

# REPUBLIC OF RWANDA



## HIV/AIDS Treatment and Care Plan 2003-2007

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Developed with  
The William J. Clinton Foundation

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# List of Acronyms

AIDS	Acquired Immune Deficiency Syndrome
ARV	antiretroviral
CAMERWA	Center for Purchase of Essential Drugs for Rwanda (Centrale d'Achat de Médicaments Essentiels au Rwanda)
CHK	Central Hospital of Kigali
CNLS	National Committee for the Fight Against AIDS (Commission Nationale de Lutte Contre le SIDA)
EU	European Union
FAO	Food and Agriculture Organization of the United States
FHI	Family Health International
GDP	gross domestic product
GOR	Government of Rwanda
HIV	Human Immunodeficiency Virus
ICT	Information and Communications Technology
IEC	Information, Education, and Communication
M&A	management and administration
MAP	World Bank Multi-Country HIV/AIDS Program for Africa
MINISANTE	Ministry of Health (Ministère de la Santé)
MTCT	mother-to-child transmission (of HIV)
NGO	non-governmental organization
PACFA	Protection and Care of Families Against HIV/AIDS
PAF	Elizabeth Glaser Pediatric AIDS Foundation
PGAF	Pangaea Global AIDS Foundation
PLWHA	People Living with HIV/AIDS
PNLS	National AIDS Control Program (Programme National de Lutte Contre le SIDA)
PMTCT	prevention of mother-to-child transmission (of HIV)
PMU	Program Management Unit
PRSP	Poverty Reduction Strategy Paper
PSI	Population Services International
QA	quality assurance
RSCs	Rwandan Standards of Care
TB	tuberculosis
TRAC	Treatment and Research AIDS Centre
UNAIDS	Joint United Nations Programme on HIV/AIDS
UNDP	United Nations Development Programme
USAID	The United States Agency for International Development
URC	University Research Corporation
VCT	voluntary counseling and testing
WHO	World Health Organization
WJCF	William J. Clinton Foundation

Where an acronym stands for a French term, the original is in parentheses following the English translation, above.

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# Executive Summary

## Plan Vision

- Increased longevity and improved quality of life for people living with HIV/AIDS (PLWHA) in Rwanda

## Core Objective

- National, comprehensive treatment and care system for HIV/AIDS (see Figure I), including:
  - HIV testing, counseling and clinical staging
  - Services coordination
  - Medical treatment, including ARV drug therapy
  - Clinical monitoring and adherence support
  - Psychosocial care
  - Community and home-based care
  - Ancillary support services (food and nutrition, transportation assistance, social and economic services)
  - Prevention education and counseling

## Values and Principles

- Equal access to services
- Long-term commitment
- Improvement of Rwanda's general health services infrastructure beyond HIV/AIDS
- Financial transparency

## Situation Analysis

- Projected HIV/AIDS prevalence:

**Table I: Projected HIV/AIDS Prevalence in Rwanda**

HIV/AIDS Projections	2002 Baseline	2003	2004	2005	2006	2007
Population	8,162,715	8,311,131	8,613,017	8,813,665	1,151,581	1,116,177
Projected HIV prevalence	106,061	135,612	165,181	196,158	1,028,657	1,061,107
Projected increase per year		21,631	30,281	30,178	31,618	32,450
Projected new HIV infections	80,000	83,111	86,130	88,137	11,516	11,170
Projected deaths from HIV/AIDS	11,000	51,361	56,112	57,151	51,818	61,111
Estimated HIV-exposed people	10,000	11,308	12,615	11,013	15,112	16,815

Sources: GOR (2002 baseline); WJCF

- Key challenges in the fight against HIV/AIDS in Rwanda:
  - Expanding the availability of treatment and care services
  - Enhancing treatment and care services to include ARV therapy
  - Hiring and training health professionals

- Upgrading the health system infrastructure (facilities, laboratory, drug distribution, ICT)
- Coordinating internal and external HIV/AIDS initiatives

## Target Population

- The plan targets all PLWHA who desire treatment, divided into six patient groups. Projected patients treated by year are as follows:

**Table II: Projected Patients by Year**

Treatment Projections	Year 1	Year 2	Cumulative			% Total
			Year 3	Year 4	Year 5	
A) Adult <200 & asymptomatic	3,710	11,175	23,137	37,270	52,280	17%
B) Adult 200-350 & asymptomatic	6,316	20,702	40,133	66,771	96,777	25%
C) Adult 350* & asymptomatic	11,877	38,705	77,163	126,015	182,761	48%
D) Pediatric <15% of asymptomatic	505	1,517	3,125	4,165	6,171	2%
E) Pediatric >15% & asymptomatic	2,777	8,171	17,187	27,328	42,371	11%
<b>Total</b>	<b>25,264</b>	<b>81,350</b>	<b>162,645</b>	<b>264,419</b>	<b>380,551</b>	<b>100%</b>
F) HIV-exposed infants	3,127	11,088	18,126	22,706	28,107	
Est. % of PLWHA in treatment	3%	8%	16%	26%	36%	
Total on ARV	4,215	13,572	26,562	42,205	57,250	

## Implementation Approach

- Service integration with existing health system infrastructure
  - Health services access points
  - Human resources development
  - Emerging decentralized health care management
- Community mobilization
  - Community-based care delivery and support
  - Adherence support
  - Services promotion
  - Targeted prevention messages
- Linkage between treatment and care and prevention
  - Prevention messages, education and counseling at every level of care
  - National program visibility and increased awareness about HIV/AIDS
  - Lower viral loads of patients on ARVs
- Multi-country procurement economies of scale
  - ARVs
  - Laboratory equipment and consumables
  - ICT
- Rapid scale-up and iterative learning based on “Collaboratives” model
  - Network of first year sites

- Ongoing information sharing
- Best practices development

## Infrastructure Development Requirements

- Expanded HIV/AIDS medical personnel, as follows:

**Table III: Projected Full Time Equivalent (FTE) Medical Personnel Requirements**

Medical Personnel	Cumulative					Total
	Year 1	Year 2	Year 3	Year 4	Year 5	
Doctors	31	85	151	227	307	307
Reference doctors	20	25	25	25	25	25
Nurses	37	115	217	338	473	473
Lab techs	73	176	277	372	465	465
Specialized lab techs	15	30	45	60	68	68
Pharmacy personnel	32	67	95	115	135	135
Counselors	38	111	210	327	461	461
<b>Subtotal</b>	<b>247</b>	<b>576</b>	<b>962</b>	<b>1,367</b>	<b>1,794</b>	<b>1,794</b>
Annual salary	3,667	7,333	11,000	11,000	11,000	11,000

- Expanded and coordinated training of health care providers in HIV/AIDS treatment and care
  - Integration into existing medical training infrastructure (e.g. University of Butare, Kigali Health Institute)
  - MINISANTE/TRAC: training coordination, curriculum development, evaluation
  - Combination of didactic, practical (on site), and train-the-trainer instruction
- Modified distribution system for drugs and consumables
  - CAMERWA distribution of all drugs and consumables to regional distribution points (locations TBD)
  - Upgraded drugs and consumables inventory management, forecasting and electronic ordering systems (CAMERWA/MINISANTE)
  - Expanded CAMERWA central warehouse
- Distributed HIV/AIDS laboratory testing
  - CD4 testing at 4-5 regional drug distribution points
  - Coordinated system of lab specimen pickup/drug distribution from regional drug distribution points to/from district hospitals and health centers
- Targeted ICT development, including patient information system
  - Distributed patient information system (MINISANTE)
  - ICT upgrades, as needed, for central management, reference and district hospitals, health centers
- Facilities upgrades for central management, reference and district hospitals, health centers, as needed



## Information, Education and Communication (IEC) Requirements

- Service availability awareness campaigns
- Anti-HIV/AIDS discrimination communications and education
- Mobilization of community and PLWHA associations
- Targeted prevention messages

## Management and Administration

- Coordinated, GOR-managed, national plan
  - Standardized treatment and care services
  - Coordination among external donors, NGOs and GOR
  - Multi-sector, multi-discipline cooperation
- Central and distributed services management
  - Central level coordination by MINISANTE through the Office of the Minister of State for HIV/AIDS and TRAC, CNLS (see Figure IV)
  - Distributed services management and coordination through district hospital health boards, health center health committees, cellule and community groups (see Figure V)
  - Targeted external technical assistance in clinical systems, medical training, quality assurance, monitoring and evaluation, procurement and management

## Projected Budget

**Table IV: Projected Five-Year Budget Summary**

Projected Expenses	Year 1	Year 2	Year 3	Year 4	Year 5	Total	% Total
Medical Staffing	\$ 1,307,027	\$ 2,817,073	\$ 4,778,067	\$ 7,271,100	\$ 10,130,311	\$ 26,303,578	12%
Training	\$ 1,122,637	\$ 1,467,277	\$ 1,807,777	\$ 1,252,121	\$ 1,287,175	\$ 6,936,997	3%
Drugs & Consumables	\$ 4,850,602	\$ 13,025,612	\$ 22,868,161	\$ 32,576,872	\$ 41,510,381	\$ 114,831,638	52%
Transport & Logistics	\$ 1,311,371	\$ 1,478,772	\$ 1,872,527	\$ 1,161,075	\$ 2,161,665	\$ 8,885,410	4%
Facilities & Equipment	\$ 6,807,270	\$ 4,350,127	\$ 4,073,721	\$ 2,727,075	\$ 1,677,775	\$ 19,636,968	9%
IEC/Mobilization	\$ 1,200,000	\$ 1,320,000	\$ 1,467,000	\$ 1,636,800	\$ 1,877,160	\$ 7,503,060	3%
Management & Administration	\$ 4,253,305	\$ 6,287,525	\$ 8,376,507	\$ 8,523,711	\$ 8,773,161	\$ 36,214,210	16%
<b>Total Expenses</b>	<b>\$ 20,851,231</b>	<b>\$ 30,767,104</b>	<b>\$ 45,302,726</b>	<b>\$ 55,985,879</b>	<b>\$ 67,371,807</b>	<b>\$ 220,278,747</b>	<b>100%</b>

1) Budget is inclusive of funds from major donors, including Global Fund, MAP, etc.

# Situation Analysis

## Introduction

The HIV/AIDS epidemic in Rwanda affects all segments of the population, threatening the development and prosperity of the nation. The most recent national survey done by the Government of Rwanda (GOR) in 1997 found an 11 percent seroprevalence rate in the general population. Other recent estimates range from 8.9 percent (UNAIDS) in 2002 to 13.5 percent (GOR) among the active working population. The population is growing at a rate of approximately 2.9 percent annually.

In 1994, Rwanda attracted worldwide attention as a war and genocide led to the deaths of approximately 800,000 people. Since the war, the population has become increasingly mobile, with large segments of the population moving to the cities, particularly Kigali. Approximately 38 percent of households are headed by women (USAID), and thousands of children are growing up with neighbors, relatives, or on the street, where they may be vulnerable to sexual and other abuses. Millions of people crossed the borders to crowded, unhealthy refugee camps; most have since returned. In the intervening eight years, Rwanda has been rebuilding the foundation of basic services to its citizens in the context of these many challenges.

Rwanda is one of the least-developed nations in the world, ranking 152 out of 162 in the United Nations Development Programme's Human Development Index. Per capita income is among the lowest in the world, at \$252, and the GDP is \$7.2 billion. Average life expectancy in Rwanda is 40.2 years (UNDP). Over 90 percent of the population is involved in agriculture, mostly subsistence-level farming. The country is landlocked, sharing borders with Burundi, Tanzania, Uganda, and the Democratic Republic of Congo, and is the most densely populated nation in Africa.

**Table V: Population Overview of Rwanda (2002)**

Total population	8,162,715
Population under 17	4,187,715
Women of childbearing age	1,775,717
Birth rate	5.07%
Death rate	2.17%
% urban	16.6%
% rural	83.4%
Human Development Index rank	152 of 162

Source: GOR, CIA Factbook, UNDP

Hunger in Rwanda is pervasive and persistent, as it is in many sub-Saharan nations. High population density, poverty and soil exhaustion contribute to a 40 percent rate of undernourishment (2001 FAO State of Food Insecurity). Rwanda is among the twenty-five nations worldwide with the highest rate of undernourishment (UNDP). Pregnant women, infants, orphans and PLWHA are particularly vulnerable to hunger and malnourishment. In addition, up to 56 percent of Rwandans do not have adequate water for drinking, cooking and washing.

The current government, headed by President Paul Kagame, has achieved a stable political climate. Following ratification of the constitution in May 2003, local, legislative and presidential elections are expected in the summer of 2003. Religious institutions are prominent in Rwandan society; the population is 56 percent Roman Catholic, 26 percent Protestant, 11 percent Adventist and five percent Muslim. All denominations have an important role to play in the dissemination of prevention information and messages of care and hope for those living with and affected by HIV/AIDS.

The Ministry of Education has made a priority of enrolling all children in primary education. To date, 73.3 percent attend. Since 1994, the number of secondary schools in Rwanda has increased from 10 to 363 (in 2000), and the number of students increased from 10,000 to 124,000 in the same period. The remoteness of some of the population and the inability of parents or guardians to pay \$.60 - \$4 per year in school fees limits attendance. Increasingly, children are being kept home from school to take on childcare and other responsibilities of ailing or absent parents. There is a national university in Butare, which includes a medical school and other graduate programs.

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## HIV/AIDS Epidemiological Profile

### People Living with HIV/AIDS (PLWHA)

HIV cases were first seen at the Central Hospital of Kigali (CHK) in 1983. Since then, the virus has spread widely, affecting both urban and rural populations in the aftermath of the genocide. UNAIDS estimated 49,000 AIDS-related deaths in 2002, although this is difficult to verify because few patients are tested for HIV. In urban areas, infection rates are considerably higher than in rural areas, though there is some evidence that rural infection rates are approaching urban rates.

**Table VI: HIV/AIDS Epidemiological Statistics (2002 Estimates)**

HIV prevalence - Total	106,000
Annual deaths from AIDS	49,000
New HIV cases annually	80,000
Annual pregnancies, HIV* women	40,000
Perinatal HIV infections per year	11,909
% HIV* persons with TB	60%
Children orphaned by AIDS	260,000

Source: GOR, *Sante Pour Tous*

Estimates from food relief groups in Rwanda suggest that approximately 50 percent of PLWHA require some form of food assistance. For many patients, access to food remains problematic, as they may be unable to travel to a distribution site. Infant formula for seropositive mothers has not generally been available in Rwanda. Both the cost of formula, and lack of an available clean water supply in some areas, have been barriers to widespread use of formula. The stigma associated with HIV has been a disincentive to pursue formula options, as mothers who do not breastfeed their children may fear being identified as having HIV.

### Risk Factors

HIV in Rwanda is spread primarily through heterosexual contact (75 percent) and mother-to-child transmission (20 percent). Young women and older men have the highest rates of infection. High-risk populations in Rwanda include sex workers and their clients, orphans, prisoners, commercial drivers and

transportation workers. The EU and the WHO have jointly supported a major effort to ensure the safety of the blood supply, thereby reducing transfusion-associated infections. The lack of resources for universal precautions remains a pressing concern in many health facilities. Tuberculosis is also a major public health problem in Rwanda; 60% of HIV patients are cross infected with TB.

HIV infection spread rapidly during the genocide, due in part to widespread rape. According to UNAIDS, half of the 3.2 percent of women in Rwanda who reported being raped during the genocide are now HIV positive. The refugee camps in the immediate post-genocide period were squalid, violent, and crowded, leading to further unsafe sex. Since the war, many women and girls, including those widowed or orphaned by the war, have been forced into prostitution. There are thousands of orphans, many of whom are being raised by family members, neighbors and strangers. Unaccompanied children, particularly orphans, are highly vulnerable to sexual abuse and being pressed into survival sex, and commonly have high infection rates. Other factors increasing the spread of the epidemic include high rates of sexually transmitted infections, low availability and use of condoms, and limited public understanding of the disease.

### Patient Groups

The development of treatment and care programs requires making reasonable estimates, based on available data, about patient groups, defined by stage of disease and associated needs for care. Of the total government-estimated 906,000 seropositive Rwandans at the end of 2002, 154,000 or 17 percent are estimated to be symptomatic and requiring antiretroviral (ARV) therapy. As of this writing, approximately 900, less than one percent, were receiving treatment. The following table summarizes estimates of HIV/AIDS patient groups by stage of disease, as measured by CD4 count, and estimates the number of HIV-exposed infants born in Rwanda annually.

**Table VII: Projected HIV/AIDS Prevalence**

Prevalence by Patient Group	2002	Year 1	Year 2	Year 3	Year 4	Year 5
A) Adult <200 & asymptomatic	135,107	140,354	144,817	147,577	154,211	157,166
B) Adult 200-350 & asymptomatic	226,515	233,123	241,415	247,240	257,167	265,277
C) Adult 350+ & asymptomatic	425,811	431,775	454,011	468,570	483,467	498,720
D) Pediatric asymptomatic	18,121	18,711	19,320	19,937	20,573	21,222
E) Pediatric asymptomatic	11,667	102,126	106,258	107,665	113,152	116,722
<b>Total</b>	<b>906,061</b>	<b>935,692</b>	<b>965,981</b>	<b>996,958</b>	<b>1,028,657</b>	<b>1,061,107</b>
F) HIV-exposed infants	40,000	38,800	36,472	33,111	31,205	28,317

Sources: GOR (2002 baseline); WJCF

## Impact of HIV/AIDS on the Rwandan People and Economy

AIDS is negatively impacting the economy of Rwanda and the health and welfare of many citizens. Each year approximately 49,000 people die from AIDS, though this data is incomplete. Rwanda's average life expectancy is 40.2 years (UNDP), a rate many expect will drop with an advancing AIDS epidemic. An estimated 260,000 children have been orphaned by AIDS, compounding the social upheaval resulting from the genocide in which many people lost their lives.

HIV/AIDS causes extreme hardship in already impoverished populations. Only 28 percent of households with an HIV/AIDS patient are able to pay for even basic care, leading families to borrow money, sell assets or decide not to seek needed treatment. Because most Rwandans are subsistence farmers, illness of a breadwinner is devastating to families. Many Rwandans do not have access to HIV counseling and testing, and if they are positive, they are unable to access or afford needed medicines and services.

Social stigma associated with HIV is beginning to lessen, but it is still widespread and a powerful disincentive to HIV testing and disclosure. In 1998, 60 percent of respondents to a PNLIS (National AIDS Control Program) poll said they would not associate with someone they knew to be HIV positive. HIV-positive Rwandans may lose their jobs and be unable to pay their rent as a result of their disease. Fear of HIV causes some patients' families to abandon them as the disease reaches its end stages. There are nascent local associations of persons infected or affected by HIV/AIDS throughout the country, but these groups are only loosely organized and inadequately funded to provide the necessary education, outreach and support.

