



Health Systems Strengthening and HIV/AIDS: Annotated Bibliography and Resources

Prepared by:

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Abt Associates Inc.

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Partners for Health Reform*plus*



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Funded by:
U.S. Agency for International Development
under contract no. HRN-C-00-00-00019-00

Order No TK 011



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- ▲ *Implementation of appropriate health system reform.*
- ▲ *Generation of new financing for health care, as well as more effective use of existing funds.*
- ▲ *Design and implementation of health information systems for disease surveillance.*
- ▲ *Delivery of quality services by health workers.*
- ▲ *Availability and appropriate use of health commodities.*

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March 2004

Recommended Citation

Lena Kolyada. March 2004. *Health System Strengthening and HIV/AIDS: Annotated Bibliography and Resources*. Bethesda, MD: The Partners for Health Reformplus Project, Abt Associates Inc.

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Contract/Project No.: HRN-C-00-00-00019-00

Submitted to: Karen Cavanaugh, CTO
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Abstract

Over the past few years, a united battle against HIV/AIDS has gained momentum worldwide. Non-governmental and community-based programs, national and international organizations – all are confronting the myriad of challenges posed by the HIV/AIDS pandemic. In an effort to provide policymakers, technical personnel, and other stakeholders, comprehensive information on the costs of interventions and the impact of HIV/AIDS on health systems, PHR*plus* has prepared this annotated bibliography. The documents described focus on those aspects of the pandemic most related to the work of the project issues of economic impact, financing and resource allocation, costing, health system strengthening, scaling up antiretroviral therapy, surveillance systems, and program monitoring and evaluation. The bibliography includes summaries of 101 publications describing work done from 1995 to the present as well as a directory of web resources for additional information. This bibliography is not meant to be an exhaustive review, but rather is intended to highlight current information in the evolving field of HIV and health systems strengthening.

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Acronyms

ABC	Activity-based Costing
AIDS	Acquired Immune Deficiency Syndrome
APDIME	Assessment, Planning, Design, Implementation Monitoring, and Evaluation
ART	Antiretroviral Therapy
ARV	Antiretroviral Drugs
ATC	AIDSTREATCOST Model
CAREC	Caribbean Epidemiology Centre
CBO	Community-based Organization
CDC	Centers for Disease Control
CIOMS	Council for International Organizations on Medical Sciences
CMH	Commission on Macroeconomics and Health
DALY	Disability Adjusted Life Year
DOT	Directly Observed Therapy
DSSP	Decentralized Systems of Social Protection
ECA	Eastern Europe and Central Asia
GFATM	Global Fund to Fight AIDS, Tuberculosis and Malaria
HAART	Highly Active Antiretroviral Therapy
HIV	Human Immunodeficiency Virus
HMIS	Health Micro-insurance Schemes
ICHC	Integrated Community-based Home Care
ILO	International Labor Organization
LAC	Latin America and Caribbean
MAP	Multi-Country HIV/AIDS Programs
MOH	Ministry of Health
MSH	Management Science for Health
MTCT	Mother-to-Child Transmission
NGO	Non-government Organization

NHA	National Health Accounts
PAHO	Pan American Health Organization
PEPFAR	President's Emergency Plan for AIDS Relief
PHR<i>plus</i>	Partners for Health Reform <i>plus</i>
PLWHA	People Living with HIV/AIDS
PRSP	Poverty Reduction Strategy Paper
PSI	Population Services International
RTK	Rapid Test Kits
STD	Sexually Transmitted Disease
STI	Sexually Transmitted Infections
STEP	Strategies and Tools against social Exclusion and Poverty
TACT	Technical Assistance Costing Tool
TB	Tuberculosis
UNAIDS	Joint United Nations Programme on HIV/AIDS
UNDP	United Nations Development Programme
USAID	United States Agency for International Development
VCT	Voluntary Counseling and Testing
WHO	World Health Organization

Acknowledgements

The author is grateful to Janet Edmond, Catherine Chanfreau, Owen Smith, Gilbert Kombe, and Paurvi Bhatt for their technical input and review of the introduction section of this document and for providing reference information and other guidance. The author also wishes to acknowledge Ruth Hope from the Synergy Project for her technical review of the document and valuable comments provided.

Likewise, the author would like to thank Liz Nugent, Linda Moll, Ricky Merino, Suzanne Szarai, and Michelle Munro for their assistance in compiling, editing, and formatting this document.

1. Introduction

1.1 Background on HIV/AIDS

By the end of 2003, the HIV/AIDS pandemic had reached an unprecedented scale, with approximately 40 million people infected worldwide. In 2003 alone, 5 million people acquired HIV and an estimated 3 million lost their lives to HIV-related disease. At the same time, the global campaign against HIV/AIDS is rapidly gaining momentum as international organizations, donor agencies, and governments mobilize to confront the pandemic. HIV/AIDS is no longer just a public health problem – it is a development crisis. There is increased pressure on bilateral and multilateral agencies to move quickly to scale up prevention, treatment, care, and support services in low-resource countries. New initiatives such as the Global Fund to fight HIV/AIDS, Tuberculosis and Malaria (GFATM), the WHO/UNAIDS 3 by 5 Initiative, the President’s Emergency Plan for AIDS Relief “PEPFAR,” the World Bank Multi-Country HIV/AIDS Programs (MAP), and many other initiatives have committed an enormous amount of resources to address a range of prevention, treatment, and support interventions.

Although the HIV/AIDS epidemic touches all aspects of society, health systems are and will remain at the forefront of efforts to halt the disease. However, there is a lack of recognition and understanding of the links between the provision of HIV/AIDS services and the broader health systems required to ensure a sustainable, effective response to the epidemic in the long term. Given the resource constraints in many developing countries, national health systems are already struggling to provide adequate basic health care for their populations, and the additional requirements for providing HIV/AIDS services present the system with resource allocation and system management challenges.

Health systems strengthening, within the context of broader health sector reform,¹ includes policy development and implementation, efficient financing mechanisms, increased information on health expenditures and costs, improved quality of health service delivery, surveillance and reporting of disease impact within communities, and implementation of sustainable health information systems. Policymakers at national and international levels are in need of evidence-based, comprehensive information on the costs of interventions, sources of funds, and impact of HIV/AIDS on health systems and as well as the systems’ ability to function efficiently. Based on the initiatives mentioned above, the amount of resources for HIV/AIDS has sharply increased and a number of new critical components have come to play on the HIV/AIDS agenda. These new issues to be examined include absorptive capacity, adequate human resources, and system capacity for effective and safe delivery of treatment services.

¹ Health sector reform is a sustained process, guided by government, of strengthening systems to achieve fundamental change in policy and institutional arrangements through changes in health sector priorities, laws, regulations, organizational structure, and financing arrangements. The central goals are to improve the functioning and performance of the health sector, in order to improve access, equity, quality, efficiency and/or sustainability and ultimately the health status of the population.

In an effort to contribute to the expanding knowledge base needed by policymakers on the cost of interventions and the impact of HIV/AIDS on health systems, *PHRplus* has compiled a bibliography of key documents related to the economic impact, resource allocation, costing, financing, and surveillance of HIV/AIDS as well as the access and provision of Antiretroviral Therapy (ART). The document contains summaries of 101 key documents, most published from 1996 to the present; author and title indices; and websites for additional information. A brief overview of the topics covered follows.

1.2 Economic Impact

The HIV/AIDS pandemic, particularly in sub-Saharan African countries, presents challenges reaching far beyond the scope of national health sectors. Increasing morbidity and mortality rates among people in their prime working age have created significant pressure on individuals, households, private institutions, and public resources such as labor, education, agriculture, industry, and other sectors. HIV/AIDS requires a response that goes beyond the traditional boundaries of public health initiatives; it demands a multi-sectoral, comprehensive approach involving all stakeholders and aspects throughout the country. Experience has shown that creating an enabling environment in the broader national context and across the health system is a critical step for long-term effectiveness in improving health services for the target population.

Measuring the economic impact of HIV/AIDS among the affected population is one way of showing how devastating the disease can be, in terms of lost productivity, lost revenues, and other monetary elements. This information can assist policymakers understand how valuable prevention efforts are in the long run.

1.3 System Strengthening

Prior to the HIV/AIDS epidemic in sub-Saharan Africa, many low- and middle-income countries were making strides in improving health outcomes with limited resources. However, the epidemic has occasioned a greater demand for services while at the same time trained and qualified human resources have been lost to the epidemic (USAID/Africa Bureau, 2002). Health systems infrastructure in low-resource countries also is weakened by inadequate public delivery systems; poorly integrated private sector delivery mechanisms; inefficient use of hospital resources; lack of coordination among different levels of the health system, such as primary, secondary, tertiary facilities, and labs; and inefficient use of existing resources.

In order to address the challenges of delivering HIV/AIDS prevention and treatment services, national policymakers and stakeholders need to understand the broad array of health systems components required to support service delivery, such as trained personnel, well-equipped laboratories, and development of Voluntary Counseling and Testing (VCT) programs, prevention and treatment of opportunistic infections, development and maintenance of ART, and palliative care.

1.4 Financing and Resource Mobilization

According to UNAIDS, only limited information is available on how global funding for HIV/AIDS is allocated between prevention, care, and research in developing countries. Despite the unprecedented levels of international assistance, tracking resource flows is challenging due to the lack of comprehensive reporting systems, lack of donor coordination, and the absence of national level mechanisms to collect expenditure data.

At the national level there are similar questions of what resources are available for HIV/AIDS services, how they are being used, how dependent the system is on donor assistance, what the current costs of the system are, and how well the health sector can manage resources. Lack of information or disparities in estimates lead to inadequate decision making and potentially ineffective prevention and treatment measures. Policymakers at all levels of government need information on who is paying for what. National Health Accounts (NHA) is one tool for national level analysis of disease-specific expenditures, such as HIV/AIDS. By disaggregating HIV/AIDS expenditures from other health service expenditures, NHA sub-analysis can provide hospital administrators, program managers, and policymakers with a clearer idea of how the money is being spent on HIV/AIDS by governments, donors, and households, as well as the amount of money involved. A National HIV/AIDS strategy is another tool for obtaining an accurate picture of the sources and use of the funds and for tracking the effective use of these funds. Such strategies should support the role of national governments' in resource planning and allocation through ongoing activities that broadly strengthen health systems. The information from sources like these allows governments to review expenditure patterns and improve resource planning and increase their ability to address the needs of the HIV/AIDS epidemic.

1.5 Costing

Due to growth in demand for funding for HIV/AIDS prevention and care, expenditures on these activities have outpaced most other public health needs and bear heavily on the budgets of national governments and international donors alike. National policymakers and program managers need more comprehensive costing information on a range of HIV/AIDS services. This is particularly true with regard to the provision of ART in low-resource countries, since provision of ART threatens to overwhelm health budgets and human resource capacity. Policymakers need a solid base of information on comprehensive input costs of ARV provision, such as training personnel, labs, and drugs, in order to craft effective policy decisions, plan and budget treatment strategies, and ensure sustainability of financing strategies.

Many low-resource countries have started to provide ART to people living with HIV/AIDS in response to national and international pressure. While donors and governments alike stand prepared to support expansion of HIV services, particularly the delivery of ARVs, there are substantial gaps in knowledge about the system requirements for operating a successful ARV program, how to plan for such a program, the cost implications of ARV and other treatment and care strategies, and how to finance these costs in the longer term.

1.6 Antiretroviral Therapy

ART includes all specialized medical and diagnostics services provided to outpatients to properly manage and monitor treatment of drugs that aim to suppress HIV replication and improve HIV-related symptoms (UNAIDS). For many countries with high HIV/AIDS prevalence, it is no longer debatable whether ARVs should be provided, but rather a question of how ART can be administered. The ultimate goal of ART policy is very often the provision of a framework that will allow universal access to ART. To facilitate development of ART policies, major issues in need of more attention including determining criteria for eligibility for ARV programs; establishing priority uses of ARVs at the national level; outlining minimum requirements to ensure effective and integrated case management; assuring treatment adherence to prevent drug resistance; understanding implications of the choice of ART first and a second line regimen to maximize the percent of patients included in the lowest cost line; and clarifying logistical and regulatory issues concerning ARVs. Building on clinical practice guidelines will take ARV provision issues to the national level. It will provide assistance to policymakers in defining specific categories with preferential access to no-charge ARVs and ordinary eligibility for publicly provided ART. The costing factor should be included in ART policies as well. Costing can assist analysts and decision makers to bring together clinical eligibility, unit cost, access, and behavioral information to estimate the overall costs of alternative program designs. A costing framework should show an analysis of options for financing and subsidy policy decisions and display the distributional consequences of the options for financing and subsidy policy.

1.7 Surveillance and Monitoring and Evaluation

Identifying and properly diagnosing and treating HIV/AIDS patients is a challenge in low-resource countries. National and district level infectious disease systems are struggling to build detection, reporting, and response capacity. HIV/AIDS poses a particular challenge to effective detection and reporting due to issues of social stigma, the nature of transmission of the disease, and other social and economic barriers to access to care. In response to these surveillance strengthening needs, many international donors and organizations such as the WHO, the Centers for Disease Control (CDC), and the United States Agency for International Development (USAID) have assisted developing countries design and implement effective disease reporting initiatives. On the other hand, monitoring and evaluation of national and internationally funded HIV/AIDS programs are also needed. It is becoming increasingly important for countries to be able to report accurate, timely, and comparable data to donors and national authorities in order to secure continued funding for expanding health programs. In addition, monitoring and evaluation is important to alert decision makers to potential problems before such problems become too entrenched, and to identify strategies to strengthen evolving programs.

2. Annotated Bibliography

2.1 General HIV/AIDS Info

1. **Abt Associates South Africa Inc. and Metropolitan Life Ltd. February 2000. "The Impact of HIV/AIDS on Current and Future Population Characteristics and Demographics in Botswana."**

Keywords: HIV/AIDS, Demographic Indicators

Botswana has one of the most severe HIV/AIDS epidemics in sub-Saharan Africa and the world. The epidemic has been hidden due to the long incubation period from HIV infection to the onset of AIDS and to stigma that discourages disclosure of HIV/AIDS. However, it is clear that the epidemic is so severe that it will lead to dramatic changes in the population size and profile. Previous projections of demographic impacts in Botswana have used problematic assumptions regarding important micro-parameters and the shape of the epidemic curve for the country. The overall objective of this study is to provide Botswana with the best available projections of the demographic impact of HIV/AIDS on its population to 2010. Available models for projecting HIV/AIDS demographic impacts were reviewed. The study technical group requested that the consultants use the Spectrum Model to make final projections. The Doyle Model was used to produce the HIV prevalence curve needed to calibrate Spectrum, and for other comparison projections. The projections given in this report are likely to give the best available indication of the scale and types of HIV/AIDS demographic impacts. However, no model can represent or predict reality perfectly. Projections are also very dependent on the quality of demographic and epidemiological data used for inputs and calibration.

2. **Ainsworth, M. and Teokul, W. 2000. "Breaking the Silence: Setting Realistic Priorities for AIDS Control in Less-Developed Countries." *The Lancet* 356, 9223:55-60.**

Keywords: HIV/AIDS, Preventive Care, Cost-effectiveness, Public-Private Collaboration

There is no cure or vaccine for AIDS, but tools to control the epidemic exist. Nevertheless, there are few examples of national AIDS control programs that have had an impact on the epidemic. Failure of many countries to implement HIV/AIDS programs is often attributed to the reluctance of governments to confront AIDS and a frustration to prioritize activities in the face of severe financial and administrative constraints. When implementation capacity is weak, expanding the number of activities may not improve program effectiveness. The article focuses on three core priorities for AIDS control in poor countries for prevention, treatment, and mitigation of the impact. One of the proposals of the report is that, by implementing a smaller, core set of the most cost-

effective activities on a national scale, policymakers could have a huge effect on the overall epidemic in a sustained way and provide a foundation for expansion.

