

Zimbabwe

Antiretroviral Therapy Program: Issues and Opportunities for Initiation and Expansion

Ms. Marilyn Noguera
Mr. David Alt
Dr. Lisa Hirschhorn
Dr. Chiedza Maponga
Dr. Patrick Osewe
Dr. Amos Sam-Abbenyi

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DELIVER

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Abstract

This report presents the findings of a four-week assessment of the readiness and capacity of Zimbabwe's health sector to deliver the range of services and manage the health commodities required for effective antiretroviral (ART) treatment. HIV/AIDS prevention, diagnostic and treatment programs cannot succeed without a reliable and consistent supply of condoms, high-quality drugs, HIV test kits, laboratory reagents, and the consumable laboratory and medical supplies. The country's public and private sector health providers have a great depth of experience and the team identified the service delivery and logistics experience, as well as lessons learned from the few providers already using ARV treatment, that will serve as a sound foundation for initiating and expanding ART. The report also specifies the critical logistics management and clinical issues that the government must address to ensure the safe and effective implementation of a national ART program.



DELIVER

John Snow, Inc.
1616 North Fort Myer Drive, 11th Floor
Arlington, VA 22209 USA
Phone: 703-528-7474
Fax: 703-528-7480
Email: deliver_project@jsi.com
Internet: deliver.jsi.com

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Acronyms

AA	Anglo-American Group
AIDS	acquired immune deficiency syndrome
ALT/AST	Alanine Aminotransferase/Asparate Aminotransferase
ART	antiretroviral therapy
ARVs	antiretroviral drugs
AZT	zidovudine (also ZDV)
BI	Boehringer Ingelheim
BTS	National Blood Transfusion Service of Zimbabwe
CIMAS	Medical AID Society
CQI	continuous quality improvement
DANIDA	Danish International Development Agency
DFID	British Department for International Development
DOTS	directly observed treatment short-course
EDLIZ	Essential Drugs List for Zimbabwe
ELISA	Enzyme Linked Immunosorbent Assay
EU	European Union
GFATM	Global Fund to Fight AIDS, Tuberculosis, and Malaria
GMS	Government Medical Stores
HAART	highly active antiretroviral therapy
HAQOCI	HIV/AIDS Quality of Care Initiative
HBC	home-based care
HIV	human immunodeficiency virus
JSI	John Snow, Inc.
LGH	Louisa Guidotti Hospital
LMIS	logistics management information system
MAC	Matebeleland AIDS Council
MCAZ	Medicines Control Authority of Zimbabwe
MDR/TB	multi drug resistance/TB
MOHCW	Ministry of Health and Child Welfare
NAC	National Aids Council
NACP	National Aids Control Program
NatPharm	National Pharmaceutical Corporation
NAFT	National AIDS Trust Fund
NETA	National Emergency Taskforce on AIDS
NHLS	National Health Laboratory Services
NNRTI	non-nucleoside reverse transcriptase inhibitors
NVP	nevirapine
OI	opportunistic infection
PCR	Polymerase Chain Reaction
PEP	post exposure prophylaxis
PLWH/A	people living with HIV/AIDS
PMTCT	prevention of mother-to-child transmission
PSI	Population Services International
QA	quality assurance
RH	reproductive health
RPR	Rapid Plasma Reagin
RTD	Rapid Test Devices
STGs	standard treatment guidelines
STI	sexually transmitted infection
TB	tuberculosis
TPHA	Treponema Pallidum Hemagglutination Assay
USAID	United States Agency for International Development

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VCT	voluntary counseling and testing
VL	viral load
WHO	World Health Organization
WTO-TRIPS	World Trade Organization-Trade-Related Aspects of Intellectual Property Rights
ZACH	Zimbabwe Association of Church-Related Hospitals
ZDV	zidovudine (also AZT)
ZEDAP	Zimbabwe Essential Drugs Action Program
ZINQAP	Zimbabwe National Quality Assurance Program
ZNFPC	Zimbabwe National Family Planning Council

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The assessment team wishes to make a special acknowledgment of the wonderful support received from Ms. Joyce Maziya and Ms. Chipso Sisimayi of the USAID Zimbabwe HIV/AIDS team. They cheerfully and tirelessly worked with us to arrange the meetings and site visits, without which there would have been no assessment.

Finally, a warm thank you is extended to USAID/Zimbabwe for funding this assessment.

The assessment team would like to dedicate this report to all Zimbabweans living with HIV and the people dedicated to provide their medical care. We hope the recommendations in this report will lead to immediate support for sites where antiretroviral therapy can be quickly initiated or expanded and in technical assistance for other sites to take the necessary steps to enable them to implement a quality antiretroviral therapy program in the near future.

Ms. Marilyn Noguera, Team Leader, DELIVER/JSI

Mr. David Alt, Logistics Advisor, DELIVER/JSI

Dr. Lisa Hirschhorn, Senior Clinical Advisor on HIV/AIDS, JSI

Dr. Chiedza Maponga, Pharmacy Department, University of Zimbabwe

Dr. Patrick Osewe, Senior HIV/AIDS Advisor, USAID

Dr. Amos Sam-Abbenyi, HIV/AIDS Advisor, DELIVER/JSI

Executive Summary

HIV/AIDS prevention, care, and treatment programs cannot succeed without a reliable and consistent supply of condoms, high-quality drugs, HIV test kits, laboratory reagents, and the consumable laboratory and medical supplies needed to support service delivery.

While global efforts to scale up HIV/AIDS interventions include increased investment in commodity procurement, not enough attention has been focused on the supply chains responsible for management and delivery of the commodities in the affected countries. Effective and efficient supply chains help to maximize use of resources, reduce wastage, improve quality of service, and, ultimately, ensure that customers receive the products they need.

The Zimbabwe government, in collaboration with nongovernmental organizations (NGOs) and donors, has begun to respond to the HIV/AIDS epidemic. Local and international resources have been mobilized to train health personnel and provide essential drugs, equipment, and supplies. Prevention programs have been implemented, and access to HIV/AIDS-related diagnostic and treatment services has improved throughout the system and country.

Efforts are now underway to introduce antiretroviral therapy (ART) in selected sites in preparation for eventual nationwide expansion of the program. HIV/AIDS programs are complex, and the logistics management of some HIV/AIDS products is particularly challenging. More than 120 different health commodities are required to provide the full range of prevention, diagnostic, and treatment services of an HIV/AIDS program. Laboratory services for screening and monitoring must also be available at different levels of care. The logistics requirements are unique because they must ensure safe and effective lifelong use of the medications.

A six-member team of staff and consultants from JSI/DELIVER and USAID/Zimbabwe conducted this assessment over a four-week period (September 23 to October 18, 2002). The team included logistic specialists and clinicians specializing in HIV/AIDS.

The purpose of the assessment was to assist the Ministry of Health and Child Welfare (MOHCW) in identifying the major issues that need to be addressed to support initiation and expansion of ART services in the country. The assessment focused on two areas: logistical requirements for ensuring a reliable and consistent supply of quality antiretroviral drugs (ARVs) and related commodities, and infrastructure and personnel requirements necessary to ensure their safe and effective use by patients. The assessment findings and recommendations are intended to be used by the MOHCW in furthering the development, initiation, and expansion of the national ART program.

This report presents the assessment team's findings and recommendations. Approximately 120 people from 40 different public and private sector organizations were interviewed, representing a wide range of different "stakeholders" involved in various aspects of HIV/AIDS care in the country. Field visits were also made to 10 public sector facilities to review how they currently manage HIV/AIDS-related products and services. The services covered included voluntary counseling and testing (VCT), prevention of mother-to-child transmission (PMTCT), home-based care for HIV-related illnesses, management of opportunistic infections, sexually transmitted infections (STIs), and tuberculosis (TB) diagnosis and treatment. Only one of the facilities visited was already providing ART. Among the organizations interviewed, five corporations are currently, or are actively considering, providing ART to their employees. In addition, people living with HIV/AIDS (PLWH/A) were interviewed in two settings for this report.

There is tremendous interest at the national level and within specific facilities to expand HIV care to include the full spectrum of care and support, including ART. The public and private sectors have a great depth of experience that will serve as an excellent foundation for initiating and expanding ART. In assessing the capability of the selected sites and wider health system to organize and deliver HIV/AIDS-related services and products, the team identified the service delivery and logistics experience, program elements, and lessons learned that will be crucial to introducing and expanding a national ART program. Given the success of the TB program, the ever-increasing number of clients visiting VCT sites in both urban and rural areas, and especially the willingness to improve logistics systems, Zimbabwe is well ahead of many countries in its capacity to implement a national ART program.

The primary recommendations for logistics management and clinical service initiation and expansion are listed below.

Logistics Management

- **Develop and implement an effective logistics management system for all HIV/AIDS-related products for both the central and site levels.** The system for special HIV/AIDS products should build on procedures and stock management tools in the current Zimbabwe Essential Drugs Action Program (ZEDAP) inventory control system as much as possible. This will facilitate the eventual absorption of these HIV/AIDS products into the main MOHCW logistics management system.
- **Establish a new HIV/AIDS Logistics Section in the MOHCW with a clear mandate to oversee coordination of logistics for all HIV/AIDS commodities.** The HIV/AIDS Logistics Section should be established as a section of the AIDS/TB Unit to give it the strongest possible focus on HIV/AIDS-related commodities. The Section should oversee forecasting, donor coordination, procurement planning, inventory management, and monitoring and evaluation
- **Design and implement a complete manual or automated national logistics management information system (LMIS) to capture essential logistics data and track product use in the system.** The overall purpose of the LMIS would be to prevent stockouts and stock imbalances of ARVs and other HIV/AIDS-related products at sites providing HIV/AIDS services to clients. LMIS data should inform future forecasting of requirements and help to validate forecasts based on morbidity or other service methodologies. It will also help with commodity management in other areas, including inventory control and ordering.
- **Establish the mechanism and procedures to coordinate product requirements and institute medium- to long-term procurement planning of HIV/AIDS commodities with donors.** The importance of this cannot be overemphasized. The Zimbabwe National Family Planning Council (ZNFPC) and the reproductive health (RH) product donors have successfully implemented this type of donor coordination. They forecast requirements for three years, have a financial commitment for the next two years, and identify funding shortfalls and mobilize resources for the third year. Building the necessary capacity within the National Pharmaceutical Corporation (NatPharm) to be able to conduct world-class procurement will be necessary for sustainable implementation of ART.

Clinical Service Initiation and Expansion

- **Appoint a national ART program manager to ensure rational and effective introduction of ARVs into the public sector. This person should work in the AIDS and TB Unit and have sufficient technical and support staff as required by different stages of program development to support the program and sites undergoing initiation and expansion of ART services.** There is great interest, commitment, and willingness to begin an ART program among centrally based staff of the ministry of health, beginning with the Minister of Health. However, there is no clear individual or organization exclusively responsible for daily planning, coordination, and management of the ART effort. The program will need a strong and committed leader at the national level to support initiation and expansion of a national ART program. Sufficient staff with committed time and clear goals and objectives, and with political support at the highest levels, will be needed to coordinate all the essential aspects needed for the success of the ART program.
- **Before initiating ART, clear protocols (at the site or national level) need to be agreed upon for patient selection and screening; ARV prescribing, monitoring, and management; adherence support; management of side effects; and treatment failure. Guidelines are also needed for coordination with other relevant programs such as TB programs.** These protocols will likely need to be revised after pilot stages, but draft protocols are critical for introducing ART. Once these protocols and procedures are in place, ART initiation programs, such as that planned by the MOHCW/CDC, will have great potential for providing practical training and experience in the use of ARVs needed to start a national ART program.
- **In the early stage of the program, ARVs ideally should be introduced into sites with existing HIV-related outpatient care services. This will provide the comprehensive and supportive system critical for people starting and maintaining effective ART.** A number of models have been used to introduce ARVs in resource-limited countries. ARVs can be given in an HIV primary care clinic that delivers the spectrum of HIV care; PMTCT clinics that provide HIV care; HIV specialty clinics devoted solely to ARVs, such as clinical trial settings where other HIV care is given at other sites; or integrated into an ongoing primary care clinic. Each model has strengths and weaknesses, and no single model will be appropriate for all the different sites where Zimbabwe will eventually offer ART. Information obtained in the assessment indicated that a physician-led/nurse-run program might be the best model in early ART pilot sites in Zimbabwe. This would be similar to country's TB program, where physicians are involved in initial treatment and management of complicated cases, and trained nurses do routine monitoring and follow up.
- **Carefully review all potential ART initiation sites and establish a standard set of basic site requirements to ensure their full readiness to provide ART. As pilot sites are initiated, bringing other sites to readiness will become easier as protocols are established and in-country experience and training opportunities expand.** Future drug supplies and logistics must also be ensured, particularly secure storage and dispensing plans at the clinical care sites. The "stages of readiness" are presented in detail in appendix E.

- **Actively engage private practitioners and corporation medical staff in national plans and ongoing activities because they have great potential to provide knowledge and active involvement in HIV care now and in the future.** Public sector efforts already underway to engage private sector players, such as help in exploring ways to make ARVs financially accessible, should be continued and extended by the MOHCW. In addition, the private sector is awaiting direction from the government concerning treatment protocols and guidance on quality assurance for ART programs.
- Provide support to expand existing ART programs (or those ready to start) in Mission hospitals, corporations, and district councils.

Background

HIV/AIDS Prevalence and Impact

According to the United Nations Programme on HIV/Aids (UNAIDS) 2002 report, since diagnosis of the first case of HIV infection in Zimbabwe in 1985, the epidemic has grown to about 2.3 million people infected of the country's total 12 million population. An estimated 34 percent of sexually active adults aged 15–49 years are infected with HIV. It is estimated that about 600,000 people have full-blown AIDS. More than 3,800 people are dying every week due to this epidemic, which has become the top killer disease in the country. At least 70 percent of hospital beds in medical wards are occupied by patients with AIDS-related conditions. Life expectancy has fallen to 43 years, while infant mortality has more than doubled to 130 per 1,000 live births. The increased morbidity and illness related to AIDS is stretching scarce health resources at a time when the country is facing enormous economic hardships.

Government and Donor Response

Zimbabwe has responded positively in its efforts to deal with the HIV/AIDS epidemic. In 1992, the government obtained a World Bank loan for AIDS prevention and to set up the National AIDS Control Program (NACP) in the Ministry of Health and Child Welfare (MOHCW), which has been a driving force behind the public sector's response. In addition, civil society through missions and other NGOs has initiated activities to respond to the HIV/AIDS epidemic. In December 1999, the government declared AIDS a national disaster and created a new coordinating body under the MOH, the National AIDS Council (NAC). A National AIDS Policy was developed, and an "AIDS levy" payroll tax that now contributes to the National AIDS Trust Fund (NATF) was introduced to improve AIDS services (excluding ART). A secretariat was appointed in January 2001 to manage the day-to-day activities of the NAC. The former NACP within the MOHCW has been renamed the National AIDS & TB Unit. This Unit continues to be responsible for all health sector activities related to HIV, STIs, and TB.

To provide essential drugs, the government has obtained grants and loans from international organizations in the past. Since 1992, the government obtained several World Bank loans for AIDS prevention and to purchase TB drugs. At the time of this assessment, however, international financial institutions had broken off relations with the government of Zimbabwe. The government application to the Global Fund to Fight AIDS, TB and Malaria (GFATM) includes funds for antiretroviral drugs (ARVs). The European Union is supplying 26 million euros worth of drugs in 2003 and 2004, and these grants and loans are a significant source of drugs in the country.

Government Plan for Nationwide ART Program

In May 2002, Zimbabwe declared HIV/AIDS a national emergency, thereby setting the stage for the country to import low-cost generic antiretroviral drugs. A National Emergency Taskforce on AIDS (NETA) was formed to coordinate comprehensive care for AIDS patients. NETA consists of leading University of Zimbabwe professors and heads of departments of medicine and pharmacy, the HIV/AIDS and TB Unit, World Health Organization (WHO), Centers for Disease Control and

Prevention (CDC), Medicines Control Authority of Zimbabwe, NatPharm, physicians from central hospitals, and other co-opted members.

Drafts of national guidelines for HIV/AIDS care have been developed with protocols for ARV eligibility criteria, including laboratory tests, and recommendations for patient monitoring. Standard treatment guidelines for ART have been drafted as part of the HIV/AIDS Quality of Care Initiative (HAQOCI), lead by the University of Zimbabwe and MOHCW, with support from the Zimbabwe office of the Centers for Disease Control (Zim-CDC). The guidelines are under review by the MOHCW, and until they are approved, there are no national guidelines governing ARV use.

The University of Zimbabwe has been deeply involved in the national efforts. It has been providing leadership and expertise in HIV care and training and clinical research involving ARVs and other aspects of HIV care. It will play a major role in the national program with laboratory support, monitoring, pharmacy and logistics expertise, and specialty consultation. The HIV Clinicians Association, a private practitioners' NGO, and the University of Zimbabwe are developing centers of excellence on HIV/AIDS care. The two centers will provide continuing education to ensure practice is kept up-to-date with national and international recommendations for ART management. These projects have committed leaders and adequate support to ensure their activities will be initiated.

The draft "Plan for the Nationwide Provision of ART" calls for a detailed implementation strategy to be developed for all aspects of ART. At the time of this assessment, this strategy had not yet been completed, and the MOHCW is still reviewing the plan. The 2001–2002 plan recommends that ART be introduced initially at a limited number of central sites and gradually decentralized to the provinces as more health personnel receive in-service training. The first four suggested "pilot" hospitals are Harare and Mpilo Central hospitals, Wilkins Infections Diseases Hospital, and the Genitourinary Center in Bulawayo. Under the plan, an estimated 7,500 patients would begin treatment at these four sites in the first three months. After three months, ART would be initiated in another three hospitals (Parirenyatwa, United Bulawayo, Chitungwiza), followed three months later by provincial hospitals (sites not specified). The authors estimate that it would be possible to treat 71,000 adults over a 12-month period. The *monthly* cost at this coverage level is estimated to be between U.S.\$1.8 million and U.S.\$3.6 million. The plan does not include specifics of how the government will finance the program in the long term.

Zimbabwe's proposal to the GFATM includes U.S.\$2.2 million to buy ARV drugs that will be used to treat approximately 1,000 patients for a three-year period. While the proposal has been approved, there is still no definite schedule for when funds will be available to purchase the drugs. The money is expected to be available sometime in 2003. It is also expected that additional funding will be requested in future proposals for significantly larger treatment targets.

ZimCDC has been very active in moving forward national efforts to introduce ARVs into the country. Since August 2000, CDC has worked to strengthen HIV/AIDS-related health care by providing support to local partners such as the University of Zimbabwe Clinical Epidemiological Unit, the National TB Reference Laboratory, the National Microbiology Reference Laboratory, and the HIV Clinicians Association. It has provided equipment and other commodities, software programs, training for HIV testing, and support of other laboratory testing as well as assistance in developing contracts and agreements for donated Determine (a rapid HIV test) and nevirapine for PMTCT and Diflucan (flucanazole). Through its HIV/AIDS Quality of Care Initiative with the University of Zimbabwe, it is providing support for a new opportunistic infections (OIs) prevention clinic at Harare Central Hospital. Finally, the CDC Global AIDS Program (GAP) is preparing to supply ARVs for 400 adult patients for one year at the Harare and Mpilo Central hospitals. It is assumed that these patients are included in the 1,000-patient target in MOHCW's proposal to GFATM. The CDC

program will also fund increasing the laboratory capacity and training of personnel at the two hospitals.

WHO Zimbabwe has provided technical assistance in training health care workers on care of OIs and standard treatment regimens proposed for ART in Zimbabwe. It has been interested in creating linkages with organizations in Ghana that are seriously considering producing generic ARVs. WHO Zimbabwe participated in preparing the GFATM proposal for ART funding.