AIDS is having a devastating impact on the Rwandan economy. According to the Poverty Reduction Strategy Paper (PRSP), families are earning less and spending more on health care, leaving them less to spend on food, water, education, and other necessities. The nation's economic productivity rate, damaged during the war, has struggled to recover. AIDS patients are filling Rwanda's hospitals, overtaxing their resources. According to a recent analysis done for the World Bank, 60 percent of all hospital beds are occupied by AIDS patients. The percentage of the health budget consumed by paying for costly hospital care cuts deeply into available resources for more appropriate outpatient management of HIV disease and other health services.

According to the National Committee for the Fight Against AIDS (CNLS), AIDS is resulting in the loss of significant numbers of teachers, civil servants, and health care professionals. Future generations are also being affected, as young children of AIDS patients are often inadequately nurtured, and are often unable to attend school. Older children of AIDS patients often leave home, voluntarily or otherwise, because their families cannot support them or send them to school. Homelessness, already a serious problem after the genocide, has been worsened by the disease.

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## The Rwandan Health Care System

### Overview

Total spending on health care in Rwanda was \$26.2M in 2002, according to government figures. Of this total, the Government of Rwanda (GOR) spent \$7.9M (30%), while external sources, including bilateral and multilateral organizations and non-governmental organizations (NGOs), contributed \$18.3M (70%). Patients are estimated to have contributed an additional \$4-5M of funds into the system in 2002. The health sector receives approximately 4.5 percent of the national budget.

The majority of Rwandans access health care services via the public health system, which is a three-tiered structure of 366 health centers, 33 district hospitals and five reference hospitals. Approximately 38 percent of these facilities are co-funded by the government and church sources; these facilities, known as "Agrée" facilities, are among the best-equipped and highest quality. Caritas is a national organization that oversees the health care programs and training schools sponsored by the Catholic Church. Protestant church organizations also fund health centers and hospitals.

Since the Rwandan government decentralized the public health care system in 1997, patient fees have funded drug, medical supply and equipment requirements at local health centers and some district hospitals. The Ministry of Health (MINISANTE) funds most health care worker salaries, though in many facilities patient fees and external sources are required to fill personnel funding gaps. Hospitals and health centers operating under the Agrée system receive funds from churches to assist in paying for equipment, medicines, and health personnel.

## **Personnel**

Approximately 300 physicians are currently registered in Rwanda, although many are employed in positions of management and administration. The one medical school, at the University of Butare, will graduate ninety doctors this year. There are currently an estimated 3,000 nurses, educated in twenty-six nursing schools. In addition, approximately 11,000 volunteer community health workers supplement the system at the community level.

The base salary for a doctor is approximately \$100-\$260 per month, although most doctors receive additional benefits such as public housing or the use of a telephone. Private and NGO doctors in Kigali often make \$1,000 per month or more, providing a strong incentive for doctors to work outside the public health system. Parliament is considering a law to increase salaries and incentives for doctors in rural areas, and salaries are expected to rise in 2003.

## **Patient Services**

Health centers provide antenatal care, basic preventive and some curative care, and a limited panel of laboratory tests, with some also dispensing certain essential drugs. Approximately one third have maternity facilities. Health centers vary widely in size, but most are operated by staffs of 3-4 nurses, 1-2 laboratory techs, and, in some cases, counselors and/or midwives. Health centers do not have physicians on staff, though a MINISANTE decentralization plan includes the addition of physicians to the centers. Health centers also oversee community health volunteers, or animateurs, who work in the community at the local level. Each health center has a catchment area of about 25,000 people.

Patients in need of advanced medical care or laboratory services are referred by the health centers to one of Rwanda's 33 district hospitals distributed nearly one-for-one in Rwanda's 39 health districts. District hospitals have on average 100 beds and offer expanded services, including maternity. Complex or critically ill patients may be referred on to one of Rwanda's five reference hospitals, which are capable of more extensive diagnostic evaluations, surgical procedures and treatment. In general, the majority of health care in Rwanda is delivered on an episodic basis, without a continuity of primary care. An exception is the National TB program, which is well organized for patient follow-up. Currently, 145 health centers and district hospitals are TB control centers, according to a recent World Bank report.

A small percentage of Rwandans—primarily the most affluent—receive care through private health clinics located mostly in Kigali. Many Rwandans continue to rely on traditional healers, turning to the government health system only after traditional medicine fails. In 1994, there were approximately 5,000 healers around the country. Most healers are part of a tradition passed down within families. Some have received one or two weeks of health training, but many continue to engage in high-risk practices such as scarification.

Patients typically travel to health facilities on foot or by bus. Individuals unable to walk are often carried in litters. While distances are relatively short to health centers, the prevalence of hills and the lack of good roads can make traveling arduous, especially for ill, pregnant, and malnourished Rwandans.

Each health district maintains an ambulance for transporting patients in need of advanced medical care to the district hospital. In practice, many health district ambulances are not operational, and sometimes fuel proves prohibitively expensive.

Only 20 percent of births occur in maternities; the rest take place at home, often assisted by traditional birth attendants (TBAs). Some groups of TBAs have received HIV/AIDS training and use delivery kits that reduce the likelihood of HIV transmission during delivery, but these practices are not

widespread. Outreach to and training of TBAs in both safe delivery practices and universal precautions is essential, as Rwanda has one of the highest maternal mortality rates in the world.

## Drug Provisioning and Distribution

Patients acquire basic drugs at health facilities, which have small dispensaries, and more sophisticated drugs at district and reference hospital pharmacies. Dispensaries require a prescription, given only after a paid consultation; private pharmacies dispense drugs without a prescription. Both dispensaries and pharmacies are usually run by nurses rather than pharmacists, as there are very few formally trained pharmacists in the Rwandan public health system. Private pharmacies, often small shops or marketplace stands, are located throughout the country, and offer varying degrees of medical expertise; some are run by individuals with no expertise or training. Many patients receive consultations and medicines at the pharmacy without first visiting a health clinic.

CAMERWA, the national drug distribution organization, orders and distributes 80 percent of medications in Rwanda. It also distributes medical supplies such as syringes, gauze, etc. Health centers pool their orders at the health district level. The health district places the orders, and then picks them up at CAMERWA; no transportation or distribution is provided. CAMERWA sells the drugs to the health district for cost plus a small fee. Health facility dispensaries sell patients drugs for cost +10 percent. Because health facilities must wait until they have sufficient funds to purchase new drugs and consumables, many suffer shortages.

## Economics

The implementation of a patient fee system in 1997 has dramatically increased the cost of care to ordinary Rwandans. Rwandans unable to afford health care or medications can apply for waivers, which may be granted based on need, or they may make arrangements to pay over time. Many elect to save costs by visiting traditional healers and by using private pharmacies, which, unlike health facility dispensaries, do not require expensively obtained prescriptions issued by a health care professional.

Out-of-pocket patient fees have led to reduced utilization of public health facilities by an estimated 25-50 percent. In poorer health districts, low patient utilization has compounded resource shortfalls. As a result, health centers without supplementary Agrée system or NGO support typically lack basic medical equipment and supplies, drugs and consumables and functioning communication systems. New pilot projects supported by the GOR and aid agencies are creating quasi-health insurance plans called *mutuelles*, which seek to increase health care access and further stabilize the local resource base for health services.

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## Country Response to HIV/AIDS

### Overview

The landscape of government and external organizations providing or planning to provide HIV/AIDS prevention, treatment and care is complex and fluid. The Government of Rwanda has recently appointed two new officials with mandates to provide HIV/AIDS leadership and coordination. The Treatment and Research AIDS Center (TRAC) within MINISANTE continues to define treatment and care standards and provide training and certification in HIV/AIDS care provision.

Rwanda has welcomed a diversity of bilateral, multilateral and NGO partners into the country to provide resources, direct assistance and capacity building around HIV/AIDS. The government has secured significant funds from the Global Fund to Fight AIDS, Tuberculosis and Malaria and the World Bank's Multi-Country HIV/AIDS Program for Africa (MAP). Excluding the Global Fund and MAP

funds, USAID currently is the largest funder of HIV/AIDS programs in Rwanda, spending \$6.96 million in FY 2002, with plans to spend up to \$10M in 2003. USAID spending may rise further with the Bush Administration's February 2003 pledge to increase spending on HIV/AIDS in Africa and the Caribbean. Annex XIV contains a matrix of all bilateral, multilateral, and NGO support for HIV/AIDS programs in Rwanda.

To date, the response to HIV/AIDS has focused on prevention interventions for high risk groups such as youth and, more recently, pregnant women. Prevention campaigns, though less extensive than in other countries, have provided information and education about HIV transmission, safer sex practices, and condom usage. Comprehensive treatment programs, particularly those providing antiretroviral therapy (ARVs), have been limited to several recently initiated pilot programs.

## **Centralized Leadership**

### ***Office of the President***

President Kagame has provided strong leadership and made the HIV/AIDS epidemic a priority for his government. The President discusses the epidemic in all public speeches, and has welcomed people living with AIDS at major functions. At his direction, the Government of Rwanda submitted applications to the Global Fund for AIDS, TB and Malaria in both the first and second rounds, as well as a successful application to the World Bank MAP Program. The President has also overseen the implementation of a national strategic plan for HIV/AIDS, a youth sector strategic plan, and HIV/AIDS programs in the Ministry of Education, Ministry of Defense, Ministry of Gender and Ministry of Health.

### ***Office of the First Lady***

Madame Jeannette Kagame has been a champion for AIDS issues throughout Africa, founding the African First Ladies Alliance Against AIDS. Her office worked with MINISANTE to develop PACFA, a program of HIV/AIDS services including the Rwandan Family Package Initiative, which builds upon the PMTCT intervention. The Family Package provides care for the entire family, including treatment with ARVs, prevention and treatment of OIs and STIs, psychosocial support, home-based care, nutritional assistance and other support services including microcredit projects to enhance family economic stability. Madame Kagame speaks about AIDS frequently, and participates in fund-raising activities for PLWHA groups.

### ***Office of the Minister of State for HIV/AIDS and Other Large Epidemics***

A new Minister of State for HIV/AIDS and Other Large Epidemics was appointed within MINISANTE in December 2002. The Minister's mandate is to develop a comprehensive response to HIV/AIDS that includes an effective national program for treatment and care. The Minister of State is directly responsible for the work of TRAC, and oversees the planning and delivery of HIV-related health care and laboratory services, the training of health care professionals, and HIV-related research. In his secondary role as Vice President of the Board of CNLS, the Minister is responsible for a multisectoral response to HIV/AIDS in Rwanda, which includes prevention, education and care. Together with the Executive Secretary of the CNLS, the Minister of State will create and oversee the development of a Program Management Unit (PMU) that will coordinate government and externally funded HIV/AIDS programs.

### ***MINISANTE/Treatment and Research AIDS Center (TRAC)***

The Ministry of Health's Treatment and Research AIDS Center (TRAC) is responsible for all HIV/AIDS surveillance in the country, and is the focal point for the development of clinical guidelines for the treatment of HIV/AIDS and related diseases in Rwanda. TRAC oversees the quality assurance of HIV testing done in health centers and hospitals, and certifies doctors to provide ARV therapy. It also



provides training for laboratory personnel in existing VCT and PMTCT centers. TRAC is the only institution with the capability to perform CD4 cell counts and viral load measurements in Rwanda.

### ***National Committee for the Fight Against AIDS (CNLS)***

CNLS is mandated to coordinate national HIV/AIDS activities, develop all national AIDS policy and strategic planning, oversee monitoring and evaluation programs, mobilize all sectors of the government, and promote and oversee community and social mobilization. CNLS is currently undergoing reorganization under its new leader. CNLS also oversees the CPLS (Provincial AIDS Control Program) and the CDLS (District AIDS Control Program). This organizational structure enables CNLS to both receive and disseminate information rapidly.

## **Prevention**

Voluntary counseling and testing programs (VCT) now exist in 34 sites around the country so that persons can learn their HIV status. The majority of VCT sites are funded by external sources such as USAID (which funds Family Health International (FHI)-IMPACT), Médecins sans Frontières – Belgium, Population Services International (PSI), WHO, and Cooperation Francaise. The number of VCT sites is expected to increase markedly to 117 over the next three years, with resources from the Global Fund I award. Most sites employ three counselors, each of whom provides group counseling sessions and sees approximately ten clients per day. Programs to prevent mother-to-child transmission (PMTCT) have been implemented in 34 sites, 14 of which are co-located with VCT sites. Funds from the Global Fund, World Bank, USAID/Impact and PAF will bring the total number of PMTCT sites to 160 within three years.

## **Treatment and Care**

The majority of HIV/AIDS treatment and care has been delivered in inpatient hospital settings, where supportive care and treatment for OIs is provided to the extent resources and drugs are available. Rwanda has secured a \$32 million grant from the World Bank's MAP project, of which approximately \$10 million will support treatment and care. The remaining funds will support TRAC and other institutions, expand prevention, VCT and PMTCT programs, and fund community-based projects.

To date, antiretroviral (ARV) therapy has reached only a small proportion of the symptomatic patient population. According to a recent World Bank study, seven primary sites currently provide ARV therapy to approximately 900 patients; more than half of these are receiving care at the Central Hospital of Kigali (CHK). Physicians certified by TRAC to provide ARV therapy total 22.

Three additional ARV programs have begun in 2003, initially targeting a minimum of 1,350 patients. These include a USAID/FHI-Impact project to provide ARV treatment at Kabgayi district hospital and Biryogo health center, a Luxembourg Development-Columbia project in Kicukiro, and an expansion of the joint Pangaea Global AIDS Foundation/PACFA program operating in Kacyiru. The World Bank study notes that these programs all employ a health care facility-based approach to care delivery (vs. a community-based approach), and all except the USAID/FHI-Impact project in Kabgayi are situated in and around Kigali. Annex XIV includes additional details on major HIV/AIDS treatment and care programs underway or planned.

## **Community and Home-Based Care for PLWHA**

A number of organizations in Rwanda (Family Health International/IMPACT, Africare, Médecins Sans Frontières, World Relief and World Vision among them) have begun home-based care programs for PLWHA. A model program at the Biryogo Medical and Social Center in Kigali Ville seeks to provide a comprehensive program of community-based social services, which include home-based care.

MINISANTE has developed guidelines for home-based care, but nearly all of the existing programs are small-scale and relatively new. Home-based care is promising as a solution for some of the challenges of providing care to PLWHA, particularly continuity of monitoring, addressing basic health and hygiene needs, and educating family members about and involving them in patient care.

### **Rwandan Standards of Care (RSCs) for HIV/AIDS**

MINISANTE has developed national protocols, called RSCs, which define the medical management and support services to be provided at each level of the health system. The RSCs will be updated regularly as medical practices, drugs, and treatment capacities change. They will provide an important reference base for all health workers treating HIV patients, and will ensure consistency of care.

Current working RSCs relevant to HIV/AIDS include: Guidelines for the clinical care and therapy for adults and children with HIV; guidelines for the use of ARVs in adults and children (2002), national guidelines for home-based care for persons living with HIV/AIDS (2002); and a manual for HIV/AIDS PMTCT and VCT.

### **Rwandan Strategic Framework for HIV/AIDS Control, 2002-2006**

The Rwandan Strategic Framework for HIV/AIDS Control, 2002-2006 outlines values, guiding principles, strategic orientations and strategic axes central to the fight against HIV/AIDS. The five strategic axes are:

1. Reinforce measures of preventing transmission
2. Strengthen pandemic surveillance
3. Improve the quality of global care of infected and affected people
4. Strengthen measures for poverty reduction and gender mainstreaming in the fight against HIV/AIDS
5. Strengthen the response, promoting partnership and multicultural coordination

This Treatment and Care Plan specifically addresses strategic axes one, three and five.

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## Summary of Key Challenges

- Only a small minority of PLWHA in Rwanda are receiving treatment for their disease
  - Lack of treatment opportunities, lack of awareness about their HIV status, the cultural stigma associated with AIDS, and lack of financial resources, all contribute to the vast majority of PLWHA in Rwanda not receiving treatment and care
  - Less than two percent of PLWHA estimated to need immediate ARV treatment are receiving it
- To provide the needed care, the health care system requires significant expansion and capacity building in key areas:
  - Wide scale provisioning of comprehensive treatment and care services, including ARV therapy
  - Hiring and training of health professionals
  - HIV/AIDS drug provisioning and distribution
  - HIV/AIDS laboratory services
  - Expansion of information and communications technologies (ICT), including patient information systems
- The diversity of HIV/AIDS activities requires strong central-level management in the following areas:
  - Donor and NGO program coordination
  - Services implementation
  - Drugs, laboratory equipment and consumables acquisition
  - Services quality assurance, monitoring and evaluation
  - Continued development of treatment and care models
- Widespread provision of comprehensive HIV/AIDS care will require examination of key health care policies, including
  - The patient fee system, including pricing for HIV-related tests and drugs
  - Health care worker compensation and incentives
  - Centralized vs. decentralized management of health services

# Plan Objectives and Approach

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## Vision

The vision of the HIV/AIDS Treatment and Care Plan is to increase the longevity and improve the quality of life for people living with HIV/AIDS in Rwanda. To achieve this vision, the Plan focuses on the design and delivery of comprehensive treatment and care services, including the provision of antiretroviral drugs (ARVs).

Successful delivery of these services will save lives and improve the quality of life of Rwandan people living with HIV/AIDS. Those in treatment will once again be able to work, to engage fully in family and community life, and to contribute to the building of the Rwandan economy. Additionally, treatment of seropositive Rwandans is expected to slow the rate of new HIV infections. Prevention messages will be central to counseling programs at every level of care, including those involving family members and communities. Improved knowledge about HIV/AIDS among those in treatment will help HIV+ patients protect their partners and their families.