3. **Ainsworth, M., Over, M., Brooks, N. et al. 1997. “Confronting AIDS: Public Priorities in a Global Epidemic.” Oxford University Press.**
Keywords: HIV/AIDS, Public Sector, Policy, Poverty and the Poor, International Aid

About 90 percent of HIV/AIDS infections occur in developing countries, where the disease has already reduced life expectancy, in some cases by more than a decade. Because most people who develop AIDS are adults in the prime of life, the disease exacts a heavy toll on surviving family members, especially children, and may exacerbate poverty and inequality. How can developing country governments and the international community identify the public priorities in confronting this global epidemic? This book provides information and analysis to help policymakers, development specialists, public health experts, and others who shape the public response to HIV/AIDS to design an effective strategy for confronting the epidemic. It draws upon three bodies of knowledge: the epidemiology of HIV; public health insights into disease control; and especially public economics, which focuses on assessing tradeoffs in the allocation of scarce public resources.

4. **Benatar, S.R. 2002. “The HIV/AIDS Pandemic: A Sign of Instability in a Complex Global System.” *Journal of Medicine and Philosophy* 27, 2: 163-77.**
Keywords: HIV/AIDS, Poverty and the Poor, International Aid

Intense scientific work on HIV/AIDS has led to the development of effective combination drug therapies and there is hope that effective vaccines will soon be produced. However, the majority of people with HIV/AIDS in the world are not benefiting from such advances because of extreme poverty. This article focuses on the pandemic as a reflection of a complex trajectory of social and economic forces that create widening global disparities in wealth and health and concomitant ecological niches for the emergence of new infectious diseases. While the biomedical approach to HIV/AIDS is necessary, has prolonged the lives of many individuals, and could offer much at the level of population health, it cannot, in isolation, improve the health of populations. To achieve the latter will require understanding and addressing the deeper social causes of pandemics. In the conclusion, the paper suggests that broadening of discourse on ethics to include public health ethics and the ethics of international relations could contribute to reducing the impact of the pandemic and to preventing the emergence of new infectious diseases in the future.

5. **Farmer, P., Léandre, F., Mukherjee, J.S., et al. 2001. “Community-Based Approaches to HIV Treatment in Resource-Poor Settings.” *The Lancet* 358: 404-9.**
Keywords: HIV/AIDS, Clinical Treatment, Equity

In the year of 2000 HIV surpassed other pathogens to become the world’s leading infectious disease cause of adult death. More than 90 percent of death occur in poor countries, yet new antiretroviral therapies have only led to a drop in AIDS deaths in industrialized countries. The main obstacles to the use of these agents in less-developed countries have been their high cost and the lack of health infrastructure necessary to use

them. This document is a report of experience of treating HIV disease in a poor community in rural Haiti and examination of the main objections to making highly active antiretroviral therapy (HAART) available in resource-poor settings. The authors suggest that directly observed therapy of chronic infectious disease with multidrug regimens can be highly effective in settings of great privation as long as there is sustained commitment to uninterrupted care that is free to the patient.

6. **Hanson, S. 2002. "AIDS Control in Sub-Saharan Africa: Are More Drugs and Money the Solution?" *The Lancet, Infectious Diseases* 2: 71-2.**
Keywords: HIV/AIDS, Essential Drugs, Financing, Preventive Care, Health Systems

Health service systems in most African countries are imbalanced and relatively unproductive. Necessary reforms, involving several sectors, are slowly underway but require politically difficult restructuring. The paper reflects on how HAART programs should be implemented to battle AIDS in African countries through local non-government organizations (NGO) in parallel with strengthening health service systems nationwide. Certainly there is need for both money and drugs, but most of all there is need for operational systems that can transform the money into effective prevention and care.

7. **Harries, A.D. 2002. "Management of HIV in Resource-Poor Countries, with a Focus on Sub-Saharan Africa." *Lepr Rev* 73: 268-75.**
Keywords: HIV/AIDS, Essential Health Care Services, Clinical Treatment, Preventive Care, Essential Drugs, Management

HIV/AIDS is the modern world's greatest pandemic, the brunt of which falls on sub-Saharan Africa. HIV/AIDS control efforts have up until now focused mainly on prevention, with little attention paid to care. This approach must change and prevention has to be linked with an essential package of care if there is to be any hope of reducing HIV incidence rates or curbing the morbidity and mortality associated with AIDS. The paper focuses on management and care of HIV-related disease where the complexity of care should be taken into consideration. This package of care should include psychosocial support, screening for sexually transmitted infections and tuberculosis, clinical care for opportunistic infections, palliative care for terminal illness, home-based care, care and support for orphans, prevention of mother-to-child transmission (MTCT) of HIV, preventive therapy, and the possibility of antiretroviral drugs. Many countries in sub-Saharan Africa are developing plans to scale-up treatment and prevention programs, including the use of ARVs. However, any meaningful challenge to the AIDS epidemic requires a huge scale-up of support from the international community, both for ARVs and for basic prevention and care packages.

8. **Lamptey, P., Wigley, M., Carr, D., et al. 2002. "Facing the HIV/AIDS Pandemic." *Population Bulletin* 57, 3.**
Keywords: HIV/AIDS, Demographic Indicators, Gender, Child Mortality, Burden of Disease, Preventive Care, Capacity Building, Management

What most countries lack are the will, the commitment, and the resources to implement effective programs. The global community has failed to provide adequate care for millions of people currently living with HIV/AIDS. The Population Reference Bureau's

bulletin focuses on data supported by narrative on the global epidemic, demographic and health effects, social and economic impact, and prevention and care possibilities. New technologies will certainly enhance HIV/AIDS prevention, care, and treatment. The knowledge to effectively fight the epidemic already exists. The authors purport that despite concerted efforts to curb the epidemic – and some success stories – HIV continues its relentless spread.

9. Materials from *Break The Silence XIII International AIDS Conference. 9-14 July, 2000. Durban, South Africa.*

Keywords: HIV/AIDS

The theme of the XIII International Conference held in Durban, South Africa, in July 2000 was “Break the Silence,” the silence on the obstacles to global efforts to turn the tide of the HIV epidemic. Obstacles include complacency, ignorance, and denial, which are still common in many countries, inequities in access to care, tardiness in the development of HIV vaccines and vaginal microbicides, lack of commitment in providing resources for research, education, and public health interventions. The conference materials include a comprehensive program of the event, presentation abstracts, and information on presenters. As the Durban conference was the first International AIDS Conference to be held in Africa it presented a unique opportunity to focus energy and attention on the epidemic where its impact and effects were being felt most: by individuals, families, communities, and countries.

10. Okware, S., Opio, A., Musinguzi, J., et al. 2001. “Fighting HIV/AIDS: Is Success Possible?” *Bulletin of the World Health Organization* 79, 12: 1113-20.

[http://www.who.int/bulletin/pdf/2001/issue12/79\(12\)1113-1120.pdf](http://www.who.int/bulletin/pdf/2001/issue12/79(12)1113-1120.pdf)

Keywords: HIV/AIDS, Infectious Disease Surveillance, Infection Control Strategies, Preventive Care, Epidemiology

The fight against HIV/AIDS poses enormous challenges worldwide, generating fears that success may be too difficult or even impossible to attain. Uganda has demonstrated that an early, consistent, and multisectoral control strategy can reduce both the prevalence and the incidence of HIV infection. From only two AIDS cases in 1982, the epidemic in Uganda grew to a cumulative 2 million HIV infections by the end of 2000. The national response was to bring in new policies, expanded partnerships, increased institutional capacity for care and research, public health education for behavior change, strengthened sexually transmitted disease (STD) management, improved blood transfusion services, care, and support services for persons with HIV/AIDS, and a surveillance system to monitor the epidemic. After a decade of fighting on these fronts Uganda became, in October 1996, the first African nation to report declining trends in HIV infection. The study suggests that a comprehensive national response supported by strong political commitment may be responsible for the observed decline.

11. **Petersen, I. and Swartz, L. 2002. "Primary Health Care in the Era of HIV/AIDS: Some Implications for Health Systems Reform." *Social Science & Medicine* 55: 1005-13.**

Keywords: Primary Health Care, HIV/AIDS, Resource Allocation, Management

According to the World Health Organization (WHO, 2000), health care systems reforms during the 20th century have been characterized by three overlapping generations. During the 1940s and 1950s the first generation was characterized by an emphasis on hospital-based care in both high- and low-income countries. Second generation reforms saw the introduction of universal primary health care, which emphasized accessible, affordable, equitable, and comprehensive care, and placed an equal emphasis on curative and preventative care. Furthermore, comprehensive primary health care was conceptualized as promoting a development agenda with an emphasis on community participation and empowerment (Rifkin & Walt, 1986). This article argues that the current emphasis on third generation reforms to health systems places at risk the empowering comprehensive agenda of second generation reforms. Using the HIV/AIDS epidemic in South Africa as an example, the authors suggest that the emphasis on "packaged" priority programs with measurable outcomes, which characterizes third generation reforms, needs to be accompanied by the reorientation of primary health care providers towards an empowering comprehensive approach to care. In addition, authors show how certain aspects of the health care system need restructuring to provide containment and support for such care.

12. **Tawfik, L. and Kinoti, S.N. December 2002. "The Impact of HIV/AIDS on the Health Sector in Sub-Saharan Africa: The Issue of Human Resources." *Support for Analysis and Research in Africa (SARA) Project*.**

Keywords: Health Systems, HIV/AIDS, Human Resource Development, Health Personnel, Policy, Advocacy, Management, International Aid

Prior to the HIV/AIDS epidemic, the health systems of sub-Saharan Africa were making a significant contribution to the steadily improving overall health status of populations in the region. There were, however, virtually no published studies, as of 1995, on how the African HIV epidemic would affect the supply, demand, and quality of health care. Anecdotal information and a few recent studies suggest that the epidemic's impact on the health system is devastating, particularly as it affects human resources. This paper reviews data, studies, and other information on HIV/AIDS impacts on human resources in sub-Saharan Africa. The purpose is to guide the development of an instrument to conduct HIV/AIDS human resource assessments in the health sector. Until now, inadequate attention has been devoted to this critical step in responding to the epidemic. Specific recommendations in the paper aim to facilitate the collection of appropriate and up-to-date data on the human resource impacts in the health sector, and to promote their use at the national level for designing mitigation responses.

13. **World Health Organization. November 2002. "Coverage of Selected Health Services for HIV/AIDS Prevention and Care in Less Developed Countries in 2001." Geneva, Switzerland.**

Keywords: HIV/AIDS, Preventive Care, Clinical Treatment, Access to Care, Surveys

In most countries access is very low for voluntary counseling and testing, prevention of MTCT, ART, and prophylaxis for opportunistic infections. The level of care available to most people with HIV does not provide elements of essential care. The services that are available are usually located in capital cities and other urban areas. The report presents the results of an assessment of the coverage of several key health services in 2001. It is intended to serve as a baseline against which future progress can be measured. This report includes about 70 countries, including most low- and middle-income countries with more than 10,000 people living with HIV/AIDS in 2001. The information presented in the paper relies on service statistics and on expert assessment and is therefore much less precise than estimates based on population-based surveys. The results should be interpreted with caution, but are useful in indicating the starting point in efforts to achieve future goals. The results of the analysis suggest that most people in low- and middle-income countries do not have access to several key prevention and care services. The paper shows that progress has been made in some areas, but much work remains to bring other essential services to a significant portion of the population in need.

2.2 Economic Impact of HIV/AIDS

14. **Abt Associates South Africa Inc. (ed.). 2000. "The Impact of HIV/AIDS on National Budget Priorities: Maintaining Progress in Social Equity vs. Managing the Epidemic: Papers for Presentation."**

Keywords: HIV/AIDS, Public Sector Health Expenditures

South Africa faces a major challenge to redress unfair differences in health status and access to health care among its population. This document compiles six papers focusing mainly on health care financing, but also on the broader issues on an economic framework and health care equity. The papers were presented at the Henry J. Kaiser Family Foundation AIDS 2000 Forum.

15. **Arndt, C. and Lewis, J.D. 2000. "The Macro Implications of HIV/AIDS in South Africa: A Preliminary Assessment." *South African Journal of Economics* 685, pp. 856-87.**

Keywords: HIV/AIDS, Economy

South Africa now stands at the brink of a full-blown AIDS crisis. Recent demographic work summarized in two reports prepared by ING Barings (1999, 2000) estimates that, since the onset of the AIDS epidemic, more than 500,000 South Africans have died of AIDS-related causes. The epidemic has moved beyond its earlier status as a health issue to become a development issue, with social, political, and economic dimensions. In this paper, authors report on the preliminary results from an analysis of the macro impact of HIV/AIDS in South Africa. They have constructed an economy-wide simulation model that embodies the important structural features of the South African economy, into which they have added major impact channels of the HIV/AIDS epidemic. Using

available demographic estimates for the impact of the epidemic, along with assumptions about behavioral and policy responses, authors used the model to generate and compare two scenarios: a hypothetical “no-AIDS” scenario in which the economy continues to perform as it has over the last several years, and an “AIDS” scenario in which the key AIDS-related factors affect economic performance.

16. **Barnett, C., Bhawalkar, M., Nandakumar, A.K., and Schneider, P. February 2001. “The Application of the National Health Accounts Framework to HIV/AIDS in Rwanda.” Special Initiatives Report No. 31. Bethesda, MD: Partnerships for Health Reform Project, Abt Associates Inc.**
<http://www.phrplus.org/Pubs/Sir31.pdf>
Keywords: HIV/AIDS, National Health Accounts (NHA), Preventive Care

HIV/AIDS has strong social and economic dimensions, and is competing for limited resources with other urgent health care demands such as malaria, diarrhea, and respiratory infections. In the absence of health insurance in Rwanda, access to AIDS-related treatment is determined by patients’ ability to pay user fees. NHA provides a comprehensive description of resource flows in a health care system, showing where resources come from and how they are used. This paper describes how a NHA exercise on HIV/AIDS in Rwanda was designed and implemented, what data was captured, and how HIV/AIDS-specific expenditures were determined. The findings regarding expenditures on HIV in Rwanda are both critical and informative, and the process by which data was gathered is also significant. The comparison of HIV/AIDS-related costs (prevention, treatment, and mitigation) within overall health expenditures reveals that AIDS prevention is primarily financed by donor funds, whereas treatment costs place the heaviest financial burden on households. This is because no financial support system exists to facilitate patients’ access to care. Thus, the patient’s socio-economic background and ability to pay user fees define access to treatment of HIV/AIDS-related diseases. Based on this analysis, the report makes recommendations for policies to improve the financial information process, the sustainability and affordability of health care, and the equity of access to health care in the Rwandan health sector in general and in the HIV/AIDS sector in particular.

17. **Barnett, T. and Whiteside, A. November 1997. “The Social and Economic Impact of HIV/AIDS in Ukraine.” British Council, Ukraine.**
<http://www.britishcouncil.org/ukraine/english/governance/aids/index.htm#o3>
Keywords: HIV/AIDS, Economic Indicators, Health Status Indicators, Infant Mortality

The epidemic in the Ukraine is currently concentrated among intravenous drug users. There is a strong possibility that Ukraine is confronted by an HIV epidemic, which will spread into the general population, and that the most common mode of transmission will be through heterosexual intercourse. This report is about the medium- to long-term social and economic impact of an HIV/AIDS epidemic in Ukraine. It is not a report on medical or epidemiological issues, although authors consider some of these insofar as they form a background. It is about what features of Ukraine may predispose the country to the epidemic, the shape and location the epidemic may take, and the effects that might become apparent over the medium and longer terms.