UNAIDS in Zimbabwe is assisting the National AIDS Council to organize the Zimbabwe Business Council on AIDS (ZBCA) to facilitate mobilization and coordination of the business community response to HIV/AIDS.

At the time of this assessment, no other donors were actively planning to provide ARVs outside of clinical trial settings. Donors have been involved predominantly in prevention and VCT and HIV care (excluding ARVs) as well as other supportive services such as food and training. This reflects a general agreement among donors on the priority of the battle against HIV/AIDS, but also a hesitation to embark on ART programs due to the expense involved and limited budgets.

Assessment Framework and Methodology

Purpose and Objectives

The purpose of the assessment was to assist the Ministry of Health (MOH) in identifying the major issues that need to be addressed to support initiation and expansion of ART services in the country. The assessment focused on two areas: logistical requirements for ensuring a reliable and consistent supply of quality ARVs, and infrastructure and personnel requirements necessary to ensure their safe and effective use by patients. The assessment findings and recommendations are intended to be used by the MOH in furthering development, implementation, and expansion of the national ART program.

The specific objectives of the assessment were to:

- identify strengths and limitations of the current (public sector) logistics system for procurement, storage, and distribution of ARV drugs, and provide recommendations for strengthening the system capacity;
- document/identify current readiness in terms of personnel and infrastructure to introduce and expand ART in selected public sector sites, with attention to possible collaboration with the private sector; and
- identify the policies and procedures needed to support service delivery and enhance logistics management of ART drugs and related laboratory supplies.

Assessment Framework

The assessment looked at all the key functions of the logistics system required for the ART program:

- Customer service
- Product selection
- Forecasting and quantification
- Procurement
- Human resource and organizational capacity
- Logistics management information systems
- Product quality assurance
- Warehousing, inventory control, and storage

- Distribution and transport system
- Funding sources and budgeting.

The purpose of the logistics system is to ensure that the right quantities of quality products reach the right places at the right time. Once products for the ART program have been selected and registered for use, requirements must be quantified for the short term (one–three years) and the longer term (more than three years). The products must then be procured, cleared through customs, and undergo quality control checks. Once in the program’s logistics system, inventory management and distribution, which includes transport and storage at perhaps several levels, must be carefully coordinated so that the products reach the service delivery points where they can be used. All of this must be supported by an effective policy and legal framework, consisting of operational procedures, regulatory authority for quality assurance, and efficient registration processes that allow new products to be registered quickly for import.

As figure 1 shows, ART is part of a continuum of care in a comprehensive approach to HIV/AIDS that includes prevention, diagnosis, treatment of opportunistic infections, palliative care, antiretroviral therapy for AIDS, and psychosocial support services. Management of ART services should be linked with other existing HIV/AIDS prevention and care activities and service delivery systems.

The organization and operations of a service delivery program are crucial for the design and functioning of a logistics system. The logistics system must respond to and support the policies, regulations, protocols, and guidelines that govern delivery of services. Figure 1 shows the logistics system supporting all levels of an HIV/AIDS program. More than 120 different health commodities are required to provide the full range of prevention, diagnostic, and treatment services. Laboratory services for screening and monitoring must also be available at different levels of care.

HIV/AIDS programs are complex, and logistics management of some HIV/AIDS products is particularly challenging. Examples of logistics issues include—

- Reliable ARV supplies are absolutely critical, given that more than 90–95 percent adherence to ART is required for the regimens to be effective over the long term. In a twice-a-day regime, this means that less than one dose every two weeks can be missed. Lower levels of adherence are associated with development of drug-resistant HIV.
- Strict monitoring of inventory levels and secure storage facilities are needed because of the high price of ARVs and other HIV/AIDS commodities. Their use for prolonging survival and improving quality of life makes them highly subject to pilferage and leakage to other markets.
- Combinations of at least three to four drugs are required for highly active antiretroviral therapy (HAART), and maintaining equal stock levels of different combinations of drugs will be very challenging for service providers. Appropriate inventory control systems are needed to maintain a full (rather than rationed) supply of ARVs for each level of the system.
- PMTCT programs in resource-limited settings use either one drug (AZT or nevirapine) or two drugs (AZT plus 3TC). Even this short course carries a risk of developing ARV drug resistance, which would decrease the efficacy of subsequent ARV regimens. Use also poses the risk of transmission of drug-resistant strains of HIV/AIDS. Product selection for ART needs to take into consideration drug selection for preventing mother-to-child transmission (PMTCT).

Figure 1.
Commodities for a Comprehensive HIV/AIDS Program

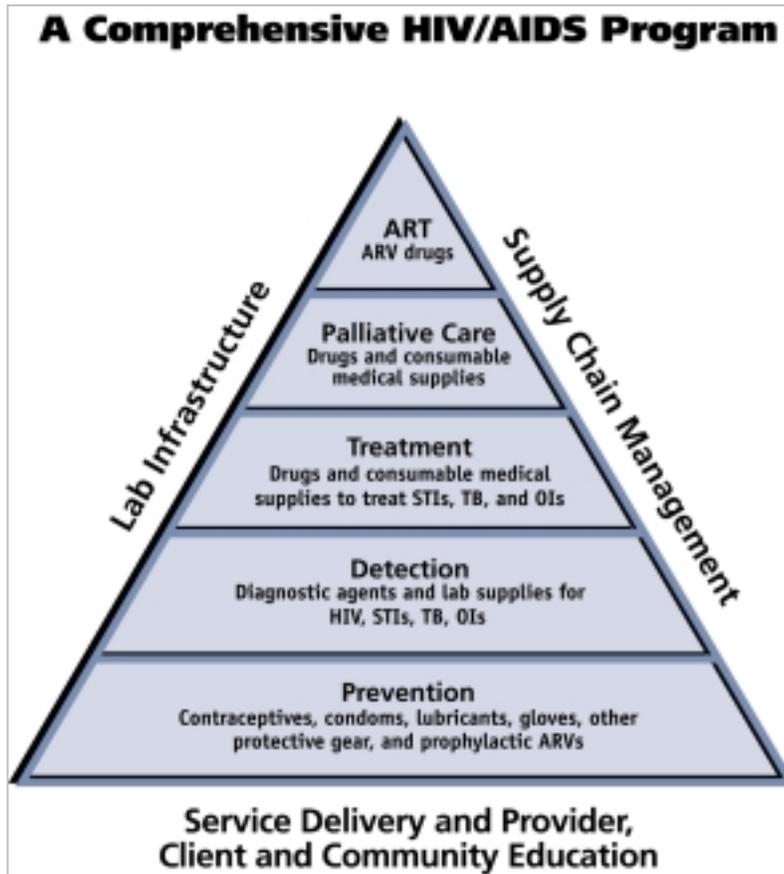


Figure 2 shows the steps and services that must be available to identify, enroll, and monitor patients in an ART program. Commodities are required at each stage of a patient’s care. The team assessed the capability of the selected sites and wider health system to organize and deliver these ART services by looking at their existing services for testing and treatment of TB, OIs, and STIs. The experience and lessons learned in providing these services will be crucial to the introduction and expansion of a national ART program.

Figure 2 also emphasizes that, for an ART program, logistics management of ARVs does not end with delivery of the drugs to the pharmacy, but rather ends when the drugs are prescribed properly and dispensed correctly by providers and taken as directed by patients. The logistics requirements for an ART program are unique because they must ensure safe and effective lifelong use of the medications. In resource-limited settings, this is a complex challenge.

Figure 2.
Patient Logistics in an Antiretroviral Therapy Program



Methodology

Assessment team

The four-week assessment was conducted from September 23 to October 18, 2002, by a six-member team that included three JSI/DELIVER staff (one physician and two health logistics specialists), a DELIVER consultant (a U.S.-based physician with extensive HIV/AIDS clinical experience), USAID/Zimbabwe’s senior HIV/AIDS advisor (physician), and a local consultant (pharmacist). The logistic specialists were responsible for the logistics areas and the clinicians focused on the clinical aspects (protocols, training, laboratory, models of care) of the assessment.

Tools

Two tools, both developed by DELIVER, were used to gather information for the assessment.

The *Facility Logistics Management Questionnaire* was administered by the logistics specialists at each of the 10 facilities visited (see appendix A for a copy of questionnaire). The tool covers all logistics aspects of how facilities are currently managing several HIV/AIDS related products: availability, security measures, ordering, storage, quality control, transport, and logistics recording and reporting. HIV/AIDS-related products were used as a “proxy” for ARVs, because ARV use is currently very limited. The 18 products covered included HIV test kits, drugs for treating opportunistic infections (e.g., fluconazole, cotrimoxazole), TB drugs (rifampicin, ethambutol), STI drugs (e.g., doxycycline, metronidazole), ARVs (nevirapene, AZT), and laboratory test supplies (pipettes).

Clinical members of the team used the *Facility Services and Infrastructure Questionnaire* as an interview guide for discussions regarding HIV/AIDS-related services with personnel at the health facilities and corporations (see appendix B). The services covered included VCT, PMTCT, home-based care (for HIV-related illnesses), management of opportunistic infections, STIs, and TB diagnosis and treatment. Information was collected on each available service: frequency of service, staffing, training, use of partner organizations, use of protocols, patient load in previous month, and record keeping. The infection control measures and cold chain capacity were also assessed for HIV test kits where service was available.

“Stakeholder” interviews

Approximately 120 people from 40 different public and private sector organizations were interviewed as part of the assessment, representing a wide range of different “stakeholders” involved in various aspects of HIV/AIDS care in the country. Among these are five corporations that are currently, or are actively considering, providing ART to their employees. The people interviewed included HIV/AIDS program managers, researchers and clinicians, pharmaceutical experts, procurement specialists, warehouse managers, NGOs involved in community services, directors and health officers of donor organizations and corporations, and PLWH/A. Table 1 provides a list of organizations contacted (see appendix C for the complete list of people interviewed).

Table 1. Organizations Contacted for Assessment, October 2002

Public Health Sector Organizations	National NGOs	Corporations	Donors and Collaborating Agencies
Ministry of Health and Child Welfare National AIDS Council UZ Medical School National Pharmaceutical Corporation Zimbabwe National Family Planning Council National Reference Laboratory Health Professions Council Medical Laboratory and Clinical Scientists Council HIV Clinicians MCAZ PMAZ	Zimbabwe Association of Church-related Hospitals National Network for PLWH/A Central Baptist Church	De Beers Zimbabwe Prospecting Ltd. Anglo-American Delta Corporation Group TA Holdings Old Mutual CAPS Holdings Ltd. Datlabs Geddes Ltd. Autosterile Unifreight Cimas Cares Crown Agents	USAID Catholic Relief Services PACT Futures Group-Zimbabwe AIDS Policy Project ZAPSO Canadian High Commission Population Services International (PSI) Department for International Development (DFID) CDC UNICEF UNAIDS JICA AmeriCares International Programs The LEAD Program WHO Zimbabwe Country Office Pfizer Inc. International Philanthropy Programs

Public health facilities selected

The team visited 10 public sector health facilities to obtain information about their HIV/AIDS-related services and logistics management systems. The sites selected were currently doing *one or more* of the following (not all activities are listed in the table):

- using ARVs for ART,
- designated by the draft national plan as an ART initiation site,
- actively preparing to introduce ARVs for HAART,
- using ARVs for PMTCT,
- and/or conducting clinical trials with ARVs for ART.

The facilities visited represent different levels of care in the health system (central, provincial, district, municipal), and they serve both urban and rural populations. Information was also collected from an additional hospital (Howard Hospital) through written communication. Table 2 shows the type of facilities included in the sample, and the map shows their location.

Table 2. Health Facilities Visited in ARV Assessment, 2002

Facility Name	Type of Hospital	Location	Current HIV-related Clinical Activity
Harare Central	National referral	Urban	Designated site for ART initiation
Mpilo Central	National referral	Urban	Designated site for ART initiation
Chitungwiza General	Provincial referral	Urban	Designated site for ART initiation
Parienyatawa Central	National referral	Urban	Designated site for ART initiation
Pelendaba Clinic	Municipal clinic	Urban	PMTCT
St. Mary's Chitungwiza	Municipal polyclinic	Urban	PMTCT, ART preparation
Wilkins Infectious Disease Hospital	Municipal referral	Urban	ARV clinical trials
Marondera Provincial	Provincial referral	Rural	PMTCT preparation
Makumbe District*	District hospital	Rural	Primary HIV care
Luisa Guidotti**	Mission hospital	Rural	ART
Howard Hospital**	Mission hospital	Urban	PMTCT, HAART preparation

* Selected as an example of a district hospital.

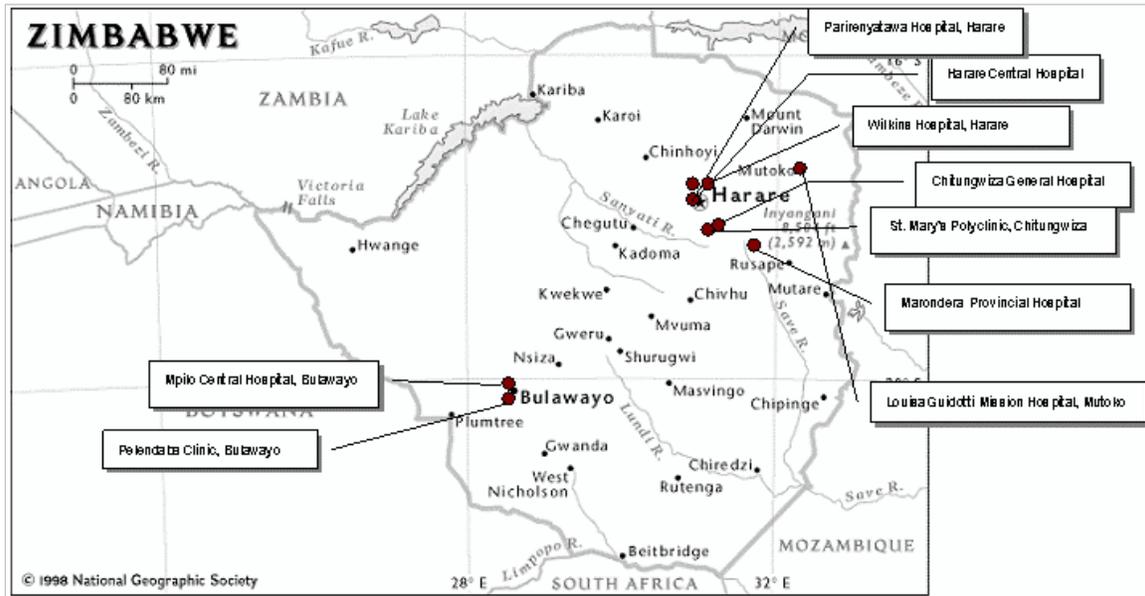
**Receives MOH and outside donor funding, member of Zimbabwe Association of Church Hospitals.

Limitations

The assessment was not meant to be a comprehensive review of all aspects of HIV/AIDS care in Zimbabwe. (See figure 3.) This report was written with the acknowledgement that not all stakeholders, such as nutritionists, traditional healers, and a broader range of NGOs and clinical providers, were covered. It is also acknowledged that the status of some clinics and activities is in flux, and, thus, by the time this report is issued, some findings may no longer be relevant to the fast-changing health care environment of Zimbabwe. One key limitation is that the team was unable to

meet with staff involved in clinical ARV trials. Finally, some information may have been missed because the team could not reach certain locations, or because team members were unaware of certain programs or stakeholders. Maximum effort was made to reach as many key stakeholders and facilities as possible with the time and resources available for the assessment.

Figure 3.
Map of Zimbabwe



Findings

This section presents the general findings on HIV/AIDS-related services and findings specific to the health facilities and corporations visited.

HIV/AIDS Related Services (Customer Service)

HIV counseling and testing services

HIV testing is being conducted in multiple settings for surveillance, voluntary counseling and testing, PMTCT, clinical diagnosis in a health facility in the context of individual medical care, and blood screening. The government has made concerted efforts to train various categories of health professionals in counseling and to increase the capacity to screen for HIV. The majority of clinical HIV testing done in Zimbabwe is voluntary. Mandatory testing for employment is illegal, although some insurance companies require HIV testing for high-premium life insurance. Voluntary testing is performed in outpatient settings for HIV diagnosis, in prenatal care settings for initiation of PMTCT services, and in clinical settings for diagnosis and management of illness due to or possibly related to HIV. In most cases, patients suspected of having HIV infection are offered pretest and posttest counseling by physicians on-site or through referral to a VCT center.

Population Services International (PSI), with USAID and other donor funding, provides support to the New Start VCT Project by procuring rapid HIV test kits for 14 urban and rural sites in the country. The sites are integrated into existing public health facilities, and two are freestanding sites providing VCT services. Trained counselors provide counseling services. Since 1999, the number of clients visiting New Start sites increased from 300 a month to 5,000 a month by the end of 2002. To meet the demand, PSI has started outreach services using mobile VCT teams partnering with a host site (church, clinic), which provides space and community mobilization. Plans are underway to add additional services (STI treatment, family planning) to the VCT services offered at New Start centers.

The MOHCW is responsible for approving all products for use in the health sector. Six rapid tests have been approved for use: Capillus, Determine, Unigold, OraQuick, Hemastrip, and Virocheck. A number of ELISA Tests have also been approved and are in use (primarily for blood safety screening, surveillance, and clinical diagnosis) in Zimbabwe.

Use of HIV test kits is governed by the HIV testing protocols in the national guidelines, *Procedures Manual for HIV Testing*. Under the approved testing protocol for VCT and PMTCT, screening and confirmatory tests are conducted in parallel: If results are discordant, the two parallel tests are repeated on a new specimen. If test results are still discordant, a single tie-breaking test is conducted with a third rapid test.

Prevention of mother-to-child transmission

At PMTCT sites, voluntary counseling and testing services are offered to pregnant women. For those found to be HIV infected, an ARV regimen is offered. The *PMTCT Program Procedures Manual* governs the use of ARVs for PMTCT. Zidovudine (AZT) was used during the pilot phase from 36 weeks' gestation. nevirapine (NVP) is given to the mother during labor and to the baby within 48 hours of delivery. It was reported that facilities currently using AZT were in the process of switching to nevirapine only. Support is given for safe infant feeding. The PMTCT program is also set to follow

up infected mothers, strengthen child and family and community-support mechanisms for families living with HIV/AIDS, and assess the impact of the interventions.

As of August 2002, there were 17 functional PMTCT sites in the country. Uptake of this service is still low at a number of sites, however. While access to NVP for PMTCT has improved greatly at the central hospitals¹, availability of rapid HIV testing (same day results) remains a main problem.

The PMTCT program has begun at a number of sites throughout the country. Technical support and donations of NVP for the trials are being provided by a number of organizations and foundations. The AIDS/TB unit of the Ministry of Health has directed development of guidelines, manuals, and standardized protocols and training for national implementation of PMTCT, and training workshops for nurses and doctors are being conducted by the AIDS/TB Unit. Recently, 180 nurse-counselors were trained to expand PMTCT services. Additional training materials are being developed by the MOHCW in collaboration with other organizations. Some facilities are using trained lay counselors to decrease the work burden on nurses, with reports of good results.

Primary HIV care, TB, and OI treatment services

Hospitals (central, provincial, and district) provide the bulk of inpatient care, with an estimated 75 percent of beds occupied by HIV patients. Primary HIV care is also delivered on an outpatient basis at many district hospitals, polyclinics, or local clinics (particularly in urban areas). Patients requiring hospitalization or more complicated care are referred to central or provincial hospitals. All medical providers in Zimbabwe are familiar with HIV-related complications. At all health facilities visited, more than 50 percent of daily activities of health providers (general practitioners, specialists, nurses, medical laboratory scientists, and pharmacists) were reported to be HIV-related.