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## Objectives

### Core Objective

The Plan's core operational objective is to develop and deliver standardized, nationally available comprehensive treatment and care services to Rwandans living with HIV/AIDS. Described in detail in the Treatment and Care section, these services include:

1. HIV testing, counseling and clinical staging
2. Services coordination
3. Medical treatment, including ARV drug therapy
4. Clinical monitoring and adherence support
5. Psychosocial care
6. Community and home-based care
7. Ancillary support services (food and nutrition, transportation assistance, social and economic services)
8. Prevention education and counseling

## Patient Reach Targets

The plan aims to reach 380,551 PLWHA in Rwanda within five years:

**Table VIII: Patient Reach Targets**

Treatment Projections	Year 1	Year 2	Cumulative			% Total
			Year 3	Year 4	Year 5	
A) Adult <200 & asymptomatic	3,770	11,775	23,737	37,210	52,280	14%
B) Adult 200-350 & asymptomatic	6,316	20,702	40,733	66,771	96,771	25%
C) Adult 350+ & asymptomatic	11,877	38,705	77,163	126,015	182,761	48%
D) Pediatric <15% asymptomatic	505	1,577	3,125	4,765	6,771	2%
E) Pediatric >15% & asymptomatic	2,777	8,771	17,787	27,328	42,371	11%
<b>Total</b>	<b>25,264</b>	<b>81,350</b>	<b>162,645</b>	<b>264,419</b>	<b>380,551</b>	<b>100%</b>
F) HIV-exposed infant	3,727	11,088	18,726	22,706	28,107	
Est % of PLWHA in treatment	3%	8%	16%	26%	36%	
Total ARV	4,275	13,572	26,562	42,205	57,250	

## Infrastructure Development Objectives

Providing treatment and care services to Rwandan PLWHA will require significant investment in Rwanda's health system infrastructure. Specific objectives, by category, include:

### 1. Human resources development

- a. Over five years, identify and train over 1,790 health care professionals, 11,000 animateurs and 4,000 TBAs to provide HIV/AIDS treatment and care:
  - i. 327 doctors
  - ii. 473+ nurses
  - iii. 433+ lab techs
  - iv. 95+ pharmacy personnel
  - v. 460+ counselors
  - vi. 11,000+ animateurs
  - vii. 4,000 TBAs

### 2. Drugs and consumables acquisition and distribution

- a. Acquire ARV drugs at progressively lower cost through volume purchases and coordination with bilateral and multilateral organizations and NGOs. Cost targets are \$450 per patient per year in Year 1, falling to \$250 per patient per year by Year 5.
- b. Expand CAMERWA's drug distribution infrastructure to make secure, timely deliveries of drugs and consumables to health facilities and the patients they serve, including:
  - i. A distribution system in which drugs are distributed to regional points
  - ii. Physical expansion of the CAMERWA warehouse
  - iii. Enhancement of the CAMERWA inventory management and accounting systems to enable accurate demand forecasting and electronic ordering

### 3. HIV/AIDS laboratory equipment

- a. Expand CD4 and other HIV/AIDS-related laboratory testing capacity to monitor 380,000 patients by Year 5

### 4. Information and communications technology (ICT)

- a. Develop a universal patient information system linking all levels of the health care system over five years

- b. Expand ICT capabilities in reference hospitals, district hospitals and health centers to enable accurate and comprehensive patient record keeping and access to electronic ordering of drugs and consumables

**5. Central and regional health facilities**

- a. Perform needed infrastructural upgrades to existing health care structures, including reference hospitals, district hospitals and health centers

## Management Development Objectives

The Plan includes management capacity building at the central and local government levels. Specific management development objectives include:

- 1. Staffing and training of centralized health management organizations, including MINISANTE and the Office of the Minister of State for HIV/AIDS and Other Large Epidemics, TRAC, and CNLS**
- 2. Staffing and training of local management of HIV/AIDS treatment and care at the provincial and health district levels**
- 3. Refinement of a centralized mechanism for HIV/AIDS funds disbursement that ensures accurate and timely distribution of funds to recipient entities with full transparency and accountability**

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## Values and Principles

Consistent with the Government of Rwanda's *Strategic Framework for HIV/AIDS Control 2002-2006*, the Plan is guided by four key values and principles:

- **Equal access to services.** Treatment will be made available to all Rwandans, regardless of age, gender, religion, occupation, or ethnicity. Further, services will be phased in across all provinces and health districts for equitable access to care.
- **Long-term commitment.** The Plan is designed to treat all Rwandan HIV/AIDS patients over their lifetimes.
- **Strengthening of Rwanda's general health services infrastructure, beyond HIV/AIDS.** Investments in human resource and infrastructure capacity will be structured to benefit not only those directly affected by the disease, but the broad health care system.
- **Financial transparency.** External funds used for the HIV/AIDS Treatment Plan will be accounted for in an open, transparent manner with quarterly reports and semi-annual external audits.

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## Implementation Approach

- **Service integration with existing health infrastructure.** HIV/AIDS treatment and care will be delivered through the existing tiered health care structure. Most patients will be seen at their local health centers, with more sophisticated referral and consultation needs being met at district hospitals and then national reference hospitals, as necessary. This system allows patients to remain close to home, limiting the need for costly and difficult travel, and is consistent with recent Rwandan initiatives to decentralize health care management.
- **Community mobilization.** Community outreach is critical to the development of successful systems of care that reach and engage persons living with HIV and others at high risk for HIV. Communities will help to promote the availability of services and encourage testing, and will be active in treatment monitoring, adherence support and many other aspects of home and community-based care. The Plan integrates support for associations providing psychosocial and other support for persons living with HIV/AIDS, support for home-based care programs, income-generating activities and food-security initiatives, and training and support for community health workers. These services will be responsive to how patients live within their families and communities.
- **Linkage between treatment and care and prevention.** The Plan aims to slow the rate of new HIV infection by extending VCT and PMTCT services to all Rwandans, and through the powerful prevention impact of widespread treatment, including antiretroviral medications. As services scale up to treat increasing numbers of Rwandans, prevention messages, education and counseling will be central to every level of care.
- **Procurement economies of scale.** The high cost of antiretroviral drugs has been a significant barrier to providing affordable AIDS treatment in Rwanda. The annual cost for ARV therapy is far beyond the reach of the vast majority of Rwandans. To achieve the lowest possible cost for ARVs, the government of Rwanda is working with the William J. Clinton Foundation (WJCF) and other groups to pool its drug purchases with those of other nations. The objective is to negotiate progressively lower costs of ARVs over the five initial years of the Plan, from approximately \$450 to \$250 per patient per year. In addition, the GOR and WJCF will explore purchasing economies for other products, including laboratory equipment and reagents, and information and communications systems.
- **Rapid scale-up and iterative learning based on “Collaboratives” model.** The Plan will seek to make services available as quickly and as broadly as possible by integrating rapid learning and iterative treatment improvements into the scaling up process. Using this “collaborative” approach, health facilities (“teams”) selected to implement the plan in the first 6-18 months will test new implementation approaches on a small scale and quickly share results. Teams learn from each others’ successes and failures. Learning is expected to be rapid and results are expected to improve quickly as successful treatment and care models are expanded.

# Treatment and Care System

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## Overview

The Plan envisions HIV/AIDS services integrated into the health care system and made available at all health centers and hospitals. Where voluntary counseling and testing (VCT) programs currently exist in the public health infrastructure, additional treatment and care services will be added. Similarly, existing programs targeting the prevention of mother-to-child transmission (PMTCT) will be joined with treatment and care services. The delivery of care and services at all levels will be guided by the standards of care developed by MINISANTE.

Most patients will access HIV/AIDS services at one of the 366 health centers, though patients identified as HIV+ in hospitals will be able to begin treatment there, with referral back to their local health centers when their health has improved. Patients requiring advanced treatment, care or laboratory services will be referred from health centers to district or reference hospitals, as needed. To encourage Rwandans to seek testing and treatment, CNLS will coordinate education, communication and outreach programs. These programs will work against stigmatization and discrimination fears that might inhibit participation.

Primary components of the treatment and care model include:

- HIV testing, counseling and clinical staging
- Services coordination
- Medical treatment, including ARV drug therapy
- Clinical monitoring and adherence support
- Psychosocial care
- Community and home-based care
- Ancillary support services (food and nutrition, transportation assistance, social and economic services)
- Prevention education and counseling

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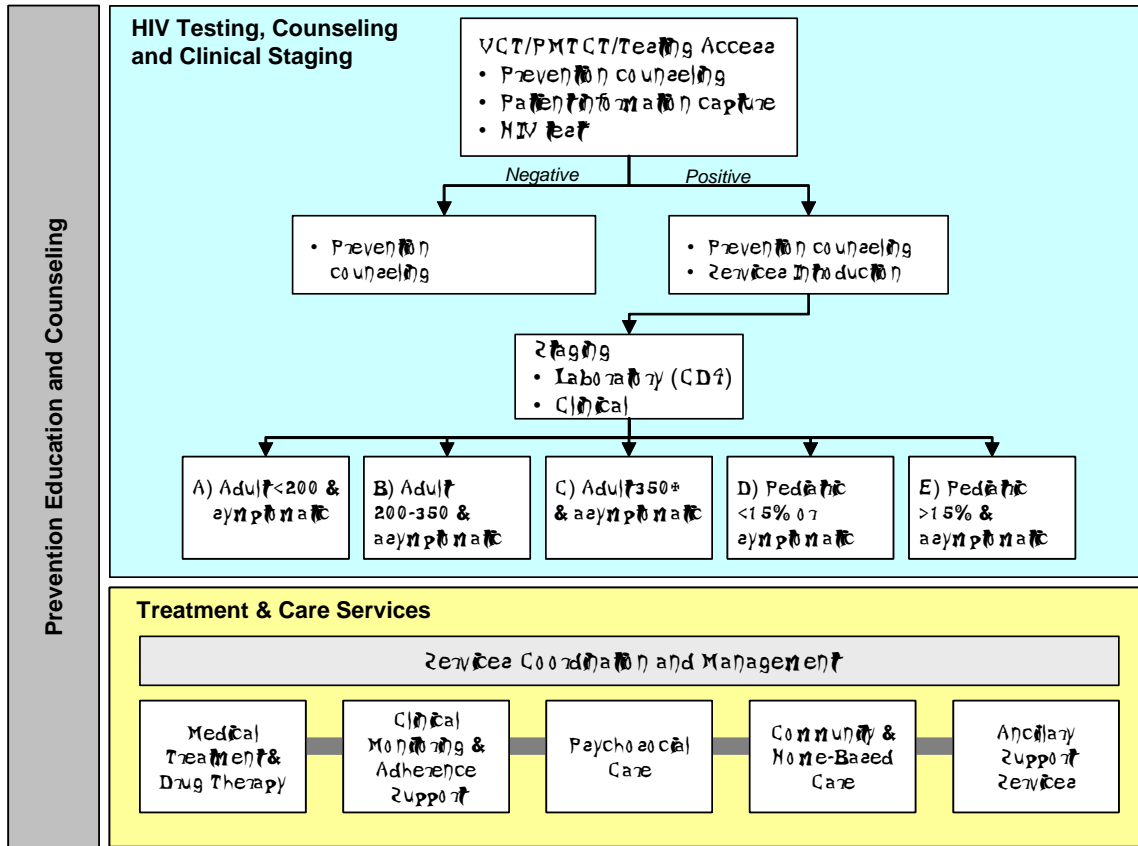
## HIV Testing, Counseling and Clinical Staging

For most patients, voluntary counseling and testing will provide the primary access to HIV/AIDS services. VCT, performed by nurses and counselors, will include pre- and post-test counseling (group and individual), HIV rapid tests, and, for HIV positive individuals, confirmatory tests as necessary. HIV positive patients will undergo a staging evaluation, including a CD4 cell count, and will be segmented into one of five categories according to stage of infection. (A sixth category, infants exposed to HIV, will be monitored until their serostatus is known.) HIV positive pregnant women may fall into any of the three adult categories. They will receive the same services as other seropositive adults, with additional interventions to reduce mother-to-child transmission, as defined by Rwandan standards of care.



Figure I below describes the flow of patients through the treatment and care system:

**Figure I: Treatment and Care System**



\*HIV-exposed infants monitored with DNA/PCR until serostatus determined

## Treatment and Care Services

### Services Coordination and Management

Care coordinators will oversee and coordinate each patient's contact with the comprehensive treatment and care system. Coordinators, who may be nurses or counselors, will keep patient files current, and, with doctor input, make appropriate decisions about the care and services for each patient. Care coordinators will interact with various providers, and formal and informal health care organizations to ensure delivery of services to patients.

### Medical Treatment and Drug Therapy

Primary care for HIV infection includes ongoing medical management of clinical conditions associated with HIV infection, including the prophylaxis and treatment of opportunistic infections including TB, and STIs, as appropriate. Treatment and care also includes ARV therapy for the estimated 84,000 Rwandans who are suffering from AIDS (defined by having a CD4 count under 200 or otherwise demonstrating AIDS symptoms), and appropriate consultation with and referral to specialists at district and reference hospitals as required. Management of common symptoms and side effects of HIV disease

and its treatment are also central to improving the quality of life for HIV+ patients. Provision of nevirapine to HIV+ pregnant women and their newborn infants is the standard care, along with provision of infant formula to HIV+ new mothers who wish to avoid breastfeeding.

### **Clinical Monitoring and Adherence Support**

Doctors and nurses will monitor the clinical status of HIV/AIDS patients according to protocols provided in the Rwandan standards of care. For patients on antiretroviral therapies and prophylactic regimens, close attention will be paid to development of side effects and drug toxicities that may require medication adjustments. The immune status of all HIV+ patients will be monitored by a CD4 count every six months. Adherence to drug regimens will be monitored closely as a combined effort of health professionals at the health care facility, animateurs, family members, and PLWHA or other trusted friends in the community.

### **Psychosocial Care**

The diagnosis of HIV infection signals a fatal disease associated with suffering and discrimination, particularly in societies where stigma is acute. Psychosocial support, both through group counseling sessions, individual counseling, and community-based support through associations of PLWHA, will be provided as a central component of expanded treatment and care. The needs of orphaned and unaccompanied children merit particular programmatic focus, working with caregiver adults and community organizations that provide outreach and services to these children.

### **Community and Home-Based Care**

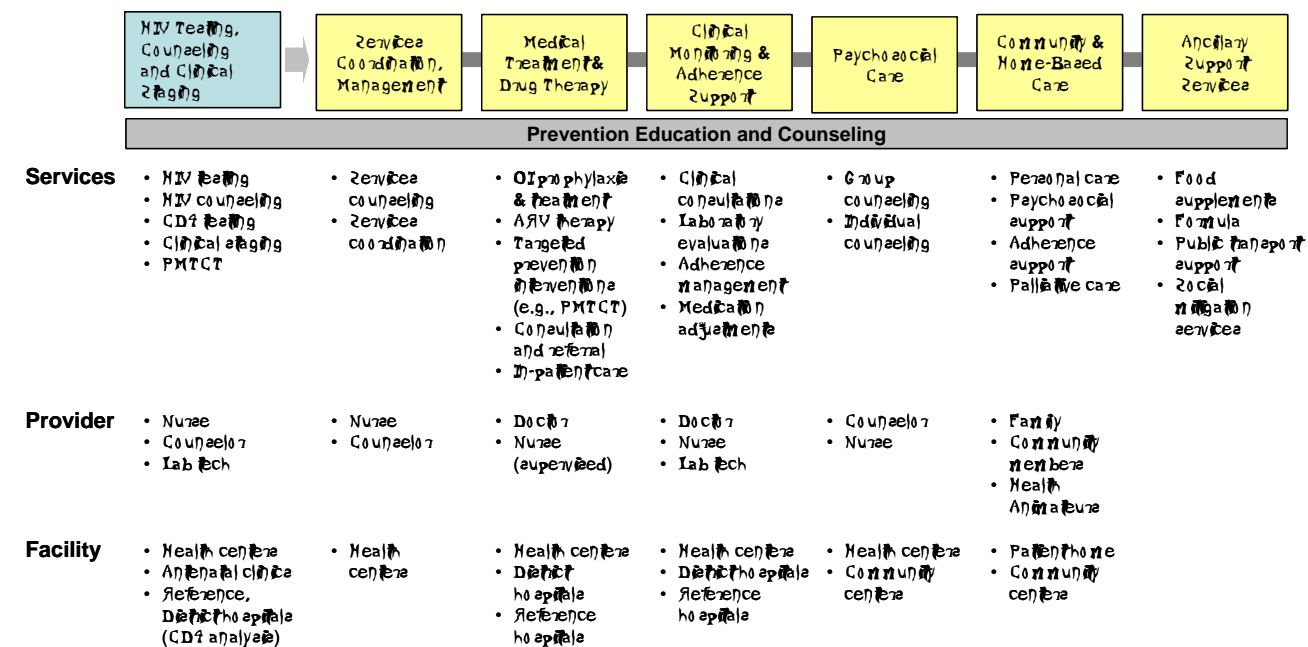
Community and home-based care systems will provide a range of health and social services to PLWHA, reinforce prevention messages, strengthen links among health care providers, communities and PLWHA, and support adherence with treatment regimes. Provided by animateurs and by PLWHA and other community groups, specific services will include personal care, psychosocial support, adherence support and palliative care. Services will be provided, in patients' homes, in health centers, and in community centers, as appropriate.

### **Ancillary Support Services**

Ancillary support services include the provision of food, infant formula, transportation and economic assistance as required for the success of medical treatment. The disease process of HIV infection and the challenges of taking certain medications require particular attention to issues of food intake and nutritional status. Fifty percent of Rwandan PLWHA are estimated to need some form of food assistance; 20% are already receiving some form of food assistance through existing programs, leaving 30% of PLWHA unserved. Guidance around the provision of food assistance to patients should be made locally at the health center level, with health care providers working closely with health center Health Committees. Priority is given to the most gravely ill patients and those on medication regimens with food requirements who cannot afford or access food. Additionally, all seropositive mothers will be offered infant formula, though the plan estimates that only 30% of seropositive mothers will elect to exclusively use formula.

Figure II below summarizes primary treatment and care services, the health care professionals and volunteers who will provide them, and the location of service delivery. Please see Annex XI for services targeted for each specific patient group, and Annex XII for assumptions on staffing needs by patient group.

**Figure II: Treatment and Care Services**



## Prevention Education and Counseling

Prevention counseling is a key element of the routine care provided to all patients with HIV infection. At the outset, VCT and PMTCT programs incorporate prevention information as part of pre- and post-test counseling. Once patients are in care, repeated interaction with trusted providers supports targeted discussion of how to avoid transmission of the virus to family, friends and partners. Misinformation about HIV acquisition is still widespread, and counselors and providers have an important role in discussing correct information with patients under their care. Patients will also be encouraged to have their family members and partners seek HIV tests, with careful attention given to confidentiality issues.

Care partners in the community, including animators, associations of PLWHAs and home-care providers all have roles in carrying prevention messages forward into homes and community settings/activities. Providers of care in the home can do a great deal to minimize fear and stigma surrounding HIV infection, and can provide and reinforce accurate information. Together, these mechanisms ensure that persons living with HIV will receive ongoing information, care and support to minimize the risk of passing on the virus to others.

## Patient Groups Requiring Specialized Treatment and Care

In addition to routine monitoring and care for HIV disease, several patient populations have specific care-related needs. Many women receive an initial diagnosis of HIV infection at the time they enter prenatal care. In women with advanced HIV infection, the decision to use antiretroviral agents during pregnancy must be carefully discussed, with close follow-up of patients choosing ARVs. Measures to

reduce the risk of HIV transmission should also be employed by health care providers or traditional birth attendants at the time of delivery, including administration of nevirapine to the mother and infant.

Infants born to HIV+ mothers require follow-up and specialized laboratory evaluation with DNA/PCR until their HIV serostatus is confirmed. All HIV+ mothers are counseled on the risk of transmission through breast milk, and encouraged to accept exclusive use of formula for their infants. Accurate information to reduce the risk of household transmission of HIV is important to review for all families with an affected child or family member.

Victims of sexual assault and health care workers with potential occupational exposures to HIV are to be offered post-exposure prophylaxis according to the Rwandan standards of care. Antiretroviral therapy with a 2- or 3-drug combination should be instituted within 4 to 48 hours of the incident and continued for 1 month in persons who were HIV negative at the time of exposure. Follow-up laboratory tests to determine if HIV infection has occurred are done at three and six months.