18. **Barnett, T. and Whiteside, A. September 2000. "Guidelines for Studies of the Social and Economic Impact of HIV/AIDS." Best Practice Collection, Joint United Nations Programme on HIV/AIDS.**

http://www.iaen.org/files.cgi/156_JC326-Guideliens.pdf

Keywords: HIV/AIDS, Impact, Assessment, Framework

Experience teaches that stemming the HIV/AIDS epidemic in countries that have a relatively high prevalence of the virus requires a multisectoral approach incorporating prevention, care, and support strategies. Clear and reliable studies on the social and economic impact of the epidemic can encourage the development of effective prevention programs and prepare countries to face the realities of HIV/AIDS. Socioeconomic impact studies can be a key element in informing the analysis and in the overall HIV/AIDS planning process. However, many impact studies have not been aimed at planning, but have been merely an academic exercise or have provided less than solid data for advocacy purposes. The present guidelines are intended to place socioeconomic impact studies in the planning process in a systematic way. The concepts of vulnerability and susceptibility are presented as central elements to identify the focus of the response, including priority setting. Based on lessons learnt, the guidelines list questions that should be considered in preparing and executing impact studies. The guidelines are intended for use by senior researchers as a source of concepts, ideas, and techniques that can be applied in particular settings and to meet their own needs.

19. **Barnett, T., Whiteside, A., and Desmond, C. November 2000. "The Social and Economic Impact of HIV/AIDS in Poor Countries: A Review of Studies and Lessons." Joint United Nations Programme on HIV/AIDS.**

<http://www.iaen.org/library/unaidsimpact.pdf>

Keywords: HIV/AIDS, Policy, Cost Analysis

This review accompanies the *Guidelines for Studies of the Social and Economic Impact of HIV/AIDS*. Its purpose is to supplement and complement those practical guidelines by presenting some of the literature that informed their development. A number of approaches to impact are reviewed: demographic modeling, and economic modeling of macro-economic effects. All of these are seen to be useful but limited in enabling a full understanding of impact. The review argues that social scientists other than economists and demographers now need to make their contribution to an understanding of impact issues. The review concludes with a discussion of attempts to develop and undertake a perspective on impact, which takes into account the widest possible societal and economic effects over the long term.

20. **Bollinger, L. and Stover, J. 1999. "The Economic Impact of AIDS." The Futures Group International.**

Keywords: HIV/AIDS, Costs

AIDS has the potential to create severe economic impacts in many African countries. It is different from most other diseases because it strikes people in the most productive age groups and essentially is 100 percent fatal. The effects vary according to the severity of the AIDS epidemic and the structure of the national economies. The economic effects are felt first by individuals and their families, then ripple outwards to firms and

businesses and the macro-economy. This paper considers each of these levels in turn and provides examples from various African countries to illustrate the impact.

21. **Broomberg, J., Söderlund, N. and Mills, A.J. 1996. "Economic Analysis at the Global Level: A Resource Requirement Model for HIV Prevention in Developing Countries." *Health Policy* 38: 45-65.**

Keywords: HIV/AIDS, Preventive Care, Resource Allocation, Research Methodology

Agencies operating at the international level have a need for economic analysis to help develop global health policies and determine resource requirements to support their advocacy efforts. This paper presents work commissioned by the Global Program on AIDS to estimate the total resource requirements of implementing a package of HIV prevention strategies in developing countries. The modeling approach identified a hypothetical package that should be implemented and developed a set of assumptions relating the size, number, and coverage of programs required for each strategy to a set demographic and other characteristics of individual countries. Costs were attached to estimate the total cost of the package for individual countries, regions, and the developing world. Results are presented for regions and their implications discussed. Conclusions are drawn on the value of this type of modeling approach to estimating resource requirements.

22. **Dixon, S., McDonald, S., and Roberts, J. 2002. "The Impact of HIV and AIDS on Africa's Economic Development." *British Medical Journal* 324: 232-4.**

<http://bmj.com/cgi/reprint/324/7331/232.pdf>

Keywords: HIV/AIDS, Health Economics

The AIDS pandemic is much more than a medical problem, and thus requires more than medical interventions. The macroeconomics effects of HIV/AIDS in Africa are substantial and policies for dealing with them may be controversial. The paper reviews the evidence and considers how economic theory can contribute to our response to the pandemic. The authors use economic theory to predict what happens to economies faced with rapidly increasing mortality and morbidity. They review empirical studies that have attempted to quantify the macroeconomic effects of the HIV/AIDS pandemic. The paper points that the pandemic has already reduced average national economic growth rates by 2-4 percent a year across Africa. Economic research helps to estimate the effects of HIV/AIDS on the African economy and the cost-effectiveness of prevention and treatment programs. Economic theory predicts that HIV/AIDS reduces labor supply and productivity, reduces exports, and increases imports. Prevention and treatment programs and economic measures such as targeted training in skills needed in key industries will limit the economic effects of HIV/AIDS.

23. **Forsythe, S. (ed.). July 2002. "State of the Art: AIDS and Economics." The POLICY Project.**
<http://www.iaen.org/conferences/stateofepidemic.php>
Keywords: HIV/AIDS, Health Economics, Costs, Preventive Care, Clinical Treatment, Cost-effectiveness, Resource Allocation, Infection Control Strategies, Essential Drugs

Policymakers need a reasonably complete picture of resource flows from sources to users that finance HIV/AIDS prevention, care, support, and treatment. Without that picture, they risk misallocation, waste, and faulty strategic planning. For now, in most parts of the developing world, the picture remains largely unpainted. Filling in the details on financing is among the key challenges to HIV/AIDS policymakers today. This document is intended to assist with these issues. The paper was written by a team of leading economists and social scientists in response to the question, "What is the state of art in the field of AIDS and economics?" As a result, each chapter represents a unique perspective on the question at hand.

24. **Forsythe, S. (ed.); Rau, B. (ed.); Alrutz, N. (ed.) et al. 1996. "AIDS in Kenya: Socioeconomic Impact and Policy Implications." Family Health International/AIDSCAP.**
Keywords: HIV/AIDS, Policy, Mortality, Costs, Legislation, Research Methodology

Despite a greater understanding about how AIDS affects demography, many policymakers still do not have the information needed to understand what AIDS is likely to mean in terms of real human impact. In fact, it is unlikely that HIV/AIDS will be made the priority that it needs to be unless policymakers understand that HIV/AIDS is intricately linked to a country's national development. The intention of this book is to bring together various studies with solid recommendations about what policies might be pursued in order to both prevent the further spread of HIV/AIDS and to mitigate its impact. The book compiles a variety of work that has been already completed, along with a number of new areas of analysis for developing a more complete picture of the social and economic aspects of HIV/AIDS in Kenya.

25. **Haacker, M. January 2001. "The Economic Consequences of HIV/AIDS in Southern Africa." Draft. International Monetary Fund.**
Keywords: HIV/AIDS, Demographic Indicators, Costs

Southern Africa is the region with the highest rates of HIV prevalence in the world. In 1999, 9.4 million, out of a total population of 97 million, were HIV-infected. As the magnitude of the crisis begins to be recognized it is important to try to sort through and evaluate key economic outcomes. This paper gives a comprehensive analysis of the economic impact of HIV/AIDS and provides some tools for economic policy advice. It focuses on countries in Southern Africa that are worst affected by HIV/AIDS, with HIV prevalence rates of 20 percent or more. The main issues analyzed in the document include the demographic impact of HIV/AIDS; the impact on the public sector, focusing on the health sector, and the education sector; and pensions and benefits. The paper also discusses impact on the private sector and household and impact of HIV/AIDS on economic growth and per capita income.

26. **Loewenson, R. and Whiteside, A. March 1997. "Social and Economic Issues of HIV/AIDS in Southern Africa." Southern Africa AIDS Information Dissemination Service.**

Keywords: HIV/AIDS, Costs

AIDS in southern Africa is a critical factor for development, yet few serious attempts have been made either to deal with the socio-economic structures feeding into the epidemic or to understand and mitigate its likely socio-economic impact. The present paper grew from recognition that, to promote both better prevention and appropriate development planning around AIDS, hard data are needed. It was important to find out what research had already taken place within southern Africa in order to see what lessons could be learned and what major gaps existed. The paper starts with introduction of AIDS as a public health problem and development issue, and explains the concepts of vulnerability and susceptibility to AIDS, viewed in the context of the risk environment. The analysis presented in the paper shows the economic cost of different HIV prevention strategies, with the recognition that this is another area where hard data are difficult to find and where more studies are needed. The economic costs of prevention have to be measured against the costs of non-prevention, or increased infections and deaths. One of the coming challenges is to identify how best to ensure that existing research is effectively translated into action, in addition to promoting the gathering of more relevant and critical data in the first place.

27. **Nagelkerke, N., de Vlas, S., Korenromp, E., et al. June 2001. "Modelling the HIV/AIDS Epidemics in India and Botswana: The Effect of Interventions." Working Paper Series No. WG5:4. Commission on Macroeconomics and Health, World Health Organization.**

http://www.cmhealth.org/docs/wg5_paper4.pdf

Keywords: HIV/AIDS, Preventive Care

In order to identify best strategies for HIV/AIDS control in two different countries, India and Botswana, authors developed and used a dynamic compartmental simulation model. Several interventions were considered: a) a sex worker-focused behavioral intervention; b) a Mwanza-style conventional sexually transmitted infections (STI) treatment program; c) MTCT prevention program; d) a HAART treatment program for the entire population; and e) a HAART treatment program for sex workers only. Both the Mwanza-style and a sex worker-focused behavioral interventions hold promise for long-term control, although their ranking is difficult to decide with certainty. MTCT prevention programs will do just that, but they will not dent the epidemic itself. HAART interventions may have short-lived effects on transmission, but within decades, drug resistance will be generalized and the epidemic will continue unabated. A more restrictive use and targeting only late stage patients would delay the development of resistance somewhat.

28. **Ojo, K. and Delaney, M. 1997. "Economic and Demographic Consequences of AIDS in Namibia: Rapid Assessment of the Costs." *International Journal of Health Planning and Management* 12: 315-26.**

Keywords: HIV/AIDS, Research Methodology, Costs, Economic Indicators, Demographic Indicators

Announcements by the government of Namibia to provide financial support to people living with AIDS (and their family members) received considerable media attention. However, given the fact that government budgets are already stretched, and the need of resources to devote the prevention efforts remains, there is an urgent need to assign some values to the support of the government within the context of an explosive epidemic. The study attempts to provide a rapid assessment of the economic costs of HIV/AIDS in Namibia over five years of the First National Development Plan. The estimates include the direct and indirect services, as well as the costs of support payments to people living with AIDS and their families and children orphaned by AIDS. Government and donor expenditures on national prevention and control efforts are also included. The study concludes that no sector of Namibian economy will escape the impact of AIDS. The epidemic will definitely tax hospital, public health, and private and community resources, and these substantial burdens underscore the need for coordinated long-term planning.

29. **Pinkerton, S.D. and Holtgrave, D.R. 1999. "Economic Impact of Delaying or Preventing AIDS in Persons with HIV." *American Journal of Managed Care* 5, 3: 289-98.**

Keywords: HIV/AIDS, Preventive Care, Costs

ART for treatment of HIV disease can be very expensive. However it can also be highly effective for some people, at least in the short term. The paper presents the analysis, which utilized a previously developed economic model of HIV/AIDS-related medical care costs under various disease progression scenarios to compare the costs and benefits of antiretroviral therapy. The results of the research suggests that: (1) recent projections of long-term medical care savings due to highly effective protease inhibitor combination therapies are probably illusory; (2) it makes relatively little difference to the overall long-term cost of HIV/AIDS care whether combination ART completely prevents or just substantially delays progression to AIDS; and (3) although combination therapy is not likely to save economic resources in the long run, it nevertheless can be highly cost effective. In their conclusion, the authors say that the health-related benefits of antiretroviral therapy are not free, but appear to be worth the cost.

30. **Wallace, M.R., Tasker, S.A., Shinohara, T., et al. 2001. "The Changing Economics of HIV Care." *AIDS Patient Care and STDs* 15, 1: 25-9.**

Keywords: HIV/AIDS, Preventive Care, Pharmaceuticals and Contraceptives, Cost-effectiveness

New advances in HIV monitoring and therapeutics have led to dramatic changes in the course of HIV disease. The authors evaluated a closed clinic of 425 HIV patients over the period 1995-1998 to determine the cost-effectiveness of these changes in care. They found that the costs of antiretroviral therapy tripled over the period of observation, but that these increases were largely offset by major declines in inpatient and home health

expenditures. In addition, annual mortality among the HIV patients declined by 90 percent. Authors calculated the cost per life-year gained to be about \$17,500, which compares favorably with medical expenditures for renal dialysis or advanced cardiac disease.

- 31. Whiteside, A.W. 2000. "The Economic Impact of AIDS in Africa." *Canadian Journal of Gastroenterology* 14, 8: 685-90.**

Keywords: HIV/AIDS, Demographic Indicators, Child Mortality, Poverty and the Poor

The experience of AIDS in Africa is very different from that in the developed world. In the developed countries AIDS affects few people, and, for those who are infected, it is an increasingly manageable illness. The economic impact of AIDS is difficult to establish, but it is certainly leading to increased poverty in African families and communities. The article analyses the demographic effects of AIDS, its impact on households, economic, and health care costs. The authors conclude that the impact of AIDS goes far beyond the economic. AIDS is resulting in growing impoverishment and stress in households and communities across the continent. At the national level, it is having a damaging effect on development indicators.

2.3 System Strengthening

- 32. Bennett, S. and Fairbank, A. October 2003. "The System-Wide Effects of the Global Fund to Fight Aids, Tuberculosis and Malaria: A Conceptual Framework." Bethesda, MD: Partners for Health Reformplus, Abt Associates Inc.**

http://www.phrplus.org/Pubs/Tech031_fin.pdf

Keywords: HIV/AIDS, Health Systems, International Aid, Delivery of Services, Financing, Implementation, Public-Private Collaboration, Efficiency

While the Global Fund to Fight AIDS, Tuberculosis and Malaria has an explicit focus on three diseases rather than on entire national health systems, certain operations of the Global Fund are designed to ensure a good fit between the disease-specific focus and health care systems. In addition, the GFATM may have system-wide effects due to the sheer magnitude of the resources it is distributing (particularly in low-income countries), and its emphasis on efficient and rapid disbursement. This paper presents a conceptual framework that identifies the channels through which GFATM disbursements might have health system-wide effects. In doing so, it reviews the design, selection, and implementation processes associated with GFATM grant-making as well as the strategies and content of approved proposals, and it discusses the potential effects each activity or strategy will have on the stewardship, resource development, financing, and service delivery functions of the health care system. The report concludes that it is of critical importance to monitor and evaluate the effects of the Global Fund on broader health systems, and identifies four aspects of systems that the Global Fund appears particularly likely to affect, namely: the policy environment, the public/private mix, human resources, and pharmaceuticals and commodities.

33. **Edmond, J. and Population Services International/Zimbabwe. March 2001. "Support for Quality Improvements in HIV/AIDS Service Delivery in Zimbabwe."** Bethesda, MD: Partnerships for Health Reform Project, Abt Associates Inc.
Keywords: HIV/AIDS, Quality of Care, Evaluation

Zimbabwe currently has one of the world's highest infection rates, with one in four adults infected with the HIV/AIDS virus. As a part of confronting the epidemic, critical improvement of HIV/AIDS service delivery is needed. This paper reports on a study which aimed to assess client satisfaction with daily operations of VCT centers and an evaluation of the effectiveness of new Rapid Test Kits (RTK) in determining HIV/AIDS infection in blood specimens collected at counseling visits. The results of the study are available to assist VCT managers and staff to improve daily operations and interactions with clients, while the RTK evaluation results suggest that introduction and use of these kits will improve effectiveness of HIV/AIDS diagnosis and counseling at all VCT centers. Population Services International (PSI) and Partnerships for Health Reform supported PSI and local partners, who conducted these studies in Zimbabwe from April to November 2000.