In the private sector, HIV primary care is also available through self-pay, insurance (ARVs not included), or contracts with agencies/companies. A full spectrum of care is provided, including coordination of inpatient care and home-based care. Care is usually provided by a physician, sometimes in coordination with a nurse. These providers have considerable expertise in primary HIV care and management of OIs and other HIV-related complications. In 1997, a group of private clinicians formed an association called the HIV Clinicians of Zimbabwe, an affiliate member of the Southern Africa Clinician Society, which works particularly in training and education.

The 2000 Essential Drugs List of Zimbabwe (EDLIZ) provides treatment guidelines for the most common health conditions in the country, including opportunistic infections and conditions related to HIV/AIDS. The EDLIZ is disseminated widely and used at all levels of the health system.

The HIV/AIDS Quality of Care Initiative (HAQOCI) is developing training modules for OI prevention and pilot testing the materials at training workshops. The first training session, held in September 2002 at Harare Central Hospital included 28 nurses and doctors. The overall plan is to conduct ongoing training on opportunistic infection prevention for health care providers in Zimbabwe.

TB is the most common opportunistic infection in Zimbabwe: more than 50 percent of TB patients are co-infected with HIV. The National TB program provides DOTS free of charge to cases in designated public sector institutions only. Private sector practitioners must refer patients to these public facilities for treatment, which is provided using established protocols for treatment and strict

¹ Between November 2001 and August 2002, 9,000 doses of NVP were issued; it is assumed they were used to prevent vertical transmission of HIV.

control of medications. The DOTS program has reportedly been effective in increasing cure rates and lowering treatment failure rates in a wide range of settings. In the facilities visited, a range of methods were used to promote adherence to treatment, including limited prescribing of one to four weeks of drugs at a time, use of community workers, and treatment partners chosen by the patient. High adherence rates were reported. Bulawayo City Health, for example, reported a cure rate of 96 percent in its TB program.

TB treatment is well organized and follows an MOH-prescribed protocol with an initial evaluation by a physician and trained nurses providing the bulk of follow up care, with physician backup. STIs are treated primarily using syndromic management and established protocols. Most STI treatment is provided by nurses or other nonphysician providers. This current TB and STI system provides an excellent model for an ARV treatment program wherein patients would receive their medications from a physician and nurse team in charge of ART at the polyclinic or hospital level. Overall, health sector staff are experienced in developing and implementing protocol-driven therapy and in community outreach and patient education. This will prove very valuable experience for the ART program.

Services available at sites visited

As table 3 shows, the public sector facilities visited provide a wide range of inpatient and outpatient HIV/AIDS-related diagnostic and treatment services. All of the hospitals and polyclinics offered HIV testing and treatment for TB, STIs, and OIs. PMTCT services were provided by seven facilities, and home-based care was provided by six.

The experience of these facilities in treating AIDS-related illness is significant. For example, the Luisa Guidotti Hospital reported that 60–80 percent of its inpatient beds are occupied by patients with AIDS-related ailments. Other hospitals had similarly high HIV patient loads. The Central Hospitals of Harare and Mpilo serve as top referral facilities. They have the best laboratory capacity, which will be upgraded further through CDC support. The OI prevention clinic being established at Harare Central Hospital with CDC support will be another valuable resource for the country's HIV/AIDS program. The provincial-level hospitals (Marondera Provincial Hospital and Chitungwiza) also provide a wide range of services (except for PMTCT), including home-based care. Their lab support facilities are more basic than those of the central-level hospitals (this is discussed in more detail in a later section).

At the lower level, the two polyclinics (Pelendaba and Chitungwiza) also provide a full range of services (VCT, PMTCT, primary care, TB services), with the addition of community outreach and patient follow up. Chitungwiza polyclinic had an interesting model of involving the community and PLWH/A in training of lay counselors and has developed a comprehensive approach to HIV primary care. Its experience is of particular value given the current health personnel shortages in the country. Laboratory capacity at Chitungwiza was very minimal on-site, but it transports specimens to the Central Hospital.

Table 3. Availability of HIV-related Diagnostic and Treatment Services in Health Facilities Visited in the Assessment, October 2002

Name of Facility, Location	Type of Service Provided										
	Type of facility	HIV testing	HIV primary care	STI treatment	OI treatment	PMTCT	TB treatment	Home-based case	Laboratory support	ART	ART patients
Harare Central Hospital, Harare	National referral	√		√	√	√	√		√		
Mpilo Central Hospital, Bulawayo	National referral	√	√	√	√	√	√		√		
Parirenyatwa Hospital	National referral	√		√	√	√	√		√		
Chitungwiza General Hospital, Chitungwiza	Provincial referral	√	√	√	√		√	√	√		
Pelendaba Clinic, Bulawayo	Municipal polyclinic	√	√	√	√	√	√	√			
St. Mary's Polyclinic, Chitungwiza	Municipal polyclinic	√	√	√	√	√	√	√			
Wilkins Hospital, Harare	Municipal hospital	√		√			√				
Marondera Provincial Hospital	Provincial referral	√	√	√	√		√	√			
Makumbe District Hospital, Makumbe	District hospital	√	√	√	√				√		
Luisa Guidotti Mission Hospital, Mutoko District	Rural Mission hospital	√	√	√	√	√	√	√	√	√	143
Howard Hospital, Glendale	Mission hospital	√	√	√	√	√	√	√			

Highly active antiretroviral therapy (HAART)

Public sector facilities

ART outside of clinical trials is currently available at only one hospital, Luisa Guidotti Mission Hospital in Mutoko District. Details on the program are provided here because of their value as a possible model for other sites.

The hospital has foreign donor resources to provide ART for up to 200 patients for five years.² A total of 170 adults and children have been enrolled in the program to date, 143 of whom are currently receiving treatment:

Patients enrolled since start of program	170
Currently receiving ART	143
Deceased	17
Dropped out	10
Inpatients	33
Outpatients	110

The hospital uses the following criteria in selecting patients for ART:

- Comprehension of lifelong therapy with ARVs for compliance/adherence
- CD4+ T lymphocyte cell count < 350

or

- Presenting with OIs
- Contribution of Zimbabwe: U.S.\$5,000–U.S.\$10,000 for patients who can afford it; free for the poor.

The hospital admits patients for three weeks during which HAART is administered. Throughout this period, patients are monitored to detect primarily possible allergic reactions to NVP. (Five patients have been switched to Efavir because of reactions.) At discharge, the patient receives a two-week dose and is instructed to return for follow up. The two-week dose is given to the patient to improve compliance; a three-week supply of ARVs is given to patients living far away from the hospital. The hospital provides transportation fare to poor patients. The ART program was integrated into a comprehensive HIV primary care program.

According to the program's administrators, in the case of terminally ill patients, ARVs are not started before the patient has been stabilized with supportive treatment, especially for opportunistic diseases. Only if the patient recovers reasonably are ARVs started. Other factors that were considered to be of paramount importance are the initial assessment of the prospective ARV patient's probable compliance: He or she must understand the situation and the value of ARVs, and the patient's social and family environment needs to be conducive to a positive outcome. Distance from home to the hospital is also important when considering necessary follow up.

² Support provided by Don Gnocchi Foundation and Bazzoni Foundation of Milan, Italy.

Additional resources required to launch the ART program were relatively minimal. Donor funds enable the hospital to purchase branded ARVs through Independent Health Care, a private distributor in Harare, at a cost of approximately U.S.\$1,000 per person per year. Because of the shortage of health sector personnel in the country (discussed below), no additional staff members were hired for the ART program, and all staff have significant other clinical responsibilities. Key staff involved in the program are the supervising physicians, nurses (inpatient and outpatient), and the pharmacy technician. The hospital surgeon personally oversees procurement of the ARVs in Harare. The pharmacist is responsible for drug consignments, maintaining the list of enrolled patients, and distributing drugs directly to the outpatients, or to the ward nurses for inpatients. For inpatients, drugs are dispensed twice daily to avoid having to store the ARVs in nonsecure places from which they could be stolen.

The program administrators believe that for the ART program to be successful, health providers must believe the program can change the disease from uniformly fatal to chronic. For example, the program's adherence counseling is being provided by nurses who are themselves taking ARVs. Staff felt this to be an effective approach, in that "coming into the open is a terrific advantage, since it saved already the life of a nurse, and the nurse or nurse aides are there, fit and healthy to prove it."

Based on their experience, Luisa Guidotti Hospital administrators said that minimum personnel resources needed to have an ART program for 200 patients are a team of one physician, four nurses, and a pharmacist. If the team is only responsible for the ART program, they could also organize more services, such as home monitoring of patients, a service they are unable to offer due to scarcity of staff. With additional funding for drugs, and with one more doctor and two qualified nurses, the head surgeon at Luisa Guidotti Hospital said they could expand their ART program to treat 300 patients:

The greatest achievement, apart from saving the life of many of our nurses, has been the breaking of ice, of silence and denial about AIDS in and around Luisa Guidotti Hospital. The disease is losing the aura of killer and the social stigma. People speak openly of AIDS and possible treatment, while before it was considered a sentence to death.

At least five of the other health facilities visited were planning or at some stage in preparing to start their own ART programs. The others were eager to start. Although they had differing capacities, and their direct experience using ARVs was still very limited, all of them have significant experience in many areas directly relevant to an ART program. Regarding the model of care, most facilities proposed using some version of a directly observed treatment short-course (DOTS) model, even though they recognized its limitations in urban settings or where stigmatization still prevailed. Providers also discussed the potential problems of incorporating ART programs directly into existing TB programs, such as the burden on resources, risk of TB infection, and need to ensure continuity of HIV care as part of the ART program. One key determinant of ARV therapy success is adherence support. They recognized that this would require training health personnel and lay people as well as innovative methods that reflect the needs of the community served (distance from site, acceptability of home visits) and level of stigma associated with HIV/AIDS in the community.³

Additional resources will be needed for most of the facilities to be ready to provide services. Two of the key issues examined by the team are available personnel and laboratory capacity.

³ The PLWH/A interviewed suggested that ARVs should only be given initially to people who have disclosed their status to their families. It is likely that disclosure will enhance individuals' ability to adhere to treatment, and discussion of need to disclose to at least one household member has been suggested by some individuals as a prerequisite for ARVs, particularly in earlier stages of introduction into the country.

Personnel capacity

Trained personnel will be needed for safe and effective use and management of ARVs, side effects, and other complications as well as to provide counseling to patients on the regimen, side effects, adherence, and lifelong regimen.

Respondents consistently reported to the assessment team what one individual termed a “massive brain drain” of health personnel in Zimbabwe, particularly in the past year. Schools producing the various cadres of health workers are losing their faculty as well. This shortage of personnel is exacerbated by HIV/AIDS (they are dying themselves and/or the stress placed on them is too much). Vacancy rates at some facilities visited provide insight into the magnitude of the staffing problem. Most heavily lacking are pharmacy professionals: out of the total number of available pharmacist posts, only 18 percent have been filled at Harare Central Hospital and 24 percent at Parirenyatwa Hospital. Nursing vacancies were also high: 27 percent at Harare Central Hospital, 29 percent at Parirenyatwa Hospital, 33 percent at Makumbe District Hospital, and 50 percent at Bulawayo City Health Clinics. The supply of student nurses and nurses aides at Parirenyatwa is higher; however, large numbers of student nurses are expected to leave the service upon graduation. Physicians are also in demand. The Bulawayo City Health Officer reported that only three of six junior doctor positions had been filled.

In addition to the clinical and logistical elements that must be in place, it is critical that the ART site have a dedicated clinical leader/manager committed to the success of the program. This person would oversee day-to-day activities of the program, ensuring that all components are in place and functioning. A trained, experienced physician who is on-site at established clinic times and available for backup for urgent care is also critical, particularly in the pilot and early expansion phases. As experience grows, trained higher-level nurses may also be able to take over this role in areas where physicians are unavailable. Nurses will provide the bulk of clinical work.

Laboratory capacity

Clinical monitoring is essential for provision of safe and effective ARV therapy. The absolute minimum laboratory tests are an HIV antibody test and hemoglobin or hematocrit level. However, for pilot programs, more extensive testing should be available. Simple rapid HIV diagnostic tests and hemoglobin or hematocrit should be available at even the most basic site, with the capacity to have samples drawn at or sent to sites with more extensive laboratory testing as required. Sites prescribing ARVs should also be able to offer pregnancy testing, liver function tests, creatinine, and glucose testing as well as some measure of immune function (CD4 count or total lymphocyte count). Pilot sites ideally should be able to access CD4 cell tests. The absolute minimum laboratory tests for initiating ART are an HIV antibody test and a hemoglobin or hematocrit level.⁴

⁴ “Scaling up Antiretroviral Therapy in Resource-limited Settings.” WHO. April 2002.

Table 4. WHO Laboratory Guidance

WHO-Recommended Clinical and Laboratory Monitoring Of ARV Use in Resource-limited Settings, 2002
Absolute minimum laboratory tests:
<ul style="list-style-type: none">• HIV antibody test• Total lymphocyte count
Basic recommended testing:
<ul style="list-style-type: none">• White cell blood count and differential count (total lymphocyte count)• Serum alanine or aspartate aminotransferase level• Serum creatinine and/or blood urea nitrogen• Serum glucose• Pregnancy test for women
Desirable tests:
<ul style="list-style-type: none">• Bilirubin• Amylase• Serum lipids• CD4 cell count
Optional:
<ul style="list-style-type: none">• Viral load• Viral resistance

Most of the health facilities visited were capable of performing the absolute minimum required tests as recommended by WHO. Other essential tests were available on-site or through referral or sample transportation. Complete blood counts and renal function tests were generally available, but liver function tests were less commonly accessible. More sophisticated HIV-related laboratory tests (CD4, viral load) were available through private laboratories and will be available on a limited basis through the national reference laboratory in Harare Central Hospital. Overall, district hospitals and polyclinics visited had considerably less laboratory capacity than did central facilities. Notable findings include:

- Personnel in three of the hospital laboratory units visited (Harare Central, Chitungwiza, and Marondera) had high technical qualifications. Protocols, manuals, and manufacturer procedures were available and being followed in these units. Moreover, all units reported participating in the ZINQAP continuous quality control process.
- The laboratory at Wilkins Hospital in Harare is able to perform polymerase chain reaction (PCR) for bacterial vaginosis, because of the hospital's link with a research group. It also has the capacity to expand PCR service for diagnosis of HIV in children.
- At Luisa Guidotti Hospital, baseline CD4 cell counts are sent to Harare for analysis. Laboratory services are available on-site, including full blood count, liver function tests, hemoglobin, hematocrit, urea, bilirubin, creatinine, and glucose.

Basic laboratory testing was widely available, but reliability may be compromised based on available reagents and equipment upkeep. Interruptions in laboratory services were reported for a number of reasons. Some sites had problems with availability of reagents during recent shortages caused by foreign exchange difficulties and delays in payments to suppliers. A strike by laboratory technicians also compromised service during 2002. Maintenance of old machines was a problem as well, resulting in frequent breakdowns. For example, at Harare Central Hospital, the renal function test machine was reported to have broken down three or four times in 2002. However, it is important to note that power outages were not a major cause of service interruption at sites visited. Most laboratories visited in Harare and Bulawayo had power backup through generators.

There have been significant efforts to upgrade laboratory support to the health system's central and peripheral levels. Laboratory capacity at the central level in Harare is increasing with CDC support to the National Microbiology Reference Laboratory (NMRL), which is intended to be a center of excellence and a referral point for laboratory testing in Zimbabwe. The NMRL also completed a USAID-funded survey, with CDC technical assistance, to assess the sensitivity and specificity of HIV rapid tests using ELISA as the standard for comparison. Following this assessment, a number of tests were approved for HIV screening, including: Unigold, Determine, OraQuick, Capillus, and HIVCheck. New national guidelines for their use were developed as well.

To expand the capacity for urgently needed HIV specific tests, which will be critical for pilot program evaluation and improved clinical care and use of ARVs, the Reference Lab will also serve as the central, primary HIV/AIDS support laboratory for the ART program in Zimbabwe. In this role, it will perform CD4+ cell counts (the cost of which is expected to decrease to U.S.\$10–U.S.\$20, thanks to CDC-sponsored maintenance of flow cytometers and their reagents) and viral load testing. The laboratory will also continue to perform other testing, including bacterial resistance, and will have the capacity to perform PCR on *Neisseria gonorrhoeae* and *Chlamydia trachomatis*. It is also expected to be able to perform HIV serology, PCR, viral load, resistance testing, and quality assurance. Some Central Lab staff are currently in training in the United States and Uganda.

Facility readiness to provide ART services

Based on interviews, observations, and experience, the assessment team identified what it thought were the necessary program elements that should be in place to start a facility-based ART program. Table 5 shows “readiness criteria” and what elements were available in each of the facilities visited.

Table 5. Criteria and Assessment of Facility Readiness to Provide ART Services, ARV Assessment, October 2002

	Harare Central Hospital	Mpilo Central hospital	Parirenyatwa hospital	Chitungwiza General hospital	Pelendaba Clinic	St. Mary's Polyclinic	Wilkins Hospital	Marondera Provincial Hospital	Makumbe District Hospital	Howard Hospital	Luisa Guidotti Mission Hospital
Leadership and commitment						√				√	√
Administering ARVs on small scale or knowledge of or experience with ARVs											√
Have working draft protocols for ARV initiation and follow up											√
Have adequate staff or knowledge of and plans to fill gaps	√	√	√	√	√	√	√	√			√
Have planned linkages with other sites to access HIV/AIDS-related services not provided directly				√	√	√		√		√	√
Have secure supply chain, including local storage and dispensing	√	√	√	√	√	√	√	√	√		√
Have most/all screening and monitoring lab capacity based on WHO recommendations	√	√	√	√	√		√	√			√
Have initial source of ARVs or funds to purchase identified	√	√									√
Have adequate supply of medications for management of HIV and ARV-related side effects	√	√	√	√	√	√	√	√		√	√

Corporate sector

The assessment team visited some major corporate organizations to discuss their HIV/AIDS-related policies and activities and future plans for HIV/AIDS care for infected employees and their families. The corporations currently offer a considerable array of services for their employees (see table 6). Delta Corporation is already providing ART to 10 employees, and De Beers Zimbabwe Prospecting Ltd. plans to introduce it in early 2003.

The corporations are keenly aware that HIV/AIDS has taken an enormous toll on their productivity; loss of manpower due to the epidemic has been felt by all. For most of the corporations, HIV/AIDS is a “boardroom issue.” While they want to provide ARVs to their staff, they feel that the corporations themselves and their health insurance providers cannot afford to provide ART in the face of the country’s current economic environment. However, some are beginning to believe that providing ARVs may be cost effective compared to the strain on their health budgets as a results of HIV-related illness, and on the operating budgets in terms of lost labor and training new people.

Table 6. Availability of HIV-related Diagnostic and Treatment Services in Corporations Visited in the Assessment, October 2002

Name of Corporation	Number of Employees	Health Insurance Coverage of Some HIV-related Drugs, Tests	HIV Testing	HIV Counseling /Peer Education	Trained HIV-related Providers On-site	Home-based Case	ART(# of Current Patients)
Anglo-American Group	+20,000	√	√	√	Some sites		
Hippo Valley Estates (AA Affiliate)	7,000	√	√	√	√	√	
Delta Corporation Group	14,000	√			√		√ (10)
TA Holdings	3,500	√	√	√	√		
De Beers Zimbabwe Prospecting Ltd.	100	√	√	√			√ (to be offered in 2003)

Anglo-American Zimbabwe, for example, is interested in providing ARVs to its staff but is unable to afford to, given the current medical schemes. The corporation’s South African sister company has just begun providing ARVs, and other private sector participants have suggested that cost-benefit analyses should be ignored in the face of corporate responsibility to protect workers from HIV/AIDS.