The health care and psychosocial needs of unaccompanied HIV+ children, particularly orphans, can be extraordinary. Adult guidance is commonly required to follow treatment regimens, ensure adequate nutrition, clothing and shelter, and protect children from abuse and forced sexual behaviors as a means of economic survival. A number of NGOs, private and religious organizations are supporting outreach and services to orphaned children; these services, and community mobilization and empowerment to address the needs of orphaned and unaccompanied children, are to be integrated with the care provided under this Plan.

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## Information, Education and Communication (IEC)

The HIV/AIDS Treatment and Care Plan will require information, education and communication (IEC) activities at the national, district and community levels. Media messages and materials regarding the benefits of testing and the availability of treatment will be widely available and integrated into every level of the health care system, including traditional healers and birth attendants. Specific IEC objectives will be to:

- Mobilize Rwandans to access available HIV/AIDS testing, treatment and care
- Fight against stigma and discrimination that might deter Rwandans from seeking care
- Manage expectations about service availability as services are scaled up
- Mobilize community groups and associations to assist in care delivery
- Promote prevention education and offer prevention counseling to patients in care

CNLS will coordinate national-level IEC activities and development of materials to mobilize participation in, and support for, the treatment and care services outlined in the Plan. Additionally, each health district will be allocated discretionary funds to be used for local support initiatives, including IEC. These funds will be used to support community and PLWHA associations that are already organized to reach community members with key messages and support services.

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## Patient Fees

The high cost of ARV therapy, in particular, puts the cost of treatment out of reach for the vast majority of Rwandan HIV/AIDS patients. Further, significant fees are likely to discourage Rwandans

from seeking treatment, weakening the program's impact. However, it is widely believed in Rwanda that charging at least a nominal fee for services and medications will encourage individual responsibility and foster community participation. Therefore, the plan envisions the provision of services and drugs on a sliding scale fee schedule established by MINISANTE. Patient fees collected will be used to support mutuelles and HIV/AIDS services in the patients' communities. Recognizing that there is an existing patient fee system in place, the Government of Rwanda will assess the need for any specific or system-wide reforms required to mitigate any adverse impact freely available HIV/AIDS services might have on the health care system.

# Infrastructure Development

## Introduction

The plan aims to provide treatment and care nationwide to approximately 380,000 PLWHA within a period of five years. Delivering these services will require development of the Rwandan health care infrastructure in the following six areas:

- Increased medical personnel for HIV/AIDS treatment and care
- Expanded and coordinated HIV/AIDS health care provider training
- Revised distribution system for drugs and consumables
- Expanded availability of HIV/AIDS laboratory equipment
- Improved information and communications technology (ICT) systems
- Improved central and regional health facilities

## HIV/AIDS Medical Personnel

### Staffing Requirements

The Plan calls for significant additions of medical and supervisory staff, based on expected staff-patient ratios developed by MINISANTE and external HIV/AIDS experts. Based on patient projections for the first year, 57 doctors will be required to treat and monitor HIV/AIDS patients, including approximately 20 doctors for symptomatic adults and children on ARVs. Projections are based on a treatment and care model estimating patient visits and time per visit.

Because new medical personnel will likely also engage in care unrelated to HIV/AIDS, the Plan estimates doctor and nurse requirements using a 40-hour week. In practice, doctors and nurses are likely to work a total of 60 hours per week including all HIV/AIDS and non-HIV/AIDS care. The following table projects medical personnel requirements over a five-year period, after which it is expected that approximately 61% of all PLWHA will be in treatment:

**Table IX: Medical Personnel Required for Treatment and Care**

Medical Personnel	Cumulative					Total
	Year 1	Year 2	Year 3	Year 4	Year 5	
Doctors	31	85	151	227	307	307
Reference doctors	20	25	25	25	25	25
Nurses	37	115	217	338	473	473
Lab Technicians	73	176	277	372	465	465
Specialized lab Technicians	15	30	45	60	68	68
Pharmacy personnel	32	67	95	125	155	155
Counselors	38	111	210	327	461	461
<b>Subtotal</b>	<b>247</b>	<b>576</b>	<b>962</b>	<b>1,367</b>	<b>1,794</b>	<b>1,794</b>
Annual Average	3,667	7,333	11,000	11,000	11,000	11,000

### Physician and Other Health Care Professional Compensation

The Plan proposes a review of health care worker compensation levels to encourage greater numbers of practicing and graduating health care professionals, particularly physicians, to work in the public health

system. The proposed compensation review would evaluate base salaries, and non-cash compensation and incentives that may be required to achieve staffing requirements outlined in this plan. The Plan's budget includes funds for physicians inclusive of salaries, incentives and non-cash compensation.

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## HIV/AIDS Health Care Provider Training

### Training Approach

Significant training will be required to build the infrastructure of knowledgeable doctors, nurses, pharmacy personnel, laboratory personnel, nutritionists, counselors and providers of social and community-based services needed to meet the needs of PLWHA and their families. The delivery of antiretroviral therapies, in particular, will require specialized training among health professionals, as described below. In this Plan, four primary strategies will be pursued to train care providers:

- Integration of training into existing medical/nursing education programs (e.g. University of Butare, Kigali Health Institute) and other programs training health professionals;
- Development of appropriate curriculum components for each provider group already serving in the health care system, under the coordination of MINISANTE/TRAC and CNLS;
- Use of multiple teaching methods, including a combination of didactic, practical (on site), and train-the-trainer instruction methods as appropriate; and
- Follow-up evaluation of the effectiveness of training initiatives and assessment of unmet training needs, and development of strategies to meet these needs including ongoing consultation mechanisms for physicians and nurses.

### National Training Center

A National Training Center, coordinated through TRAC, will oversee the training for personnel engaged in HIV/AIDS prevention, treatment and care. The Center will work with the specialized Departments within MINISANTE responsible for the training of nurses, pharmacy and laboratory personnel, nutritionists and animateurs, monitoring to ensure that training needs related to HIV/AIDS are adequately met. TRAC will be more directly involved in the implementation of training programs for practicing physicians, including the development of an expert consultation network to support doctors as they gain experience in the use of antiretroviral therapies. To complement the National Training Center, CNLS will focus on training required for prevention, mobilization and outreach programs. Additional information on training activities is provided in Annex XIII.

A Director of Professional Training, supported by two mid-level assistants and an administrative staff person, will oversee the work of the National Training Center. The Director will work closely with the Director of TRAC to implement a program for physician training and clinical consultation support, and with the appropriate divisions of MINISANTE to define standards and programs for nurse training, laboratory quality assurance, and pharmacy services. Evaluation and monitoring functions built into each discipline's training program will report to the National Training Center, providing feedback on the effectiveness of training strategies, identifying of unmet needs in the practice setting, and enabling programmatic adjustments in response.

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## Drugs and Consumables Acquisition and Distribution

Nationwide provision of HIV/AIDS treatment and care will require CAMERWA and MINISANTE to expand the current system for drug acquisition and distribution. Key requirements include:

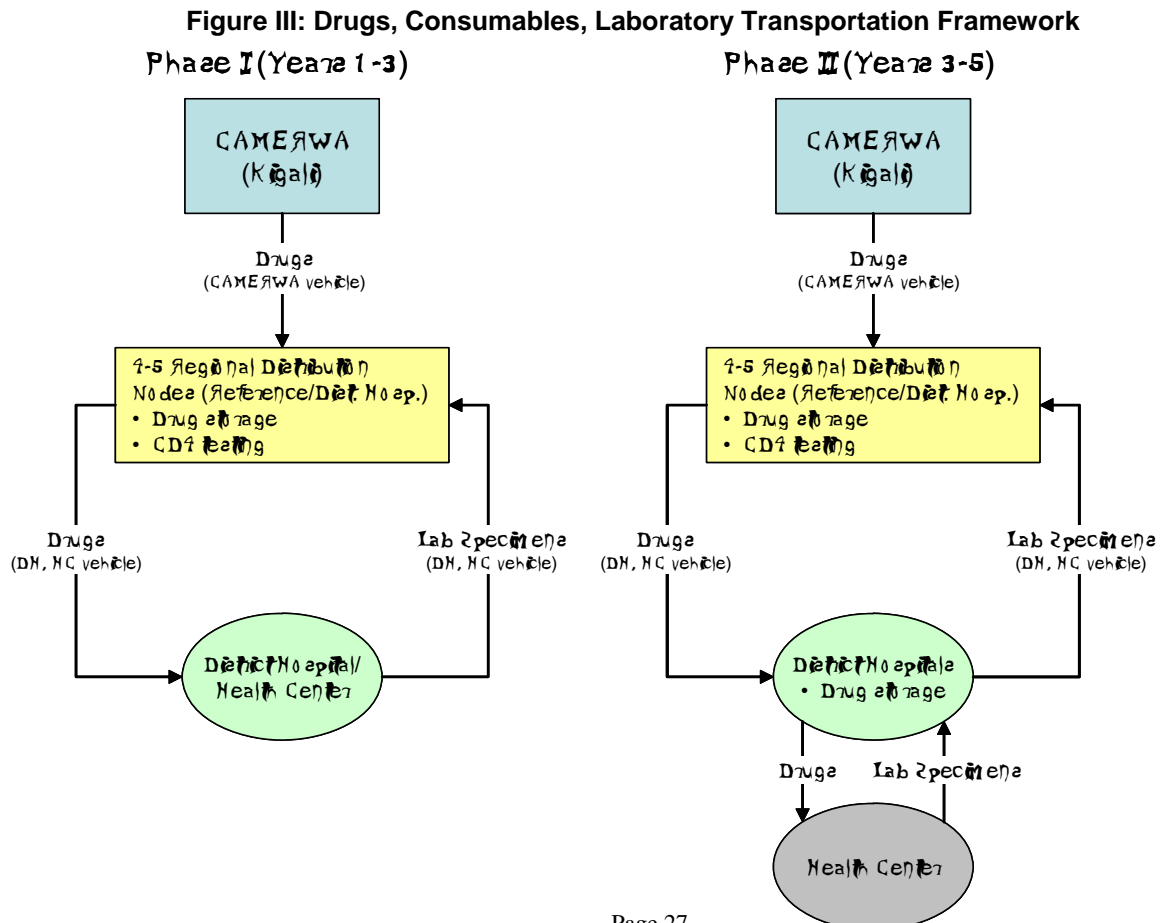
- Coordinated acquisition of low-cost antiretroviral drugs
- A modified distribution system that ensures timely drug and consumables delivery to hospitals and health centers and avoids stock outs
- Expansion of the CAMERWA central warehouse
- An updated inventory management and financial management system
- Revised CAMERWA fee structure

### Coordinated ARV Acquisition

The Plan envisions rapidly declining prices for antiretroviral drugs. In the past year, the cost of ARV drugs in Rwanda was \$1200 per patient per year. The Plan budget forecasts ARV prices of less than one half of that price, or \$450 per patient per year in Year 1, declining to \$250 in Year 5. These prices will be achieved through centralized, coordinated purchasing, with assistance from the Clinton Foundation, which is working with ARV manufacturers to secure volume purchase agreements and develop solutions for quality control, packaging and delivery.

### Modified Drugs and Consumables Distribution System

A modified distribution system to move drugs and supplies from CAMERWA to hospitals, pharmacies and clinics will be coordinated with requirements to move lab specimens from health centers and hospitals to regional CD4 testing laboratories (currently, CAMERWA does not make deliveries). The system relies on co-locating regional drug and consumables drop points with CD4 laboratory test equipment. In phase I of the plan, 4-5 co-located drop point/laboratory sites will be developed at existing reference and/or district hospital facilities. In phase II, additional sites will be developed. Figure III illustrates this framework:





Implementing the modified distribution system will require:

- A small fleet of four-wheel drive delivery vehicles
- Budget for fuel costs, vehicle maintenance and drivers' salaries
- Dedicated storage at district hospitals, as necessary
- Increased physical security at drop points

### **Expansion of the CAMERWA Warehouse**

The CAMERWA warehouse, located in Kacyiru, Kigali, is overburdened and will require physical expansion to accommodate the increased inventory associated with broad HIV/AIDS treatment and care. The addition of a second cold room for the storage of vaccines and drugs requiring refrigeration is also necessary. CAMERWA is in the process of evaluating bids for this project, and expects to select a construction firm by 30 April 2003. Construction costs are estimated to total approximately \$500,000.

### **Integrated CAMERWA Inventory Management and Accounting System**

An updated database for managing inventory, orders, distribution and utilization will replace the old, stand-alone systems, and improve security by tracking ARVs and other drugs through all stages of the order, storage, transportation and delivery process all the way to the patient. Housed and maintained by CAMERWA, the database will include the following features:

- Ports to the CAMERWA ordering and inventory systems, and inventory systems at the district pharmacies
- The ability to generate packing lists and receipts (currently generated by the order database)
- Automatic updating of incoming and outgoing orders (and forecasting need to avert stock-outs)
- Aggregate reporting for site or region on medicines dispensed to patients
- Open system design to allow for future integration with an eventual patient information database

A more sophisticated financial tracking system will enable CAMERWA to extend credit and allow direct payment by third parties.

### **Modified CAMERWA Fee Structure**

The Plan will require the following GOR and CAMERWA policy changes:

- Equitable, consistent pricing of drugs and consumables
- A permanent arrangement to take incoming drugs and supplies directly to CAMERWA, bypassing MAGERWA (“dedouaner à domicile”), to simplify and speed up the importation of ARVs and reduce CAMERWA’s transportation costs
- Elimination of the 4% MAGERWA fee for ARV drugs to reduce program costs

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## **HIV/AIDS Laboratory Equipment**

Scaling up HIV/AIDS treatment and care requires a significant expansion of Rwanda’s laboratory infrastructure. The treatment and care model envisions a laboratory system in which patient specimens are obtained at local health centers and then transported by car to district or reference hospitals as needed. Some simple tests are routinely done at health centers, according to norms published by MINISANTE. Other tests, such as analyses of chemistries and liver function tests are done at the district hospitals. As

noted above in the discussion of drug distribution, health district vehicles used to retrieve drugs and consumables from regional drop points will also be used to deliver patient specimens to reference and district hospitals for laboratory testing.

The primary means of staging and monitoring patients' immune status is CD4 testing, performed twice a year. This will require the purchase of CD4 test machines and associated reagent consumables. Initially, test machines will be located at reference hospitals; over time, machines will be placed at selected district hospitals. The plan envisions the purchase of 10 CD4 machines over five years, at a total cost of approximately \$2.5M.

Additional required laboratory equipment includes equipment for complete blood counts, spectrophotometer machines for chemistry analyses, DNA/PCR test capability, centrifuges and light microscopes. Most laboratory capability will be located at district hospitals, with the exception of centrifuges and light microscopes, which will be onsite at health centers. The need for additional diagnostic radiology equipment at selected district hospitals and reference hospitals is being evaluated.

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## Information and Communication Technology (ICT)

### Patient Information System

Patients are tracked through the system chronologically in facility-based logbooks that, while remarkably functional at a basic level, do not offer continuity of information for patients with complex, ongoing health needs. A patient information database to follow individuals over their lifetimes will facilitate consistency of care for each patient across locations and providers, and improve reporting, quality control and forecasting. A simple database structure, centrally maintained and updated at each district hospital (with data rolled up from the health centers), will enable MINISANTE to track patient outcomes. The database should include tables for:

- Patient name, date of birth, place of residence, and unique identifier
- Diagnosis codes
- Serial visits, with treatment locations, purpose of visits, services and medications provided
- Laboratory and diagnostic test results
- Ancillary and community support referrals

### Central and Regional ICT Funds

The patient information system as well as accounting and management of planned services will require improved computer and communications systems in MINISANTE, TRAC and CAMERWA and in the health districts. The planned ICT model envisions patient record data entry, drug ordering, accounting and management systems all available in the health districts, with centralized data aggregation and analysis. Initially, ICT funds will be used to develop a scalable, open and distributed system architecture, with centralized servers and databases connected to regional systems located in district hospitals and possibly administrative district offices. The Plan envisions the incremental deployment of information systems as health centers gain access to electricity and computer networks.

Regionally allocated ICT funds are also intended for the deployment of additional telephone connectivity among health districts, district hospitals, reference hospitals and central offices at MINISANTE, TRAC and CAMERWA. It is particularly important for the envisioned patient referral system that doctors and nurses at district hospitals and health centers be in direct communication with

reference doctors and specialized laboratory techs. ICT funds will also be available, as needed, for land line, cellular, radio, and computer-based communications appropriate to each district's regional characteristics and current ICT infrastructure.

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## Central and Regional Health Facilities

The Plan includes funds for upgrading central and regional hospitals and health centers. These funds will be disbursed on an as-needed basis to cover necessary improvements only. Improvements may include painting, the provision of electricity (an estimated 30% of health centers do not currently have adequate electricity), beds, desks, storage cabinets, etc. Funds are not intended to be used for the construction of new facilities, but may be used for the expansion of current facilities.

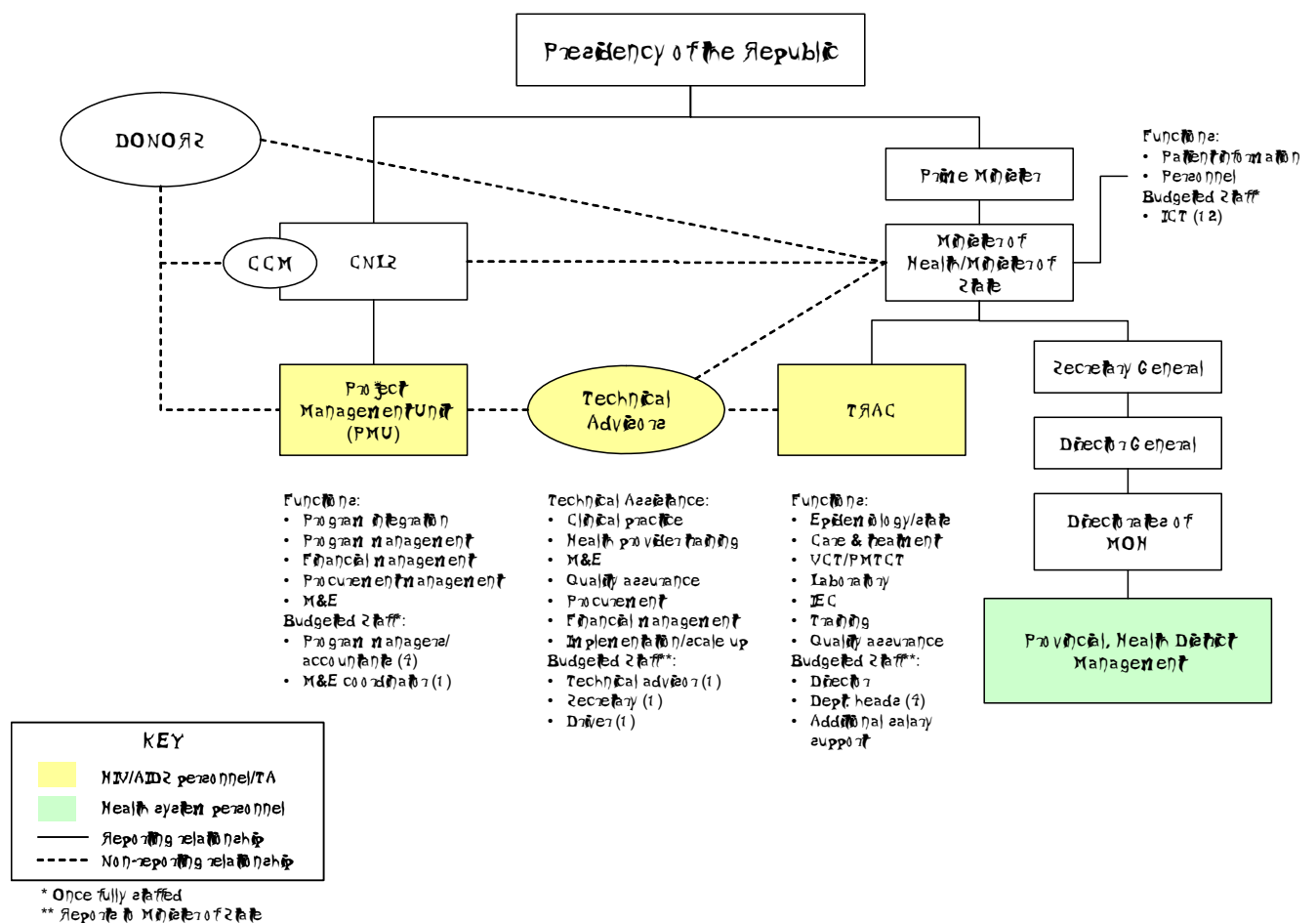
# Management and Administration

## Overview

The Plan envisions HIV/AIDS treatment and care integrated into all levels of Rwanda's central and local government structures, with primary coordination and implementation responsibilities residing in MINISANTE, CNLS and the local health districts. The Plan builds upon existing and planned treatment and care pilot projects, with government-led coordination among bilateral, multilateral and NGO groups working on HIV/AIDS treatment and care in Rwanda. CNLS and the Office of the Minister of State for HIV/AIDS and Other Large Epidemics, working with TRAC, will provide primary program coordination and management through a joint program management unit (PMU). Local management in the health districts will coordinate, and be accountable for, service delivery and quality assurance for treatment and care and laboratory services.