34. **Fox, S., Fawcett, C., Kelly, K., and Ntlabati, P. August 2002. "Integrated Community-Based Home Care in South Africa." The Centre for AIDS Development, Research and Evaluation (Cadre).**
Keywords: HIV/AIDS, Facilities, Access to Care, Quality of Care, Training, Pilot Projects

In the past few years, South African hospitals have become overcrowded and in many facilities AIDS patients outnumber patients with other illnesses. Home-based care is considered as an alternative to traditional institutionalized care, and focuses on palliative care within the home. In 1999, the POLICY Project supported seven hospices to incorporate the Integrated Community-based Home Care (ICHC) model into their operational activities. This report focuses on the critical elements of the ICHC model and reflects the experiences of those working in the field. Objectives of the research were to: 1) identify and discuss key similarities and differences between the hospice ICHC model and other home-based care models used in South Africa; 2) identify and critically review the core elements related to the ICHC model as implemented by the Hospice Association of South Africa; and 3) highlight key aspects of best practice related to the hospice ICHC model.

35. **Hirschhorn, L., Fullem, A., Shaw, C., Prosser, W., and Noguera, M. 2003. "Tool to Assess Site Program Readiness for Initiating Antiretroviral Therapy."** Boston, MA: John Snow, Inc.
Keywords: HIV/AIDS, ARV, Clinical Treatment, Management, Administrative Systems, Health Personnel, Laboratories, Pharmaceutical Procurement

Many HIV/AIDS programs are doing limited HIV outpatient or inpatient care. They are not considering providing ARVs based on capacity constraints, unwillingness, or other barriers. The goal of this tool is to develop a set of criteria to help the assessment of a site's readiness to implement antiretroviral therapy and to select ART sites based not on site type, but on capacity, vision, and activities needed for rational introduction and expansion of ART into HIV care. The tool can also be used for site self-assessment, to

assist sites and donors to identify areas in need of technical assistance, and to assist programs in determining sites for ART introduction and scale-up. Finally, the tool can identify areas in which site programs can serve as resources for other programs.

- 36. International Labor Office. July 2002. “Contributing to the fight against HIV/AIDS within the informal economy: The existing and potential role of decentralized systems of social protection.” Working paper. Geneva, Switzerland.**
Keywords: HIV/AIDS, Decentralization, Social Protection, Micro-insurance, Access to Care

Over the past four years, the Strategies and Tools against Social Exclusion and Poverty (STEP) program of the ILO has been exploring the potential and supporting the development of decentralized systems of social protection (DSSP) as mechanisms to increase social protection in health. The paper focuses on systems set up by associations and organizations in civil society to cover workers and households that do not have access to statutory systems of social protection. It places particular attention on the role of health micro-insurance schemes, which constitute a dynamic innovation in terms of community mechanisms to face health-related risks. DSSP generally, and HMIS in particular, are typically thought of as mechanisms to overcome financial obstacles to accessing health care and are often referred to as systems of community financing for health. In the conclusion, the paper notes that the increased understanding and experience will be relevant not only for DSSP, but also for many other types of community-based organizations and associations.

- 37. Kenya Ministry of Health in collaboration with National AIDS Control Council. May 2002. “National Home-Based Care Policy Guidelines.” Nairobi, Kenya.**
Keywords: HIV/AIDS, Access to Care, Delivery of Service, Policy, Quality Assurance, Health Worker Motivation

Home-based care is an approach to care provision that combines clinical services, nursing care, counseling and psycho-spiritual care, and social support. It represents a continuum of care, from the health facility to the community to the family to the individual infected with HIV/AIDS, and back again. The purpose of these policy guidelines is to ensure the integration of home-based care into Kenya’s existing health care system. The guide first summarizes the existing policy framework defining and supporting home-based care. With that foundation, it then presents the preferred approach to program design and service delivery. The Guidelines were developed by the Kenyan Ministry of Health in collaboration with the National AIDS Control Council.

- 38. The Synergy Project. n.d. APDIME Toolkit. Accessed March 2004.**
<http://www.synergyaids.com/apdime/index.htm#>
Keywords: HIV/AIDS, Planning, Management, Monitoring and Evaluation

The Synergy Project APDIME Toolkit was developed to help public health specialists and program managers improve the Assessment, Planning, Design, Implementation Monitoring, and Evaluation of HIV/AIDS interventions. The toolkit organizes materials and resources into five interrelated modules that represent the five phases of the

programming cycle. Each module contains a step-by-step methodology for conducting that phase of the cycle and acts as an index for related materials and resources.

2.4 Financing and Resource Mobilization

39. **Adeyi, O. and Chakraborty, S. July 2003. "Funding Required for the Response to HIV/AIDS in Eastern Europe and Central Asia." The Futures Group International and Instituto Nacional de Salud Pública (Mexico).**

Keywords: HIV/AIDS, Preventive Care, Clinical Treatment, Financing, Management

About one and one-quarter million adults and children in Eastern Europe and Central Asia (ECA) were living with HIV/AIDS at the end of 2002. The countries with the worst epidemic today include Estonia, the Russian Federation, and Ukraine where adult prevalence of HIV is around one percent. If HIV spreads more widely throughout the region and becomes established in the general population, then the epidemic could become much worse in the future. This paper describes the funding required to support comprehensive prevention and care programs in the 29 countries of the ECA region. It builds upon earlier work undertaken to estimate global resources needs for the treatment and prevention of HIV/AIDS in low- and middle-income countries. Data provided in this analysis show the need for a substantial increase in resources to be made available in the fight against HIV/AIDS in the ECA region countries. Failure to mobilize resources and to implement the care and support programs outlined in the paper can only lead to further exacerbation of the problems emanating from the HIV/AIDS epidemic.

40. **Adeyi, O., Hecht, R., Njobvu, E., and Soucat, A. March 2001. "AIDS, Poverty Reduction and Debt Relief: A Toolkit for Mainstreaming HIV/AIDS Programmes into Development Instruments." Geneva, Switzerland: UNAIDS/World Bank.**

Keywords: HIV/AIDS, Financing, Poverty and the Poor, Strategic Planning, Monitoring, Indicators, Capacity Building, Advocacy

In the past two years there has been unprecedented levels of political and institutional interest in reversing the course of the HIV/AIDS epidemic. Political leadership has improved significantly in some of the worst affected countries, thus providing a more favorable environment for the fight against the epidemic and its negative effects on development. This toolkit adds to the knowledge base to support analysts and decision makers in their work to: (a) mainstream HIV/AIDS as a major item on a country's development agenda; and (b) mobilize the resources needed to expand promising interventions and approaches in the fight against the epidemic. Developed by a team comprising staff from the UNAIDS Secretariat and the World Bank, the toolkit offers a unifying framework for analyzing HIV/AIDS in the context of Poverty Reduction Strategy Papers (PRSPs), as well as examples of how the issue has been treated in the first generation of PRSPs, interim PRSPs, and debt relief agreements.

41. **Alagiri, P., Summers, T., and Kates, J. July 2002. "Global Spending on HIV/AIDS in Resource-Poor Settings." The Henry J. Kaiser Family Foundation.**
Keywords: HIV/AIDS, Clinical Treatment, Preventive Care, Financing, International Aid, Private Sector, Poverty and the Poor

Estimates of funding requirements that are necessary to address the HIV/AIDS epidemic range from \$7 to \$10 billion annually. Subsequent analyses have placed funding needs at \$9.2 billion by 2005, \$14 to \$15 billion by 2007 and \$21 to \$25 billion by 2015. This paper presents data on the range of resources currently being expended to address the HIV/AIDS epidemic in resource-poor settings, including bilateral, multilateral, and private sector support, as well as domestic spending by recipient country governments. For purposes of the study, resource-poor countries include developing countries and countries in transition.

42. **Beeharry, G., Schwab, N., Akhavan, D., et al. June 2002. "Optimizing the Allocation of Resources Among HIV Prevention Interventions in Honduras." Discussion Paper. The World Bank.**
Keywords: HIV/AIDS, Resource Allocation, Preventive Care, Stakeholders

As the AIDS epidemic enters its third decade, it is rapidly overtaking the bubonic plague in human history as the biggest killer due to an infectious illness. Tragically, the overwhelming majority of worldwide AIDS patients are the poor. In this context, choosing the optimal mix of prevention programs for HIV remains a key issue for policymakers and program planners who are faced with limited resources. Their decisions have an important impact on the health outcomes of targeted populations, which can vary widely depending on selected mix of prevention programs. This paper presents a model that policymakers can use to determine the resource allocation that will prevent the maximum number of new HIV infections at any given budget level. This report represents an important contribution to policymakers looking for a tool that can help them to simulate the effect of different resource allocations among HIV prevention interventions and generate consensus around the HIV prevention strategy that will have the greatest impact on the HIV epidemic in their countries.

43. **Bollinger, L., Stover, J., Gaillard, E., Moteete, M.M. Jaase, N., and Khabotile, M. June 2002. "Goals Modeling in Lesotho: Using a Resource Allocation Model to Assess Lesotho's HIV/AIDS Budget and its Impact on the Country's Epidemic." Paper submitted to IAEN for the XIV International AIDS Conference.**
Keywords: HIV/AIDS, Public Sector Health Expenditures, Strategic Planning, Resource Allocation, Costs, Political Analysis

Designing and implementing an HIV/AIDS national program is complex and important. Prevention, treatment, and palliative care costs are a significant component of the health budget. In most national strategic plans, however, although the activities to be undertaken are clearly outlined, the activities are not tied to specific prevalence goals the countries want to attain. Millions of dollars are spent annually to prevent HIV infection without a thorough understanding of the most effective way to allocate these funds. In order to improve upon the strategic planning process, a resource allocation model called *Goals* was developed. The model can help planners understand how funding levels and patterns can lead to reductions in HIV incidence and prevalence and improved coverage of treatment, care, and support programs. This paper discusses the methodology of the

Goals first. Then, after a short description of the background of Lesotho, the process by which the model was applied is described. The analysis reveals that without the economic team and the *Goals* model it would have been extremely difficult to optimize the allocation of resources. Results of the application followed by conclusions and lessons learned are presented at the end of the paper.

44. **Chapman, K., Barraclough, A., and Richens, J. November 2001. “Accelerating Access to HIV/AIDS Commodities in Sub-Saharan Africa: Cost Estimates.” Joint United Nations Programme on HIV/AIDS.**

Keywords: HIV/AIDS, Essential Drugs, Commodity Distribution Systems, Pharmaceutical Access, Pricing, International Aid, Sustainability

In response to the devastating impact of the AIDS epidemic, expanding access to commodities of special interest to people living with HIV infection, and those vulnerable to HIV infection, is receiving the urgent attention of global leaders. This paper presents the key findings of a modeling analysis conducted by Options Consultancy Services, UK, for UNAIDS to provide need and cost estimates of HIV-related commodities for the 36 sub-Saharan African countries worst affected by HIV/AIDS, over the period 2000–2005. The term ‘commodities’ covers principally male and female condoms, drugs for STI treatment, equipment for collecting and testing blood for HIV, equipment for the safe disposal of needles for injecting drug users, and drugs for treating HIV and related infections. This model does not estimate total commodity needs for HIV control. Rather, it estimates the future commodity requirement that could be delivered through existing health infrastructures with optimistic projections for how coverage will improve over the next five years.

45. **The Henry J. Kaiser Family Foundation. May 2003. “Global HIV/AIDS Support from G8 Countries.” *HIV/AIDS Policy Fact Sheet*.**

Keywords: HIV/AIDS, International Aid, Financing

The Group of Eight (G8) includes Canada, France, Germany, Italy, Japan, Russia, the United Kingdom, and the United States. All have committed significant support for global HIV/AIDS efforts, in addition to spending to address their own domestic needs. The Policy Fact Sheet focuses on the channels donors use to contribute to HIV/AIDS efforts. The paper summarizes bilateral assistance as well as multilateral assistance through GFATM to support prevention, care, and impact mitigation programs. It compares funding commitments by G8 members, discusses new U.S. commitments being considered by the U.S. Congress, and names different epidemic issues that funds will be addressed.

46. **International HIV/AIDS Alliance. June 2002. “Raising Funds and Mobilizing Resources for HIV/AIDS Work.” A Toolkit to Support NGOs/CBOs. Brighton, United Kingdom.**

Keywords: HIV/AIDS, Nongovernmental Organizations, Training, Management, Human Resource Development, Financing, Strategic Planning, Sustainability

Resource mobilization mechanisms are the ways that resources can be mobilized from resource providers. Mechanisms are the actual processes of requesting or getting resources – for example: writing proposals, selling services, face-to-face meetings. The

overall aim of the resource mobilization toolkit is to build the confidence and skills required by NGOs/community-based organizations (CBOs) to strategically and systematically mobilize resources for HIV/AIDS work. This toolkit introduces an approach to planning and carrying out resource mobilization to ensure that maximum returns are gained for the least effort and that NGOs/CBOs remain true to their missions. It provides a collection of information and skills-building activities, which can help NGOs/CBOs in HIV/AIDS work. This study focuses on resource mobilization, rather than fundraising, on the assumption that NGOs/CBOs can benefit from mobilizing a range of resources rather than money only; for example, technical assistance, human resources, material goods, and free services.

- 47. Kenyon, C., Skordis, J., Boule, A., et al. 2003. "The Art of Rationing - The Need for a New Approach to Rationing Health Interventions." *South African Medical Journal* 93, 1: 56-60.**

Keywords: HIV/AIDS, Essential Drugs, Resource Allocation, Cost-effectiveness, Poverty and the Poor, Burden of Disease

The current differential access of ARVs may signal a new feature of the global political economy. For the first time, a whole class of drugs on the WHO Essential Drugs list has been priced beyond the means of the majority of those afflicted by a mass condition. This article argues that this change in the global context, together with the inevitability of explicitly limiting a new ART initiative in South Africa, necessitates a new approach to rationing health interventions. Some of the specific objectives of the discussion include a review of contemporary public health decision making with respect to ART in South Africa and a review of traditional approaches to priority setting and rationing more generally.

- 48. McGreevey, W. June 2003. "Resource Flows and National HIV/AIDS Accounts." *The Futures Group International*.**

Keywords: HIV/AIDS, Financing, Resource Allocation, International Aid, Public Sector Health Expenditures

There is a lack of data on HIV/AIDS financial flows in the world except for the Latin America and Caribbean (LAC) region. Proponents of resource mobilization for HIV/AIDS depend on partial data from donor assistance and some of the spending by governments in recipient countries. Lacking are data on private spending for AIDS. Absent, too, is the capacity to assess public-private balance in financing and service delivery. This paper seeks to encourage supporters of effective HIV/AIDS programs to help close the knowledge gap about the sources and uses of funds that currently pay for the fight against AIDS. The absence of essential data on resource flows undermines efficiency, equity, and the effort to generate more active donor support and greater commitment from governments in the most-affected countries. The financing gap, when compared to HIV/AIDS spending in rich countries, remains so large as to lend further impetus to the effort to mobilize more resources for the fight against AIDS.

49. **Nandakumar, A.K., Schneider, P., Bhawalkar, M., and Butera, D. July 2000. "Use of and Expenditures on Outpatient Health Care by a Group of HIV Positive Individuals in Rwanda." Bethesda, MD: Partnerships for Health Reform Project, Abt Associates Inc.**
<http://www.phrplus.org/Pubs/Sir28.pdf>
Keywords: HIV/AIDS, Utilization of Services, Household Expenditures

Nearly 11 percent of the Rwandan population is estimated to have HIV/AIDS, making this one of the most important health issues facing the country. One of the key research questions has been on use and out-of-pocket expenditures on health services by this population. The paper presents the results of a study, which examined socio-demographic status, and use and expenditures on health services in Rwanda. This study used a sample of 348 HIV-positive individuals who were either enrolled in a HIV/AIDS support group or sought care at two health facilities. The most common causes for health care visits were malaria, pneumonia, TB, and diarrhea. Expenditures on health care services by these individuals accounted for nearly 20 percent of household consumption and, in over half the cases, patients had to borrow from friends and relatives to pay for care. An interesting finding was that the amount borrowed was much greater than the cost of health services, indicating that part of it was being used to finance routine household consumption. At a minimum, the findings highlight gender, income, and place of residence inequities in the use and expenditures on health services as well as the ability to mobilize non-household resources to pay for care.