Based on interviews, providers felt they will need the following before corporations can provide ART (assuming drugs are accessible):

- Trained doctors and nurses
- A determination of how drugs will be dispensed
- A determination on the amount patients will have to pay toward the cost of drug
- A continuous procurement program with an identified continuous source of the drugs
- Identified additional support services

In general, corporations are looking to (and waiting for) the MOHCW to take the lead in developing policy and providing guidelines for ART in Zimbabwe.

Public and private sector plans for financing ART appear to be focused on most of the relevant areas—product acquisition, patient costs, and sustaining care and support mechanisms. Inadequate attention, however, has been paid to investments that are necessary to achieve an agile, robust supply chain to manage commodities. The strengths and weaknesses of the current system are discussed in the following sections.

Logistics Management

Forecasting

There is no consistent, uniform approach to forecasting and quantifying HIV/AIDS commodity requirements in Zimbabwe. Methods vary depending on product type, donor, and service delivery point.

HIV rapid tests for PMTCT

A parallel testing protocol is used for PMTCT and VCT, forecasting for which is based on service statistics data. The CDC Laboratory Program Officer forecasted annual requirements of 100,000 HIV tests of each type for the PMTCT program by assuming that 20 percent of pregnant mothers would access PMTCT counseling and testing services each year. Based on kit requests coming from PMTCT sites, CDC staff recognize that annual consumption is rising, and they are ordering more kits as necessary. The program has not yet started to gather essential logistics data from the PMTCT sites, which would allow it to quantify rapid test requirements based on consumption data.

HIV rapid tests for VCT

PSI manages all aspects of HIV test kit distribution (from quantification through delivery) for integrated and freestanding New Start VCT sites. After making an initial crude estimate of requirements to stock each center, PSI immediately began collecting consumption and stock on hand figures for the tests and placed orders based on trends in consumption. Rapid tests are purchased for three months at a time to allow for quantity adjustments as consumption increases.

HIV rapid tests for clinical diagnosis and for VCT at sites other than new start centers

There is currently no external donor for HIV rapid tests for clinical diagnosis and for VCT at sites other than New Start centers. However, the MOHCW has been provided with estimates of requirements for HIV test kits for clinical diagnosis by a Danish International Development Agency (DANIDA) consultant. The CDC Laboratory Program Officer has provided MOHCW with an estimate of rapid test requirements for these purposes.

Nevirapine for PMTCT

An initial target quantity of 2,520 adult and infant doses of nevirapine for PMTCT was determined through negotiations between MOHCW and the supplier, Boehringer Ingelheim (BI). Subsequent shipments will be based on progress reports from MOHCW, though the program has just started to gather the essential logistics data from the PMTCT sites that would allow them to quantify nevirapine requirements based on consumption data.

Diflucan (fluconazole)

Pfizer is discussing with MOHCW the possibility of including Zimbabwe in its Diflucan Partnership Program. If an agreement is reached, Pfizer would forecast requirements using its Diflucan Requirements Forecasting and Tracking Model, a demographic/morbidity model that also takes into account estimates of access to health care facilities, number of facilities participating in the program, and patient compliance in consuming the full regimen of drugs.

ARVs from the Global Fund Against AIDS, TB and Malaria (GFATM)

MOHCW has requested funding for ARV drugs for a target of 1,000 patients over a three-year period through GFATM. Given Zimbabwe's high HIV prevalence, it is expected that funding will be requested for significantly larger treatment targets in future proposals.

ARVs from CDC

The quantity of ARVs to be provided by CDC was determined by setting a target of 400 patients, made up of 200 from each of the first two public sector sites where ART will be initiated. It is expected that the ARV drugs for treatment of these first 400 patients beyond the first year of care will come from the Government of Zimbabwe through GFATM.

ARVs for Luisa Guidotti Hospital

Similar to other ARV forecasting, the quantity of ARVs for Luisa Guidotti Hospital was targeted based on available funding. In this case, ART requirements were initially set for 140 people for a five-year period. More recently, the team was informed that funding will be available for 200 people for five years starting in 2003.

Procurement

In May 2002, Zimbabwe declared HIV/AIDS a national emergency to access affordable antiretroviral drugs through the WTO-TRIPS agreement for compulsory licensing, parallel importation, and promotion of early testing and approval of generic drugs. It is already becoming apparent, however, that the emergency declaration is only one of many interventions necessary to improve access to ARVs on a nationwide basis.

A wide range of different ARVs are being used in the private sector, either obtained locally through private pharmacies or by patients traveling to Swaziland to buy generic ARVs. Appendix D contains the list of ARVs registered or in process of being registered in Zimbabwe as of October 2002.

Drug prices for ARVs, even in their generic forms, are still unaffordable on a large scale. Zimbabwe's foreign currency shortage is a key stumbling block to the importation of even small quantities of these drugs. Also, according to the rules of WTO-TRIPS, emergency declarations under which generic ARVs could be imported expire in 2006.

Zimbabwe traditionally depends on two channels for procurement of drugs, private distributors and NatPharm, a 100 percent state-owned company formed in 2001 to take over the functions of the former Government Medical Stores (GMSs).

Private distributors procure locally and internationally for sale to both the private and public sectors. They are normally well stocked, but recent foreign currency shortfalls have made understocking more common. Private distributors' mark-ups are usually high and unaffordable by the public sector.

NatPharm caters primarily to the public sector, but since its recent privatization, plans have been to extend sales to the private sector as well. Private sector sales may take time to implement because, as a newly established government-owned company, NatPharm has as its initial priority to develop its infrastructure and develop capacity to serve the public sector. NatPharm uses an open tender system for procurement, allowing it to maintain lower prices.

Both private distributors and NatPharm are considering importation of ARVs. Some private distributors, such as Independent Health Care and Geddes, already have significant experience importing them. However, because of currency shortages, most importers have to depend on the country's reserve bank for foreign currency allocation, or, when the reserve bank does not provide foreign currency, they must acquire foreign currency on the rapidly inflating parallel market. This greatly decreases NatPharm's purchasing power and increases the prices of drugs to the public.

Medical Aid Societies are important stakeholders in drug financing. They already feel the financial losses due to increased costs of hospitalizations and treatment of opportunistic infections because of HIV/AIDS. They are, therefore, interested in providing access to ART as a way of decreasing the costs, which are straining the aid societies' health budgets. Current prices are still too high for these organizations to consider reimbursing the cost of ART. The current highest limit for drugs afforded by one major Medical AID Society (CIMAS) is only Z\$10,000 per annum. This is insignificant given that the cheapest triple therapy combination costs more than Z\$100,000 per month and will continue to increase with the inflation of the parallel exchange rate.

Donors and manufacturers have committed to provide test kits for VCT and PMTCT. However, these kits may also be used for other purposes (i.e., clinical diagnosis) as the need arises at health facilities and until the proper resources are coordinated to provide sufficient test kits for all HIV testing needs. Actual current procurement of HIV/AIDS-related commodities is as follows:

CDC

The first Determine and Unigold HIV rapid test devices provided by CDC for use in PMTCT were purchased under a CDC Atlanta global AIDS tender. Between 50,000 and 100,000 of these kits arrived in Zimbabwe at the same time and with the same expiry dates. CDC swapped a large number of these with the PSI New Start project to avoid losing them through expiry. A small quantity of the

original shipment of kits was lost, however, because sites requested more kits than they were able to use and returned them only after expiry.

Zim-CDC now procures its own kits under local contracts that require that a portion of the kits be produced and shipped immediately after manufacture each quarter. The total quantity of test kits contracted in one year is slightly understated to avoid overstocking. The quantity in the contract can be increased if required. Zim-CDC reports receiving excellent service from Abbott and Trinity Biotech, with a seven-day lead-time between time of order and actual receipt of the test kits. CDC will also purchase branded ARVs once it receives the necessary approvals.

New start VCT sites

PSI purchases Determine and Unigold HIV Rapid Test for VCT directly from Abbot and Trinity Biotech for its New Start VCT sites with funding from USAID and additional support from the Japanese government. Purchases are made quarterly, and lead-time is less than one month.

VCT sites other than new start

The initial supply of rapid tests was provided by Zim-CDC and the National Public Health Laboratory. Facilities with trained staff, but that are not registered PMTCT sites or New Start sites, must purchase the kits with funds from their own budgets. One such site visited, Makumbe District Hospital, purchased Capillus from a private supplier. Some mission hospitals purchase their own HIV rapid tests. DFID funded a one-time purchase of HIV test kits.

NatPharm

To date, NatPharm has not purchased HIV test kits or ARVs. In a separate, complementary study,⁵ Crown Agents Limited noted that, as a company in its infancy, NatPharm, needs institutional strengthening across all operational units. Effective, sustained intervention is required to help NatPharm overcome the problems it inherited from GMS. Although the European Union (EU) has committed finance technical assistance to enhance NatPharm's capacity, the report concludes that NatPharm is not currently equipped for the task of ARV procurement.

Product quality assurance

Medicines used in the public sector should normally be those that appear on the latest edition of the Essential Drugs List for Zimbabwe (EDLIZ), and they should be registered by the Medicines Control Authority of Zimbabwe (MCAZ). According to the Guidelines for Drug Donations to the Republic of Zimbabwe, all donated drugs have to originate from a reliable source and comply with quality standards in both the donor country and the Republic of Zimbabwe. Donated drugs should have a remaining shelf life of at least one year upon arrival in Zimbabwe.

The MCAZ has a system of registering and maintaining products on its register. Products have to be of proven good quality before they can be registered. MCAZ also carries out postmarketing surveillance, including random collection and testing of products for quality checks when they are already on the market, particularly when there is reason to suspect any problems.

MCAZ is not currently involved in checking the quality of or registering laboratory test kits. However, it has developed a proposal to the GFATM for upgrading manual equipment and acquiring

⁵ *Assessment of antiretroviral agents and HIV/AIDS drugs procurement capacity in Zimbabwe.* Crown Agents. October 16, 2002.

automated, modern testing equipment. Among other things, this will allow MCAZ to test antiretroviral medicines for distribution in Zimbabwe. It plans to explore a possible mechanism for batch testing of products as they enter Zimbabwe, similar to what is being done for condoms.

While it was found that central-level quality assurance systems are robust and vigilant, it was noted that some lower-level service delivery points still use some products that have expired.

In one facility visited by the study team, the technician was conducting HIV tests with kits that had just passed their expiry dates.

Inventory management, storage, and distribution

Similar to most countries, Zimbabwe has many different identifiable supply chains. A number of the commodities needed to support ART are currently managed in multiple supply chains and in multiple compartments based on either the type or funding source or the program use of the commodity.

HIV rapid tests for VCT

PSI stores the HIV rapid tests it purchases for its New Start sites in its main office storeroom until they are sent to the sites. Delivery is done using Swift, unless a member of the PSI central team is going to a particular site when delivery is needed. PSI actively monitors consumption of rapid tests at New Start sites and replenishes stock on a quarterly basis.

HIV rapid tests for PMTCT

Zim-CDC stores the rapid tests it purchases for PMTCT at a private distribution center managed by Geddes Limited, a major drug distributor in Zimbabwe. The Geddes facility is a modern, high-security facility with video surveillance, internal security personnel, and a contracted external security company. Everyone entering and leaving the facility is subject to a body search, and a portion of the facility serves as a bonded warehouse. CDC has entered a contract with Geddes for storing and issuing the rapid tests and other items Zim-CDC purchases for the HIV/AIDS program.

Registered PMTCT sites request the number of HIV tests they feel they need on a monthly basis from the Zim-CDC secretary. Once Zim-CDC has received a batch of orders, the orders are reviewed. If the quantities requested appear to be too large (e.g., more than 350 tests), fewer kits are provided. Order requests are adjusted if there is a shortage of either brand of test kit in the Geddes warehouse. Zim-CDC then emails Geddes, authorizing it to release the specified quantities of test kits to the requesting health facilities.

When ordering from CDC, the facility states whether it will pick up the requested tests from Geddes, or Geddes can send the order to them via Swift using the health facility's Swift account number. Geddes has three branches outside Harare, and in the future CDC may request that Geddes send the test kits for the various health facilities to the Geddes branch nearest each health facility.

The CDC staff person in charge of logistics noted that monthly ordering of RTDs is too frequent, and it creates high transaction costs. She said that once everyone has more experience in PMTCT, the order interval will be increased.

Abbott Laboratories will soon begin donating Determine Rapid HIV-Test Devices (RTDs) to the Zimbabwe PMTCT program, and it is expected that these donated test kits will be stored at the Geddes warehouse and will be ordered and distributed along with the CDC-procured RTDs.

Nevirapine

In November 2001 Boehringer Ingelheim (BI) donated an initial 2,520 doses of adult and infant nevirapine to the MOHCW AIDS/TB Unit for the national PMTCT program. This nevirapine is stored in the Dangerous Drugs Administration (DDA) cupboard at the Parirenyatwa Hospital main pharmacy. Some interest has been expressed in storing the nevirapine for PMTCT in the Geddes distribution center in the future, but no firm decision had been made at the time of the assessment.

Based on written requests from PMTCT sites to the AIDS/TB Unit and written letters of instruction from this unit to Parirenyatwa Hospital, the hospital pharmacy issues the nevirapine to the requesting facility. As with the HIV rapid tests, there has been no system for reporting the average monthly consumption or stock on hand at the requesting facility when the order is placed. Thus, the person vetting the request for nevirapine does not have the information required to make an objective decision about how much nevirapine to issue to the requesting facility.

After most of the initial nevirapine donation had been issued to PMTCT sites, the AIDS/TB Unit requested additional nevirapine from BI. However, BI would not give additional product without a progress report on use of the initial donation. To meet PMTCT site requests on an interim basis, the AIDS/TB Unit retrieved nevirapine stocks from various NGOs and placed them in the DDA cupboard at Parirenyatwa from which they were issued to PMTCT sites. The second shipment of 5,040 doses of adult and infant nevirapine was received from BI in May 2002.

During a visit to the Parirenyatwa hospital pharmacy on October 8, 2002, the consultant team found 600 adult tablets of nevirapine in stock, and the pharmacist was holding an approved order for 700 tablets to be issued to the Chitungwiza Polyclinics. This stock situation was discussed with the AIDS/TB Unit, which reduced the quantity to be issued to Chitungwiza to avoid a stockout. The Unit indicated that it was placing a new order for 10,000 adult and infant doses with BI.

Diflucan and ARVs for ART

These products are not yet in the public system, and no decisions have been made about how they will be ordered by and distributed to end-user facilities.

The Luisa Guidotti Mission Hospital stores its ARVs in its pharmacy. Drugs are dispensed by the pharmacist directly to outpatients, in a two- or three-week supply at a time, depending on how far patients live from the hospital. Newly diagnosed or very sick patients are usually treated in the hospital for the first three weeks. The pharmacist issues the drugs daily to the ward nurses to cover this treatment. This avoids stocking the drugs on the wards, where they could be stolen more easily. Luisa Guidotti has not had any problem to date with security of the stocks.

In Zimbabwe, NatPharm usually stores and handles drugs donated to the MOHCW on the condition that they can sell the drugs to the health facilities at 50 percent of wholesale value to cover NatPharm's cost of handling and distribution. Thus, if NatPharm were to store and distribute the donated Diflucan, the Government of Zimbabwe or some other agency would have to pay NatPharm the costs involved. The concern is that government might agree to pay NatPharm for this function, but might not actually be able to pay in the end given the current economic crisis. If this situation arose, it could delay making Diflucan available to end users and could contribute to the decapitalization of NatPharm.

In addition, the Crown Agents study cited earlier noted that NatPharm does not have the capacity to guarantee the security of very-high-value products being held in storage. This reference was to ARVs, but it would apply equally to Diflucan. NatPharm advised the study team that its predecessor agency,

GMS, did not insure the drugs it held in storage. NatPharm is negotiating with an insurance company to change this situation and have its goods insured while in storage and transit. This arrangement has not been finalized with the insurance company, reportedly because NatPharm is waiting for final turnover of all former GMS assets from the MOHCW. In the meantime, the commodities at NatPharm are not insured, except for those being held on behalf of other agencies. Commodities being held on behalf of other agencies are not treated as NatPharm stock. An example of this latter type of item is the WHO HARP drugs stored at NatPharm and insured separately because WHO is paying NatPharm for the storage of these drugs.

If the MOHCW were interested, CDC could consider storing donated Diflucan at Geddes under its contract. CDC has also indicated that it could store at Geddes any Determine rapid tests donated by Abbott Laboratories for PMTCT. It is expected that any CDC-purchased ARVs would also be stored at Geddes before distribution to ART sites. Although it is not explicitly stated in the CDC/Geddes contract, it is understood that Geddes is liable for any loss of or damage to CDC goods being held in the Geddes warehouse.

EU-donated essential medicines

The EU is donating 26 million Euro worth of primary health care medicines to the MOHCW for 2003 and 2004; these medicines will be stored at NatPharm. Hospitals and health centers will order these medicines from NatPharm monthly under the Zimbabwe Essential Drugs Action Program (ZEDAP) drug management scheme. Historically, GMS/NatPharm has processed drug orders and delivered the packed orders directly to the health facilities. However, under its current mandate to be more commercially viable, NatPharm plans to deliver filled drug orders down to the district hospital level only. An earlier DELIVER report⁶ noted that this change in physical distribution will adversely affect availability of medicines in the rural areas. The report also recommended lowering the maximum and minimum stock levels provided for in the ZEDAP inventory control system. This was recommended in part because of concerns about security at the health centers given reports of a series of robberies at such centers throughout the country.

The ZEDAP inventory control system, which had been heavily supported by DANIDA, requires facilities to place drug orders monthly. Each facility has an established minimum stock level of three months for each drug. The actual quantity, however, is based on the facility's current average monthly consumption of that drug. If the stock level for a given drug is at the minimum level or below at the time of ordering, the facility orders three months of stock. The study team observed that smaller health facilities located far from NatPharm warehouses are still trying to follow the ZEDAP ordering system. They are keeping their stock cards up to date and using the prescribed stock book to organize their data and make appropriate calculations before placing their monthly orders; however, they are becoming increasingly frustrated by the lack of drugs available from NatPharm. Provincial and district hospitals near NatPharm facilities have abandoned to some extent the ZEDAP ordering system because of the drug shortages and because staff attrition has reportedly made it difficult to continue using the ZEDAP tools. These facilities tend to go to the nearest NatPharm branch weekly (transportation permitting) and purchase whatever drugs NatPharm has received that are needed by their hospital or the health centers under the hospital. They supplement the drugs they are able to buy from NatPharm with purchases from the private sector at inflated prices. At least one provincial hospital visited purchases more than the usual three-month order from NatPharm if it finds the drugs in stock at NatPharm. It then keeps these drugs in reserve to supply the hospitals and health centers in

⁶ *Zimbabwe: HIV/AIDS Commodities Transport Assessment, July 2002.* John Snow, Inc., for the U.S. Agency for International Development and the Zimbabwe National Family Planning Council.

the province. In some cases, health personnel trained in the ZEDAP system have left the service, and some of their successors have not been trained to use the system.

Organizational capacity

There is no clear individual or organization exclusively responsible for the daily planning, coordination, and management of the ART effort. Currently leadership is shared by members of NETA, the director of the AIDS and TB Unit, and others at higher levels of the Ministry. The program will need a strong and committed leader at the national level to support initiation and expansion of a national ART program.

The MOHCW reportedly had a Director of Pharmacy Services, but the position was abolished in 2000 under a reengineering of the Ministry. Currently, there is a Department of Pharmacy Services, staffed by only two pharmacists, which is primarily concerned with advising the Ministry on pharmacy-related issues but does not have sufficient staff or authority to manage the logistics function for all programs and units of the Ministry. The AIDS/TB Unit does not have a dedicated logistics section or cell to deal with all activities essential to managing the supply chain for TB and HIV/AIDS-related commodities.