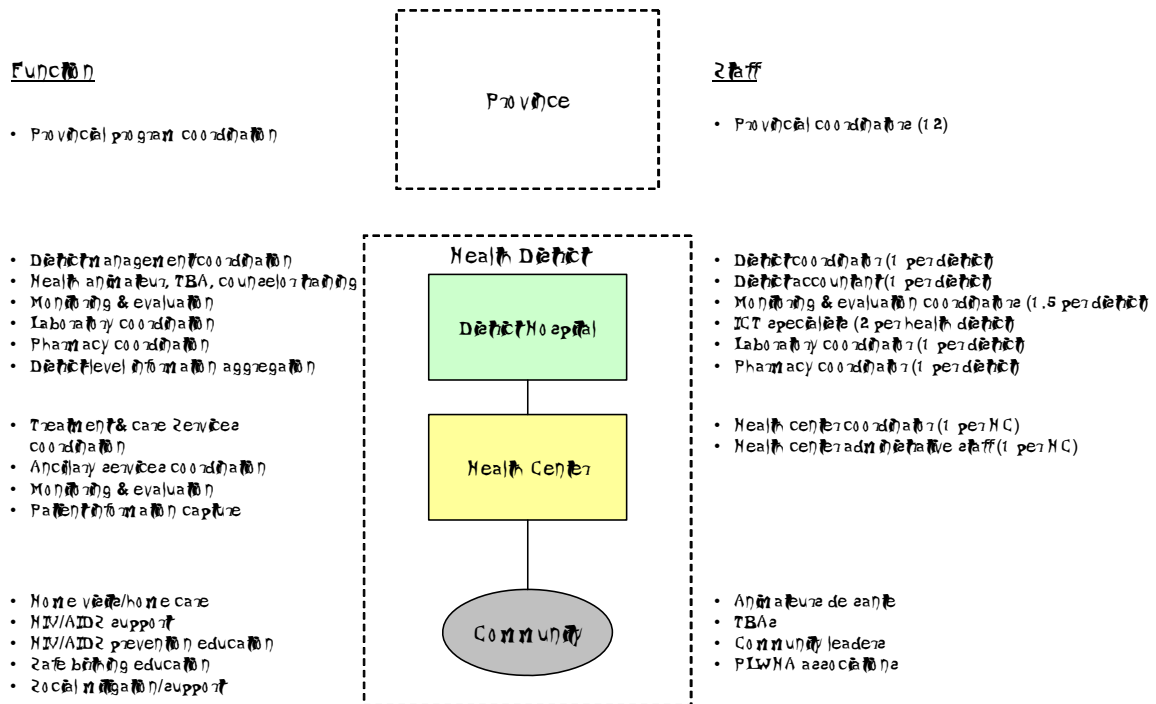
## Central Management

Figure IV: HIV/AIDS Central Management Framework



# Local Management

Figure V: HIV/AIDS Local Management Framework



# Technical Assistance

The William J. Clinton Foundation and other external organizations will provide technical assistance to the Office of the Minister of State, CNLS, the PMU, and to other implementing government organizations as needed. Key areas of technical assistance will include:

- Clinical practice
- Health care provider training
- Monitoring and evaluation
- Quality assurance
- Procurement
- Operational and financial management
- Scaling up treatment

# Scaling Up Treatment

Few developing countries have experience providing comprehensive HIV/AIDS treatment, particularly antiretroviral drugs (ARVs), to large populations of PLWHA. As Rwanda scales up HIV/AIDS treatment, it is imperative that the care provided be effective, safe, ethical and comprehensive.

The first year of treatment is critical, because failure to deliver quality care will result in poor outcomes, and discouragement and resistance from patients, their families, health workers, governments and donors. The challenge is to deliver treatment quickly without compromising quality and safety.

The strategy outlined below (“Collaborative”) is designed to do this by integrating rapid learning and iterative treatment improvements into the deployment process. In a collaborative, participating organizations (“teams”) trial new implementation approaches on a small scale and quickly share results. Teams learn from each others’ successes and failures. Learning is rapid and results improve quickly as successful treatment and care models are rapidly expanded.

## **Organization**

MINISANTE/ TRAC will oversee the implementation of the Collaborative and manage key partners. The Quality Assurance (QA) Unit of the Ministry of Health (MINISANTE) will coordinate day-to-day Collaborative activities. The Clinton Foundation, working through IHI in Boston and the University Research Corporation (URC) of Bethesda, MD, will provide technical assistance in collaborative and health care improvement methods. At the health district level, two local leaders will be assigned to represent the HIV care program in their districts to the Collaborative.

In each health district, an oversight team made up of representatives from each level of care will manage the implementation and ongoing refinement of the treatment and care system. The oversight team’s responsibilities will be to identify, train and guide sub-teams with specific tasks or areas of expertise; develop solutions to implementation challenges as they arise; monitor system performance and evaluate results; and communicate results regularly to other district teams.

## **Implementing Partners**

The organizational partners in the Collaborative, several of which are conducting pilot projects in HIV treatment in Rwanda, are expected to participate in the work of the Collaborative over five years and agree to share results with each other and with TRAC monthly. In addition, partners are expected to provide transportation of staff to meetings, and to support communication costs. Many bilateral, multilateral and NGO aid agencies also provide components of services to be included in the comprehensive continuum of care. The Collaborative will work closely with the Program Management Unit (PMU) in the Office of the Minister of State to maximize engagement of these entities in the collaborative learning process.

## **Site Selection**

In the Rwandan HIV/AIDS Collaborative model, the core collaborating entities (“sites”) are the Rwandan health districts, which form an integrated system of facilities, people and organizations that together deliver comprehensive treatment and care. In addition, the Collaborative will include key centralized organizations, such as CAMERWA, TRAC and organizational units within MINISANTE that oversee clinical guidelines, laboratory services, drug distribution and other infrastructure support.

An initial number of health districts proposed by MINISANTE will participate in the first year of the Collaborative to implement comprehensive HIV/AIDS care and treatment. These districts will include primarily facilities that are currently providing, or plan to provide, VCT, PMTCT or ARVs. First year Collaborative sites will be selected based on their existing or planned provision of HIV/AIDS treatment; their ability to scale rapidly to treat large numbers of patients by the end of the first year; the degree to which they represent a cross-section of the Rwandan population (and therefore provide learning across a variety of care environments); and their access to modes of communication necessary for the functioning of the Collaborative.

Successful expansion of the treatment and care model beyond the first year will require:

- Knowledge transfer from first year sites to new sites in neighboring health districts
- Ongoing technical assistance from TRAC, the MINISANTE QA Unit and IHI/URC to new sites
- Communication links and team meetings between first year and new sites, and among each new group of sites
- Steering Committees in each health district to coordinate site expansion activities and monitor results

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## Monitoring and Evaluation

Monitoring and evaluation activities to assess progress towards achievement of a national system of comprehensive HIV/AIDS care will be conducted at multiple levels. There will be nested evaluation components within all major program areas, such as the development of efficient and secure drug distribution systems, effective training programs for each category of health care worker, and management information systems that address patient care and administrative needs, among others. This component-specific monitoring and evaluation is essential for each program, particularly as it yields rapid feedback to program managers to allow corrective action or new strategies to meet unmet/identified needs.

At the level of the core objective, an evaluation designed to capture the overall impact of this Plan in increasing longevity and improving quality of life for Rwandans living with HIV/AIDS will include a number of process and outcome measures. Quality of care, hospital and clinic utilization patterns, treatment adherence, and patient satisfaction are among the many domains to be included in this evaluation plan. Overlapping requirements for program evaluation in other concurrent initiatives, such as the Global Fund and World Bank MAP program, will be taken into consideration within the PMU, MINISANTE and CNLS to harmonize indicators and methods, and simplify reporting.

MINISANTE will oversee the coordination and implementation of the monitoring and evaluation plan, working very closely with the PMU and CNLS. The Clinton Foundation, working through the Pangaea Global AIDS Foundation, will provide technical assistance in development and implementation of the evaluation plan. One staff position will be created in the Office of the Minister of State for HIV/AIDS and Other Large Epidemics to oversee the development of the monitoring and evaluation plan, and monitor its implementation. A second position created in the PMU will promote coordinated planning of evaluation activities with other ongoing programs, and will receive much of the program data received from Health Districts and other agencies.

Staff positions will also be created in each of the Health Districts to oversee day-to-day activities at the District and health center levels, to respond to questions from onsite coordinators, to quality check and manage data, run preliminary analyses, and submit cleaned data to MINISANTE. Individuals working at the Health District level and health center coordinators will require training in methods and use of evaluation instruments, to ensure high quality data collection and processing at all levels.

# Projected Budget

## Expenses

The total cost to implement the Plan is \$220M over five years. As detailed in the table below, the largest cost is for drugs and consumables, which constitute 52 percent of the budget over five years. ARV therapy and CD4 test reagents are the most significant components of the drugs and consumables category. Average cost per HIV-infected patient decreases from \$825 per patient in Year 1 to \$177 in Year 5, as the patient population increases and infrastructure investments and drug costs decrease.

**Table X: Five-Year Budget Projections**

Projected Expenses													
Medical Staffing	\$	1,301,027	\$	2,811,073	\$	1,718,061	\$	7,211,100	\$	10,130,311	\$	26,317,571	12.0%
Training	\$	1,122,637	\$	1,161,217	\$	1,801,747	\$	1,252,121	\$	1,287,145	\$	6,135,152	3.1%
Drugs & Consumables	\$	1,850,602	\$	13,025,612	\$	22,868,161	\$	32,516,812	\$	11,510,381	\$	111,851,511	52.1%
Transport & Logistics	\$	1,311,311	\$	1,118,172	\$	1,872,521	\$	1,161,015	\$	2,161,665	\$	8,805,017	4.0%
Furniture & Equipment	\$	6,801,270	\$	1,350,121	\$	1,013,721	\$	2,721,015	\$	1,611,175	\$	11,611,135	5.3%
IT/Mobilization	\$	1,200,000	\$	1,320,000	\$	1,161,000	\$	1,636,800	\$	1,811,160	\$	7,161,160	3.3%
Management & Administration	\$	1,253,305	\$	6,281,525	\$	8,316,507	\$	8,523,111	\$	8,713,161	\$	36,256,125	16.5%
<b>Total Expenses</b>	<b>\$</b>	<b>20,851,231</b>	<b>\$</b>	<b>30,767,104</b>	<b>\$</b>	<b>45,302,726</b>	<b>\$</b>	<b>55,985,879</b>	<b>\$</b>	<b>67,371,807</b>	<b>\$</b>	<b>220,278,747</b>	<b>100.0%</b>

Expenses by Recipient													
		Year 1		Year 2		Year 3		Year 4		Year 5		Total	% Total
MINDRANTE/TYAC	\$	6,852,333	\$	10,128,516	\$	11,137,683	\$	16,365,721	\$	11,611,816	\$	67,176,158	30.6%
Health Districts	\$	5,660,782	\$	5,202,131	\$	5,888,121	\$	5,502,170	\$	5,081,811	\$	27,335,017	12.4%
CAMEAWA	\$	5,020,201	\$	11,210,051	\$	11,135,131	\$	27,153,137	\$	35,661,671	\$	11,280,505	5.1%
CNLT	\$	660,000	\$	611,500	\$	611,225	\$	701,186	\$	701,316	\$	3,167,307	1.4%
Food NGOs	\$	650,207	\$	1,115,807	\$	3,113,006	\$	1,015,152	\$	1,811,326	\$	11,153,117	5.1%
M&A Organizations	\$	2,007,705	\$	1,736,015	\$	1,721,211	\$	1,115,505	\$	1,311,707	\$	8,266,261	3.8%
<b>Total</b>	<b>\$</b>	<b>20,851,231</b>	<b>\$</b>	<b>30,767,104</b>	<b>\$</b>	<b>45,302,726</b>	<b>\$</b>	<b>55,985,879</b>	<b>\$</b>	<b>67,371,807</b>	<b>\$</b>	<b>220,278,747</b>	<b>100.0%</b>

Cost/Patient per Year												
		Year 1		Year 2		Year 3		Year 4		Year 5		Average
Medical Staffing	\$	52	\$	35	\$	30	\$	28	\$	27	\$	31
Training	\$	11	\$	18	\$	11	\$	5	\$	3	\$	16
Drugs & Consumables	\$	112	\$	160	\$	111	\$	123	\$	101	\$	115
Transport & Logistics	\$	52	\$	18	\$	12	\$	7	\$	6	\$	11
Furniture & Equipment	\$	261	\$	53	\$	25	\$	10	\$	1	\$	73
IT/Mobilization	\$	17	\$	16	\$	1	\$	6	\$	5	\$	17
Management & Admin	\$	168	\$	77	\$	52	\$	32	\$	23	\$	71
<b>Total</b>	<b>\$</b>	<b>825</b>	<b>\$</b>	<b>378</b>	<b>\$</b>	<b>279</b>	<b>\$</b>	<b>212</b>	<b>\$</b>	<b>177</b>	<b>\$</b>	<b>374</b>

## Budget Structure

The budget is organized horizontally around cost categories such as medical staff, training, drugs, etc., and vertically around six funding recipients, two of which, Food NGOs and M&A (management and administration) may include more than one entity. The budgets for each entity in turn are organized around the same seven horizontal cost categories. Key costs for each recipient funding organization are summarized in Annex III.

## Budget Categories

### Medical Staffing

Medical staff costs include salaries for doctors, nurses, lab techs, counselors and pharmacy personnel. The projected budget for medical staffing is \$26M over five years, accounting for approximately 12 percent of the total budget. Animators, who assist with patient care primarily outside



of health facilities, are volunteers. The Plan assumes that the majority of the required medical staff will be new hires or existing staff repurposed for HIV/AIDS treatment and care. Further, it is assumed that medical staff hired under the plan will work, on average, 60-70 percent of their time on HIV/AIDS care, and the balance on other medical treatment. Annex IV details specific medical staffing plans and assumptions.

## **Training**

Training cost is estimated to be approximately \$7M over five years, or 3.2 percent of the total budget. The training budget includes a fixed cost per training day for each medical professional. It is assumed that for each category of medical professional, there will be a set number of initial training days, followed by annual refresher training days. Training day costs are inclusive of trainer compensation, materials, per diem, travel and facilities. Additionally, the budget includes a fixed training development budget of approximately \$75,000 per year. Annex V includes further details on training assumptions and costs.

## **Drugs and Consumables**

Drugs and consumables is the largest single budget category, at \$114M over five years, or 52 percent of the budget. Key components include drugs, medical supplies, laboratory consumables, food and formula. Drugs constitute the largest category within Drugs and Consumables, accounting for \$48M of the total budget, or 42 percent. Antiretroviral drugs account \$46M or 92 percent of total drug expense, though they decline on a per-patient basis from \$450 to \$250 per year. Laboratory consumables account for \$47M or 42 percent of the Drugs and Consumables budget. They include HIV tests, CD4 reagents and other laboratory tests. CD4 tests, performed on all HIV positive patients every six months, are estimated to cost \$20 per test, and constitute 70 percent of total laboratory costs.

Food and formula is the third largest Drugs and Consumables expense category. As discussed above, the Plan envisions providing food assistance through partner organizations to patients on ARV drugs and their families. 70 percent of these patients are estimated to not need food assistance or be currently receiving it from other sources. Food assistance is estimated to cost approximately \$19 per month per patient and his or her family, inclusive of distribution costs, for either six, 12 or 18 months. Finally, the Plan includes budget for one year of canned formula for an estimated 50-60 percent of treated mothers with HIV-exposed infants. Formula is estimated to cost approximately \$200 per year per mother. Annex VI includes detailed drugs and consumables assumptions.

## **Transportation and Logistics**

Transport and logistics costs total \$8.8M over five years or 4 percent of the total budget. These costs include the purchase and maintenance of vehicles for a) transporting blood specimens between health centers and regional laboratories located in district hospitals and reference hospitals; b) transporting drugs and consumables from CAMERWA to regional drop points, and c) facilitating transportation of central and district coordinators and trainers.

Other transportation and logistics costs include a transportation assistance fund for patients required to travel to regional or central facilities for advanced treatment not available at health centers. The Plan assumes that approximately 25 percent of patients will require such assistance. Finally, the transport and logistics category includes funds for the purchase of bicycles for animateurs, who are critical to extensive community-based outreach and care envisioned in the treatment and care model. Annex VII includes further assumptions on transportation and logistics costs.

## **Facilities and Equipment**

Facilities and equipment represents \$19.6M or 9 percent of the total budget. This budget category includes three sub categories: laboratory equipment; information and communications technology (ICT); and health facilities upgrade funds. Personnel and training associated with these three areas are not included in this budget category, but rather in the Management and Administration budgets (personnel) and the training budget.

At \$2.3M, CD4 test equipment is the largest single budget item in the laboratory equipment category. Other laboratory equipment, such as spectrophotometers, radiology equipment, etc. is budgeted for some facilities, based on need. (Consumables associated with these machines, such as CD4 reagents, are included in the drugs and consumables budget.)