50. **Opuni, M., Bertozzi, S., Bollinger, L., et al. 2002. "Resource Requirements to Fight HIV/AIDS in Latin America and the Caribbean." *AIDS* 16, Supplement 3: S58-65.**
Keywords: HIV/AIDS, Economics, Financing

Policymakers need information on the scale of resources required to prevent the further spread of HIV and to provide adequate care for people living with HIV/AIDS (PLWHA). At the international level, estimates of resource needs for HIV/AIDS prevention and care can provide guidance on how to allocate resources across diseases and countries. At the national level, knowledge of the funding levels required to achieve coverage targets for different interventions is key to national HIV/AIDS strategic planning. Both nationally and internationally, such studies are key tools for advocacy and resource mobilization. The paper presents a study done by economists and epidemiologists from 10 countries in Latin America and Caribbean (LAC). They reviewed the methods used to develop estimates for resource requirements to address HIV/AIDS prevention and care in low- and middle-income countries. The researchers applied their country-specific knowledge to re-estimate the costs, coverage, and capacity of their health and education systems to expand HIV/AIDS interventions by 2005. The preliminary exercise with 10 LAC countries confirmed the validity of the use of these estimates as tools at the international level, given current data limitations, both to guide the allocation of resources across diseases and countries, and for advocacy and resource mobilization. In addition, with the country revisions, these estimates have also been shown to be key tools for country-level strategic planning.

51. **Pothisiri, P., Tangcharoensathien, V., Lertiendumrong, J., Kasemsup, V., and Hanvoravongchai, P. June 2001. "Funding Priorities for the HIV/AIDS Crisis in Thailand." United Nations Development Programme.**

Keywords: HIV/AIDS, Financing, Preventive Care, Essential Drugs, Cost-effectiveness, Economic Indicators

The recent economic crisis in Thailand was triggered by currency devaluation. Since July 1997, the crisis has placed severe constraints on public financing, including public health and HIV/AIDS programs. This paper introduces the conceptual framework of interrelated consequences of the economic crisis on HIV/AIDS prevention and control. On the basis of document research and in-depth interviews with officials at national and provincial levels, it explains how the government of Thailand has dealt with the AIDS epidemic during the period of economic hardship. The paper also discusses the impact the budget cuts may have on the effectiveness of programs. The authors of the study strongly recommend budget reorientation towards cost effective program activities (e.g., blood donor screening, vertical transmission). However, policymakers should strike a balance, taking into account constraints caused by political pressures and the urgent demand for ARVs and drugs for opportunistic infections.

52. **Prescott, N. April 1997. "Setting Priorities for Government Involvement with Antiretrovirals." The World Bank.**

Keywords: Public Sector, HIV/AIDS, Policy, Cost-effectiveness

Four questions posed by economic analysis that help set priorities for government involvement with antiretroviral therapy for people living with HIV/AIDS. First, how does antiretroviral therapy link to broader health sector and country development objectives? Second, what other interventions need to be considered including the various ARTs? Third, which of these alternatives are realistically affordable given the country's resources constraints? And fourth, which of the affordable alternatives are most efficient in achieving a favorable development impact? This paper examines these questions with the main focus on making decisions about policy relating to ARVs in developing countries where the needs are greatest and resource constraints are most binding.

53. **Schneider, P., Schott, W., Bhawalkar, M., et al. September 2001. "Paying for HIV/AIDS Services: Lessons from National Health Accounts and Community-Based Health Insurance in Rwanda, 1998-1999." Best Practice Collection. Joint United Nations Programme on HIV/AIDS.**

<http://www.unaids.org/publications/documents/economics/families/JC653-Rwanda-E.pdf>

Keywords: HIV/AIDS, Financing, Household Surveys, Prepayment Plans, Clinical Treatment, Preventive Care, National Health Accounts (NHA), Rural, Pilot Projects

By 1999, the utilization of primary health care services in Rwanda had dropped from 0.3 annual consultations per capita in 1997 to a national average of 0.25. This sharp drop in demand for health services, combined with growing concerns about rising poverty, poor health outcome indicators, and a worrisome HIV prevalence among all population groups, motivated the Rwandan government to investigate health care spending through National Health Accounts (NHA), and develop community-based health insurance to ensure that the poor had access to the modern health care system. This report focuses on

the financial side of HIV/AIDS with the first chapter examining how much and what proportion of overall health expenditures by government, donors, and patients go towards the prevention and treatment of HIV/AIDS. The second chapter suggests a way to decrease the financial burden of HIV on the rural poor infected with the virus, through community-based health insurance such as prepayment schemes. The information reported is from two initiatives undertaken by the Ministry of Health in Rwanda, the Rwandan NHA analysis, and a pilot program of prepayment schemes in the three districts of Byumba, Kabgayi, and Kabutare.

54. Schwartländer, B., Stover, J., Walker, N. et al. 2001. "Resource Needs for HIV/AIDS." *Science* 292: 2434-6.

Keywords: HIV/AIDS, Preventive Care, Costs

Many countries, including some of the poorest, have shown political commitment and developed plans to scale up treatment and prevention programs. What they need are resources. The United Nations, at the Millennium Summit in 2000 and at a special session on population and development in 1999, made commitments to intensify the fight against AIDS and specifically to reduce HIV prevalence in young people. The paper presents estimates of the resources required for reaching these goals and for reducing incidence through the expansion of prevention efforts and increasing access to care and support for all people living with HIV. It was developed for the General Assembly Special Session on AIDS in June 2001.

55. Skordis, J. and Nattrass, N. 2002. "Paying to Waste Lives: The Affordability of Reducing Mother-To-Child Transmission of HIV in South Africa." *Journal of Health Economics* 21: 405-21.

Keywords: HIV/AIDS, Maternal and Child Health, Clinical Treatment, Cost-effectiveness

It is estimated that each HIV-positive child in South Africa costs the government more in terms of health and welfare expenses than it does to reduce MTCT of HIV through the use of antiretroviral regimes (where the mother continues to breastfeed). Programs to reduce MTCT of HIV/AIDS are, thus, clearly affordable. The paper focuses on these economics issues of preventing MTCT of HIV in South Africa. The authors review the different approaches taken by various studies on the cost-effectiveness of preventing MTCT of HIV in South Africa – all of which conclude that the government should have been allocating resources to prevent such transmission. The question raised is why, in the face of such evidence, the Ministry of Health continues to maintain that a MTCT prevention program is 'unaffordable'. While this may be a convenient excuse for inaction, it is possible that this policy position has arisen because existing studies of cost-effectiveness do not frame the argument in a way that addresses the full impact on the government's budget. The paper then presents an alternative way of approaching the issue of affordability, i.e., by comparing the costs to the health sector of two short-course drug regimens that reduce MTCT with the costs of not intervening. The study shows that there is no basis for the argument that the government 'cannot afford' a program to prevent MTCT.

56. **Stover, J., Bollinger L., and Cooper-Arnold, K. December 2001. "The Goals Model for Estimating the Effects of Resource Allocation Decisions on the Achievement of the Goals of the HIV/AIDS Strategic Plan." Glastonbury, CT: The Futures Group International.**
<http://www.tfgi.com>
Keywords: HIV/AIDS, Management Information Systems, Strategic Planning, Financing, Resource Allocation

Most countries have developed HIV/AIDS strategic plans. These plans have well-developed goals for prevention, care, and support and include specific activities to achieve these goals. Costing of strategic plans is usually done as the last step. Most costing is done from the bottom-up. Unfortunately, this approach does not allow for any strategic planning of financial resources since the budgets are not linked to the goals. Thus, there is no way for the planners to know what would happen if more or less resources were available or if resources were allocated differently. The Goals model is intended to support strategic planning at the national level by providing a tool to link program goals and funding. It is intended to assist planners in understanding the effects of funding levels and allocation patterns on program impact. The model can help planners understand how funding levels and patterns can lead to reductions in HIV incidence and prevalence and improved coverage of treatment, care, and support programs. It does not, however, calculate the "optimum" allocation pattern or recommend a specific allocation of resources between prevention, care, and mitigation.

57. **Zeitz, P., Rosen, S., Simon, J., and Thea, D. November 1999. "Exchanging Debt for Health: Lessons from Ten Years of Debt-For-Development Swaps." Development Discussion Paper # 732. Harvard Institute for International Development, Harvard University.**
Keywords: Debt Relief, Sub-Saharan Africa, HIV/AIDS

The purpose of this paper is to describe and assess one feasible approach to debt relief in sub-Saharan Africa: the debt-for-health exchange. Following up on proposals recently put forward by several international organizations and governments, it presents and assesses the past decade of experience with transactions that involve the exchange of poor country debt for a commitment to invest local resources in a social good, such as environmental protection, child health, or education.

2.5 Costing

58. **Beck, E.J., Miners, A.H., and Tolley, K. 2001. "The Cost of HIV Treatment and Care: A Global Review." *Pharmacoeconomics* 19(1): 13-39.**
Keywords: HIV/AIDS, Clinical Treatment, Preventive Care, Costs

Information on the cost, treatment, and care for HIV infection enables assessment of the economic impact of the disease on health care systems to be made and the affordability of new and existing interventions to be assessed, as well as provides a basis for health care resource planning and identification of resource requirements for HIV service provision. The review of published studies on the costs of HIV treatment and care describes some of the recent developments that have influenced these costs in industrialized and industrializing countries, especially within the context of changing

drug treatments. Several approaches to estimating the economic impact of HIV infection are presented as well as suggestions for the direction of future HIV costing studies. Adequate research effort should be directed to improving the scope and quality of information on costs of HIV service provision around the world.

59. **Beck, E.J., Tolley, K., Power, A., et al. 1998. "The Use and Cost of HIV Service Provision in England in 1996." *Pharmacoeconomics* 14(6): 639-52.**

Keywords: HIV/AIDS, Utilization of Services, Costs

Several estimates of the use and costs for HIV service provision in the United Kingdom have been produced since the mid-1980s. However, these studies have been of variable quality and comparability. Much of their usefulness for resource planning has been limited by their design, with most studies having small patient sample sizes, often performed in a single hospital site, with a few studies linked to patient outcomes. This paper presents analysis of data on the use of hospital services collected through a multicenter project, the National Prospective Monitoring System on the use, cost, and outcome of HIV service in English hospitals. The data enabled estimation of the annual use and costs as a baseline. The likely financial impact of the introduction of dual or triple combination ART was then estimated.

60. **Binswanger, H.P. December 2000. "How to Make Advanced HIV Treatment Affordable for Millions in Poor Countries." *The World Bank*.**

Keywords: HIV/AIDS, Preventive Care, Poverty and the Poor, Costs

Treatment of HIV/AIDS patients involves treatment of opportunistic infections, prophylaxis against some of these, and ART with three or more drugs administered simultaneously (HAART). The paper investigates different approaches to make ART affordable for low-resource countries. Poor countries face heavy fiscal problems and cannot subsidize expensive ART for more than a favored few. The author suggests that the main government actions needed to promote ART are facilitation of generic imports and negotiation of deep discounts with patent-holding companies. Even with radical price reductions, many poor patients will lack access to ART. This gap could at least be partially filled by donation programs targeting the poor. A conclusion of the paper is built on these insights and is based on two main thrusts to expanded access: one driven by price reductions, and one based on compassionate donations. Combined, they can make treatment available to millions.

61. **Boulle, A., Kenyon, C., Skordis, J., et al. 2002. "Exploring the Costs of a Limited Public Sector Antiretroviral Treatment Programme in South Africa." *South African Medical Journal* 92 (10): 811-17.**

Keywords: HIV/AIDS, ARV, Essential Drugs, Clinical Treatment, Cost-effectiveness

The role of ART for adults in the public sector in South Africa is debated with little consideration of the national ART program choices that could impact the cost-effectiveness of the intervention. This study focuses on the impact of program choices at an individual level, as well as explores the total cost of a rationed national public sector ART program. Eight scenarios were modeled of limited national treatment programs over five years, reflecting different program design choices. The individual cost-

effectiveness of these scenarios was calculated and the potential for savings in other areas of health care utilization was explored. In conclusion, the authors of the study say that specific policy choices could almost double the number of people who could benefit from an investment in a limited national ART program. Such a program is affordable within current resource constraints.

- 62. Creese, A.L., Floyd, K., Alban, A., et al. 2002. "Cost-effectiveness of HIV/ AIDS Interventions in Africa: A Systematic Review of the Evidence." *The Lancet* 359: 1635-43.**

Keywords: HIV/AIDS, Infection Control Strategies, Cost-effectiveness, Research Methodology, Preventive Care, Clinical Treatment

Up to now cost-effectiveness has been well documented only for industrialized countries. Evidence for cost-effectiveness of interventions for HIV/AIDS in Africa is fragmentary. Cost-effectiveness is, however, highly relevant. African governments face difficult choices in striking the right balance between the prevention, treatment, and care, all of which are necessary to deal comprehensively with the epidemic. The paper provides a critical assessment of studies of the cost-effectiveness of HIV/AIDS interventions in Africa, and presents results in a standard form. The authors state that a strong economic case exists for prioritization of preventive interventions and TB treatment. Where potentially exclusive alternatives exist, cost-effectiveness analysis points to an intervention that offers the best value for the money. Cost-effectiveness analysis is an essential component of informed debate on priority setting for HIV/AIDS.

- 63. Govender, V., McIntyre, D., Grimwood, A., and Maartens, G. April 2000. "The Costs and Perceived Quality of Care for People Living with HIV/AIDS in the Western Cape Province in South Africa." *Small Applied Research No. 14*. Bethesda, MD: Partnerships for Health Reform Project, Abt Associates Inc. <http://www.phrplus.org/Pubs/sar14.pdf>**

Keywords: HIV/AIDS, Costs, Quality of Care

A report by the United National Development Programme (1998) indicates that "South Africa is currently experiencing one of the most rapidly progressing HIV epidemics in the world." The majority of South Africans are dependent on the public health system, which is straining under the impact of the epidemic. The aim of this study is to evaluate the costs of care for people with HIV/AIDS at different levels of care in the Western Cape metropolitan area and the patients' perception of care. A key recommendation based on study findings is to improve the management of TB at all levels, and this is necessary if expensive secondary and tertiary inpatient costs are to be reduced. In addition, the development of standard treatment guidelines for the management of those infected with HIV is essential. This will assist in ensuring that early diagnosis and appropriate treatment of patients are conducted at the appropriate levels of care. Improved knowledge and awareness of HIV/AIDS is critical if discrimination against those with HIV/AIDS is to be reduced, if not eliminated, in communities and health care facilities.

64. **Guinness, L., Arthur, G., and Bhatt, S.M. 2002. "Costs of Hospital Care for HIV-Positive and HIV-Negative Patients at Kenyatta National Hospital, Nairobi, Kenya." *AIDS* 16: 901-8.**

Keywords: HIV/AIDS, Clinical Treatment, Hospitals, Costs

Existing models of the provision of care for people living with HIV/AIDS are often described as a continuum of care across which patients move according to their health care seeking behavior. Providers across this continuum include individuals in the home, primary health centers, and centers for management of TB or STD. Although alternative models of care are being developed, there are very limited data on the costs of HIV/AIDS hospital care in developing countries. This study is on cost of hospital care for HIV-positive and -negative patients in Kenyatta National Hospital, Nairobi, Kenya, in 1997. Data were collected on inpatients enrolled in a linked clinical study using standardized costing methods. Results of the research showed no significant difference in costs or mean lengths of stay between HIV-positive and -negative groups, nor were the costs and lengths of stay for clinical AIDS patients notably different to those for HIV-positive patients without AIDS. The similar cost patterns for inpatient care irrespective of HIV status or clinical AIDS probably reflects the limited provision of care beyond basic clinical services. When resources are limited, the introduction of new, more costly therapies needs careful planning. The study provides cost information for planning care services in resource-poor settings.