Logistics management information system

The study team found no evidence that logistics management information systems are being developed for HIV/AIDS-related commodities outside New Start and CDC-supported activities. The study team also noted that the use of logistics management information systems (LMISs) is inadequate in the ZNFPC contraceptive distribution system and the MOHCW's ZEDAP drug management system. In the latter system, facilities report their stock on hand when placing their monthly orders, but they do not report their consumption or losses and adjustments to stock. The stock-on-hand data that facilities report at the time of monthly ordering is not encoded, so none of the three essential logistics data items is aggregated, analyzed, and disseminated as a means of monitoring the distribution system's overall performance.

In general, there is a significant lack of logistics data and information collected and routinely reported for program management. There are currently no data on consumption, stock on hand, and losses and adjustments for HIV/AIDS-related commodities. Certain programs seem to have some data collection and reporting mechanisms, but they are either inadequate or poorly coordinated.

To offset the lack of data from the PMTCT service sites, the MOHCW AIDS/TB Unit and CDC have developed a draft *Zimbabwe PMTCT Progress Report*, which will be used for regular progress reporting by all registered PMTCT sites. Completion and aggregation of these reports will allow PMTCT program managers to monitor activities in their programs and will provide a database for reporting consumption of nevirapine and Determine to Boehringer Ingelheim and Abbott, respectively.

Program management has not yet determined the frequency of reporting to be used with the draft PMTCT Progress Report, or how the information in these reports will be aggregated and disseminated for use by program managers. Moreover, it is also not clear whether submission of a progress report will be a prerequisite to a facility's ordering resupplies of nevirapine and HIV rapid tests.

Funding sources for drugs and other requirements

Zimbabwe has already taken several steps to make ARVs more available, beginning with last year's declaration of HIV/AIDS as a national emergency to access the drugs affordably through the WTO-TRIPS. So far, three major local companies—Datlabs, CAPS, and Varichem—are negotiating with foreign companies to manufacture ARVs under license. There is the long-term prospect of regional pooling through bodies, such as SADC, where countries in the region plan to buy these drugs in bulk. DATLABS has been negotiating with Ranbaxy, an Indian company said to be producing generic ARVs, for local production of ARVs in Zimbabwe. However, at the time of the assessment, no donors were actively contemplating providing ARVs outside the clinical trial setting.

Also at the time of this logistics assessment, Pfizer Inc. representatives were in Zimbabwe making arrangement for donation of Diflucan tablets to treat *Cryptococcal meningitis* and *Oesophageal candidiasis*. Pfizer informed the assessment team that in most countries involved in the Diflucan Partnership, the drugs are given to the government's Central Medical Stores. Pfizer does not pay for taxes, customs clearance, or storage or distribution costs in-country, and part of the Memorandum of Understanding Pfizer signs with the receiving governments is that their donated product will be provided free of charge to clients.

Significant quantities of drugs and other products were purchased for use in home-based care activities using NAC funds. These products were distributed to all central and provincial hospitals. It is believed that some limited funding could be made available to purchase ARVs under the emergency declaration. The major problem is that NAC funds are only in local currency. Foreign currency is essential for the supply of drugs in Zimbabwe because almost all products have to be imported as finished products or raw materials.

Conclusions and Recommendations

Key recommendations for logistics management and clinical management are listed separately below in their order of relative priority. Other important, but secondary, recommendations are listed under “Other Recommendations” at the end of this section; they are not in any particular order.

Logistics Management

1. Develop and implement an effective logistics management system for all HIV/AIDS-related products for both central and site levels.

It is critical to the success of the ART program, and the HIV/AIDS program in general, to have an effective and efficient national logistics management system for HIV/AIDS commodities.

Plans for introducing ART in the country have (rightly) focused on relevant areas, including acquisition of products and establishing sustainable mechanisms for providing patient care and support. Insufficient attention seems to have been paid, however, to the investment necessary to achieve an agile, yet robust supply chain to manage commodities. Efforts to supply PMTCT sites with the proper quantities of NVP and rapid tests are admirable, but this task will become increasingly complex and difficult as more PMTCT sites and other HIV/AIDS services and products are added to the mix.

The system should include:

- defined order intervals;
- minimum and maximum stock levels for each site;
- a facility order form/progress report;
- an excess stock report for notification of products not likely to be consumed before expiration;
- consolidated reports on stock status at health facilities and central warehouse;
- a procedures manual on supply management of HIV/AIDS products;
- direct delivery of HIV/AIDS products to the ordering facilities; and
- procedures for security of stocks in storage and in transit.

The system for special HIV/AIDS products should build on procedures and stock management tools in the current ZEDAP inventory control system as much as possible. This will facilitate eventual absorption of these HIV/AIDS products into the main MOHCW logistics management system.

2. Establish a new HIV/AIDS Logistics Section in the MOHCW with a clear mandate to oversee coordination of logistics for all HIV/AIDS commodities.

The HIV/AIDS Logistics Section should be established as a section of the AIDS/TB Unit to give it the strongest possible focus on HIV/AIDS-related commodities. It should be responsible for overseeing forecasting, donor coordination, procurement planning, inventory management, and monitoring and evaluation. For the Logistics Section to be successful, the government should provide adequate staff, funding, and authority to the Section to manage the required logistics responsibilities. The government should seek donor support for the HIV/AIDS Logistics Section, including required technical assistance and other resources to ensure that system and functions can be implemented successfully.

3. Design and implement a complete manual or automated national LMIS to capture essential logistics data and track product use in the system.

The overall purpose of the LMIS would be to prevent stockouts and stock imbalances of ARVs and other HIV/AIDS-related products at sites providing HIV/AIDS services to clients. The LMIS data should inform future forecasting of requirements and will help to validate forecasts based on morbidity or other service methodologies. The data would also help with commodity management in other areas, including inventory control and ordering.

The PMTCT Progress Report developed by the AIDS/TB Unit and CDC could be adapted to serve as the basic LMIS facility order form and progress report for PMTCT. A similar format could be used by facilities providing other HIV/AIDS services for reporting and ordering commodities. The order form/progress report should be completed by all participating sites and essential data collected for all rapid HIV test kits, nevirapine for PMTCT, ARVs, and OI drugs such as Diflucan.

The LMIS should include the following information:

- beginning stock balance;
- receipts;
- consumption (dispensed to patients);
- losses and adjustments (transfers to other sites, expiry, damaged commodities);
- ending stock balance (including quantities per expiry date);
- quantity to order; and
- service statistics regarding numbers of clients on ART, PMTCT patients, and HIV tests performed at the site for various purposes—VCT, PMTCT, clinical diagnosis, and other.

The Logistics Section should use this information to approve order quantities, monitor stock levels, cross-check quantities dispensed with service statistics, plan procurement, and implement stock transfers when needed to avert stockouts and stock expiration. The Logistics Section should also provide regular logistics status reports to program managers in the MOHCW and to partner organizations and commodity donors (CDC, BI, Abbot, Pfizer, and others) to maintain the confidence and financial support of the donor community and government policymakers.

4. Establish the mechanism and procedures to coordinate product requirements and institute medium- to long-term procurement planning of HIV/AIDS commodities with donors.

The importance of this activity cannot be overemphasized. ZNFPC and the reproductive health (RH) product donors have implemented this type of donor coordination successfully. They forecast requirements for three years, have a financial commitment for the next two years, and identify funding shortfalls and mobilize resources for the third year. Building the necessary capacity within the NatPharm to be able to conduct world-class procurement is necessary for sustainable implementation of ART. The EU is reportedly committed to financing technical assistance to enhance NatPharm's capacity. It will be important to take this initiative forward and secure the necessary assistance.

Where the same products are being procured through separate channels, it may be prudent to review these procurements to identify the most efficient mechanism to pool requirements and gain economies. In doing so, however, it is important to maintain the flexibility required for procurement of some products, notably HIV test kits, which have short shelf lives and need frequent or staggered delivery schedules.

Clinical Service Initiation and Expansion

1. Appoint a national ART program manager to ensure rational and effective introduction of ARVs into the public sector. This person should work in the AIDS and TB Unit and have sufficient technical and support staff as required by different stages of program development to support the program and sites initiating and expanding ART services.

There is great interest, commitment, and willingness to begin an ART program among centrally based staff of the MOH, beginning with the Minister of Health. However, no clear individual or organization is exclusively responsible for the daily planning, coordination, and management of the ART effort. Currently leadership is shared by members of NETA, the director of the AIDS and TB Unit, and others at higher levels of the Ministry. The program will need a strong and committed leader at the national level to support initiation and expansion of a national ART program. The program manager would also be responsible for coordinating the ART program with other related programs, including TB, PMTCT, support services, training efforts, and resource mobilization. Sufficient staff with committed time and clear goals and objectives and with political support at the highest levels will be needed to coordinate all the essential aspects needed for the success of the ART program.

- 2. Before initiating ART, clear protocols (at the site or national level) need to be agreed upon for patient selection and screening; ARV prescribing, monitoring, and management; adherence support; management of side effects; and treatment failure. Guidelines are also needed for coordination with other relevant programs such as TB programs.**

These protocols will likely need to be revised after pilot stages, but draft protocols are critical for introducing ART. Existing protocols from similar settings and those being developed for use in Zimbabwe (e.g., national, CDC GAP) should be used to rapidly develop this guidance so as not to delay initiation. Committed staffing and leadership at the selected sites should also be specified before implementation. Other issues that need additional specifications are physical space requirements; product logistics and dispensing; linkages with the community; and support services for education, support, and adherence.

- 3. In the early stage of the program, ARVs should be introduced into sites with existing HIV-related outpatient care services. This will provide the comprehensive and supportive system critical for people starting and maintaining effective ART.**

A number of models have been used to introduce ARVs in resource-limited countries. ARVs can be given in an HIV primary care clinic that delivers the spectrum of HIV care; PMTCT clinics that provide HIV care; or an HIV specialty clinic devoted solely to ARVs such as clinical trial settings where other HIV care is given at other sites, or integrated into an ongoing primary care clinic. Each model has strengths and weaknesses, and no single model will be appropriate for all the different sites in Zimbabwe that will eventually offer ART. Information obtained in the assessment indicated that a physician-led/nurse-run program might be the best model in early ART pilot sites. This would be similar to the country's TB program, where physicians are involved in initial treatment and management of complicated cases, and trained nurses do routine monitoring and follow up. Lay counselors could be used to help with follow up (as in Chitungwiza Polyclinic's PMTCT program). However, these individuals would require oversight and training as well, which needs to be accounted for when estimating staffing needs.

- 4. Carefully review all potential ART initiation sites and establish a standard set of basic site requirements to ensure their full readiness to provide ART. This will help to ensure rational and effective introduction of ART.**

As ARVs become available beyond the first few pilot sites, a standard set of requirements will be helpful to prepare sites for introducing ART. The following steps are recommended to complete this process:

- a) Determine staffing plans (projected staffing needs; current staffing and capacity, including dedicated time, training needs, and identification of areas requiring technical assistance (TA) or assistance from outside program); staff identification and recruitment plans, including clinic head and manager.
- b) Establish protocols for eligibility, screening, ARV regimens, initiation, and follow up (laboratory and clinic visits, adherence support and monitoring, side effect management, and other screening for other support services).
- c) Articulate spectrum of care (and plans for continuity of care if not a full spectrum of HIV care site).
- d) Identify psychosocial and concrete support resources for patients, e.g., counseling, nutrition, transportation, etc., including which services will be provided by the clinic and by referrals and whether they will be provided on- and off-site.

- e) Ensure adequate and reliable laboratory support for screening and monitoring patients in the pilot phase (more intensive).
- f) Educate community and consumers about programs and engage in program and process.
- g) Ensure secure and sustainable ARV supply and secure product logistics system, including on-site storage and dispensing.
- h) Evaluate and ensure other linkages, including hospitalization, community outreach, TB treatment, and other concrete support services.

Given these requirements, the assessment team supports including the polyclinics in Chitungwiza and Bulawayo and Howard Hospital as well as some corporations such as Anglo-American, as sites for initiating ART. Luisa Guidotti Hospital should be considered for expansion. Appendix E contains a draft “Readiness Scale” developed by the team, which could be used to assist assessments of site readiness.

5. Establish site-specific, regional, and national quality assessment (QA) monitoring programs for the full spectrum of ARV logistics.

The success of the program will depend on real-time evaluation to detect potential problems in program implementation. Existing resources should be used to build these services, including HAQOCI and the TB program. Monitoring the efficacy and toxicity of ARV treatment in clinical practice must be incorporated into standardized protocols. Quality assurance of the program will also be critical to ensuring programmatic adherence to guidelines, evaluating overall program impact, and many other areas. Individuals responsible for QA monitoring should be identified at site and national levels.

6. Actively engage private practitioners and corporation medical staff in national plans and ongoing activities because they have great potential to provide knowledge and active involvement in HIV care now and in the future.

Public sector efforts already underway to engage private sector players, such as help in exploring ways to make ARVs financially accessible, should be continued and extended by the MOHCW. The private sector expressed a desire for public sector leadership, and many corporations are waiting to see what comes of the declaration of emergency in terms of expansion of HIV-related care and activities. Medical associations can also provide leadership in a national ARV strategy by contributing to policy development, capacity building through continuous education for its members, and linking practitioners in different sectors to ensure uniform standards of ART.

Secondary recommendations

Document the current consumption of HIV test kits for all uses (blood safety, clinical diagnosis, VCT, PMTCT, testing babies born to HIV-positive mothers, sentinel surveillance, special studies and training). The data should be used to support existing plans for expanding testing services and to prepare a formal quantification of total requirements. Having a complete quantification will enable the AIDS/TB Unit to be better prepared to approach and promote coordination among donors so that all HIV testing needs are met. If this is not done, tests intended for one purpose, e.g., PMTCT, may be used for VCT or clinical diagnosis, creating a potential shortage of tests available for their intended purpose and possibly creating distrust in those donating test kits.

Continue to quantify ARV requirements for the near term using the morbidity methodology based on targets. Future treatment targets and GFATM funding requests for ARVs and laboratory

reagent procurements need to be in line with the health care system's capacity to treat and monitor patients with a high quality of care.

Until costs come down and/or available funding increases dramatically, the numbers of clients who receive ART will remain a small proportion of those who need treatment. Procurements must be decided upon careful consideration of these factors:

- the number of facilities capable of providing quality ART;
- the number of clients each facilities can treat and monitor; and
- the number of people who can be treated on a lifetime basis with the funds available to cover the costs of ARV drugs, laboratory reagents, and other items required for ART.

The quality assurance system of MCAZ may need to be intensified given the great need to assure the quality of ARVs. The MCAZ appears to have the capacity to assure the quality of ARV commodities that are distributed in Zimbabwe. It has a system that can promote registration of products from manufacturers that have received WHO prequalification. It also carries out its own inspections of local companies as well as others in foreign countries such as India. The preregistration due diligence for quality assurance and the postmarketing surveillance for quality checks are highly commended. This activity might require some support to the MCAZ, and specific needs should be identified and provided to ensure that quality assurance of ARVs is not undermined.

Assess the feasibility of storing HIV test kits, nevirapine, ARVs, Diflucan, and other HIV/AIDS commodities at Geddes Limited under the CDC contract or other contract mechanisms until such time as security at NatPharm has been improved, and a working mechanism for paying NatPharm for handling these products has been developed. Given the short shelf life of and the limited resources for some of these commodities, stock levels should be kept as low as possible, while including enough buffer stock to guard against stockouts in the event of delayed orders. Storage arrangements for a number of commodities have been compartmentalized, and this does not bode well for implementation of a comprehensive ARV program. A decision must be made about where these products are to be stored. It would be less work for the HIV/AIDS service sites if they could receive these products from only one source.

The ZEDAP minimum and maximum stock levels will have to be reduced to accommodate these products. If the three-month minimum and six-month maximum inventory levels prescribed under the ZEDAP system are not reduced, they would likely lead to significant loss of product through expiration. In addition, maintaining large quantities of drugs in stock ties up program funds unnecessarily and provides a tempting target for product leakage and theft.

Assess the feasibility of contracting with a private organization such as Swift for delivery of HIV/AIDS commodities from Harare to service delivery points. Good drug supply management calls for delivery of ordered products direct to the ordering facility. The current arrangement under which facilities come to multiple sources to pick up their HIV/AIDS products is ad hoc and inefficient and a generally poor use of clinical staff time. The NatPharm/ZEDAP system for managing drugs has the very significant advantage of delivering the drugs directly to the facilities—even if this might now be only to the district hospital level. The Swift Transport division of Unifreight can provide next-day delivery of products from Harare and other major urban centers to 60 locations in Zimbabwe. If contracted with to deliver ARVs, Swift would be responsible for the security of ARVs in transit to health facilities. Swift has available lockable “roll tainers” for high-

value cargoes, and, if necessary, the company could take extra security steps if asked to handle very-high-value products such as ARVs. It can ship items requiring cold chain maintenance if the client provides appropriate containers.

Guidelines for HIV care should be updated regularly to reflect changes in laboratory and treatment availability and lessons learned from initial programs. The guidelines should also reflect differences in site resources (rural vs. urban, clinic vs. central hospital). These guidelines will need to be updated regularly to integrate knowledge based on experience and research, changes in international recommendations, change in prices and availability of ARVs, and laboratory monitoring outcomes. National leaders should dedicate adequate time and resources to reviewing the guidelines at least biannually.

Identify and establish innovative, sustained measures to retain staff.

- Provide leadership: establish policies and procedures, define roles and responsibilities, and promote teamwork.
- Ensure initial and follow up training, including knowledge, skills, and mentoring.
- Develop and make available clinical tools to facilitate care (e.g., flow sheets), adequate staff, and staff counseling and avoid burnout.
- Ensure adequate supplies required for care.
- Motivate: give feedback, quality assurance, and continuous quality improvement (CQI).
- Compensate: salary, benefits, merit-based system, access to ARVs if HIV-positive when they are more widely available, and early expansion to families.
- One effective method to improve staff recruitment and retention was to provide ART to HIV-infected clinical staff. This method was reportedly very effective at Luisa Guidotti Hospital and resulted in improved staff morale as well as less stigma and more acceptance of care by patients.
- Use staff as resource: train staff as a trainer/mentors.
- Recognition of efforts and accomplishments.
- Consider including clinically eligible staff in early stages of ARV program.

Train staff at all levels (community health workers, counselors, nurses, pharmacists, physicians, and others) to ensure successful introduction and expansion of an effective and safe ARV program. Topics will need to include HIV education, ARV prescribing, management and monitoring, counseling, and adherence support. Level of training will depend on staff trained, scope of ARV management at the site, and expected staff expertise. Development of and training in algorithms for screening, initiation, management, and monitoring of ARVs will simplify training needs, with recognition of the need to development sources of expert consultation for management of complicated side effects, treatment failure, and other unusual or unexpected complications.

Establish minimum standards for training of providers in adherence support for basic standardized approach to ensure a minimum set of interventions and assessments. The choice of adherence support program should be discussed with staff and consumers to determine the relative acceptability, cost, and feasibility of the program. Different models can be considered and tested: DOTS (Haiti model), modified DOTS (weekly dispensing, patient-identified adherence buddy), or other (Uganda). As the program progresses, these can be adapted to reflect the particular setting and communities served. Use of trained community health workers or similar lay counselor/educators as part of the care team should be considered as a means to expand adherence support and alleviate the workload of nurses and physicians. Community education, particularly for PLWH/A, will also be critical.

Ensure education, involvement, and mobilization of the community, including PLWH/A, NGOs, churches, etc. Activities should include national and local efforts to educate, involvement of PLWH/A as advocates and educators, efforts to address and decrease impact of stigma, and mobilization of community resources for ART support.