ICT expenditures total approximately \$8.4M over five years, and include a central information system (hardware and software) and general funds for ICT upgrades as needed at regional facilities. The Plan does not attempt to cover the total cost for ICT for the public health system; rather, it seeks to make targeted investments critical to ensure accurate patient record-keeping; efficient drug ordering and inventory management, and a baseline level of communications among medical professionals. The most significant single investment is for a patient information system, which is projected to cost nearly \$2M, excluding regional, networked nodes at local district hospitals and health centers. Regional ICT funds are budgeted at \$50K per reference hospital, \$30K per district hospital, and \$10K per health center. Annex VIII details ICT costs for each major category by year and further on facilities and equipment.

## **IEC/Mobilization**

The budget for IEC/Mobilization totals \$7.5M or 3.4 percent of the total budget. IEC/Mobilization funds are split between funds allocated to local PLWHA support and community groups (60%) and funds allocated to central communication campaigns managed by CNLS (40%). These funds are to be used to support activities in three principal areas: a) communications and education to generate awareness and promote the benefits of seeking testing and treatment; b) communications and education to fight stigma and misinformation associated with HIV/AIDS; and c) community activities and support for PLWHA and their families, who may require economic and social assistance. Annex IX includes budget categories for IEC.

## **Management and Administration**

The budget for Management and Administration (M&A) totals \$36.3M over five years, or 16.5 percent of the total budget. M&A includes principally management and supervisory staffing in central and local health facilities (77%), and external monitoring and evaluation (M&E), technical assistance in financial management, drug procurement, clinical systems, training, quality assurance, M&E, and “Collaboratives” management (23%). While management and supervisory staffing increases over the five years of the budget, external technical assistance costs decrease, as internal resources expand their capacity and expertise. Annex X includes further details on the management and administration budget.

## Source of Funds

The Plan's total budget of \$220M over five years is an estimate of the total cost to provide treatment and care services to over 380,000 PLWHA in Rwanda. The budget is inclusive of committed, expected and/or estimated funding for treatment and care from the Government of Rwanda, NGOs, bilateral or multilateral organizations. Considering all sources of potential funding for HIV/AIDS treatment and care (*excluding* funds for prevention, health infrastructure and other health system capacity building), required financing to meet Plan targets is \$173M, excluding a preliminary commitment of \$25M from USAID.

**Table XI: Projected Funding Requirements**

Projected Expenses	Year 1	Year 2	Year 3	Year 4	Year 5	Total	% Total
Medical Staffing	\$ 1,301,027	\$ 2,811,073	\$ 1,778,067	\$ 7,211,100	\$ 10,130,311	\$ 26,317,577	12%
Traveling	\$ 1,122,637	\$ 1,761,277	\$ 1,801,777	\$ 1,252,121	\$ 1,287,175	\$ 6,135,152	3%
Drugs & Consumables	\$ 1,850,602	\$ 13,025,612	\$ 22,868,161	\$ 32,576,872	\$ 11,510,381	\$ 117,851,577	52%
Transport & Logistics	\$ 1,311,311	\$ 1,778,772	\$ 1,872,527	\$ 1,161,075	\$ 2,161,665	\$ 8,805,077	4%
Facilities & Equipment	\$ 6,801,270	\$ 1,350,127	\$ 1,013,721	\$ 2,721,075	\$ 1,671,775	\$ 11,617,135	5%
IT/Mobilization	\$ 1,200,000	\$ 1,320,000	\$ 1,761,000	\$ 1,636,800	\$ 1,871,160	\$ 7,767,160	3%
Management & Administration	\$ 1,253,305	\$ 6,281,525	\$ 8,376,507	\$ 8,523,111	\$ 8,713,161	\$ 36,256,125	16%
<b>Total Expenses</b>	<b>\$ 20,851,231</b>	<b>\$ 30,767,104</b>	<b>\$ 45,302,726</b>	<b>\$ 55,985,879</b>	<b>\$ 67,371,807</b>	<b>\$ 220,278,747</b>	<b>100%</b>
<b>Offsetting Funding Sources</b>							
Global Fund I	\$ 3,660,877	\$ 1,778,777	\$ 6,561,778	\$ -	\$ -	\$ 11,999,432	5%
World Bank MAP I	\$ 3,166,678	\$ 5,711,678	\$ 7,572,871	\$ 7,816,873	\$ 6,101,722	\$ 32,000,112	15%
<b>Total Funds</b>	<b>\$ 7,627,527</b>	<b>\$ 10,463,096</b>	<b>\$ 14,154,619</b>	<b>\$ 7,816,873</b>	<b>\$ 6,909,422</b>	<b>\$ 46,971,537</b>	<b>21%</b>
<b>Required Funds</b>	<b>\$ 13,223,705</b>	<b>\$ 20,304,007</b>	<b>\$ 31,148,106</b>	<b>\$ 48,169,006</b>	<b>\$ 60,462,385</b>	<b>\$ 173,307,210</b>	<b>78.7%</b>
<b>Preliminary Funding Commitments*</b>							
USAID - Treatment & Care	\$ 5,000,000	\$ 5,000,000	\$ 5,000,000	\$ 5,000,000	\$ 5,000,000	\$ 25,000,000	11%
<b>Net Required Funds</b>	<b>\$ 8,223,705</b>	<b>\$ 15,304,007</b>	<b>\$ 26,148,106</b>	<b>\$ 43,169,006</b>	<b>\$ 55,462,385</b>	<b>\$ 148,307,210</b>	<b>67.3%</b>

# Annexes

## Annex I: HIV/AIDS Prevalence Assumptions

	2002	2003	2004	2005	2006	2007
<b>Demographics</b>						
Estimated Population	8,162,715	8,399,434	8,643,017	8,893,665	9,151,581	9,416,977
Birth rate %	5.01%	5.01%	5.01%	5.01%	5.01%	5.01%
Births	NA	411,401	423,331	435,608	448,241	461,240
Death rate %	2.11%	2.11%	2.11%	2.11%	2.11%	2.11%
Deaths	NA	177,682	177,778	187,161	190,327	195,877
Net population growth rate %	2.10%	2.10%	2.10%	2.10%	2.10%	2.10%
Net increase in population	NA	236,719	243,587	250,678	257,116	265,316
<b>Projected HIV Prevalence</b>						
New infections rate	NA	1.00%	1.00%	1.00%	1.00%	1.00%
HIV* death rate	NA	6.0%	6.0%	6.0%	6.0%	6.0%
New infections	80,000	83,117	86,430	88,737	91,516	94,170
Projected deaths from HIV/AIDS	99,000	57,367	56,172	57,157	57,818	61,717
<b>Net HIV+ population</b>	<b>906,061</b>	<b>935,692</b>	<b>965,981</b>	<b>996,958</b>	<b>1,028,657</b>	<b>1,061,107</b>
<b>Prevalence by Patient Group %</b>						
A) Adult <200 & asymptomatic	15%	15%	15%	15%	15%	15%
B) Adult 200-350 & asymptomatic	25%	25%	25%	25%	25%	25%
C) Adult 350* & asymptomatic	47%	47%	47%	47%	47%	47%
D) Pediatric <15% asymptomatic	2%	2%	2%	2%	2%	2%
E) Pediatric >15% & asymptomatic	11%	11%	11%	11%	11%	11%
	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>
<b>Prevalence by Patient Group</b>						
A) Adult <200 & asymptomatic	135,107	140,357	144,817	147,577	152,277	157,166
B) Adult 200-350 & asymptomatic	226,515	233,123	241,715	247,270	257,167	265,277
C) Adult 350* & asymptomatic	425,877	437,775	454,011	468,570	483,461	498,720
D) Pediatric <15% asymptomatic	18,121	18,717	19,320	19,737	20,573	21,222
E) Pediatric >15% & asymptomatic	99,667	102,726	106,258	107,665	113,152	116,722
<b>Total</b>	<b>906,061</b>	<b>935,692</b>	<b>965,981</b>	<b>996,958</b>	<b>1,028,657</b>	<b>1,061,107</b>
F) HIV-exposed infants	90,000	91,308	92,675	94,013	95,712	96,875
Sources: GOR (2002 baseline); WJCF	90,000	38,800	36,772	33,717	31,205	28,377

Note: Projections do not assume impact of the Plan on projected HIV/AIDS prevalence or deaths.

## Annex II: Treatment Assumptions

<b>Key Assumptions</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>	<b>Year 5</b>
Projected healed patients - % of unhealed	2.70%	6.00%	9.00%	12.00%	15.00%
Projected healed HIV-exposed infants	10.00%	30.00%	55.00%	70.00%	80.00%
Death rate of healed patients	1.50%	1.50%	1.50%	1.50%	1.50%
<b>Net Patients in Treatment</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>	<b>Year 5</b>
A) Adult <200 & asymptomatic	3,710	11,175	23,137	37,270	52,280
B) Adult 200-350 & asymptomatic	6,316	20,102	40,133	66,711	96,711
C) Adult 350* & asymptomatic	11,877	38,105	77,163	126,015	182,761
D) Pediatric asymptomatic	505	1,517	3,125	4,165	6,171
E) Pediatric asymptomatic	2,777	8,171	17,187	27,328	42,341
<b>Total</b>	<b>25,264</b>	<b>81,350</b>	<b>162,645</b>	<b>264,419</b>	<b>380,551</b>
F) HIV-exposed infants	3,880	10,142	18,655	21,844	22,718

### Annex III: Budget Allocations by Funding Entity

- CNLS
  - Information, Education and Communications (IEC)
  - Central level management and coordination
- MINISANTE
  - All medical salaries
  - Medical staff training (excluding health animateurs)
  - Laboratory equipment and consumables
  - Central level and reference hospital information, communications technology (ICT)
  - Management and administration salaries (central and local)
- Health Districts
  - Medical supplies
  - Bikes for health animateurs
  - Lab transportation and management vehicles
  - Patient transportation - vehicles, drivers, maintenance, fuel, ins
  - Microscopes for 1/2 health centers
  - District hospital and health center facilities upgrades
  - District hospital and health center ICT upgrades
  - Community and PLWHA support group funds
- CAMERWA
  - Systems staff, drug transport drivers
  - Training - systems staff
  - Drugs and consumables (except food and formula)
  - Drug transport vehicles, maintenance, fuel, ins
  - Facilities - central warehouse expansion
  - ICT - inventory management system, financial mgt system
- NGO 1 - Food & formula
  - Assistance for food relief to HIV/AIDS patients
  - Logistical support
- Management and Administration Organizations
  - Support for Collaborative implementation TA
  - Monitoring and evaluation
  - Technical assistance - management
  - Technical assistance - clinical support
  - Technical assistance - training
  - Technical assistance - quality assurance/monitoring and evaluation
  - Technical assistance - scale up (Collaboratives)

### Annex IV: Expense Detail – Staffing

	Cumulative							
Medical Personnel	Year 1	Year 2	Year 3	Year 4	Year 5	Total	Cost/Mon	5-Yr Cost
Doctors	31	85	151	227	307	307	\$ 700	\$ 7,507,205
Reference doctors	20	25	25	25	25	25	\$ 1,000	\$ 1,532,771
Nurses	37	115	217	338	473	473	\$ 700	\$ 6,371,186
Lab Techs	73	176	277	272	365	365	\$ 700	\$ 1,056,501
Specialized Lab Techs	15	30	45	60	68	68	\$ 500	\$ 1,787,377
Pharmacy personnel	32	67	95	95	95	95	\$ 700	\$ 1,283,745
Counselors	38	111	210	327	461	461	\$ 350	\$ 5,728,477
<b>Subtotal</b>	<b>247</b>	<b>576</b>	<b>962</b>	<b>1,367</b>	<b>1,794</b>	<b>1,794</b>	<b>\$ -</b>	<b>\$ 24,669,998</b>
Admin	3,667	7,333	11,000	11,000	11,000	11,000		

	Cumulative							
TRAC	Year 1	Year 2	Year 3	Year 4	Year 5	Total	Cost/Mon	5-Yr Cost
Head of TRAC	1	1	1	1	1	1	\$ 1,500	\$ 77,461
Dept head - epidemiology & infections	1	1	1	1	1	1	\$ 750	\$ 62,172
Dept head - care and treatment	1	1	1	1	1	1	\$ 750	\$ 62,172
Dept head - VCT-FMTCT	1	1	1	1	1	1	\$ 750	\$ 62,172
Dept head - ZTIs	1	1	1	1	1	1	\$ 750	\$ 62,172
Dept head - laboratory	1	1	1	1	1	1	\$ 750	\$ 62,172
Dept head - ICT	1	1	1	1	1	1	\$ 750	\$ 62,172
Staff - epidemiology & infections*	7	7	7	7	7	7	\$ 800	\$ 106,072
Staff - care and treatment	2	2	2	2	2	2	\$ 800	\$ 53,076
Staff - VCT-FMTCT*	13	13	13	13	13	13	\$ 800	\$ 377,777
Staff - ZTIs*	2	2	2	2	2	2	\$ 800	\$ 53,076
Staff - laboratory*	11	11	11	11	11	11	\$ 800	\$ 271,753
Staff - ICT*	3	3	3	3	3	3	\$ 500	\$ 77,461
Admin	17	17	17	17	17	17	\$ 700	\$ 251,167
<b>Total TRAC</b>	<b>61</b>	<b>61</b>	<b>61</b>	<b>61</b>	<b>61</b>	<b>61</b>	<b>\$ -</b>	<b>\$ 1,677,582</b>

\* Staff and admin (excluding ICT) funded at 50% only

	Cumulative							
Management & Administration	Year 1	Year 2	Year 3	Year 4	Year 5	Total	Cost/Mon	5-Yr Cost
Technical advisor (M of Z)	1	1	1	1	1	1	\$ 3,000	\$ 178,123
Program manager (M of Z)	1	1	1	1	1	1	\$ 1,500	\$ 77,461
Secretary (M of Z)	1	1	1	1	1	1	\$ 600	\$ 77,785
Driver (M of Z)	1	1	1	1	1	1	\$ 300	\$ 17,812
Provincial program coordinator	7	8	12	12	12	12	\$ 800	\$ 577,433
PMU accountant (6)	2	7	6	6	6	6	\$ 800	\$ 257,716
PMU coordinator (1)	1	1	1	1	1	-	\$ 1,500	\$ 77,461
PMU program manager (7)	2	3	3	7	7	-	\$ 1,200	\$ 258,780
PMU M&E coordinator (1)	1	1	1	1	1	-	\$ 1,200	\$ 77,567
MINIRANTE ICT staff (12)	6	12	12	12	12	12	\$ 600	\$ 737,215
District coordinator (37 - 1 per HD)	15	30	37	37	37	37	\$ 600	\$ 1,310,757
District M&E coordinator (37 - 1 per HD)	15	30	37	37	37	37	\$ 600	\$ 1,310,757
District accountant (37 - 1 per HD)	15	30	37	37	37	37	\$ 500	\$ 1,072,278
District laboratory coordinator (37 - 1 per HD)	15	30	37	37	37	37	\$ 600	\$ 1,310,757
District pharmacy coordinator (37 - 1 per HD)	15	30	37	37	37	37	\$ 600	\$ 1,310,757
District ICT specialist (78 - 2 per HD)	30	60	78	78	78	78	\$ 78	\$ 2,187,575
Health center coordinator (365 - 1 per HC)	122	277	365	365	365	365	\$ 500	\$ 7,876,732
Health center admin staff (365 - 1 per HC)	122	277	365	365	365	365	\$ 300	\$ 5,726,037
Lab report reviewers (51 - 1.5 per HD)	12	27	36	78	51	51	\$ 300	\$ 700,007
Security guards for drug points (37 - 1 per HD)	10	20	30	37	37	37	\$ 200	\$ 377,428
<b>Total M&amp;A</b>	<b>390</b>	<b>774</b>	<b>1,108</b>	<b>1,125</b>	<b>1,128</b>	<b>1,122</b>	<b>\$ -</b>	<b>\$ 27,379,065</b>

	Cumulative							
CAMERWA	Year 1	Year 2	Year 3	Year 4	Year 5	Total	Cost/Mon	5-Yr Cost
Investment grant specialist	-	-	-	-	-	-	\$ 600	\$ -
Financial grant specialist	-	-	-	-	-	-	\$ 600	\$ -
Drug report reviewers	6	8	8	8	8	8	\$ 300	\$ 177,772
<b>Subtotal</b>	<b>6</b>	<b>8</b>	<b>8</b>	<b>8</b>	<b>8</b>	<b>8</b>	<b>\$ -</b>	<b>\$ 143,792</b>

TOTAL REQUIRED STAFFING	Year 1	Year 2	Year 3	Year 4	Year 5	Total	Cost/Mon	5-Yr Cost
	644	1,357	2,078	2,499	2,929	2,929	\$ -	\$ 52,192,855

Cost of living adjustments: 5% per year



Annex V: Expense Detail – Training

**Training Cost (Including materials, per diem, travel, facilities)**

<b>Initial Training</b>	<b>Days</b>	<b>Cost/day</b>	<b>Cost/staff</b>
Doctors	10	\$ 150.00	\$ 1,500
Reference doctors	2	\$ 150.00	\$ 300
Nurses	10	\$ 50.00	\$ 500
Lab techs	5	\$ 75.00	\$ 375
Specialized lab techs	15	\$ 75.00	\$ 1,125
Pharmacy personnel	10	\$ 75.00	\$ 750
Counselors	5	\$ 60.00	\$ 300
Administrators	3	\$ 20.00	\$ 60
MINIRANTE ICT staff (12)	10	\$ 100.00	\$ 1,000
PMU accountants (6)	15	\$ 100.00	\$ 1,500
PMU coordinators (1)	15	\$ 100.00	\$ 1,500
PMU program managers (7)	15	\$ 100.00	\$ 1,500
PMU M&E coordinators (1)	15	\$ 100.00	\$ 1,500
District coordinators (31 - 1 per MD)	10	\$ 75.00	\$ 750
District M&E coordinators (31 - 1 per MD)	10	\$ 75.00	\$ 750
District accountants (31 - 1 per MD)	10	\$ 75.00	\$ 750
District laboratory coordinators (31 - 1 per MD)	5	\$ 75.00	\$ 375
District pharmacy coordinators (31 - 1 per MD)	10	\$ 75.00	\$ 750
District ICT specialists (78 - 2 per MD)	5	\$ 75.00	\$ 375
Health center coordinators (365 - 1 per HC)	5	\$ 75.00	\$ 375
Health center admin staff (365 - 1 per HC)	2	\$ 50.00	\$ 100

