	22	35	52	69	90
Public and private condom distribution	74	98	120	140	157	172	185
STIs	59	61	63	65	67	69	71
Voluntary counseling, testing	8	10	11	13	15	17	19
Workplace	7	16	26	36	47	58	69
Blood	41	41	42	43	44	45	46
Prevention of MTCT	18	24	30	37	44	51	59
Mass media	26	30	39	45	50	55	61
Intravenous drug users	3	4	5	7	9	11	13
Men who have sex with men	23	32	42	52	64	75	86
Special groups, I	11	19	28	37	46	56	68
Special groups, II	14	21	28	36	43	51	59
Policy, administration, research	36	47	58	69	80	91	102
Total care and treatment	**482**	**474**	**507**	**539**	**586**	**641**	**697**
Palliative care	10	13	16	17	19	19	19
Testing for HIV positives	0	0	1	1	1	1	1
Treatment for opportunistic infections	52	62	77	92	111	129	144
Prophylaxis for O. I.'s	33	27	31	34	39	44	51
Monitoring of HIV positives	25	26	29	32	37	42	48
Highly active anti-retroviral therapy	362	357	361	367	380	405	435
Mitigation, all OVC assistance	**52**	**59**	**67**	**75**	**84**	**93**	**102**
Orphans and vulnerable children	52	59	67	75	84	93	102
Total, all interventions	**913**	**1,032**	**1,196**	**1,359**	**1,541**	**1,732**	**1,928**

Source: country specialist worksheets developed based on the *Resource Needs Model Excel Workbooks.*

Table 4. UNGASS and Country Specialists' Estimates of Unit Costs for Interventions year 2005, US$

Interventions by Target Group	UNGASS	Country Specialists	% Change
Youth focused interventions			
Cost per teacher trained, primary school	69	65	-6
Cost per teacher trained secondary school	38	51	34
Cost per M/F peer education for out of school youth	8	11	42
Interventions focusing on SW and clients			
Cost per SW targeted - urban	16	19	18
Cost per male condom distributed - urban	0.10	0.13	32
Cost per female condom distributed	1.00	1.49	49
Public and commercial sector condom provision			
Cost per male condom distributed	0.10	0.20	96
Strengthening male condom logistics (cost per condom)	0.05	0.06	24
Condom social marketing			
Cost per male condom distributed urban areas	0.12	0.19	60
Cost per male condom distributed rural areas	0.25	0.29	17
Cost per female condom distributed	1	2	55
Improving STI management			
Cost per STI treated in clinics	9	14	56
Cost per woman screened for STIs in ANC	1	5	419
Cost per STI case treated ANC service	9	14	48
Voluntary counseling and testing			
Cost per person counseled and tested	11	18	71
Workplace interventions (inc. military, truckers)			
Cost per person in employment reached (peer education)	3	4	6
Cost per STI treated in workplace	9	13	39
Cost per male condom distributed	0.10	0.15	53
Strengthening blood transfusion system			
Cost per safe blood unit available for transfusion	15	24	63
Prevention of MTCT			
Cost per woman screened	4	13	246
Cost per woman testing HIV+ and receiving regimen	5	186	3629
Cost per woman testing HIV+ of strengthening delivery services to undertake regimens	28	123	338
Cost per woman of six months formula milk	50	75	50
Mass media			
Cost per country mass media campaign	489,565	376,767	-23
IDUs			
Cost of harm reduction programs per person contacted	13	24	95
MSMs			
Cost per MSM targeted for peer counseling	16	21	35
Cost per male condom distributed	0.10	0.15	46
Care and Treatment Interventions			
Palliative care (lifetime)	75	420	460
HIV test	5	13	151
Treatment for opportunistic infections (lifetime)	300	953	218
Prophylaxis for opportunistic infections (annual)	32	113	254

Interventions by Target Group	UNGASS	Country Specialists	% Change
Laboratory tests for HAART therapy (annual)	140	229	64
HAART (annual) 2001	(450-3,500)	(350 - 7,921)	
Orphans			
Cost per child in orphanage	356	**617**	73
Cost per child given assistance with living expenses	51	**171**	235
Cost per child for school expenses (all orphans)	25	**43**	72

Note: Unit costs greater than US$1 have been rounded for this presentation. Percentage changes are calculated from unrounded amounts for both UNGASS and country specialist unit costs.
Source: UNGASS estimates of unit costs from pilot and case studies (see *Resource Needs Manual* list of references). Unit costs from the country specialists are unweighted averages of the costs applied in the country workbooks used in the three workshops. Weighting these averages by population of the countries represented would produce different results.