Appendix A

Facility Logistics Management Questionnaire

Facility Logistics Management Questionnaire

<p>Name of the facility _____</p> <p>Facility location _____</p> <p>District _____</p> <p>Facility Type: (1 = Central hospital; 2 = Provincial hospital; 3= District Hospital; 4 = VCT Center; 5 = PMTCT Program; 6 = Natpharm warehouse; 7=Other _____)</p> <p>Operating Authority: 1= government; 2 = non-governmental; 3 = mission; 4 = private; 5= Other</p> <p>Facility characteristics: (1 = urban; 2 = rural).....</p>	<p>DISTRICT..... <table border="1" style="display: inline-table; border-collapse: collapse;"><tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr></table></p> <p>SUB-DISTRICT..... <table border="1" style="display: inline-table; border-collapse: collapse;"><tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr></table></p> <p>FACILITY <table border="1" style="display: inline-table; border-collapse: collapse;"><tr><td style="width: 20px; height: 20px;"></td></tr></table></p> <p>CODE..... <table border="1" style="display: inline-table; border-collapse: collapse;"><tr><td style="width: 20px; height: 20px;"></td></tr></table></p> <p>FACILITY TYPE..... <table border="1" style="display: inline-table; border-collapse: collapse;"><tr><td style="width: 20px; height: 20px;"></td></tr></table></p> <p>OPERATING AUTHORITY..... <table border="1" style="display: inline-table; border-collapse: collapse;"><tr><td style="width: 20px; height: 20px;"></td></tr></table></p> <p>URBAN/RURAL..... <table border="1" style="display: inline-table; border-collapse: collapse;"><tr><td style="width: 20px; height: 20px;"></td></tr></table></p>												
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400 Respondents interviewed at this site:		
<u>Name and Title</u>	<u>Length in current position</u> months/years	<u>**Received training in logistics?</u> <u>(If yes, specify product</u> <u>categories & dates)</u>
a) _____	_____	_____
b) _____	_____	_____
c) _____	_____	_____
d) _____	_____	_____
e) _____	_____	_____
f) _____	_____	_____
g) _____	_____	_____

** Logistics training include product categories and the following functions: ordering, receiving supplies, inventory management, and supervision. If speaking to the person in charge of TB, ask specifically "Have you received formal training for TB drug logistics management?" Add dates of any training received.

401	Do you <u>have</u> the following logistics forms currently available to manage health products? IF "NOT AVAILABLE" TO BOTH A AND B, THEN SKIP TO QUESTION 409	OBSERVED	REPORTED AVAILABLE	NOT AVAILABLE
	A. Drug List			
	B. Stock cards			
	C. Stock Book			
	D. Requisition and Issue Voucher			
	E. Consumption Record			
	F. Other			

NO.	QUESTIONS	CODE CLASSIFICATION	GO TO
402	Do you use the following logistics forms to manage health products?	YES1 NO2	
	A. Drug List	YES1 NO2	
	B. Stock cards	YES1 NO2	
	C. Stock book	YES1 NO2	
	D. Requisition and Issue Voucher	YES1 NO2	→407 →407
	E. Consumption record	YES1 NO2	
	F. Other	YES1 NO2	
403	How is the information on these forms used? CIRCLE ALL THAT APPLY	Calculating consumption.....A Calculating needsB Reporting use to the higher level.C Requesting supplies from the higher level.....D Other, _____ W	IF ZERO →409
404	If transaction reports are used, are reports sent to the higher level?	YES1 NO2 NOT APPLICABLE3 DON'T KNOW8	
405	How often?	MonthlyA QuarterlyB Semi-annuallyC AnnuallyD Not ApplicableE Other, _____ W	
409	How many times have you placed an order or submitted a procurement request in the last year?	Never1 0–3 times a year2 4–6 times a year3 more than 6 times a year4 None.....5	
410	How often are you supposed to place orders or submit a procurement request? CIRCLE ALL THAT APPLY	MonthlyA QuarterlyB Semi-annuallyC AnnuallyD Not ApplicableE Other, _____ W	
411	Who determines this facility's re-supply quantities? CIRCLE ALL THAT APPLY	The facility itself (pull)A The facility at the higher level (push/topping up)B Other, _____ W	

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NO.	QUESTIONS	CODE CLASSIFICATION	GO TO
412	How are the facility's re-supply quantities determined?	Formula (DESCRIBE IN COMMENT SPACE)1 Higher level facility determines2 Other means,8	
413	Which data elements are used to calculate the facility's re-supply quantities? CIRCLE ALL THAT APPLY	Beginning of reporting period stock levelA End of reporting period stock levelB Quantity receivedC Quantity dispensedD Losses and adjustmentsE Other,W	
414	How did you learn how to complete the forms used at this facility? CIRCLE ALL THAT APPLY	During a logistics trainingA On the job trainingB On the job (self-learning).....C Other,W	→421 →421
415	Who is responsible for transporting commodities to your facility? CIRCLE ALL THAT APPLY	This facility collectsA District level facility delivers.....B Sub-district level facility delivers.C Supplier delivers.....D OtherW	
416	What mode of transportation is most often used? CIRCLE ALL THAT APPLY	Public transportationA Facility-managed vehicleB Private, hired vehicleC On foot.....D OtherW	
	When did you receive your last logistics supervisory visit?	Within the last month1 Within the last 3 months2 Within the last 6 months3 Never4 Not Applicable5 Other6	
	Who conducted the last logistics supervisory visit that you received? SPECIFY POSITION OF THE PERSON	_____ _____	
	What was done during the supervisory visit you received? (Circle all that apply)	Supplies checked.....A Stock cards checked.....B Expired stock removed.....C LMIS reports checked.....D On the job training/coaching.....E OtherW	

423. STOCK STATUS TABLE (August 2001–August 2002)

- IN COLUMN 9, ENTER THE TOTAL AMOUNT OF EXPIRED QUANTITIES OF PRODUCTS THAT ARE ON THE SHELF OR ANYWHERE INSIDE THE STOREROOM FOR EACH PRODUCT.

Product	Units of Count	Product managed by this facility? Y/N	Total consumption or issues (August. 2001–August 2002)	Out of these 12 mos, no. of mos. of data available	Usable stock on hand		Has order been placed? Y/N	Expired products
					From physical inventory	From stock ledger or stock cards		
1	2	3	4	5	6	7	8	9
Fluconazole	150 mg cap							
Cotrimoxazole	240 mg tab							
Aciclovir								
Benzathine penicillin	2.4 mU powder							
Doxycycline	100 mg tab							
Metronidazole	200 mg							
AZT	150 mg caps.							
Nevirapene	200 mg tab							
Nevirapene	200 mg/ 5ml sus.							
Nelfinavir	capsule							
Ethambutol	150 mg tab							
Isoniazide	300 mg tab							
Rifampicin	500 mg caps.							
Morphine	500 mg caps.							

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Product	Units of Count	Product managed by this facility? Y/N	Total consumption or issues (August. 2001–August 2002)	Out of these 12 mos, no. of mos. of data available	Usable stock on hand		Has order been placed? Y/N	Expired products
					From physical inventory	From stock ledger or stock cards		
1	2	3	4	5	6	7	8	9
Unused sharps containers	unit							
Male condom	piece							
5 ml. syringe	unit							
10 ml. syringe	unit							
Disposable pipettes/Disposable tips	unit							
Enter brands of HIV test kits below								

425. PERCENT DIFFERENCE BETWEEN QUANTITY ORDERED AND QUANTITY RECEIVED:

IF THIS FACILITY DOES NOT MANAGE ONE OF THE SELECTED PRODUCTS, LEAVE THAT ROW BLANK. WRITE IN THE TYPE OF ARV OR HIV TEST KIT MANAGED BY FACILITY.

Method/Brand/ Product	Units	Quantity ordered in last filled order	Date last filled order placed	Quantity received in last filled order/ procurement	Date last filled order received	Comments:
1	2	3	4	5	6	7
Male condom	Piece					
Cotrimoxazole	400/80 mg tab					
Benzathine penicillin	2.4 mU powder					
Isoniazid	150 mg tab					
5 ml syringe	piece					
ARV						
HIV TEST						

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426. Storage Conditions table

ITEMS 1–13 SHOULD BE ASSESSED FOR ALL FACILITIES FOR PRODUCTS THAT ARE READY TO BE ISSUED OR DISTRIBUTED TO CLIENTS. A TABLE SHOULD BE FILLED OUT FOR EACH STORAGE AREA HOUSING ONLY THE PRODUCT CATEGORIES LISTED BELOW. PLEASE SPECIFY THE TYPES OF PRODUCTS BEING ASSESSED IN THE STORAGE AREA BY CIRCLING THE CATEGORY (IES) OF PRODUCTS BELOW.

PLACE A CHECK MARK IN THE APPROPRIATE COLUMN BASED ON VISUAL INSPECTION OF THE STORAGE FACILITY, NOTING ANY RELEVANT OBSERVATIONS IN THE COMMENTS COLUMN. ***TO QUALIFY AS “YES,” ALL PRODUCTS AND CARTONS MUST MEET THE CRITERIA FOR EACH ITEM.***

Contraceptives Opportunistic Infection Drugs Malarial Drugs STI Drugs TB Medications

No	Description	Yes	No	N/A	Comments
	Products that are ready for distribution are arranged so that identification labels and expiry dates and/or manufacturing dates are visible.				
2.	Products are stored and organized in a manner accessible for First-Expiry/First-Out (FEFO) counting and general management.				
3.	Cartons and products are in good condition, not crushed due to mishandling. If cartons are open, check if products are not wet or cracked due to heat/radiation (fluorescent lights in the case of condoms)				
4.	The facility makes it a practice to separate damaged and/or expired products from good products and remove them from inventory.				
5.	Products are protected from direct sunlight at all times of the day and during all seasons.				
6.	Cartons and products are protected from water and humidity during all seasons.				
7.	Storage area is visually free from harmful insects and rodents. (Check the storage area for traces of rodents (droppings) or insects).				
8.	Storage area is secured with a lock and key, but accessible during normal working hours, with access limited to authorized personnel.				
9.	Products are stored at the appropriate temperature during all seasons according to product temperature specifications.				

No	Description	Yes	No	N/A	Comments
10.	All hazardous waste (e.g., needles, toxic materials) is properly disposed of and non-accessible to non-medical personnel.				
11.	Roof is maintained in good condition to avoid sunlight and water penetration at all times.				
12.	Storeroom is maintained in good condition (e.g. clean, all trash removed, shelves are sturdy, boxes are organized).				
13.	The current space and organization is sufficient for existing products and reasonable expansion (i.e., receipt of expected product deliveries for the foreseeable future).				

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The additional standards below can be applied to any facility large enough to require stacking of multiple boxes.

No.	Description	Yes	No	N/A	Comments
14.	Products are stacked at least 10 cm off the floor.				
15.	Products are stacked at least 30 cm away from the walls and other stacks.				
16.	Products are stacked no more than 2.5 meters high.				
17.	Fire safety equipment is available and accessible (any item identified as being used to promote fire safety should be considered).				
18.	Products are stored separately from insecticides and chemicals.				

Additional guidelines for specific questions:

Item 2: In noting proper product arrangement, the shelf life of the different products should be considered.

Item 3: Cartons should be checked to determine whether they are smashed due to mishandling. The conditions of the products inside opened or damaged cartons should also be examined to see if they are wet, cracked open due to heat/radiation (e.g. because of fluorescent lights in the case of condoms) or crushed.

Item 4: The discarding of damaged or expired products should be conducted according to the facility's procedures (which may differ from one facility to another). Please specify if procedures exist and note what they are.

Item 7: It is important to check the storage area for traces of rodents (droppings) or insects harmful to the products.

Item 8: This refers to either a warehouse secured with a lock or to a cabinet with a key in a clinic.

Item 17: Fire safety equipment does not have to meet international standards. Any item identified as being used to promote fire safety (e.g. water bucket, sand) should be considered.

427. SECURITY FOR HIGH VALUE ITEMS (IE. PHARMACEUTICAL SUBSTANCES OR TRADESMEN'S REQUISITIONS)

No.	Description	Yes	No	N/A	Comments
1.	Is there a separate, secure storage area for high/value products or controlled substances?				
2.	Are there unannounced audits or high value/ controlled substances performed? (Specify frequency, date of last audit and procedure in comments section)				
3.	Are theft/loss indicators being monitored for these commodities at this site?				

4.	Is staff performance evaluation and compensation (rewards and penalties) tied to theft/loss indicators for these commodities?				
5.	Describe the procedures in place for management of DDA?				
6.	Describe the security mechanisms in place for protecting high value substances/items during transit?				
7.	Describe the security mechanisms in place for dispensing high value/controlled substances to patients?				

COMMENTS OR GENERAL OBSERVATIONS ON COMMODITIES MANAGEMENT:

Appendix B

**Facility Service and Infrastructure
Questionnaire**

Facility Services and Infrastructure Questionnaire

<p>Name of the facility _____</p> <p>Facility location _____</p> <p>District _____</p> <p>Facility Type: (1 = Central hospital; 2 = Provincial hospital; 3= District Hospital; 4 = VCT center; 5 = PMTCT Program; 6=Other _____)</p> <p>Operating Authority: 1= government; 2 = non-governmental; 3 = mission; 4 = private; 5= Other.....</p> <p>Facility characteristics: (1 = urban; 2 = rural).....</p>	<p>DISTRICT..... <input style="width: 20px; height: 20px;" type="text"/> <input style="width: 20px; height: 20px;" type="text"/></p> <p>SUB-DISTRICT..... <input style="width: 20px; height: 20px;" type="text"/> <input style="width: 20px; height: 20px;" type="text"/></p> <p>FACILITY CODE <input style="width: 20px; height: 20px;" type="text"/></p> <p>FACILITY TYPE <input style="width: 20px; height: 20px;" type="text"/></p> <p>OPERATING AUTHORITY..... <input style="width: 20px; height: 20px;" type="text"/></p> <p>URBAN/RURAL..... <input style="width: 20px; height: 20px;" type="text"/></p>						
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FOR PART I, SECTION 1, QUESTIONS 101–110 A–L, YOU WILL WANT TO TALK WITH THE PERSON MOST KNOWLEDGEABLE ABOUT EACH SPECIFIC HIV/AIDS RELATED SERVICE PROVIDED BY THE FACILITY:

FOR PART I, SECTION 2: SHARPS MANAGEMENT AND INFECTION CONTROL, YOU WILL WANT TO VISIT THE ROOM WHERE THERAPEUTIC INJECTIONS ARE MOST COMMONLY GIVEN AND ASK TO SPEAK WITH THE PROVIDER OFFERING THESE SERVICES ON THE DAY OF THE VISIT.

FOR PART I, SECTION 3: LABORATORY DIAGNOSTICS, YOU WILL WANT TO VISIT THE LABORATORY AND INTERVIEW THE PERSON IN CHARGE. IF THE LAB IS CLOSED, CONTINUE TO INTERVIEW THE PERSON MOST KNOWLEDGABLE ABOUT THE LABORATORY SERVICES.

FOR SECTION 4: HAART, YOU WILL NEED TO IDENTIFY WHO THE MOST APPROPRIATE PERSON IS TO INTERVIEW.

04: LISTING OF STAFF TO INTERVIEW AND LOCATIONS TO VISIT				
N O	SERVICE CATEGORY OR FUNCTIONAL AREA	NAME OF STAFF TO BE INTERVIEWED	LOCATION	SELECTED FOR INTERVIEW (✓)
1	VCT			
2	PMTCT			
3	Home-based care			
4	Management (prevention, diagnosis and treatment) of Ois in HIV/AIDS patients			
5	STIs			
6	Diagnosis of TB			
7	Treatment of TB			
8	Laboratory services			
9	ART			
10	Commodity management			

101 VCT SERVICES		
A	<p>Does this facility provide this service? IF YES, INDICATE IF THE SERVICE IS AVAILABLE TODAY.</p> <p>IF REFER, INDICATE IF THERE IS A SPECIFIC LOCATION FOR THIS SERVICE WHERE THE CLIENT IS REFERRED TO.</p>	<p>YES, : TODAY, OBSERVED 1</p> <p>YES, TODAY, REPORTED 2</p> <p>YES, NOT TODAY 3</p> <p>NO, REFER 4 → 102</p> <p>(SPECIFY PLACE CLIENT IS REFERRED TO)</p> <p>NO 5 → 102</p>
B	<p>Is VCT offered as a unique service where only clients with AIDS related issues are seen and by specific staff assigned to work with the program or is it offered as a part of general services?</p>	<p>UNIQUE FOR HIV/AIDS 1</p> <p>INTEGRATED WITH GENERAL SERVICES 2</p> <p>BOTH 3</p> <p>DON'T KNOW 4</p>
C	<p>How many days per week is this service available?</p>	<p>DAYS <input type="text"/></p>
D	<p>Does your facility provide VCT service as outreach?</p> <p>Y N</p> <p>How many days during the month of AUGUST 2002 did your facility provide VCT as outreach?</p>	<p><input type="text"/> <input type="text"/></p> <p>NONE 00</p> <p>DON'T KNOW 98</p>
E	<p>How many staff are directly involved with client counseling, diagnosis or management for VCT at one time? INCLUDE ALL STAFF WHO HAVE RESPONSIBILITY FOR ANY OF THESE ACTIVITIES AT ANY TIME, EXCLUDING THE LAB TECHNICIAN.</p>	<p><input type="text"/> <input type="text"/></p>
F	<p>How many staff at this site have been trained in conducting VCT?</p> <p>(NOTE APPROXIMATE DATE AND SOURCE OF THE TRAINING).</p>	<p>LAB</p> <p>TECHS _____</p> <p>NURSES _____</p> <p>OTHER _____</p> <p>DON'T KNOW _____</p>

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101 VCT SERVICES					
G	Does the facility offer the following program components as part of the VCT service? CIRCLE ALL ROUTINE PROGRAM COMPONENTS OFFERED BY FACILITY. DO NOT CIRCLE THE ITEM IF THE SERVICE IS PROVIDED ELSEWHERE AND THIS FACILITY ONLY REFERS FOR THE INDICATED SERVICE.	COUNSELING FOR ALL CLIENTS ON REQUEST A TEST ON REQUEST B COUNSELING FOR ALL CLIENTS AFTER RECEIVING TEST C C			
H	Are there any partner organizations that provide staff or technical support <u>to this facility</u> for VCT? Please specify:	YES 1 NO 2 DON'T KNOW 8			
I	Do you have VCT guidelines or protocols for how the facility is to provide this service? IF YES, MAY I SEE THEM? (TO SCORE 1 OR 2, THEY MUST BE IN SERVICE DELIVERY AREA OR IMMEDIATELY ADJACENT); <u>NOTE SOURCE AND DATE.</u>	YES, OBSERVED 1 YES, NOT SEEN 2 NONE AVAILABLE 3 DON'T KNOW 8 IF YES, SPECIFY _____			
J	Do you have a register or other record where you record information on clients who receive this service? IF YES, ASK TO SEE THE REGISTER	YES, OBSERVED 1 YES, NOT SEEN 2 NO 3			
K	USING THE REPORT FOR THE MONTH OF AUGUST 2002, OR COUNTING FROM REGISTER, IF REPORT NOT AVAILABLE, INDICATE HOW MANY CLIENTS RECEIVED THIS SERVICE.	<table border="1" style="display: inline-table; vertical-align: middle;"><tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr></table> DON'T KNOW NONE			

102 PMTCT SERVICES		
A	Does this facility provide PMTCT? IF YES, INDICATE IF THE SERVICE IS AVAILABLE TODAY. IF REFER, INDICATE IF THERE IS A SPECIFIC LOCATION FOR THIS SERVICE WHERE THE CLIENT IS REFERRED TO.	YES,: TODAY, OBSERVED 1 YES, TODAY, REPORTED 2 YES, NOT TODAY 3 NO, REFER 4→103 (SPECIFY PLACE CLIENT IS REFERRED TO) NO 5→103