**Refresher Training (1)**

	<b>Days</b>	<b>Cost/day</b>	<b>Cost/staff</b>
Doctors	2	\$ 150.00	\$ 300
Reference doctors	2	\$ 150.00	\$ 300
Nurses	2.5	\$ 50.00	\$ 125
Lab techs	1	\$ 75.00	\$ 75
Specialized lab techs	1	\$ 75.00	\$ 75
Pharmacy personnel	1	\$ 75.00	\$ 75
Counselors	2	\$ 60.00	\$ 120
Administrators	2	\$ 20.00	\$ 40
MINIRANTE ICT staff (12)	2	\$ 100.00	\$ 200
PMU accountants (6)	2	\$ 100.00	\$ 200
PMU coordinators (1)	2	\$ 100.00	\$ 200
PMU program managers (7)	2	\$ 100.00	\$ 200
PMU M&E coordinators (1)	2	\$ 100.00	\$ 200
District coordinators (31 - 1 per MD)	2	\$ 75.00	\$ 150
District accountants (31 - 1 per MD)	2	\$ 75.00	\$ 150
District M&E coordinators (31 - 1 per MD)	2	\$ 75.00	\$ 150
District laboratory coordinators (31 - 1 per MD)	2	\$ 75.00	\$ 150
District pharmacy coordinators (31 - 1 per MD)	2	\$ 75.00	\$ 150
District ICT specialists (78 - 2 per MD)	2	\$ 75.00	\$ 150
Health center coordinators (365 - 1 per HC)	2	\$ 75.00	\$ 150
Health center admin staff (365 - 1 per HC)	1	\$ 50.00	\$ 50

(1) Refresher training once per year on staff person's time (i.e., not deducted from work hours)

## Annex VI: Expense Detail – Drugs and Consumables

Category	Year 1	Year 2	Year 3	Year 4	Year 5	Total	% Total
Drugs	\$ 2,308,604	\$ 5,147,702	\$ 10,025,498	\$ 13,637,591	\$ 16,071,695	\$ 47,191,090	12%
Medical supplies	\$ 75,711	\$ 247,051	\$ 487,134	\$ 713,258	\$ 1,141,653	\$ 2,742,688	2%
Lab consumables	\$ 1,517,324	\$ 4,618,311	\$ 8,785,813	\$ 13,582,146	\$ 18,741,401	\$ 47,405,110	12%
ΑΙΥ πρo phylactic (HC worketa)	\$ 58,111	\$ 105,478	\$ 140,318	\$ 162,717	\$ 172,116	\$ 640,188	1%
Uημεραια pρεcaυηηe	\$ 73,200	\$ 153,720	\$ 242,104	\$ 338,153	\$ 444,875	\$ 1,252,857	1%
Food	\$ 257,780	\$ 576,152	\$ 841,143	\$ 1,063,357	\$ 1,225,430	\$ 3,164,661	3%
Formula	\$ 2,328,000	\$ 2,188,320	\$ 2,035,138	\$ 1,872,327	\$ 1,703,817	\$ 10,127,601	1%
<b>TOTAL</b>	<b>\$ 6,699,704</b>	<b>\$ 13,914,135</b>	<b>\$ 22,558,862</b>	<b>\$ 31,451,228</b>	<b>\$ 39,501,867</b>	<b>\$ 114,125,796</b>	<b>100%</b>

Drugs costs	Year 1	Year 2	Year 3	Year 4	Year 5	Total	%Total
ΑΙΥe	\$ 1,132,672	\$ 5,428,757	\$ 1,216,751	\$ 12,661,452	\$ 14,812,544	\$ 47,132,176	12%
Αη φηeictic B	\$ 23,112	\$ 50,016	\$ 73,331	\$ 134,567	\$ 185,384	\$ 486,591	1%
Dηucan (Flucoηazole)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	0%
Nevηapηe	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	0%
TB πρo phylacic	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	0%
Bacηin	\$ 5,305	\$ 16,187	\$ 33,748	\$ 54,418	\$ 77,874	\$ 188,113	0%
Keηcoηazole cηean	\$ 421	\$ 1,357	\$ 2,656	\$ 4,220	\$ 5,425	\$ 14,588	0%
Acyclo vη	\$ 31,710	\$ 124,402	\$ 253,107	\$ 408,436	\$ 584,058	\$ 1,411,301	3%
Αηηeictic cηean e	\$ 7,215	\$ 23,102	\$ 45,817	\$ 74,117	\$ 105,101	\$ 256,211	1%
<b>Subtotal</b>	<b>\$ 2,008,604</b>	<b>\$ 5,647,702</b>	<b>\$ 9,725,498</b>	<b>\$ 13,337,591</b>	<b>\$ 15,771,695</b>	<b>\$ 46,491,090</b>	<b>17%</b>
Fund for rare OIs	\$ 300,000	\$ 300,000	\$ 300,000	\$ 300,000	\$ 300,000	\$ 1,500,000	3%
<b>Total Drug Cost</b>	<b>\$ 2,308,604</b>	<b>\$ 5,947,702</b>	<b>\$ 10,025,498</b>	<b>\$ 13,637,591</b>	<b>\$ 16,071,695</b>	<b>\$ 47,991,090</b>	<b>100%</b>
Total non-AIY drugs	\$ 375,133	\$ 518,145	\$ 728,747	\$ 976,134	\$ 1,251,151	\$ 3,858,111	8%
Average cost per patient/year	\$ 15	\$ 6	\$ 4	\$ 4	\$ 3		

Drug cost, use assumptions	Year 1	Year 2	Year 3	Year 4	Year 5
Cost per patient/year					
ΑΙΥ eηapη	\$ 450	\$ 400	\$ 350	\$ 300	\$ 250
ΑΙΥ πρo phylactic (HC worketa)	\$ 302	\$ 268	\$ 235	\$ 201	\$ 168
Αη φηeictic B	\$ 120	\$ 120	\$ 120	\$ 120	\$ 120
Dηucan (Flucoηazole)	\$ -	\$ -	\$ -	\$ -	\$ -
Nevηapηe	\$ -	\$ -	\$ -	\$ -	\$ -
TB πρo phylacic	\$ -	\$ -	\$ -	\$ -	\$ -
Bacηin	\$ 0.50	\$ 0.50	\$ 0.50	\$ 0.50	\$ 0.50
Keηcoηazole cηean	\$ 0.50	\$ 0.50	\$ 0.50	\$ 0.50	\$ 0.50
Acyclo vη	\$ 15	\$ 15	\$ 15	\$ 15	\$ 15
Αηηeictic cηean e	\$ 0.68	\$ 0.68	\$ 0.68	\$ 0.68	\$ 0.68
Percentage of total patient drug					
ΑΙΥe	17.0%	16.7%	16.3%	16.0%	15.6%
Αη φηeictic B	0.8%	0.8%	0.7%	0.7%	0.7%
Dηucan (Flucoηazole)	0.8%	0.8%	0.7%	0.7%	0.7%
Nevηapηe	15.4%	13.4%	11.5%	8.3%	6.0%
TB πρo phylacic	42.0%	41.8%	41.5%	41.2%	40.4%
Bacηin	42.0%	41.8%	41.5%	41.2%	40.4%
Keηcoηazole cηean	3.4%	3.3%	3.3%	3.2%	3.1%
Acyclo vη	10.5%	10.4%	10.4%	10.3%	10.2%
Αηηeictic cηean e	42.0%	41.8%	41.5%	41.2%	40.4%
Number of patients on drug					
ΑΙΥe	4,215	13,572	26,562	42,205	57,250
Αη φηeictic B	113	417	778	1,121	1,545
Dηucan (Flucoηazole)	113	611	1,145	1,814	2,666
Nevηapηe	3,880	10,442	18,655	21,844	22,718
TB πρo phylacic	10,611	33,474	67,445	108,446	155,744
Bacηin	10,611	33,474	67,445	108,446	155,744
Keηcoηazole cηean	854	2,414	5,312	8,441	11,850
Acyclo vη	2,653	8,443	16,874	27,244	38,444
Αηηeictic cηean e	10,611	33,474	67,445	108,446	155,744

## Annex VI: Expense Detail – Drugs and Consumables (cont.)

Laboratory Consumables		Year 1	Year 2	Year 3	Year 4	Year 5	Total
<b>Medication</b>							
<b>Patient Demand</b>							
Targeted patient (new)		25,267	56,766	82,515	107,217	120,078	
Previously known HIV*		0%	0%	0%	0%	0%	
Previously unknown HIV*		25,267	56,766	82,515	107,217	120,078	
% Targeted HIV*		13.5%	13.5%	13.5%	13.5%	13.5%	
Projected patient Targeted		187,138	718,265	611,217	777,757	887,616	
<b>Medication Types and Cost</b>							
HIV rapid test		100%	100%	100%	100%	100%	
Confirmation test		20%	20%	20%	20%	20%	
Te-breaker test		2%	2%	2%	2%	2%	
HIV rapid test cost	\$	1.70	1.70	1.70	1.70	1.70	
Confirmation test cost	\$	2.50	2.50	2.50	2.50	2.50	
Te-breaker test cost	\$	1.50	1.50	1.50	1.50	1.50	
<b>Total HIV test</b>	<b>\$</b>	<b>361,177</b>	<b>807,251</b>	<b>1,177,652</b>	<b>1,481,877</b>	<b>1,716,758</b>	<b>\$ 5,557,716</b>
<b>CD4 Tests</b>							
CD4 test per patient year		2	2	2	2	2	
Patients receiving CD4 tests		25,267	81,350	162,675	267,717	380,551	
Cost per CD4 test	\$	20	17	17	18	18	
<b>Total CD4 tests</b>	<b>\$</b>	<b>50,527</b>	<b>162,707</b>	<b>325,210</b>	<b>528,837</b>	<b>761,102</b>	<b>1,828,757</b>
<b>Total CD4 tests</b>	<b>\$</b>	<b>1,010,577</b>	<b>3,166,317</b>	<b>6,121,277</b>	<b>7,653,137</b>	<b>13,775,167</b>	<b>\$ 33,717,376</b>
<b>Viral load tests</b>							
Percentage patient requiring VL		5%	5%	5%	5%	5%	
Total patient requiring VL		675	2,115	4,277	6,827	7,585	
VL test per patient		2	2	2	2	2	
Cost per VL test	\$	56	56	56	56	56	
<b>Total VL cost</b>	<b>\$</b>	<b>77,812</b>	<b>275,871</b>	<b>481,277</b>	<b>767,652</b>	<b>1,073,777</b>	<b>\$ 2,673,073</b>
<b>Other laboratory consumables</b>							
<b>Other lab - cost per patient year</b>							
<200 * Zymproma	\$	10	10	11	11	11	
200-350 No P Zymproma	\$	5	5	5	5	6	
350* No P Zymproma	\$	5	5	5	5	6	
Pediatric Zymproma	\$	10	10	11	11	11	
Pediatric No P Zymproma	\$	5	5	5	5	6	
<b>Other lab - total cost</b>							
<200 * Zymproma	\$	37,876	123,375	278,675	406,127	588,711	1,705,223
200-350 No P Zymproma	\$	31,580	105,071	217,121	367,121	513,050	1,261,757
350* No P Zymproma	\$	57,370	177,787	407,307	688,135	1,026,807	2,382,210
Pediatric Zymproma	\$	5,053	16,746	33,153	57,257	78,455	187,363
Pediatric No P Zymproma	\$	13,815	46,202	75,711	160,270	238,275	557,027
<b>Total other lab</b>	<b>\$</b>	<b>177,773</b>	<b>788,850</b>	<b>1,003,678</b>	<b>1,675,282</b>	<b>2,475,001</b>	<b>\$ 5,770,575</b>
<b>Total lab consumables</b>	<b>\$</b>	<b>1,579,327</b>	<b>7,678,317</b>	<b>8,785,873</b>	<b>13,582,776</b>	<b>18,777,701</b>	<b>\$ 77,705,110</b>
<b>Universal precautions - needle sticks</b>							
Exposed Patient (funded patient only)		178	401	656	772	1,238	
Exposed Patient (eat total patient)		1,220	2,770	3,660	7,880	6,100	
Monthly incidence rate		10%	10%	10%	10%	10%	
Patient affected per month		122	277	366	788	610	
Total affected per year		1,467	2,728	4,372	5,856	7,320	
AIV prophylactic cost - 1 month	\$	38	33	27	25	21	
HIV test (2)	\$	4,077	8,118	12,278	16,377	20,776	61,788
AIV prophylactic cost	\$	57,100	77,600	128,100	176,400	152,500	577,500
Universal precaution - needle stick	\$	58,777	105,718	170,378	162,777	172,776	670,188
<b>Universal precautions</b>							
Cost per health worker per month	\$	5	5	6	6	6	
Total health worker		1,220	2,770	3,660	7,880	6,100	
Universal precaution - acuba, gloves, etc.	\$	73,200	153,720	272,107	338,153	447,875	1,252,857
<b>Treatment of victims of rape</b>							
Exposed rape victims		2,061	2,121	2,182	2,276	2,311	
AIV prophylactic cost - 1 month	\$	38	33	27	25	21	
HIV test (2)	\$	5,777	5,138	6,110	6,288	6,770	30,577
AIV prophylactic cost	\$	77,288	70,612	63,650	56,137	48,137	315,107
Antiretroviral cost (one time)	\$	1,006	1,035	1,065	1,076	1,128	5,327
Probenecid (one time)	\$	2,061	2,121	2,182	2,276	2,311	10,720
Doxycycline (1 week)	\$	376	366	367	377	388	1,835
<b>Treatment of victims of rape</b>	<b>\$</b>	<b>86,771</b>	<b>80,172</b>	<b>73,377</b>	<b>66,175</b>	<b>58,736</b>	<b>\$ 367,568</b>
<b>Total Drugs &amp; Consumables</b>	<b>\$</b>	<b>4,124,604</b>	<b>10,985,754</b>	<b>19,267,221</b>	<b>27,788,432</b>	<b>35,489,402</b>	<b>\$ 97,655,413</b>

## Annex VI: Expense Detail – Drugs and Consumables (cont.)

### Food & Nutrition

#### Key Assumptions

Average patient family size	6.5
% PLWHA requiring food	50%
% patients requiring food (not already receiving it)	30%
% of these patients requiring food to 76 months	30%
% of these patients requiring food to 712 months	50%
% of these patients requiring food to 718 months	20%
Food cost per month per person	\$ 2.70
Avg. food cost per month per family	\$ 17.55

## Annex VII: Expense Detail – Transportation and Logistics

Category	Year 1	Year 2	Year 3	Year 4	Year 5	Total	% Total
Vehicle - lab transportation (37)	\$ 211,200	\$ 367,136	\$ 445,350	\$ 525,111	\$ 363,077	\$ 1,912,673	23%
Vehicle - management & coordination (37)	\$ 208,000	\$ 262,270	\$ 318,107	\$ 375,650	\$ 257,371	\$ 1,423,398	16%
Central management vehicle pool (3)	\$ 36,700	\$ 75,872	\$ 55,667	\$ 65,737	\$ 76,111	\$ 270,811	3%
CAMRYWA vehicle (5 total)	\$ 260,000	\$ 126,750	\$ 75,750	\$ 75,750	\$ 75,750	\$ 613,300	7%
Patient transport (25%, \$1/1hr, 12x/yr)	\$ 75,771	\$ 256,257	\$ 537,778	\$ 118,275	\$ 1,387,687	\$ 3,175,775	36%
Healthcare equipment (1 per HA)	\$ 470,000	\$ 470,000	\$ 470,000	\$ -	\$ -	\$ 1,320,000	15%
<b>TOTAL</b>	<b>\$ 1,311,391</b>	<b>\$ 1,498,472</b>	<b>\$ 1,872,524</b>	<b>\$ 1,961,045</b>	<b>\$ 2,161,665</b>	<b>\$ 8,805,097</b>	<b>100%</b>

Annex VIII: Expense Detail – Facilities and Equipment

**1. Laboratory Equipment Units**

Laboratory Equipment	Year 1	Year 2	Year 3	Year 4	Year 5	Total	Unit Cost
Flow cytometer/CD? (30)	2	7	7	8	7	30	\$ 76,000
CBC machine (37)	15	12	7	-	-	37	\$ 10,000
DNA/PC machine (3)	2	-	1	-	-	3	\$ 15,000
Spectrophotometer (37)	15	12	7	-	-	37	\$ 10,000
Centrifuge 183 - 1/2 DNA	61	61	61	-	-	183	\$ 2,000
Radology equipment (17 - 1/2 DNA)	6	6	5	-	-	17	\$ 35,000
Microscope (71/2 MCa)	61	61	61	-	-	183	\$ 1,000

**2. Laboratory Equipment Costs**

Laboratory Equipment	Year 1	Year 2	Year 3	Year 4	Year 5	Total	% Total
Flow cytometer/CD? (30)	\$ 153,603	\$ 371,008	\$ 774,267	\$ 618,787	\$ 706,082	\$ 2,313,751	55%
CBC machine (37)	\$ 150,000	\$ 120,000	\$ 70,000	\$ -	\$ -	\$ 370,000	8%
DNA/PC machine (3)	\$ 30,000	\$ -	\$ 15,000	\$ -	\$ -	\$ 75,000	1%
Spectrophotometer (37)	\$ 150,000	\$ 120,000	\$ 70,000	\$ -	\$ -	\$ 370,000	8%
Centrifuge 183 - 1/2 DNA	\$ 121,667	\$ 121,667	\$ 121,667	\$ -	\$ -	\$ 365,000	7%
Radology equipment (17 - 1/2 DNA)	\$ 210,000	\$ 210,000	\$ 175,000	\$ -	\$ -	\$ 595,000	14%
Microscope (71/2 MCa)	\$ 61,000	\$ 61,000	\$ 61,000	\$ -	\$ -	\$ 183,000	4%
<b>Subtotal</b>	<b>\$ 876,270</b>	<b>\$ 773,677</b>	<b>\$ 1,006,136</b>	<b>\$ 618,787</b>	<b>\$ 706,082</b>	<b>\$ 2,181,751</b>	<b>100%</b>

**3. ICT Costs**

ICT	Year 1	Year 2	Year 3	Year 4	Year 5	Total	% Total
Payment system	\$ 1,100,000	\$ 175,000	\$ 175,000	\$ 175,000	\$ 175,000	\$ 1,800,000	21%
CAMEYWA Inv. Mgr. Sys.	\$ 162,000	\$ 33,000	\$ 27,000	\$ 27,000	\$ 27,000	\$ 276,000	3%
CAMEYWA Fin. Mgr. Sys.	\$ 162,000	\$ 33,000	\$ 27,000	\$ 27,000	\$ 27,000	\$ 276,000	3%
IM ICT (\$50K ea)	\$ 120,000	\$ 87,000	\$ 27,000	\$ 27,000	\$ 27,000	\$ 276,000	3%
DM ICT (\$30K ea)	\$ 687,000	\$ 777,000	\$ 370,285	\$ 236,156	\$ 277,163	\$ 2,056,107	24%
MC ICT (\$10K ea)	\$ 1,200,000	\$ 700,000	\$ 800,000	\$ 670,000	\$ 365,000	\$ 3,755,000	44%
<b>Subtotal</b>	<b>\$ 3,728,000</b>	<b>\$ 1,522,700</b>	<b>\$ 1,473,285</b>	<b>\$ 1,171,156</b>	<b>\$ 865,163</b>	<b>\$ 8,731,107</b>	<b>100%</b>