65. **Hansen, K., Chapman, G., Chitsike, I., et al. 2000. "The Costs of HIV/AIDS Care at Government Hospitals in Zimbabwe." *Health Policy and Planning* 15 (4): 432-40.**

Keywords: HIV/AIDS, Costs, Public Sector, Hospitals

According to official figures, HIV infection in Zimbabwe stood at 700,000–1,000,000 in 1995, representing 7-10 percent of the population, with even higher expected numbers in 2000. Such high numbers have far reaching effects on the economy and the health care sector. Information on costs of treatment and care of HIV/AIDS patients in health facilities is necessary in order to have an idea of the likely costs of the increasing number of HIV/AIDS patients. The present study estimates the costs per inpatient day as well as per inpatient stay for patients in government health facilities in Zimbabwe with special emphasis on HIV/AIDS patients. Data collection and costing were done in seven hospitals representing various levels of the referral system. The findings of the study indicate that hospital care for HIV/AIDS patients was considerably higher than for non-HIV/AIDS patients. Therefore, the impact on hospital services of increasing number of HIV/AIDS patients is enormous.

66. **Health Resources and Services Administration, U.S. Department of Health and Human Services. November 2003. "Technical Assistance Costing Tool (TACT): A Resource to Help Clinicians and Health Care Organizations Identify Costs in Providing HIV/AIDS Care." Rockville, MD.**

<http://www.hrsa.gov/tact/>

Keywords: HIV/AIDS, Costs, Health Expenses, Cost Analysis

The Technical Assistance Costing Tool (TACT) is designed for use by clinics and individual providers who want to identify the costs of delivering health care services to

patients living with HIV and AIDS. TACT reports provide cost analyses for internal clinic financial management for third-party reimbursement. In addition, TACT results will assist providers in contract negotiations with managed care organizations that offer the opportunity to participate in their provider network. With the TACT in hand, providers will know the cost of the care they provide and can therefore determine the financial adequacy of payment rates in both a fee-for-service and managed-care context.

67. Hellinger, F.J. 1998. "Cost and Financing of Care for Persons with HIV Disease: An Overview." *Health Care Financing Review* 19 (3): 5-18.

Keywords: HIV/AIDS, Preventive Care, Pharmaceuticals and Contraceptives, Costs

The rapid growth in the number of drugs approved to treat persons with HIV disease accompanied by improved techniques to monitor the quantity of virus in patients have transformed the treatment of persons with HIV disease. Uncertainty about how best to treat patients and the high cost of many drugs have enormous consequences for those who forecast economic costs of this epidemic. This article explores the impact of new combination drug therapies on the cost and financing of HIV disease. Evidence indicates that the proportion of costs attributable to drugs has increased significantly since the diffusion of new combination drug therapies, and that the proportion of costs attributable to hospital inpatient care has decreased. Only two studies have examined costs since the diffusion of new combination drug therapies, and there are no recent studies of the insurance status of persons with HIV disease. The absence of timely data is the major difficulty in analyzing the impact of recent changes.

68. Ngalula, J., Urassa, M., Mwaluko, G., et al. 2002. "Health Service Use and Household Expenditure During Terminal Illness Due to AIDS in Rural Tanzania." *Tropical Medicine and International Health* 7(10): 873-7.

Keywords: HIV/AIDS, Household Expenditures, Utilization of Services, Mortality

Increased adult morbidity and mortality associated with HIV infection are likely to have important consequences for households, communities, and health systems. Relatively little is known about health-seeking behavior during the terminal stages of HIV/AIDS. This paper focuses on analysis of health service use and household expenditure during terminal illness due to AIDS in rural Tanzania. The study uses data from a longitudinal community study in a rural area in northwest Tanzania. Interviews with relatives who lost an adult family member in recent months are used to assess the levels and determinants of medical care use and household expenditure by HIV status and cause of death. Expenses associated with HIV/AIDS terminal illness were higher than for other causes of death, largely because of the longer duration of illness. The rapid increase in numbers of terminally ill adults as a result of HIV/AIDS is likely to lead to an increased burden on all layers of the health system and household resources, in part because of the relatively long duration of HIV/AIDS terminal illness. However, almost half of all HIV/AIDS deaths in this rural population were not admitted to hospitals during their terminal illness and only a small proportion died in hospitals.

69. **Pepperall, J., Goodman, H., Vaughan, P., et al. 2000. "Costing Guidelines for HIV/AIDS Prevention Strategies." London School of Hygiene and Tropical Medicine.**

Keywords: Cost Analysis, HIV/AIDS, Health Economics

More than a decade into the worldwide implementation of HIV prevention work, there is a noticeable lack of costing and cost analysis specific to this field. There is even less work on assessing the relative cost-effectiveness of different prevention strategies. Cost analysis is a tool that can provide useful insight into the functioning of projects, as well as being a key component of cost-effectiveness analysis. The specific aim of these guidelines is to encourage and enable managers of HIV prevention projects and programs to conduct cost analysis. The guidelines can be used to assess projects/programs at national, regional, district, and community levels. In many countries economists are scarce, but the specific aim of these guidelines is to encourage other professionals such as managers and accountants to conduct cost analysis. The guidelines provide an introduction to the basic economic concepts of cost analysis, a step-by-step guide to planning and undertaking a cost analysis, and an explanation of how to generate different results from the analysis.

70. **Phillips, M. and Huff-Rousselle, M. March 2001. "A Step-by-step Methodological Guide for Costing HIV/AIDS Activities." Bethesda, MD: Partnerships for Health Reform Project, Abt Associates Inc.**

<http://www.phrplus.org/Pubs/tool4.pdf>

Keywords: HIV/AIDS, Cost Analysis

Many developing countries have recognized the need for comprehensive national reforms and comprehensive prevention, treatment, and care and support initiatives to reduce future transmission of and to meet the growing demand for HIV/AIDS services. As a part of these national health reform initiatives, governments are exploring ways to allocate resources in the most efficient and effective way to mitigate the HIV/AIDS epidemic. However, many countries lack information on the level and nature of the costs of HIV/AIDS programs. This document provides an introduction for calculating and analyzing the costs of HIV/AIDS programs and describes how to measure directly the actual costs of a program that is up and running. The step-by-step guide is intended to provide project managers in the field with a framework for how to measure costs for a single, recent year in the life of an HIV/AIDS program. An illustrative activities list in the report annex assists the user develop an activities-based framework. The information gleaned from the costing framework will enable policymakers and program managers to make informed resource allocation decisions.

71. **Rabeneck, L., Menke, T., Wray, N.P. 1999. "How Good are U.S. Studies of HIV Costs of Care?" *Medical Care* 37(8): 748-59.**

Keywords: HIV/AIDS, Utilization of Services, Costs, Cost Analysis, Preventive Care

Valid, timely estimates of the costs of HIV care are needed by health planners and policymakers. The paper presents results of research that was done to perform a methodological critique of published estimates of resource utilization and costs of HIV care. The MEDLINE database, a service of the United States National Library of Medicine, was used as a data source. Studies were compared based on: (1) utilization

and cost estimates in 1995 dollars; (2) study period; (3) research design; (4) sampling frame; (5) sample size and patient characteristics; (6) data sources and scope of services; and (7) methods used in the analysis. The study concludes that for accurate estimate of resource use and costs for HIV care nationwide, a nationally representative probability sample of HIV-infected patients is required. Even in research not intended to provide national estimates, the scope of utilization data should be broadened and greater attention to methodological issues in the analysis of annual and lifetime costs is needed.

72. **Telyukov, A., Stuer, F., and Krasovec, K. August 2000. "Design and Application of a Costing Framework to Improve Planning and Management of HIV/AIDS Programs." Technical Report No. 29. Bethesda, MD: Partnerships for Health Reform Project, Abt Associates Inc.**

<http://www.phrplus.org/Pubs/Sir29.pdf>

Keywords: HIV/AIDS, Administrative Systems, Management, Costs

HIV/AIDS-related interventions can be enhanced by management cost accounting, a range of accounting and analysis techniques enabling cost-conscious management decisions in a specific organization or program. Selected international programs focused on HIV/AIDS prevention and care in Cambodia participated in the validation of an activity-based costing (ABC) methodology, an important technique of management accounting. The purpose of the methodology is to provide program managers and their funding agencies with uniform guidelines for allocation of costs to activities. The paper includes a standardized list of activities by major intervention, a list of "activity lines," a standardized cost classification system, a set of cost drivers to trace indirect costs to activity centers, and a program management agenda that can be addressed with cost information generated by ABC.

73. **Wilkinson, D., Floyd, K., and Gilks, C.F. 2000. "National and Provincial Estimated Costs and Cost-effectiveness of a Programme to Reduce Mother-To-Child HIV Transmission in South Africa." *South African Medical Journal* 90 (8): 94-8.**

Keywords: HIV/AIDS, Costs, Cost-effectiveness, Maternal and Child Health, Preventive Care

South Africa is suffering from an explosive HIV epidemic, among the worst in the world, with HIV prevalence among pregnant women close to 30 percent in some areas. The number of children infected with HIV, and the incidence of illness in these children, are rising rapidly. Before effective implementation of MTCT prevention programs is possible, and if maximum public health benefit is to be achieved, careful planning is required. The paper estimates cost and cost-effectiveness nationally and for each province of a program to reduce MTCT of HIV in South Africa. The study concludes that a national program preventing 37 percent of expected pediatric HIV infections would cost a small fraction of the national health budget. The cost per Disability Adjusted Life Year (DALY) gained compares well with established public health and clinical interventions in middle-income countries, even without factoring in the care costs that would be saved through a successful program.

74. **Wilwerding, J., Kombe, G., Smith, O., et al. July 2003. "AIDSTREATCOST MODEL: User's Manual." Bethesda, MD: Partners for Health Reformplus, Abt Associates Inc.**
<http://www.phrplus.org/hiv-atc.html>
Keywords: ARV, Management Information Systems, Strategic Planning, Financing, Resource Allocation, HIV/AIDS

As a result of growing national and international demand to make ART available, most low-resource countries have started to provide this treatment to people living with HIV/AIDS. However, limited information exists on the costs of providing a comprehensive ART program, including the necessary drugs, monitoring tests, health facility infrastructure, staffing requirements, and training. The AIDSTREATCOST (ATC) antiretroviral modeling software is designed to estimate the costs and resources required to implement an ARV program under various assumptions and scenarios that the model allows the users to define. The ATC Manual provides users with a step-by-step guide to the model, including how to enter baseline data, identify various treatment scenarios, and compare policy options and their respective costs. The model can be tailored to country-specific situations using local data from statistical agencies, ministries of health, health facilities, and other sources. Intended users include policymakers, program planners, and technical working groups.

2.6 Antiretroviral Therapy

75. **Blower, S. and Farmer, P. 2003. "Predicting the Public Health Impact of Antiretrovirals: Preventing HIV in Developing Countries." *AIDScience* Vol. 3, No. 11.**
Keywords: HIV/AIDS, Preventive Care, Essential Drugs, ARV

The effect of ARVs on HIV epidemics is complex, because these therapies produce both a beneficial and a detrimental effect at the epidemic level. The authors discuss the potential public health impact of ARVs in developing countries. They use mathematical models to show that ARVs could prevent a substantial number of HIV infections and significantly reduce HIV prevalence, but would increase the transmission and prevalence of drug-resistant strains of HIV. The authors argue that ARVs should be considered as a prevention tool and not simply as a therapeutic tool however. They stress that ARVs should be viewed as a non-conventional prevention tool since the drugs have both preventive and therapeutic effects and are given to infected, rather than uninfected, individuals.

76. **Brugha, R. June 2003. "Antiretroviral Treatment in Developing Countries: The Peril of Neglecting Private Providers." *British Medical Journal* 326: 1382-4.**
<http://bmj.com/cgi/reprint/326/7403/1382.pdf>
Keywords: HIV/AIDS, Essential Drugs, Access to Care, Private Sector, Regulations, ARV

Only 5 percent of the 5.5 million people in developing countries who need ART currently receive it. New initiatives and global partnerships such as the International HIV Treatment Access Coalition, WHO guidelines for scaling up ART, and employee programs under the umbrella of the Global Business Coalition on HIV/AIDS are trying

to increase access to antiretroviral drugs. However, these initiatives largely ignore the fact that most poor people who suspect they have a sexually transmitted infection seek care in the private sector because of the stigma attached. The main focus of the article is on private sector providers and their proper involvement in confronting the epidemic. The author discusses issues related to developing relations between private providers, NGOs, and public organizations. Lack of such partnerships places ARVs into formal and informal private markets where improper use may result in development of resistant HIV. It is therefore important to take into account private providers and regulation of their behavior.

77. **Chequer, P., Cuchi, P., Mazin, R., et al. 2002. "Access to Antiretroviral Treatment in Latin American Countries and the Caribbean." *AIDS* 16, Supplement 3: S50-7.**

Keywords: ART, HIV/AIDS, Policies

Access to medication, in particular ARVs, is a critical component of the treatment of PLWHA. However, access to medication should be viewed as just one part of providing appropriate management. In reality, medical care encompasses more than just prescribing and providing drugs. This paper concentrates on ARVs, while recognizing that they are not the sole answer to HIV/AIDS provision of care. The paper presents a review of ART policies in LAC countries, the estimated number of people receiving ART, the level of coverage of those needing ARV care, and the lessons learned, both negative and positive.

78. **Farmer, P., Léandre, F., Mukherjee, J.S., et al. 2001. "Community-Based Treatment of Advanced HIV Disease: Introducing DOT-HAART (Directly Observed Therapy with Highly Active Antiretroviral Therapy)." *Bulletin of the World Health Organization* 79 (12): 1145-51.**

[http://www.who.int/bulletin/pdf/2001/issue12/79\(12\)1145-1151.pdf](http://www.who.int/bulletin/pdf/2001/issue12/79(12)1145-1151.pdf)

Keywords: HIV/AIDS, Preventive Care, Clinical Treatment, Essential Drugs, Poverty and the Poor, ART

In 2000, AIDS overtook tuberculosis (TB) as the world's leading infectious cause of adult deaths. In affluent countries, however, AIDS mortality has dropped sharply, largely because of the use of HAART. Antiretroviral agents are not yet considered essential medications by international public health experts and are not widely used in the poor countries where HIV takes its greatest toll. Arguments against the use of HAART have mainly been based on the high cost of medications and the lack of the infrastructure necessary for using them wisely. The article reexamines these arguments in the setting of rising AIDS mortality in developing countries and falling drug prices, and describes a small community-based treatment program based on lessons gained in TB control. With the collaboration of Haitian community health workers experienced in the delivery of home-based and directly observed treatment for TB, an AIDS-prevention project was expanded to deliver HAART to a subset of HIV patients deemed most likely to benefit. The inclusion criteria and preliminary results are presented. The authors conclude that DOT-HAART, can be delivered effectively in poor settings if there is an uninterrupted supply of high-quality drugs.

79. **Floyd, K. and Gilks, C.F. March 1998. "Cost and Financing Aspects of Providing Anti-Retroviral Therapy: A Background Paper."**
Keywords: HIV/AIDS, Clinical Treatment, Essential Drugs, Costs, Cost-effectiveness, Maternal and Child Health, Health Personnel, Financing, ARV

As the HIV epidemic worsens in many regions, policy development in the area of ART is increasingly warranted. This is especially so in light of recent suggestions that ARV combination therapies may not only prolong life but may even, if taken for life, be capable of preventing HIV-infected people from progressing to AIDS at all (Piot 1996). The economic aspects of providing ARVs to HIV-infected people and exposed health workers are one of a number of important considerations that can be analyzed to help inform policy development. The authors discuss: cost-saving potential and cost-effectiveness of ART; total cost implications of providing ART and in comparison with available resources; cost and cost-effectiveness of prophylaxis for health care workers; and ART financing.