102 PMTCT SERVICES		
B	Is PMTCT offered as a unique service where only clients with AIDS related issues are seen and by specific staff assigned to work with the program or is it offered as a part of general services?	UNIQUE FOR HIV/AIDS 1 INTEGRATED WITH GENERAL SERVICES 2 BOTH 3 DON'T KNOW 8
C	How many days per week is PMTCT available?	DAYS <input type="text"/>
D	How many days during the month of AUGUST 2002 was PMTCT provided as outreach?	<input type="text"/> <input type="text"/> NONE 00 DON'T KNOW 98
E	How many staff are directly involved with client counseling, diagnosis or management for PMTCT at one time? INCLUDE ALL STAFF WHO HAVE RESPONSIBILITY FOR ANY OF THESE ACTIVITIES AT ANY TIME, EXCLUDING THE LAB TECHNICIAN.	<input type="text"/> <input type="text"/>
F	Among these staff, how many have received any training in PMTCT within the last 2 years? (NOTE APPROXIMATE DATE AND SOURCE OF THE TRAINING).	<input type="text"/> <input type="text"/> NONE 00 DON'T KNOW 98
G	Does the facility offer the following program components as part of the PMTCT service? CIRCLE ALL ROUTINE PROGRAM COMPONENTS OFFERED BY FACILITY. DO NOT CIRCLE THE ITEM IF THE SERVICE IS PROVIDED ELSEWHERE AND THIS FACILITY ONLY REFERS FOR THE INDICATED SERVICE.	HIV TEST FOR PREG. WOMAN A COUNSEL ON BREAST FEEDING B ART (NEVIRAPINE OR AZT) C PROVIDE MILK FORMULA D
H	Are there any partner organizations that provide staff or technical support <u>to this facility</u> for PMTCT? Please specify:	YES 1 NO 2 DON'T KNOW 8

Zimbabwe: ART Program—Issues and Opportunities for Initiation and Expansion

102 PMTCT SERVICES		
I	Do you have clinical guidelines or protocols for how the facility is to provide PMTCT? IF YES, MAY I SEE THEM? (TO SCORE 1 OR 2, THEY MUST BE IN SERVICE DELIVERY AREA OR IMMEDIATELY ADJACENT)	YES, OBSERVED 1 YES, NOT SEEN 2 NONE AVAILABLE 3 DON'T KNOW 8 IF YES, SPECIFY _____
J	Do you have guidelines or protocols for how the facility is to conduct the HIV-test PMTCT? IF YES, MAY I SEE THEM? (TO SCORE 1 OR 2, THEY MUST BE IN SERVICE DELIVERY AREA OR IMMEDIATELY ADJACENT)	YES, OBSERVED 1 YES, NOT SEEN 2 NONE AVAILABLE 3 DON'T KNOW 8 IF YES, SPECIFY _____
K	Do you have a register or other place where you record information on clients who receive PMTCT? IF YES, ASK TO SEE THE REGISTER	YES, OBSERVED 1 YES, NOT SEEN 2 NO 3
L	USING THE REPORT FOR THE MONTH OF AUGUST 2002, OR COUNTING FROM REGISTER, IF REPORT NOT AVAILABLE, INDICATE HOW MANY CLIENTS RECEIVED THIS SERVICE.	<div style="text-align: right;"> <input type="text"/> <input type="text"/> <input type="text"/> </div> DON'T KNOW 998 NONE 000

103 HOME-BASED CARE		
A	Does this facility provide home-based care for HIV-related illness? IF YES, INDICATE IF THE SERVICE IS AVAILABLE TODAY. IF REFER, INDICATE IF THERE IS A SPECIFIC LOCATION FOR THIS SERVICE WHERE THE CLIENT IS REFERRED TO.	YES,: TODAY, OBSERVED 1 YES, TODAY, REPORTED 2 YES, NOT TODAY 3 NO, REFER 4→104 (SPECIFY PLACE CLIENT IS REFERRED TO) NO 5→104
B	Is home-based care for HIV-related illness offered as a unique service where only clients with AIDS related issues are seen and by specific staff assigned to work with the program or is it offered as a part of general services?	UNIQUE FOR HIV/AIDS 1 INTEGRATED WITH GENERAL SERVICES 2 BOTH 3 DON'T KNOW 8
C	How many days per week is home-based care for HIV-related illness available?	DAY <input type="text"/>

D	<p>Do you provide home-based care for HIV-related illness as outreach?</p> <p>How many days during the month of AUGUST 2002 was home-based care for HIV-related illness provided as outreach?</p>	<div style="text-align: right;"> <input style="width: 30px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 30px; height: 20px; border: 1px solid black;" type="text"/> </div> <p>NONE 00 DON'T KNOW 98</p>
E	<p>How many staff are directly involved with client counseling, diagnosis or management for home-based care for HIV-related illness at one time? Include all staff who have responsibility for any of these activities at any time, excluding the lab technician.</p>	<div style="text-align: right;"> <input style="width: 30px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 30px; height: 20px; border: 1px solid black;" type="text"/> </div>
F	<p>Among these staff, how many have received any training related to this service within the last 2 years?</p> <p>(NOTE APPROXIMATE DATE AND SOURCE OF THE TRAINING).</p>	<div style="text-align: right;"> <input style="width: 30px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 30px; height: 20px; border: 1px solid black;" type="text"/> </div> <p>NONE 00 DON'T KNOW 98</p>
G	<p>Does the facility offer the following program components as part of this HIV/AIDS-related service?</p> <p>CIRCLE ALL ROUTINE PROGRAM COMPONENTS OFFERED BY FACILITY. DO NOT CIRCLE THE ITEM IF THE SERVICE IS PROVIDED ELSEWHERE AND THIS FACILITY ONLY REFERS FOR THE INDICATED SERVICE.</p>	<p>PROVIDE SERVICES IN HOMES A TRAIN CARETAKERS B MATERIAL SUPPORT C COMMUNITY EDUCATION AND ADVOCACY D OUTREACH E</p>
H	<p>Are there any partner organizations that provide staff or technical support <u>to this facility</u> for home-based care for HIV-related illness?</p> <p>Please specify:</p>	<p>YES 1 NO 2 DON'T KNOW 8</p>
I	<p>Do you have clinical guidelines or protocols for how the facility is to provide home-based care for HIV-related illness? IF YES, MAY I SEE THEM? (TO SCORE 1 OR 2, THEY MUST BE IN SERVICE DELIVERY AREA OR IMMEDIATELY ADJACENT)</p>	<p>YES, OBSERVED 1 YES, NOT SEEN 2 NONE AVAILABLE 3 DON'T KNOW 8 IF YES, SPECIFY _____</p>
J	<p>Do you have a register or other record where you record information on clients who receive this service? IF YES, ASK TO SEE THE REGISTER</p>	<p>YES, OBSERVED 1 YES, NOT SEEN 2 NO 3</p>

Zimbabwe: ART Program—Issues and Opportunities for Initiation and Expansion

104 MANAGEMENT OF OPPORTUNISTIC INFECTIONS IN HIV/AIDS PATIENTS (PREVENTION, DIAGNOSIS, TREATMENT)		
A	<p>Does this facility provide management of opportunistic infections in HIV/AIDS patients? IF YES, INDICATE IF THE SERVICE IS AVAILABLE TODAY.</p> <p>IF REFER, INDICATE IF THERE IS A SPECIFIC LOCATION FOR THIS SERVICE WHERE THE CLIENT IS REFERRED TO.</p>	<p>YES,; TODAY,OBSERVED 1</p> <p>YES, TODAY, REPORTED 2</p> <p>YES, NOT TODAY 3</p> <p>NO, REFER 4 → 105</p> <p>(SPECIFY PLACE CLIENT IS REFERRED TO)</p> <p>NO 5 → 105</p>
B	<p>Are OI services provided as part of in-patient care?</p> <p>Are OI services provided as part of home-based care?</p> <p>If OI services are provided as part of home-based care, how is communication with the patient managed?</p>	<p>YES/NO</p> <p>YES/NO</p>
C	<p>Is management of opportunistic infections in HIV/AIDS patients offered as a unique service where only clients with AIDS related issues are seen and by specific staff assigned to work with the program or is it offered as a part of general services?</p>	<p>UNIQUE FOR HIV/AIDS 1</p> <p>INTEGRATED WITH GENERAL SERVICES 2</p> <p>BOTH 3</p> <p>DON'T KNOW 8</p>
D	<p>How many days per week is management of opportunistic infections in HIV/AIDS patients available?</p>	<p>DAYS <input type="text"/></p>
E	<p>Do you provide management of opportunistic infections in HIV/AIDS patients as outreach?</p> <p>How many days during the month of AUGUST 2002 was management of opportunistic infections in HIV/AIDS patients provided as outreach?</p>	<p><input type="text"/> <input type="text"/></p> <p>NONE 00</p> <p>DON'T KNOW 98</p>

	104 MANAGEMENT OF OPPORTUNISTIC INFECTIONS IN HIV/AIDS PATIENTS (PREVENTION, DIAGNOSIS, TREATMENT)	
F	How many staff are directly involved with client counseling, diagnosis or management for management of opportunistic infections in HIV/AIDS patients at one time? INCLUDE ALL STAFF WHO HAVE RESPONSIBILITY FOR ANY OF THESE ACTIVITIES AT ANY TIME, EXCLUDING THE LAB TECHNICIAN.	<input type="text"/> <input type="text"/>
G	Among these staff, how many have received any training related to management of opportunistic infections in HIV/AIDS patients within the last 2 years? (NOTE APPROXIMATE DATE AND SOURCE OF THE TRAINING).	<input type="text"/> <input type="text"/> NONE 00 DON'T KNOW 98
H	Does the facility offer the following program components as part of management of opportunistic infections in HIV/AIDS patients? CIRCLE ALL ROUTINE PROGRAM COMPONENTS OFFERED BY FACILITY. DO NOT CIRCLE THE ITEM IF THE SERVICE IS PROVIDED ELSEWHERE AND THIS FACILITY ONLY REFERS FOR THE INDICATED SERVICE.	LAB DIAGNOSIS A X-RAY SERVICE B PRESCRIBE DRUGS FOR OIs C COUNSELING FOR POSITIVE LIVING D OUTREACH E
I	Are there any partner organizations that provide staff or technical support <u>to this facility</u> for management of opportunistic infections in HIV/AIDS patients? Please specify:	YES 1 NO 2 DON'T KNOW 8
J	Do you have clinical guidelines or protocols for how the facility is to provide management of opportunistic infections in HIV/AIDS patients? IF YES, MAY I SEE THEM? (TO SCORE 1 OR 2, THEY MUST BE IN SERVICE DELIVERY AREA OR IMMEDIATELY ADJACENT)	YES, OBSERVED 1 YES, NOT SEEN 2 NONE AVAILABLE 3 DON'T KNOW 8 IF YES, SPECIFY _____

Zimbabwe: ART Program—Issues and Opportunities for Initiation and Expansion

	104 MANAGEMENT OF OPPORTUNISTIC INFECTIONS IN HIV/AIDS PATIENTS (PREVENTION, DIAGNOSIS, TREATMENT)	
K	Is there a protocol describing when a patient should be started on cotrimoxazole prophylaxis?	YES1 NO2 DON'T KNOW 3
L	Do you have a register or other record where you record information on clients who receive this service? IF YES, ASK TO SEE THE REGISTER	YES, OBSERVED 1 YES, NOT SEEN 2 NO 3

105 SEXUALLY TRANSMITTED INFECTIONS		
A	Does this facility provide STI services? IF YES, INDICATE IF THE SERVICE IS AVAILABLE TODAY. IF REFER, INDICATE IF THERE IS A SPECIFIC LOCATION FOR THIS SERVICE WHERE THE CLIENT IS REFERRED TO.	YES,: TODAY,OBSERVED 1 YES, TODAY, REPORTED 2 YES, NOT TODAY 3 NO, REFER 4 → 106 (SPECIFY PLACE CLIENT IS REFERRED TO) NO 6 → 106
B	Is the STI service offered as a unique service where only clients with AIDS related issues are seen and by specific staff assigned to work with the program or is it offered as a part of general services?	UNIQUE FOR HIV/AIDS 1 INTEGRATED WITH GENERAL SERVICES 2 BOTH 3 DON'T KNOW 8
C	How many days per week is the STI service available?	DAYS <input type="text"/>
D	Does the facility provide STI services as outreach? How many days during the month of AUGUST 2002 was the STI service actually provided as outreach?	<input type="text"/> <input type="text"/> NONE 00 DON'T KNOW 98
E	How many staff are directly involved with client counseling, diagnosis or management for this STI service at one time? INCLUDE ALL STAFF WHO HAVE RESPONSIBILITY FOR ANY OF THESE ACTIVITIES AT ANY TIME, EXCLUDING THE LAB TECHNICIAN.	<input type="text"/> <input type="text"/>
F	Among these staff, how many have received any training related to STIs within the last 2 years? (NOTE APPROXIMATE DATE AND SOURCE OF THE TRAINING).	<input type="text"/> <input type="text"/> NONE 00 DON'T KNOW 98

Zimbabwe: ART Program—Issues and Opportunities for Initiation and Expansion

	105 SEXUALLY TRANSMITTED INFECTIONS				
G	Does the facility offer the following program components as part of the STI service? CIRCLE ALL ROUTINE PROGRAM COMPONENTS OFFERED BY FACILITY. DO NOT CIRCLE THE ITEM IF THE SERVICE IS PROVIDED ELSEWHERE AND THIS FACILITY ONLY REFERS FOR THE INDICATED SERVICE.	ROUTINE SYPHILIS TEST A SYPHILIS TEST ON REQUEST B COUNSELING ABOUT STIs C SYNDROMIC DIAGNOSIS D PRESCRIBE MEDICATIONS E OUTREACH F			
H	Are there any partner organizations that provide staff or technical support <u>to this facility</u> for STI services? Please specify:	YES 1 NO 2 DON'T KNOW 8			
I	Do you have clinical guidelines or protocols for how the facility is to provide the STI service? IF YES, MAY I SEE THEM? (TO SCORE 1 OR 2, THEY MUST BE IN SERVICE DELIVERY AREA OR IMMEDIATELY ADJACENT)	YES, OBSERVED 1 YES, NOT SEEN 2 NONE AVAILABLE 3 DON'T KNOW 8 IF YES, SPECIFY _____			
J	Do you have a register or other record where you record information on clients who receive the STI service? IF YES, ASK TO SEE THE REGISTER	YES, OBSERVED 1 YES, NOT SEEN 2 NO 3			
K	USING THE REPORT FOR THE MONTH OF AUGUST 2002, OR COUNTING FROM REGISTER, IF REPORT NOT AVAILABLE, INDICATE HOW MANY CLIENTS RECEIVED THIS SERVICE.	TOTAL: <div style="text-align: right;"> <table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td style="width: 30px; height: 20px;"></td> <td style="width: 30px; height: 20px;"></td> <td style="width: 30px; height: 20px;"></td> </tr> </table> </div> DON'T KNOW 998 NONE 000			

106 DIAGNOSIS FOR TUBERCULOSIS		
A	Does this facility provide diagnosis for TB? IF YES, INDICATE IF THE SERVICE IS AVAILABLE TODAY. IF REFER, INDICATE IF THERE IS A SPECIFIC LOCATION FOR THIS SERVICE WHERE THE CLIENT IS REFERRED TO.	YES,: TODAY,OBSERVED 1 YES, TODAY, REPORTED 2 YES, NOT TODAY 3 NO, REFER 4→107 (SPECIFY PLACE CLIENT IS REFERRED TO) NO 5→107
B	Is diagnosis for TB offered as a unique service where only clients with AIDS related issues are seen and by specific staff assigned to work with the program or is it offered as a part of general services?	UNIQUE FOR HIV/AIDS 1 INTEGRATED WITH GENERAL SERVICES 2 BOTH 3 DON'T KNOW 8
C	How many days per week is diagnosis for TB available?	DAYS <input type="text"/>
D	Do you provide outreach for diagnosis for TB ? How many days during the month of AUGUST 2002 diagnosis for TB provided as outreach?	<input type="text"/> <input type="text"/> NONE 00 DON'T KNOW 98
E	How many staff are directly involved with diagnosis for TB at one time? INCLUDE ALL STAFF WHO HAVE RESPONSIBILITY FOR ANY OF THESE ACTIVITIES AT ANY TIME, EXCLUDING THE LAB TECHNICIAN.	<input type="text"/> <input type="text"/>
F	Among these staff, how many have received any training related to diagnosis for TB within the last 2 years? (NOTE APPROXIMATE DATE AND SOURCE OF THE TRAINING).	<input type="text"/> <input type="text"/> NONE 00 DON'T KNOW 98

Zimbabwe: ART Program—Issues and Opportunities for Initiation and Expansion

106 DIAGNOSIS FOR TUBERCULOSIS					
G	Does the facility offer the following program components as part of diagnosis for TB? CIRCLE ALL ROUTINE PROGRAM COMPONENTS OFFERED BY FACILITY. DO NOT CIRCLE THE ITEM IF THE SERVICE IS PROVIDED ELSEWHERE AND THIS FACILITY ONLY REFERS FOR THE INDICATED SERVICE.	ROUTINE SPUTUM TEST A TEST ONLY IF SYMPTOMATIC B CLINICAL DIAGNOSIS WITHOUT LAB TESTC X-RAY SERVICE.....D OUTREACH..... E			
H	Are there any partner organizations that provide staff or technical support to this facility for diagnosis for TB? Please specify:	YES 1 NO 2 DON'T KNOW 8			
I	Do you have clinical guidelines or protocols for how the facility is to provide this service? IF YES, MAY I SEE THEM? (TO SCORE 1 OR 2, THEY MUST BE IN SERVICE DELIVERY AREA OR IMMEDIATELY ADJACENT)	YES, OBSERVED 1 YES, NOT SEEN 2 NONE AVAILABLE 3 DON'T KNOW 8 IF YES, SPECIFY _____			
J	Do you have a register or other record where you record information on clients who receive diagnosis for TB? IF YES, ASK TO SEE THE REGISTER	YES, OBSERVED 1 YES, NOT SEEN 2 NO 3			
K	USING THE REPORT FOR THE MONTH OF AUGUST 2002, OR COUNTING FROM REGISTER, IF REPORT NOT AVAILABLE, INDICATE HOW MANY CLIENTS RECEIVED THIS SERVICE.	<table border="1" style="float: right; margin-right: 20px;"> <tr> <td style="width: 30px; height: 20px;"></td> <td style="width: 30px; height: 20px;"></td> <td style="width: 30px; height: 20px;"></td> </tr> </table> DON'T KNOW 998 NONE 000			

107 TREATMENT FOR TUBERCULOSIS		
A	<p>Does this facility provide treatment for TB? IF YES, INDICATE IF THE SERVICE IS AVAILABLE TODAY.</p> <p>IF REFER, INDICATE IF THERE IS A SPECIFIC LOCATION FOR THIS SERVICE WHERE THE CLIENT IS REFERRED TO.</p>	<p>YES,: TODAY,OBSERVED 1</p> <p>YES, TODAY, REPORTED 2</p> <p>YES, NOT TODAY 3</p> <p>NO, REFER 4→200</p> <p>(SPECIFY PLACE CLIENT IS REFERRED TO)</p> <p>NO 6→200</p>
B	<p>Is this service offered as a unique service where only clients with AIDS related issues are seen and by specific staff assigned to work with the program or is it offered as a part of general services?</p>	<p>UNIQUE FOR HIV/AIDS 1</p> <p>INTEGRATED WITH GENERAL SERVICES 2</p> <p>BOTH 3</p> <p>DON'T KNOW 8</p>
C	<p>How many days per week is treatment for TB available?</p>	<p>DAYS <input type="text"/></p>
D	<p>Does this facility provide treatment for TB as outreach?</p> <p>How many days during the month of AUGUST 2002 was the service, funded by this facility, actually provided as outreach?</p>	<p><input type="text"/><input type="text"/></p> <p>NONE 00</p> <p>DON'T KNOW 98</p>
E	<p>How many staff are directly involved with treatment for TB at one time? INCLUDE ALL STAFF WHO HAVE RESPONSIBILITY FOR ANY OF THESE ACTIVITIES AT ANY TIME, EXCLUDING THE LAB TECHNICIAN.</p>	<p><input type="text"/><input type="text"/></p>
F	<p>Among these staff, how many have received any training related to treatment for TB within the last 2 years?</p> <p>(NOTE APPROXIMATE DATE AND SOURCE OF THE TRAINING).</p>	<p><input type="text"/><input type="text"/></p> <p>NONE 00</p> <p>DON'T KNOW 98</p>