**4. Facility Upgrade Costs**

Facilities Upgrades	Year 1	Year 2	Year 3	Year 4	Year 5	Total	% Total
IM facilities upgrade (\$100K ea)	\$ 200,000	\$ 200,000	\$ 100,000	\$ -	\$ -	\$ 500,000	7%
DM facilities upgrade (\$50K ea)	\$ 750,000	\$ 525,000	\$ 275,625	\$ -	\$ -	\$ 1,750,625	25%
MC facilities upgrade (\$10K ea)	\$ 1,000,000	\$ 1,050,000	\$ 1,102,500	\$ 752,756	\$ -	\$ 3,907,756	56%
Drug delivery proj. (\$15K ea)	\$ 75,000	\$ 78,750	\$ 165,375	\$ 173,677	\$ 72,130	\$ 565,617	8%
CAMEYWA Warehouse (\$150K)	\$ 275,000	\$ -	\$ -	\$ -	\$ -	\$ 275,000	4%
<b>Subtotal</b>	<b>\$ 2,500,000</b>	<b>\$ 1,853,750</b>	<b>\$ 1,643,500</b>	<b>\$ 926,100</b>	<b>\$ 72,130</b>	<b>\$ 6,196,280</b>	<b>100%</b>

<b>TOTAL</b>	<b>\$ 6,804,270</b>	<b>\$ 4,350,124</b>	<b>\$ 4,093,721</b>	<b>\$ 2,724,045</b>	<b>\$ 1,644,975</b>	<b>\$ 19,617,135</b>	<b>100%</b>
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### Annex IX: Expense Detail – IEC/Mobilization

Category	Year 1	Year 2	Year 3	Year 4	Year 5	Total	% Total
CNIR - Central IEC programme	\$ 600,000	\$ 600,000	\$ 600,000	\$ 600,000	\$ 600,000	\$ 3,000,000	40%
Community group support funds	\$ 600,000	\$ 720,000	\$ 864,000	\$ 1,036,800	\$ 1,247,160	\$ 4,467,960	60%
<b>TOTAL</b>	<b>\$ 1,200,000</b>	<b>\$ 1,320,000</b>	<b>\$ 1,464,000</b>	<b>\$ 1,636,800</b>	<b>\$ 1,844,160</b>	<b>\$ 7,464,960</b>	<b>100%</b>

## Annex X: Expense Detail – Management and Administration

### Management & Administration

Category	Year 1	Year 2	Year 3	Year 4	Year 5	Total	% Total
MANIRANTE	\$ 2,164,000	\$ 1,430,580	\$ 6,538,266	\$ 6,142,172	\$ 7,303,248	\$ 27,377,065	76%
CNIZ	\$ 60,000	\$ 14,500	\$ 11,225	\$ 104,186	\$ 101,316	\$ 467,307	1%
CAMEPWA	\$ 21,600	\$ 28,350	\$ 21,768	\$ 31,256	\$ 32,811	\$ 143,712	0%
Expend	\$ 2,007,705	\$ 1,736,015	\$ 1,729,271	\$ 1,445,505	\$ 1,347,707	\$ 8,266,261	23%
<b>TOTAL</b>	<b>\$ 4,253,305</b>	<b>\$ 6,289,525</b>	<b>\$ 8,396,507</b>	<b>\$ 8,523,919</b>	<b>\$ 8,793,169</b>	<b>\$ 36,256,425</b>	<b>100%</b>

### External Technical Assistance Detail

Category	Year 1	Year 2	Year 3	Year 4	Year 5	Total	% Total
Contract, Training, M&E (PGAF)							
Personnel	\$ 1,046,147	\$ 728,288	\$ 728,288	\$ 578,288	\$ 583,288	\$ 3,665,011	44%
Operating expenses	\$ 61,711	\$ 44,720	\$ 44,720	\$ 44,720	\$ 44,720	\$ 218,671	3%
Program expenses	\$ 302,173	\$ 178,880	\$ 154,880	\$ 131,460	\$ 131,460	\$ 114,853	11%
Capital expenses	\$ 41,413	\$ -	\$ -	\$ 8,000	\$ -	\$ 57,413	1%
Indirect expenses	\$ 231,380	\$ 147,517	\$ 145,273	\$ 162,676	\$ 161,605	\$ 166,451	12%
Subtotal	\$ 1,707,705	\$ 1,111,405	\$ 1,123,161	\$ 133,147	\$ 121,073	\$ 5,872,488	71%
Scale Up/ Collaborative TA (USC)	\$ -	\$ 236,670	\$ 306,088	\$ 262,361	\$ 218,634	\$ 1,023,773	12%
Management TA (WJCF)	\$ 300,000	\$ 350,000	\$ 300,000	\$ 250,000	\$ 200,000	\$ 1,400,000	17%
<b>TOTAL</b>	<b>\$ 2,007,705</b>	<b>\$ 1,736,095</b>	<b>\$ 1,729,249</b>	<b>\$ 1,445,505</b>	<b>\$ 1,347,707</b>	<b>\$ 8,266,261</b>	<b>100%</b>

### External TA by Function

Category	Year 1	Year 2	Year 3	Year 4	Year 5	Total	% Total
Monitoring & evaluation	\$ 147,410	\$ 153,458	\$ 131,652	\$ 124,851	\$ 125,057	\$ 682,428	8%
Contract and training TA	\$ 1,560,215	\$ 145,147	\$ 111,501	\$ 808,213	\$ 804,016	\$ 5,160,060	62%
Management	\$ 300,000	\$ 350,000	\$ 300,000	\$ 250,000	\$ 200,000	\$ 1,400,000	17%
Scale up	\$ -	\$ 236,670	\$ 306,088	\$ 262,361	\$ 218,634	\$ 1,023,773	12%
<b>TOTAL</b>	<b>\$ 2,007,705</b>	<b>\$ 1,736,095</b>	<b>\$ 1,729,249</b>	<b>\$ 1,445,505</b>	<b>\$ 1,347,707</b>	<b>\$ 8,266,261</b>	<b>100%</b>



Annex XI: Services by Patient Group

	A) Adult <200 + symptomatic	B) Adult 200-350 asymptomatic	C) Adult 350+ asymptomatic	D) Pediatric <15% or symptomatic	E) Pediatric >15% & asymptomatic	F) HIV-Exp. infants*
<b>Counseling &amp; services coordination</b>						
Σεμβάσεις καθ' ύλην	✓	✓	✓	✓	✓	
Σεμβάσεις καθ' ύλην	✓	✓	✓	✓	✓	
<b>Medical treatment, drug therapy</b>						
ΟΤΠ πρόληψη & θεραπεία	✓	✓		✓		
ARV θεραπεία	✓			✓		
Θεραπεία ασθενούς	✓			✓		
Κοινοποίηση και αναφορά	✓	✓	✓	✓		
PMTC θεραπευτικές	✓	✓	✓		✓	✓
<b>Clinical monitoring &amp; adherence support</b>						
Δοκίμια και νοσηλεία κοινοποίηση	✓	✓	✓	✓	✓	✓
Εργαστήριο αξιολόγηση	✓	✓	✓	✓	✓	✓
Αδherence management	✓			✓		
Μεταβολή φαρμάκων	✓	✓		✓		
<b>Psychosocial care &amp; support</b>						
Ομάδες καθ' ύλην	✓	✓	✓	✓	✓	
Ατομική καθ' ύλην	✓	✓	✓	✓	✓	
<b>Community &amp; home-based care</b>						
Προσωπική φροντίδα	✓			✓		
Ψυχολογική στήριξη	✓	✓	✓	✓	✓	
Παλλιατική φροντίδα	✓			✓		
Αδherence στήριξη	✓			✓		
<b>Ancillary support services</b>						
Τροφή συμπλήρωμα	✓			✓		
Όξινα				✓		✓
Κοινωνική φροντίδα στήριξη	✓	✓	✓	✓	✓	
Κοινωνική προστασία υπηρεσίες	✓	✓	✓	✓	✓	
<b>Prevention education and counseling</b>						
Καθ' ύλην & εκπαίδευση	✓	✓	✓	✓	✓	✓

\* HIV-exposed infants enter patient groups A-E, based on their serostatus, or exit system if not seropositive

Annex XII: Staffing Needs by Patient Group

PATIENT TREATMENT SCHEDULE	Months per Month												Year 1		Year 2+		
	1	2	3	4	5	6	7	8	9	10	11	12	Total	Hours	%/Yr 1	Minutes	Hours
<b>Adult &lt;200, symptomatic</b>																	
Doctor	10	10	10	20	20	20	-	-	20	-	-	20	270	4.5	27%	73	1.2
Nurse	105	80	10	20	20	20	20	-	20	-	-	20	375	5.8	75%	257	4.3
Lab Tech	20	-	-	-	-	10	-	-	-	-	-	10	70	0.7	26%	10	0.2
Pharmacist	25	5	5	5	5	5	5	5	5	5	5	5	80	1.3	75%	60	1.0
Counselor	130	10	20	20	20	20	20	20	20	20	20	20	370	6.2	75%	278	4.6
Health assistant	120	30	30	30	30	30	30	30	30	30	30	30	450	7.5	75%	338	5.6
<b>Adult 200-350 asymptomatic</b>																	
Doctor	30	-	-	20	-	-	20	-	-	20	-	-	10	1.5	50%	45	0.8
Nurse	30	-	-	20	-	-	20	-	-	20	-	-	10	1.5	75%	68	1.1
Lab Tech	20	-	-	-	-	10	-	-	-	-	-	-	30	0.5	68%	20	0.3
Pharmacist	10	5	5	5	5	5	5	5	5	5	5	5	65	1.1	75%	47	0.8
Counselor	60	10	10	10	10	30	10	10	20	10	10	20	210	3.5	75%	158	2.6
Health assistant	60	20	20	20	20	20	20	20	20	20	20	20	280	4.7	75%	210	3.5
<b>Adult 350+ asymptomatic</b>																	
Doctor	30	-	-	-	-	20	-	-	-	-	-	20	70	1.2	80%	56	0.9
Nurse	20	-	-	20	-	20	-	-	20	-	-	20	100	1.7	75%	75	1.3
Lab Tech	20	-	-	-	-	10	-	-	-	-	-	-	30	0.5	68%	20	0.3
Pharmacist	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	75%	-	0.0
Counselor	30	5	5	5	5	5	5	5	5	5	5	5	85	1.4	75%	67	1.1
Health assistant	30	10	10	10	10	10	10	10	10	10	10	10	170	2.3	75%	105	1.8
<b>Pediatric, symptomatic</b>																	
Doctor	10	10	10	20	20	20	20	20	20	20	20	20	350	4.5	27%	95	1.6
Nurse	105	80	10	20	20	20	20	-	20	-	-	20	375	5.8	75%	257	4.3
Lab Tech	20	-	10	-	-	10	-	-	10	-	-	10	60	0.7	33%	20	0.3
Pharmacist	25	5	5	5	5	5	5	5	5	5	5	5	80	1.3	75%	60	1.0
Counselor	130	10	20	20	20	20	20	20	20	20	20	20	370	6.2	75%	278	4.6
Health assistant	120	30	30	30	30	30	30	30	30	30	30	30	450	7.5	75%	338	5.6
<b>Pediatric asymptomatic</b>																	
Doctor	30	-	-	20	-	-	20	-	-	20	-	-	10	1.5	50%	45	0.8
Nurse	30	-	-	20	-	-	20	-	-	20	-	-	10	1.5	75%	68	1.1
Lab Tech	20	-	10	-	-	10	-	-	10	-	-	10	60	0.5	68%	41	0.7
Pharmacist	10	5	5	5	5	5	5	5	5	5	5	5	65	1.1	75%	47	0.8
Counselor	60	10	10	10	10	30	10	10	20	10	10	20	210	3.5	75%	158	2.6
Health assistant	60	20	20	20	20	20	20	20	20	20	20	20	280	4.7	75%	210	3.5

## Annex XIII: Training Plan Detail

### Physician Training

Until recent months, there has been no program focused on developing broad-based physician expertise in the management of HIV disease and antiretroviral therapies. Twenty-two physicians are currently certified by MINISANTE to prescribe antiretroviral therapies. A three-pronged physician training strategy will: (a) address the incorporation of basic curricula on immune function and the pathogenesis and clinical management of HIV infection into medical school education, (b) implement a training program targeting physicians already in practice, and (c) put in place a consultation capability to support those physicians directly providing HIV/AIDS care.

Two-week training sessions for practicing physicians will be conducted in Kigali, using Rwandan experts certified in antiretroviral therapies as core faculty. Three sessions would be conducted in primary care for HIV and HIV-related conditions and management of patients on antiretroviral drugs in the first year, reaching 60 physicians. In each subsequent year, up to 100 physicians would be trained until all areas of the country are served by knowledgeable providers. Once physicians are out in practice settings, a consultation network anchored by the Rwandan expert group and physicians in District Hospitals would provide daily coverage for difficult clinical questions. The Rwandan expert consultant group would have rotating responsibility for regularly scheduled hours of phone availability, and would be compensated for their time.

### Nurse Training

Nurses form the backbone of the health care delivery system in Rwanda, most notably in the system of community health centers that are the primary source for preventive care and antenatal services. There has been no formal initiative to date to train nurses in the care of persons with HIV infection, with the exception of targeted trainings in PMTCT and VCT in selected health centers.

The Division of Nursing Formation in MINISANTE will direct and oversee a national training initiative to educate nurses in prevention interventions and the care of HIV seropositive persons. Training will address basic assessment and medical monitoring of patients with HIV infection, nursing care for patients receiving ARVs, case management, psychosocial support, prevention counseling, and home care. Rwandan nurses with experience in caring for HIV/AIDS patients in reference hospitals will be paired with external consultants to develop curriculum materials reflecting the Rwandan standards of care, and to conduct an initial training for MINISANTE nurse trainers. Nurses across the country will be trained using a “train the trainer” model, consistent with established mechanisms now in place that employ nurse trainers in each Health District to reach out into health centers and communities. Follow-up evaluation to assess retention of information and unmet educational needs are incorporated in the nurse training plan; refresher sessions and ongoing visits by nurse trainers to health centers and hospitals are anticipated over time.

### Pharmacist Training

There are a very limited number of trained pharmacists in Rwanda, with 36 employed in the public sector and 53 in the private sector. In most health centers and some district hospitals, nurses with supplemental training in pharmacy services are filling the role of pharmacists. Pharmacy personnel currently employed, and those who will be recruited to support expanded HIV care and treatment, will require training in both HIV-related therapeutics, including antiretroviral medications, and in management systems that ensure a safe, secure and uninterrupted availability of medications. Knowledge of basic pharmacology, drug interactions and toxicities and adherence strategies are important to the correct use of ARVs and management of related opportunistic infections, particularly tuberculosis.

The program to train pharmacists and pharmacy personnel will include an assessment of training needs among current personnel, development of training modules to cover the needed content areas, the development of a “train the trainer” program at the national level, and the use of trainers to conduct workshops and sessions for pharmacy personnel across the country. External consultants will support the initial training of 40 trainers and development of in-country expertise. These trainers will reach an additional 200 persons with two-week training workshops held in locations across the country. Evaluation of the program will include trainers visiting each province to assess effectiveness of the training and unmet needs where these exist.

## **Nutritionist Training**

Good nutrition plays a central role in the health of PLWHA, and can be particularly difficult for people beginning ARV therapy. Although few health centers have dedicated nutritionists, nurses often perform this function. The Division of Nutrition at MINISANTE envisions a training program for nutritionists and for nurses and counselors working as nutritionists. The training of trainers model will have one initial training session of two weeks at Kabgayi, where 24 trainers, two per province, will be trained in the nutritional needs of PLWHA, specialized care for mothers, infants, children, and nutritional issues for people on ARVs. These 24 trainers will in turn provide 2-3 day training sessions for three people per health facility offering ARVs. The Division of Nutrition plans to provide in-service training and monitoring and evaluation after the initial trainings are completed.

## **Laboratory Staff Training**

There are two groups of laboratory staff requiring training: general laboratory technicians working at health centers, who draw blood, perform basic analyses, and prepare samples for shipment to more specialized laboratories, and specialized laboratory workers who perform advanced diagnostics in the hospital setting. Training for both groups will be overseen by the National Reference Laboratory at TRAC, although some of the more general parts of the training will take place at the Kigali Health Institute.

Training for general laboratory technicians working at health centers will be overseen by the National Reference Laboratory at TRAC. The one-week training session will cover the performance and evaluation of all diagnostic exams performed at the health center, as well as how to prepare samples for shipment to the more advanced laboratories. One laboratory technician per health center will be trained. Specialized laboratory technicians working at district and reference hospitals will have a three-week training program at the National Reference Laboratory at TRAC. The training will cover all laboratory tests performed at the district and reference hospital level, maintenance of machines, use of reagents, and quality control methods. Selected trainings will provide additional modules on CD4 tests and viral load measurement for personnel in hospital settings where these tests are available.

## **Counselor Training**

Few health centers in Rwanda currently have dedicated counselors, but there is a need to hire additional people for this position as HIV/AIDS care increases. Most counselors currently work on VCT and PMTCT programs, so there is a need to expand their services to include post-diagnostic care. Counselors will talk to patients about their health needs, discuss non-medical issues such as food and housing, organize psychosocial support, teach about nutrition, and generally help manage care. Model HIV/AIDS clinics in Rwanda have a number of counselors on staff to oversee the provision of care.

Counselors will receive a one-week training course. Training will be overseen by the TRAC Training Center in coordination with the CNLS. A minimum of one counselor per facility will be trained, with additional counselor positions depending on the size of the clinic and patient volume.

## **Health Training**

There are 11,000 health s working as volunteers throughout Rwanda, roughly allocated one per cellule. They are elected by their communities, and serve to educate the community, help people access health care, and generally improve the quality of health care in their communities. They have very limited health training, but are helpful in providing health education and promoting preventive care, identifying the needs of persons who have fallen ill, and assisting them to go to the health center.

A program to increase the knowledge level of s regarding HIV/AIDS is seen as vital to the success of this Plan. Health s will be used to talk to people about HIV/AIDS, refer people to health centers for testing and care, to teach about nutrition, visit PLWHA at home, assist with adherence issues, and advocate for the sick. To train these community workers, a sequential train-the-trainer model will be used, starting with fifteen trainers who will each go out and train one health professional in each health center. These professionals will then lead training sessions of three days each for local health s. Using this model, over 2,200 people per year can be trained, for a total of 11,000 in five years. Training will be overseen by the Division of Health s at MINISANTE, in coordination with the CNLS.

## **Traditional Birth Attendant (TBA) Training**

A second large group of community providers are traditional birth attendants (TBAs), numbering in the thousands. Approximately 80% of Rwandan women give birth at home, relying on the assistance of these informal providers. TBAs are usually middle-aged to older women in the community with little or no formal training in safe delivery procedures. Of particular importance will be the education of TBAs in safe delivery practices, universal precautions, and the administration of nevirapine to the pregnant woman and her newborn to minimize transmission of HIV.

TBA training will be overseen at the health district level, and will be performed by health center professionals, mostly nurses and midwives. There are approximately 5,000 TBAs to be trained throughout Rwanda.