80. **Forsythe, S. 1998. "The Affordability of Antiretroviral Therapy in Developing Countries: What Policymakers Need to Know." *AIDS* 12, Supplement 2: S11-8.**
<http://www.worldbank.org/aids-econ/arv/background/arvconc.pdf>
Keywords: HIV/AIDS, Pharmaceutical Access, Costs

The success of ARVs in developed countries is creating increasing pressure on policymakers in developing countries to provide these drugs for their own populations. How should policymakers in developing countries address the very difficult issue of purchasing antiretroviral (ARV) drugs? The objective of this paper is to assist policymakers in developing countries and international donors by providing an outline of economic information needed to make a decision regarding the purchase of ARVs. The paper reviews existing experiences of policymakers in developing countries regarding the purchase of ARVs; identifies issues that would need to be addressed and data that would be required in order to make more informed decisions regarding this issue; and develops a cost-benefit model that could be utilized in designing an economic research project evaluating the economic costs and benefits of antiretroviral therapy. It is imperative that economic data be collected to better inform policymakers in developing countries on this issue. It is recommended that such economic data be collected as organizations such as UNAIDS initiate their medical assessments of ARVs in developing countries.

81. **Forsythe, S. and Gilks, C.F. 1999. "Economic Issues and Antiretroviral Therapy in Developing Countries." *Transactions of the Royal Society of Tropical Medicine and Hygiene* 93: 1-3.**
Keywords: HIV/AIDS, Costs, Equity, ARV

Some middle-income developing countries with relatively small HIV disease burdens do appear capable of purchasing ARVs with limited negative economic impact. However, in most developing countries, with limited public sector resources to pay for even the most basic health services, it is recognized that the cost of fully subsidizing access to these drugs would create a huge burden on the health care system (both in terms of costs and the human capacity to properly administer and monitor the use of ARVs). This paper analyses economic issues related to providing ARVs as well as ethical and

therapeutical questions, cost and capacity to provide ARVs, and equity and access to them.

82. **Galvão, J. 2002. "Access to Antiretroviral Drugs in Brazil." *The Lancet* 360: 1862-5.**

Keywords: HIV/AIDS, Clinical Treatment, Essential Drugs, Access to Care, ARV

Since 1996, the Brazilian Ministry of Health has guaranteed free and universal access to ART for people living with HIV/AIDS. Implementation of this policy has had political, financial, and logistical challenges. The study investigates the history and context of ARV policy in Brazil, the logistics of the drug's distribution, and the government's strategies for acquisition of the drugs. Many ARVs used in Brazil are produced domestically; the remainder, including some of the most expensive drugs, are purchased from abroad. Although the Brazilian policy of ARV distribution has had notable success, it remains threatened by the high cost of acquisitions of drugs, which has led to disputes with international pharmaceutical companies over prices and patents. Whether or not the Brazilian model of guaranteeing access to ART for people living with HIV/AIDS can be applied in other countries or regions, much can be learnt from the country's experience.

83. **Harries, A.D., Hargreaves, N.J., Chimzizi, R., and Salaniponi, F.M. 2002. "Highly Active Antiretroviral Therapy and Tuberculosis Control in Africa: Synergies and Potential." *Bulletin of the World Health Organization*, 80 (6): 64-470**

[http://whqlibdoc.who.int/bulletin/2002/Vol80-No6/bulletin_2002_80\(6\)_464-470.pdf](http://whqlibdoc.who.int/bulletin/2002/Vol80-No6/bulletin_2002_80(6)_464-470.pdf)

Keywords: HIV infection/drug therapy; ART; Drug cost

HIV/AIDS and TB are two of the world's major pandemics, the brunt of which falls on sub-Saharan Africa. Despite heroic and successful efforts to establish Directly Observed Therapy (Short Course) programs in that region, TB continues to rise in countries with significant HIV epidemics. There is unlikely to be a decline in the number of cases of TB unless additional strategies are developed to control both this disease and HIV simultaneously. The article discusses such strategies including active case finding in situations where TB transmission is high, the provision of a package of care for HIV-related illness, and the application of highly active antiretroviral therapy. The latter is likely to have the greatest impact, but for this therapy to become more accessible in Africa the drugs would have to be made available through international support and a program structure would have to be developed for its administration.

84. **Lange, J.M.A. December 2002. "Access to Antiretroviral Therapy in Resource-Poor Settings." *International AIDS Society*.**

<http://www.ias.se/article/show.asp?article=1851>

Keywords: HIV/AIDS, Clinical Treatment, Essential Drugs, Access to Care, Poverty and the Poor, ART

There is a humanitarian and economic need to block the devastating effects of HIV in infected persons throughout the world, and, in principle, the technical tools to do so exist. One of these tools is HAART. The article discusses issues related to the wide-scale introduction of appropriate ART in developing countries. The author names some

of the challenges of bringing ART to severely resource-constrained settings: lack of political commitment, cost, lack of infrastructure and expertise, lack of a common agenda and lack of leadership. To overcome these constraints, the international community should actively collaborate with governments and follow coordinated actions on multiple levels instead of pursuing fragmented and isolated efforts.

85. Morrison J.S. June 2002. "Expanding Antiretroviral Treatment in Developing Countries Creates Critical New Challenges." Washington DC: Center For Strategic and International Studies.

Keywords: HIV/AIDS, Clinical Treatment, Essential Drugs, Access to Care, Capacity Building, Costs, Sustainability, Preventive Care, ART

ART programs in developing countries are relatively small today but are expected to grow dramatically in the next few years. At present, an estimated 250,000 people in the developing world receive ART. The WHO has set a goal for 2005 of having 3 million persons in the developing world on ART a 12-fold increase in less than four years. Much of that increase is intended to come in Africa and other resource-limited settings with weak health infrastructures. This paper examines the downstream implications of this new commitment to provide ART to people living with HIV/AIDS in developing countries. Specifically, what new challenges are likely to emanate from expanded treatment programs that reach large numbers of HIV-infected persons? And what policy and programmatic innovations will be needed to address these challenges? The author describes and substantiates six core challenges that will emerge as HIV-treatment programs expand.

86. Noguera, M., Alt, D., Hirschhorn, L., Maponga, Ch., Osewe, P., and Sam-Abbenyi, A. 2003. "Zimbabwe: Antiretroviral Therapy Program – Issues and Opportunities for Initiation and Expansion." Arlington, VA: DELIVER/John Snow, Inc.

Keywords: HIV/AIDS, Essential Drugs, Pharmaceuticals and Contraceptives, ART, Clinical Treatment, Preventive Care, Access to Care, Quality Assurance, Capacity Building, Laboratories, Evaluation

The Zimbabwe government, in collaboration with NGOs and donors, has begun to respond to the HIV/AIDS epidemic. Efforts are now underway to introduce ART in selected sites in preparation for eventual nationwide expansion of the program. This report presents the findings of a four-week assessment of the readiness and capacity of Zimbabwe's health sector to deliver the range of services and manage the health commodities required for effective ART. The study focused on two areas: logistical requirements for ensuring a reliable and consistent supply of quality ARVs and related commodities and infrastructure and personnel requirements necessary to ensure their safe and effective use by patients. Findings and recommendations are intended to be used by the Ministry of Health and Child Welfare in furthering the development, initiation, and expansion of the national ART program.

87. **Okera, A., Serutoke, J., Madraa, E., and Namagala, E. May 2003. "Scaling Up Antiretroviral Therapy. Ugandan Experience." Draft. Geneva, Switzerland: World Health Organization.**

Keywords: HIV/AIDS, Pilot Projects, Clinical Treatment, Pharmaceutical Access, Pricing, Costs, Capacity Building, Quality Assurance, Laboratories, ART

This paper is a part of the *Perspectives and Practice in Antiretroviral Treatment* series initiated by WHO. The series provides examples of how challenges of expanding access to ART are being overcome in the growing number of developing countries where ART programs are underway. The present case study shows how the Uganda government, in collaboration with UNAIDS, civil society groups, private corporations, and others is successfully providing ART and care to people with HIV/AIDS, even in the poorest settings. In documenting these pioneering programs, WHO hopes that their experiences will both inform and inspire all those who are working to make access to treatment a reality.

88. **Tawfik, Y., Kinoti, S., and Blain, G. C. November 2002. "Introducing Antiretroviral Therapy (ART) on a Large Scale: Hope and Caution. Program Planning Guidance Based on Early Experience from Resource-Limited and Middle-Income Countries." Washington DC, USA: Academy for Educational Development Global Health, Population and Nutrition Group.**

Keywords: HIV/AIDS, Clinical Treatment, Essential Drugs, Costs, Access to Care, Strategic Planning, Implementation, Management, Human Resources Development, Laboratories

Recently, the cost of ARVs has decreased significantly as drug manufacturers have agreed to sell their products at large discounts and as a number of developing countries have begun to manufacture their own ARVs. This cost reduction, combined with the creation of the Global Fund to Fight HIV/AIDS, Tuberculosis and Malaria, which added significant financial resources, has given many developing countries, especially those hardest hit by the AIDS epidemic, the hope to implement services. Despite this hope, caution is required as the cost to implement the full range of services necessary for large-scale ART programs, especially laboratory services, is still too high for most developing countries. This paper provides program planning and management guidance to resource-limited countries that seek to implement expanded ART services. It includes specific guidance on setting criteria for receiving ART and deciding on treatment protocols, laboratory, clinical, counseling, and pharmaceutical services. In addition, guidance for estimating program costs, human resources and training requirements, and examples of communication messages specific to ART programs are outlined. The paper suggests components for a national ART program and topics for key operations research requirements specific to resource-limited countries.

89. **Teixeira, P.R., Vitória, M.A., and Barcarolo, J. June 2003. "The Brazilian Experience in Providing Universal Access to Antiretroviral Therapy." Agence Nationale de Recherches sur le Sida. France.**

Keywords: HIV/AIDS, Clinical Treatment, Pharmaceutical Access, Preventive Care, Access to Care, Costs, Advocacy, ART

This is a chapter of the book "Economics of AIDS and Access to HIV/AIDS Care in Developing Countries, Issues and Challenges," assembled by the Agence Nationale de

Recherches sur le Sida. The chapter describes Brazilian success in implementing a large-scale ARV distribution program and discusses factors that contributed the success. It is clear that the broad political and sociological context in which the Brazilian response evolved cannot be underestimated, but it is fair to say that the Brazilian experience is based on a concerted early government response, the strong and effective participation of civil society, a multisectoral mobilization, a balanced prevention and treatment approach and the advocacy of human rights in all strategies and actions. It confirms the fact that it is feasible to extend the availability of ART to the millions of people in need, even in a resource-poor setting where the ideal infrastructure might not be in place.

- 90. World Health Organization. June 2002. "Scaling Up Antiretroviral Therapy in Resource-Limited Settings: Guidelines for a Public Health Approach." Geneva, Switzerland.**

Keywords: HIV/AIDS, Essential Drugs, Clinical Treatment, Monitoring, ART

Countries are encouraged to adopt a public health approach in order to facilitate the scale-up of ARV use in resource-limited settings. These guidelines are part of the WHO's commitment to the global scale-up of ART. They are intended to support and facilitate the proper management and scale-up of ART in the years to come by proposing a public health approach to achieve these goals. The key tenets of this approach are: (1) scaling up of ART programs to meet the needs of people living with HIV/AIDS in resource-limited settings; (2) standardization and simplification of ARV regimens to support the efficient implementation of treatment programs; and (3) ensuring that ART programs are based on the best scientific evidence, in order to avoid the use of substandard treatment protocols which compromise the treatment outcome of individual clients and create the potential for emergence of drug resistant viruses.

2.7 Surveillance and Monitoring Evaluation

- 91. Boerma, T., Pisani, E., Schwartländer, B., and Mertens, T. January 2000. "A Framework for the Evaluation of National AIDS Programs." Chapel Hill, NC: MEASURE *Evaluation* Project, University of North Carolina**

Keywords: HIV/AIDS, STDs, Infectious Disease Surveillance, Public Sector, Management, Monitoring, Indicators, Evaluation

One of the shortcomings of existing monitoring and evaluation efforts by national AIDS programs is that they exist independently of a clear framework which links program efforts and behavioral trends to HIV-related outcomes in a logical way. This paper proposes a simple conceptual framework for monitoring and evaluation of AIDS programs, using the intermediate or proximate determinants conceptual framework used in the study of fertility and child survival. The paper underscores the need for selection of indicators at different levels of the framework, ranging from context and program inputs to health impact and mortality and emphasizes the central role of the proximate determinants. The combination of monitoring data at different levels of the framework with disease surveillance data provides the most practical basis for the evaluation of a national program.

92. **Canadian AIDS Society (CAS), The Centre for Infectious Disease Prevention and Control (CIDPC), and HEALTH CANADA. 2002. "A Guide to HIV/AIDS Epidemiological and Surveillance Terms."**

Keywords: HIV/AIDS, Epidemiology, Infectious Disease Surveillance, Information Dissemination, Internet

Community members, developing programs, and policies for work with diverse populations affected by HIV/AIDS need a solid understanding of the different research designs and data reported in HIV/AIDS epidemiology and surveillance documentation. For this reason, CAS and CIDPC have worked collaboratively to produce "A Guide to HIV/AIDS Epidemiological and Surveillance Terms." The guide contains a detailed catalogue of epidemiological and surveillance terminology, and responses to frequently asked questions about epidemiology and HIV/AIDS surveillance reporting. Entries include common language definitions, followed by examples to illustrate how each concept is applied within the context of HIV/AIDS community work. The guide also contains a list of bibliographic and website resources geared to assist the user in attaining additional information on HIV/AIDS, epidemiology, research, and statistics.

93. **The Caribbean Epidemiology Centre (CAREC). 2002. Guidelines for Upgrading of HIV/AIDS/STI Surveillance in the Caribbean: The Third Generation of Surveillance of HIV/AIDS/STI Linking HIV/AIDS and Case-reporting, Behavioural and Care Surveillance. Trinidad: CAREC/PAHO/WHO**

http://www.catin.org/download/Guidelines_for_Upgrade/Guidelines_for_Upgrading.pdf

Keywords: HIV/AIDS, Epidemiology, Behavioral Surveillance, STI, Quality of Care, Evaluation

The Caribbean Epidemiology Centre (CAREC), the Caribbean's disease monitoring agency, is mandated to strengthen the national response to the HIV/AIDS epidemic in its 21 member countries, the population of which is estimated at 6.5 million. One key component of CAREC's regional strategy for prevention and control of the HIV/AIDS epidemic is to improve member countries' information and surveillance systems to generate reliable data on HIV/AIDS/STI to guide decision-making, planning, implementation, and evaluation. CAREC makes these guidelines a tool that blends epidemiology with behavioral surveillance and audits of quality of care for PLWHA and STI patients. The guidelines will allow for comparability between countries through targeting the same vulnerable groups among which comprehensive data is collected over time on a continuous basis.

94. **Garcia Calleja, J.M., Pervilhac, C. August 2002. "Initiating Second Generation HIV Surveillance Systems: Practical Guidelines." UNAIDS.**

Keywords: HIV/AIDS, Infectious Disease Surveillance, Monitoring, Evaluation

The HIV/AIDS pandemic is composed of multiple and dynamic epidemics, even within a country. Therefore, HIV surveillance systems should be capable of being adapted and modified to meet the specific needs of each epidemic. These guidelines are designed to assist national AIDS programs and ministries of health in implementing second generation HIV surveillance systems through a logical and standardized process. The main objective of second generation surveillance is to monitor HIV and high-risk

behavior trends over time in order to provide essential data needed for the development of interventions and the evaluation of their impact. This document is primarily addressed to program managers, epidemiologists, social scientists, and other experts working in or with national programs on surveillance issues. The practical steps and recommendations are partly based on experience gained in the first three years of a collaborative European Commission-funded project that started in 1999.

95. Joint United Nations Programme on HIV/AIDS. September 2003. “Progress Report on the Global Response to the HIV/AIDS Epidemic, 2003.” Geneva, Switzerland.

http://www.dec.org/pdf_docs/PNACU586.pdf

Keywords: HIV/AIDS, International Aid, Preventive Care, Clinical Treatment, Essential Drugs, Education, Advocacy, Financing

Success in the fight against AIDS is measured by the achievement of concrete, time-bound targets. The UNAIDS Secretariat collaborated in 2002 with UNAIDS Cosponsors and other partners in the development of a series of core and additional indicators to measure progress in combating HIV/AIDS. Over the last year, the UNAIDS Monitoring and Evaluation Unit has worked with countries and other actors to collect data needed to establish both monitoring baselines for each indicator and mechanisms for collecting information on an ongoing basis. This report – the first of what will become regular reports by UNAIDS on the stage of the global response – is the most comprehensive assessment to date of national responses to HIV/AIDS. Country data presented in this report have been reviewed by UNAIDS and compared with other sources to consolidate validity. National data presented in national reports, however, derived solely from information provided by the countries themselves and UNAIDS does not warrant that the information contained is complete and correct.

96. Joint United Nations Programme on HIV/AIDS, The World Bank, World Health Organization, United States Agency for International Development, Global Fund to Fight AIDS, Tuberculosis and Malaria. January 2004. “Monitoring and Evaluation Toolkit HIV/AIDS, Tuberculosis and Malaria.” Draft.

Keywords: HIV/AIDS, TB, Malaria, Indicators, International Aid

It is becoming increasingly important for countries to be able to report accurate, timely, and comparable data to donors and national authorities in order to secure continued funding for expanding health programs, and most importantly, utilize this information locally to strengthen evolving programs. This toolkit is one step towards assuring that countries are able to measure, report, and use good quality health information in a manner that meets both donor and country needs. It is particularly important for national program implementers and managers to have access to the quality information they need to make adjustments and programmatic and technical decisions.

97. **United States Agency for International Development. January 2003. “Expanded Response. Guide to Core Indicators for Monitoring and Reporting on HIV/AIDS Programs.”**

Keywords: HIV/AIDS, International Aid, Monitoring and Evaluation, Indicators, Donor Coordination

In fiscal year 2001, USAID developed an “expanded response” strategy to combat the HIV/AIDS pandemic. This strategy was designed to enhance the ability of countries to prevent new HIV/AIDS infections and provide services to those either infected or otherwise affected by the epidemic, especially children, youth, and infected mothers. As a part of this strategy, the agency is establishing an improved, comprehensive system to routinely monitor its HIV/AIDS programs worldwide and periodically report its progress toward achieving stated results. The indicators in this guide were developed to expand the sets of indicators described in the *Handbook of Indicators for HIV/AIDS/STI Programs*, as well as to cover new crosscutting areas under the expanded response. Although efforts were made to make the indicators applicable to diverse settings, some local adaptation may be necessary, depending both on the level of program implementation and agency or agencies involvement in the planning, design, implementation, monitoring, or evaluation of the program.

98. **United States Agency for International Development. March 2000. “Handbook of Indicators for HIV/AIDS/STI Programs.” First edition.**

Keywords: HIV/AIDS, International Aid, Monitoring and Evaluation, Indicators

In 1996, the HIV/AIDS Division of the USAID Bureau for Global Programs, Field Support and Research, Center for Population, Health and Nutrition, Office of Health and Nutrition (G/PHN/HN/HIV/AIDS), redesigned its HIV/AIDS Strategic Support Objective and Results Package to better reflect the experience gained to date in prevention activities and to respond more effectively to the growing and changing worldwide epidemic. This handbook presents indicators for monitoring and evaluating USAID-supported programs. For each indicator, definitions, data sources, purposes, and strengths and limitations are described. The handbook is designed to include indicators to measure the key aspects of the USAID HIV/AIDS portfolio. As many country programs only address part of this portfolio, users of the handbook should choose those indicators that are appropriate for monitoring and evaluating their programs.

99. **World Health Organization and Joint United Nations Programme on HIV/AIDS. 2000. “Guidelines for Second Generation HIV Surveillance: The Next Decade.” Geneva, Switzerland.**

Keywords: HIV/AIDS, Infectious Disease Surveillance, Indicators

A decade has passed since the initial guidelines on HIV surveillance were drafted by WHO in 1989. As HIV continues to spread around the world, it has become increasingly apparent that the epidemic does not follow the same course in all societies. Rather it affects different geographical areas and population sub-groups in different ways at different times. This paper is intended to guide policy on strengthened surveillance for HIV. The document reviews the achievements of the first decade of surveillance for HIV. It describes the strengths and weaknesses of existing systems and outlines the

basic principles of second generation surveillance needs of countries in different epidemic states.

- 100. World Health Organization and Joint United Nations Programme on HIV/AIDS. 2001. “Guidelines for Using HIV Testing Technologies in Surveillance: Selection, Evaluation, and Implementation.” Geneva, Switzerland.**
Keywords: HIV/AIDS, Infectious Disease Surveillance, Laboratories, Preventive Care, Management

Second generation HIV surveillance relies on data collected from biological surveillance, behavioral surveillance, and other sources to describe a country’s HIV epidemic and respond effectively. These guidelines provide directions on the types of specimens to collect and how to store and test them. They describe HIV testing strategies recommended by WHO, which are based on HIV prevalence rates, and existing HIV testing technologies used for biological surveillance. The guidelines also include information regarding strategies and technologies for use in diagnostic testing since data from diagnostic testing may also be used as a source of surveillance information. They outline methods for selecting and evaluating testing technologies appropriate to a country’s epidemic state and needs. These guidelines are written for HIV surveillance coordinators and other health professionals involved in HIV testing for surveillance purposes in developing countries. This is part of a series of operational guidelines for second generation HIV surveillance systems.

- 101. World Health Organization and Joint United Nations Programme on HIV/AIDS. 2004. “Guidelines for Effective Use of Data from HIV Surveillance Systems.” Geneva, Switzerland.**
<http://www.who.int/hiv/strategic/surveillance/en/useofdata.pdf>
Keywords: HIV/AIDS, Behavioral Surveillance, Surveillance, Monitoring and Evaluation

Many countries around the world have invested heavily in the past decade in collecting information about the HIV and the behavior that spreads it. This guide is part of a series of technical resources on second generation surveillance that started with the “Guidelines for Second Generation HIV Surveillance,” published by WHO and UNAIDS in 2000. It is designed to produce information on how to improve programming, measure the success of prevention, lobby for policy change, and engage affected communities in the response. The publication concentrates on the mechanics of using data, i.e., not only what can be done with data but how it can be done.

3. Title Index

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5. List of Web Resources

Organization	WWW address/Description
Eldis HIV/AIDS Resource Guide	<p>http://www.eldis.org/hivaids/index.htm</p> <p>Eldis, hosted by the Institute of Development Studies, Sussex, England, with core funding from DANIDA, NORAD, and SIDA, is a gateway to information on development issues, providing free and easy access to a wide range of online resources. The website offers substantial information on issues related to HIV/AIDS.</p>
European Centre for the Epidemiological Monitoring of AIDS (CEES), WHO	<p>http://www.eurohiv.org/sida.htm</p> <p>The European Centre for the Epidemiological Monitoring of AIDS (EuroHIV programme) produces a half-yearly report <i>HIV/AIDS Surveillance in Europe</i> providing information on HIV/AIDS prevalence in the 51 countries of the WHO European Region.</p>
Family Health International (FHI)	<p>http://www.fhi.org/en/HIVAIDS/index.htm</p> <p>FHI has worked to address the needs of communities and countries ravaged by HIV/AIDS since 1986. The website provides information on project interventions.</p>
The Futures Group International	<p>http://www.futuresgroup.com/</p> <p>The Futures Group International helps build a supportive policy environment for HIV/AIDS, family planning, and reproductive health programs by encouraging policies and plans that promote and sustain access to quality information and services.</p>
Global AIDS Program (GAP)	<p>http://www.cdc.gov/nchstp/od/gap/</p> <p>The Centers for Disease Control initiated Global AIDS Program focuses on HIV/AIDS primary prevention; surveillance and monitoring and evaluation; infrastructure development; care, support and treatment; VCT; reduction of MTCT. Information and reports on these issues and many others related to HIV/AIDS care on the website.</p>
Health Economics & HIV/AIDS Research Division (HEARD), University of Natal, South Africa	<p>http://www.und.ac.za/und/heard/</p> <p>The website provides information on academic and applied research on economic, development and social impacts of HIV/AIDS.</p>

Organization	WWW address/Description
HIV/AIDS Policy Compendium Database	<p>http://209.27.118.7/</p> <p>Released by The Futures Group. This database contains over 2,400 annotated citations from policy papers (documents describing national policies or international resolutions) from over 50 countries.</p>
International AIDS Economic Network (IAEN)	<p>http://www.iaen.org</p> <p>The IAEN site provides economic data, tools, and analysis for researchers and policymakers working to define and implement effective AIDS policy.</p>
International AIDS Society (IAS)	<p>http://www.ias.se/index.asp</p> <p>The IAS contributes to the control and management of HIV infection and AIDS through advocacy, education, facilitation of scientific networks and debate, and support for best practices in research, prevention, and care. IAS is the custodian of the International AIDS Conferences, the paramount gathering of all disciplines in HIV/AIDS held every two years. The website hosts information about these conferences as well as information about conferences on HIV pathogenesis.</p>
International Association of Physicians in AIDS Care	<p>http://www.iapac.org/</p> <p>The association works on development and implementation of global educational and advocacy strategies to improve the quality of care provided to people living with HIV/AIDS and associated co-infectious diseases.</p>
Joint United Nations Programme on HIV/AIDS (UNAIDS)	<p>http://www.unaids.org/en/default.asp</p> <p>UNAIDS, as the main advocate for global action on the epidemic, leads, strengthens, and supports an expanded response aimed at preventing transmission of HIV. The UNAIDS homepage contains a reliable search engine and links to publications and research.</p>
MEASURE Evaluation	<p>http://www.cpc.unc.edu/measure/publications/hiv_aids.html</p> <p>MEASURE <i>Evaluation</i> is involved in a wide range of activities whose aim is to strengthen the monitoring and evaluation of AIDS programs in developing countries in order to improve national AIDS programs' M&E systems, develop new tools and indicators, review studies to ascertain trends, and evaluate programs.</p>

Organization	WWW address/Description
National Library of Medicine	<p>http://www.nlm.nih.gov/libserv.html</p> <p>The National Institutes of Health library is the world's largest medical library. The library collects materials in all areas of biomedicine and health care and works on biomedical aspects of technology, the humanities, and the physical, life, and social sciences. The collections stand at more than 6 million items – books, journals, technical reports, manuscripts, microfilms, photographs and images. Through the Web (http://www.nlm.nih.gov) some 400 million searches of MEDLINE are done each year by health professionals, scientists, librarians, and the public. There are increasing links between article references and full text, and a new service called PubMed Central allows free access to a central repository of journal articles.</p>
Partners for Health Reformplus	<p>http://www.phrplus.org/</p> <p>PHRplus provides state-of-the-art knowledge, approaches, and tools in costing, financing, and organization of HIV/AIDS services. The website has an user-friendly document database of all PHRplus materials as well as reports from the predecessor Partnerships for Health Reform (1995-2001) project. A bibliographic database of over 5,000 entries can easily be searched for HIV/AIDS-specific information.</p>
POLICY Project	<p>http://www.policyproject.com/</p> <p>Part of the Futures Group International, the POLICY Project works with civil society and government partners in developing countries to facilitate the development of high quality, sustainable family planning, reproductive health, HIV/AIDS, and safe motherhood policies and programs.</p>
Southern Africa AIDS Information Dissemination Service (SAfAIDS)	<p>http://www.saf aids.org.zw/saf aidsweb/</p> <p>SAfAIDS is a regional HIV/AIDS resource established in 1994 and based in Zimbabwe. The organization's goal is to disseminate HIV/AIDS information in order to promote, inform, and support appropriate responses to the epidemic in the fields of HIV prevention, care, long-term planning and coping with the impact. SAfAIDS produces a variety of publications that are aimed at different readerships – in terms of literacy and other factors – within the region. All are available online.</p>

Organization	WWW address/Description
Synergy Project	<p>http://www.synergyaids.com</p> <p>The Synergy Project's mandate is to identify and synthesize HIV/AIDS programming lessons learned and best practices and summarize the experience in a simple methodology that supports USAID's commitments to participation, transparency, customer service, gender responsiveness, greater involvement of people living with HIV/AIDS, and sustainability. Synergy also supports USAID's leadership role in developing and increasing use of technically sound and useful monitoring, evaluation, and reporting systems, including HIV/AIDS indicators and data management systems for describing program activities and measuring results.</p>
United Nations Development Programme (UNDP)	<p>http://www.undp.org/dpa/publications/hiv.html</p> <p>UNDP advocates for placing HIV/AIDS at the center of national planning and budgets; helps build national capacity to manage initiatives that include people and institutions not usually involved with public health; and promotes decentralized responses that support community-level action. The "publications" page contains a comprehensive list of HIV/AIDS reports and study papers.</p>
USAID's Development Experience Clearinghouse	<p>http://www.dec.org/</p> <p>The website is the largest online resource for USAID-funded international development documentation with a separate search engine for HIV/AIDS publications.</p>
USAID's Global Health website	<p>http://www.usaid.gov/pop_health/aids/index.html</p> <p>The HIV/AIDS webpage on USAID's Global Health describes the Agency's strategy and approaches to combating HIV/AIDS. Information on the Agency's small grant programs and projects are included.</p>
The Weekly Epidemiological Record (WER)/WHO	<p>http://www.who.int/wer/en/</p> <p>Information on the global situation of the HIV/AIDS pandemic and global AIDS Surveillance are published in the <i>WHO Weekly Epidemiological Record</i>, offering a summary and detailed statistical analysis of the epidemic.</p>
The World Health Organization Library Database (WHOLIS)	<p>http://www.who.int/library/database/index.en.shtml</p> <p>The WHO Library and Literature Services (HLT) provides access to the WHOLIS database, partially abstracted, of (1) WHO headquarters and regional office publications, (2) periodical articles, (3) technical and policy documents, (4) joint publications or WHO with other publishers and international organizations, (5) publications from the Pan American Health Organization (PAHO), the International Agency for Research on Cancer (IARC), Council for International Organizations on Medical Sciences (CIOMS).</p>

Organization	WWW address/Description
Working Group on AIDS (Pokdisus AIDS FKUI/ RSCM)	<p data-bbox="581 243 1073 275">http://www.pokdisus-aids.org/jrm_site.htm</p> <p data-bbox="581 302 1317 453">The Working Group on AIDS (Pokdisus AIDS FKUI/ RSCM) or Pokdi, for short, is an institution organized by the Faculty of Medicine, University of Indonesia. The site focuses on development of ART and appropriate health care services for people living with HIV/AIDS.</p>
World Bank AIDS Economics website	<p data-bbox="581 491 1013 522">http://www.worldbank.org/aids-econ/</p> <p data-bbox="581 550 1349 701">The site focuses on the economics of HIV/AIDS prevention and treatment. It aims to help researchers and policymakers to define and implement effective AIDS policy. The site provides access to full text World Bank reports, a bibliographical database, newsletter, and links to related sources.</p>
World Health Organization	<p data-bbox="581 739 883 770">http://www.who.int/hiv/en/</p> <p data-bbox="581 798 1365 884">The WHO HIV/AIDS website reflects all activities carried out by the organization in the HIV/AIDS field and contains a list of internal and external publications.</p>

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