Zimbabwe: ART Program—Issues and Opportunities for Initiation and Expansion

107 TREATMENT FOR TUBERCULOSIS														
G	Does the facility offer the following program components as part of treatment for TB? CIRCLE ALL ROUTINE PROGRAM COMPONENTS OFFERED BY FACILITY. DO NOT CIRCLE THE ITEM IF THE SERVICE IS PROVIDED ELSEWHERE AND THIS FACILITY ONLY REFERS FOR THE INDICATED SERVICE.	<table style="width: 100%; border: none;"> <tr> <td style="width: 80%;">DOTS</td> <td style="width: 20%; text-align: right;">A</td> </tr> <tr> <td>PRESCRIBE MEDICATION (NON-DOTS)</td> <td style="text-align: right;">B</td> </tr> <tr> <td>OUTREACH</td> <td style="text-align: right;">C</td> </tr> </table>	DOTS	A	PRESCRIBE MEDICATION (NON-DOTS)	B	OUTREACH	C						
DOTS	A													
PRESCRIBE MEDICATION (NON-DOTS)	B													
OUTREACH	C													
H	Are there any partner organizations that provide staff or technical support <u>to this facility</u> for treatment for TB? Please specify:	<table style="width: 100%; border: none;"> <tr> <td style="width: 80%;">YES</td> <td style="width: 20%; text-align: right;">1</td> </tr> <tr> <td>NO</td> <td style="text-align: right;">2</td> </tr> <tr> <td>DON'T KNOW</td> <td style="text-align: right;">8</td> </tr> </table>	YES	1	NO	2	DON'T KNOW	8						
YES	1													
NO	2													
DON'T KNOW	8													
I	Do you have clinical guidelines or protocols for how the facility is to treat TB patients? IF YES, MAY I SEE THEM? (TO SCORE 1 OR 2, THEY MUST BE IN SERVICE DELIVERY AREA OR IMMEDIATELY ADJACENT)	<table style="width: 100%; border: none;"> <tr> <td style="width: 80%;">YES, OBSERVED</td> <td style="width: 20%; text-align: right;">1</td> </tr> <tr> <td>YES, NOT SEEN</td> <td style="text-align: right;">2</td> </tr> <tr> <td>NONE AVAILABLE</td> <td style="text-align: right;">3</td> </tr> <tr> <td>DON'T KNOW</td> <td style="text-align: right;">8</td> </tr> <tr> <td>IF YES, SPECIFY</td> <td></td> </tr> <tr> <td>_____</td> <td></td> </tr> </table>	YES, OBSERVED	1	YES, NOT SEEN	2	NONE AVAILABLE	3	DON'T KNOW	8	IF YES, SPECIFY		_____	
YES, OBSERVED	1													
YES, NOT SEEN	2													
NONE AVAILABLE	3													
DON'T KNOW	8													
IF YES, SPECIFY														

J	Do you have a register or other record where you record information on clients who are treated for TB? IF YES, ASK TO SEE THE REGISTER	<table style="width: 100%; border: none;"> <tr> <td style="width: 80%;">YES, OBSERVED</td> <td style="width: 20%; text-align: right;">1</td> </tr> <tr> <td>YES, NOT SEEN</td> <td style="text-align: right;">2</td> </tr> <tr> <td>NO</td> <td style="text-align: right;">3</td> </tr> </table>	YES, OBSERVED	1	YES, NOT SEEN	2	NO	3						
YES, OBSERVED	1													
YES, NOT SEEN	2													
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K	USING THE REPORT FOR THE MONTH OF AUGUST 2002, OR COUNTING FROM REGISTER, IF REPORT NOT AVAILABLE, INDICATE HOW MANY CLIENTS RECEIVED THIS SERVICE.	<table style="width: 100%; border: none;"> <tr> <td style="width: 80%;"></td> <td style="width: 20%; text-align: right;"> <table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 30px; height: 20px;"></td> <td style="width: 30px; height: 20px;"></td> <td style="width: 30px; height: 20px;"></td> </tr> </table> </td> </tr> <tr> <td>DON'T KNOW</td> <td style="text-align: right;">998</td> </tr> <tr> <td>NONE</td> <td style="text-align: right;">000</td> </tr> </table>		<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 30px; height: 20px;"></td> <td style="width: 30px; height: 20px;"></td> <td style="width: 30px; height: 20px;"></td> </tr> </table>				DON'T KNOW	998	NONE	000			
	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 30px; height: 20px;"></td> <td style="width: 30px; height: 20px;"></td> <td style="width: 30px; height: 20px;"></td> </tr> </table>													
DON'T KNOW	998													
NONE	000													
L	Does this facility plan integrate the management of TB treatment and ART?	<table style="width: 100%; border: none;"> <tr> <td style="width: 80%;">Yes</td> <td style="width: 20%;"></td> </tr> <tr> <td>No</td> <td></td> </tr> </table>	Yes		No									
Yes														
No														

PART I, SECTION 2: SHARPS MANAGEMENT AND INFECTION CONTROL				
ASK TO SEE THE ROOM WHERE THERAPEUTIC INJECTIONS ARE MOST COMMONLY GIVEN AND ASK TO SPEAK WITH THE PROVIDER OFFERING THESE SERVICES ON THE DAY OF THE VISIT. IF SERVICES ARE NOT BEING OFFERED ON THE DAY OF VISIT, RECORD AS MANY OF THE OBSERVATIONS AS POSSIBLE.				
NO.	QUESTIONS	CODE CLASSIFICATION		GO TO
200	INDICATE IF THE FACILITY IS OPEN FOR CLIENT SERVICE AT THE TIME THE SURVEY IS BEING CONDUCTED.	YES, OPEN REGULAR SERVICE	1	
		YES, OPEN FOR EMERGENCY	2	
		CLOSED FOR CLIENT SERVICE	3	
201	ITEMS REQUIRED TO PROVIDE INJECTION SERVICES IN ROOM OR IMMEDIATELY ADJACENT (SHARPS CONTAINER, DISPOSABLE SYRINGES)	YES, OBSERVED	1	
		YES, NOT SEEN	2	
		NO	3	
209	ASK TO SEE WHERE POTENTIALLY CONTAMINATED WASTE, USED NEEDLES AND ITEMS THAT ARE NOT RE-USED ARE STORED, PRIOR TO FINAL DISPOSAL AND DESCRIBE THE CONDITION	FIRMLY COVERED BIN	1	
		OPEN BIN, PROTECTED	2	
		OTHER PROTECTED AREA	3	
		OTHER NON-PROTECTED AREA	4	
		OTHER _____	6	
210	How does this facility dispose of potentially contaminated waste and items that are not reused (e.g. bandages, syringes)? IF DIFFERENT METHODS ARE USED AT DIFFERENT TIMES, CIRCLE ALL COMMON METHODS OF DISPOSAL.	BURNED IN INCINERATOR	A	
		BURNED IN OPEN PIT	B	
		BURNED AND BURIED	C	
		BURIED	D	
		THROW IN TRASH/OPEN PIT	E	
		THROW IN PIT LATRINE	F	
		TRANSPORT OFFSITE		
		W/ MUNICIPAL TRASH	G	
		TRANSPORT OFFSITE		
		SPECIAL DISPOSAL	H	
		SOLD TO GARBAGE COLLECTORS		
		OR RECYCLERS	I	
		OTHER _____	W	

PART I, SECTION 3: LABORATORY DIAGNOSTICS			
NO.	QUESTIONS	CODE CLASSIFICATION	GO TO
301	Do you have documented lab testing protocols? If yes, note the date and issuer of the procedures	YES.....1 NO.....2	
302	Do you have lab testing procedures? If yes, note the date and issuer of the procedures	YES.....1 NO.....2	
303	What is the <u>qualification</u> of the person who is in charge of the quality of the laboratory work? (NOTE TYPE OF DIPLOMA).		

ANSWER QUESTIONS 304–316 ONLY IF THE FACILITY MANAGES HIV TEST KITS THAT REQUIRE COLD CHAIN AND YOU ARE ABLE TO VISIT THE COLD CHAIN STORAGE AREA. IF NOT GO TO QUESTION 309

NO.	QUESTIONS	CODE CLASSIFICATION			
304	Do you have a functioning refrigerator(s) to store HIV test kits?	YES NUMBER____.....1 NO.....2 NOT APPLICABLE3			
305	Write down the actual temperature by looking at the internal thermometer inside the fridge (ideally temperature should be between 2 and +8 degrees centigrade) NOTE IF THERMOMETER BROKEN OR MISSING	TEMPERATURE (CENTIGRADE) <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> </tr> </table>			
306	Are refrigerators located away from any surrounding objects?	YES.....1 NO.....2			
307	Is the temperature chart up-to-date? (in order to be up-to-date, there has to be an entry for the day of the visit)	YES.....1 NO.....2 NO CHART AVAILABLE.....3			
308	Do you have a reliable supply of electricity, paraffin, gas or solar panels for HIV/AIDS cold chain purposes?	YES.....1 NO.....2			
309	IS A PERSON WHO CONDUCTS LAB TESTS PRESENT?	YES.....1 NO.....2			

Please specify the type(s) of HIV test that the staff have been trained to use: (please specify brand/type) and date/source of training

311 Please list all the HIV test kits that are managed by this facility: [IF NO TESTS MANAGED, WRITE "NONE"]

Brand	PURPOSE 1=VCT 2= PMTCT 3= CLINICAL DIAGNOSIS 4= BLOOD	PRINCIPAL USAGE 1=primary test, 2=secondary test, 3=confirmatory test	SOURCE OF KITS (CDC, NATPHARM, PSI, OTHER)

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312 –

Test performed on site		Client cost per test	Staff trained in the last 2 years?	Equipment available today?	Reagents available today?	Is there a register for results to be recorded?	Comments
	Y/N		Y/N	Y/N	Y/N	Y/N	
HIV test							
TB-sputum							
RPR							
VDRL							
Phlebotomy							
WBC							
Hct							
LFT (liver enzymes)							
CD4							
Absolute /Total lymphocyte count (TLC)							
Viral load							
PCR-Polymerase Chain Reaction							
Resistance							
Hemoglobin							
Hematocrit							
(WBC) –White Blood Cell count							
Urea							
Bilirubin							
Creatinine							
Glucose							
Lipid Levels							
OI-related labs (should we list them here?)							
Cryptococcal diagnosis							
HIV Diagnosis for children							

<p>313 Explain arrangements for off-site laboratory tests. (Public, private and/or partner)</p>
<p>314 Is there a cost-sharing arrangement?</p>
<p>315 Is collection and transport of blood samples necessary?</p> <p>Who manages the coordination of off-site testing?</p> <p>How will test results be communicated to the provider?</p>
<p>316 How long does it take to receive the test results? (days)</p>
<p>317 Who receives the results?</p>
<p>318 What process is in place for the management of urgent test results?</p>

319 What's lab's daily test capacity ?

What would be necessary to expand that capacity?

What are plans for expanding that capacity? (equipment, staff, training)

PART 1, SECTION 4: IMPLEMENTING ART

Human Resources
<p>401 What staff levels do you need to implement ART?</p> <p>Do you currently have sufficient staff to implement ART?</p> <p>What additional staff (positions and numbers) would you need?</p>
<p>402 What do you consider essential before beginning to implement ART?</p>
<p>403 If ARV drugs were available, what number of clients on ART can you sustain at this site? (number of patients/provider; number of clients / site)</p>
<p>Eligibility Criteria</p>
<p>404 Has the MOH provided you with guidelines that establish patient eligibility criteria for ART?</p> <p>What eligibility criteria do you think should be used for determining which patients should be prioritized for receiving ART?</p>
<p>405 Do you intend to provide ART to children?</p>

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Other comments regarding determination of eligibility:
Monitoring
406 How will compliance/adherence with drug regimens (Patient/provider?) be monitored?
407 How would these apply to children?
408 Is there patient and family education program? Describe:
409 In the event there isn't access to laboratory services, what are site's plans to use clinical evaluation and syndromic management of ART?
Management of Secondary Effects
410 Does the site have management capacity for managing secondary effects? Describe process?

411 How will site detect treatment failure? How will treatment failure be monitored?
Management of pregnancy on ART
412 Will pregnant women be eligible for ART? Will family planning counseling be required for women on ART? Who will be responsible for managing these clients?
413 Have you received any national guidelines for implementing ART? What do the guidelines include? (Proposed regimens, Eligibility criteria, etc.)
Quality Assurance
414 Is there a protocol describing when will a patient be started on cotrimoxazole prophylaxis? What is the guidance?
415 Is there a protocol for post-exposure prophylaxis? If yes, describe.

Appendix C

Persons Contacted for ARV Assessment

Persons Contacted for ARV Assessment

Public Health Sector

Ministry of Health and Child Welfare

National AIDS & TB Programme

Dr. Owen Mugurungi, Director

Dr. Inam Chitsike, PMTCT

Dr. Agnes Mahomva, PMTCT

Dr. Anna Miller, PMTCT

Mr. Joe Kambarami, STI

Ms. Janet Muteiwa, Condoms and Communication

Pharmacy Department

Ms. Tendayi Simoyi

National AIDS Council (NAC)

Dr. E. Marowa, Director

University of Zimbabwe Medical School

Professor A. Latif, Dean

Professor James Hakim

City of Harare Health Department

Dr. I. Hove, Actg. Director Medical Services

Dr. Maureen Wellington

Mpilo Hospital, Bulawayo

Dr Juliet Dube-Ndebele, Medical Superintendent

Dr. Mary Nyathi, Pediatrician, (PMTCT Coordinator)

Dr. Tembo, Internist (HAART Coordinator)

Mr. Dube, Pharmtech

Marondera Provincial Hospital, Mashonaland East

Dr. Jeff Majok, Superintendent

Lt. Col. (rtd) Kenneth Masoneera, Chief, Laboratory Services

Mr. Charles Zimbovora, Laboratory Scientist

Mr. Mutezwa Chipodzana, Pharmacist

National Pharmaceutical Corporation (NatPharm)

Mr. Celestine Kumire, Managing Director

Mr. Charles Mwaramba, Operations Manager

Mr. Misheck Ndlovu, Harare Regional Manager

Mr. Dube, Bulawayao Receiving Supervisor

Zimbabwe National Family Planning Council

Mr. Godfrey Tinarwo, Executive Director

Mr. Matthew Zharare, Director of Administration & Finance

Mr. D. Ndlovu, Logistics Manager

Mr. Richard Sabumba, Acting Stores Controller

Parirenyatwa Hospital

Mr. W. Mukoko, Director of Operations

Harare Central Hospital

Mr. Vera, Acting Superintendent
Dr. Tapiwa Bwakura, ARV Coordinator
Mr. Atef Yacoub, Actg. Chief Pharmacist

Makumbe District Hospital

Mr. B.T. Rusike, Actg. District Medical Director
Mr. Ralph Moyo, Pharmacy Technician
Ms. Maponda, Matron

Wilkins Memorial Hospital

Sister E. Paraiwa

National Reference Laboratory

Professor Valerie Robertson
Mr. Wandasara

Pelandaba Clinic

Ms. Otilia Mlingo, Matron
Ms. Bokani Maposa, Sister

Chitungwiza St. Mary's Polyclinic

Dr. Mike Simoyi, City Health Officer
Sister Tsanga
Mr. Chipunza
Matron Mambanje

Chitungwiza Hospital

Dr. Mutariswa
Ms. Patricia Mabvadya, Pharmacy Technician

Health Professions Council

Mr. J. Mapisire, Registrar

Medical Laboratory and Clinical Scientists Council

Ms. Agnes Chigora, Registrar
Dr. Obadoyo Moyo
Prof. Norman Nyazema
Mr. C. B. Mashanda
Mr. B. Mudenge

Bulawayo City Health Department

Dr. Rita Dlodlo, Director

Matabeleland South Provincial Medical Directorate

Sister Mushai, EPI Surveillance

Howard Hospital

Dr. Paul Thistle

Private Sector

De Beers Zimbabwe Prospecting Limited

Mr. Anthony W. Revitt, Exploration Manager

Mr. Nicholas Matulich, Logistics/SHE Manager, HIV/AIDS Coordinator

Ms. Tsitsi Chizengeni, Human Resources Officer

Anglo-American

Mr. Paul Rogers, Human Resources Administration Manager

Dr. Richard Davy, Group Medical Consultant (Hippo Valley Estates Limited)

Ms. Florence Kazhanje, Chief Operations Officer, Sovereign Health

Dr. Robert Makombe, Medical Officer, Community Health

DELTA Corporation Group

Dr. Masimbe, Medical Director

TA Holdings

Dr. Mlambo, Medical Director

Old Mutual

Mr. Graham Hollick, Group Chief Executive

HIV-Clinicians

Dr. Ingrid Landman

Dr. Isaac S. Dombo

Other Private Physicians

Dr. A.K.K. Chivaura, Family Practitioner

Dr. Margaret Tarvinga, Family Practitioner

CAPS Holdings Ltd

Mr. Mudiwa Mundawarara, Chief Executive Officer

Datlabs

Mr. Todd Moyo, Chief Executive Officer

Geddes Ltd

Mr. S. Maringapasi, Operations Manager

Ms. Jacqui Lazarus, Marketing Director

Autosterile

Mr. Mucha Mkanganwi, Managing Director

Unifreight

Mr. David Cruttenden, Chief Executive Officer

Cimas Cares

Mr. Mac Chaora, Chief Executive Officer

Mr. Lawrence Toendepi, Chief Operations Executive

Dr. J. Nyenwa, Chief Medical Officer

Luisa Guidotti Mission Rural Hospital (Mutoko)

Dr. Maria Elena Pesaresi, Director

Dr. Carlo Spagnolli, Surgeon

Dr. Bernard Masuku, Physician

National NGOs

Zimbabwe Association of Church – Related Hospitals (Z.A.C.H.)

Ms. Vuyelwa T. S. Chitimbire, Executive Director

Zimbabwe National Network for PLWH/A (ZNNP+)

Mrs. T.B. Chimusoro, Chairperson

Central Baptist Church

Caroline Maposwere, Foster Children Program

Donors and Collaborating Agencies

United States Embassy

Ambassador Joseph Sullivan

USAID

Mr. Paul Weisenfeld, Mission Director

Mr. Peter Halpert, Team Leader Health

Ms. Victoria James

Catholic Relief Services

Ms. Katherine Pondo, Head of Programming

Ms. Clara Dube, HIV/AIDS Program Manager

Mr. Backson Muchini, STRIVE Program Director

Pact

Mr. William Salmond, Director

Ms. Anna Eniya Mashiya, Programme Manager

Mr. Charakupa Mgwerume, Support Service Coordinator

Ms. JoyMazakana, Coordinator, Airport Post Test Club

Futures Group—Zimbabwe AIDS Policy (ZAPA) Project

Dr. Alex Zinanga, Technical Advisor

Zimbabwe ZAPSO

Ms. Evelyn Serima

Canadian High Commission

Mr. Sam Landon, First Secretary (Development)

Population Services International (Zimbabwe)

Mr. Andrew Boner, Country Director

Mr. Chuck Szymanski, Deputy Country Director

Mrs. Fortunate Nhemachena, Admin/Human Resources Manager

Ms. Busi Hove, Deputy Director, Technical Services

Department for International Development (DFID)

Ms. Miriam Temin, Assistant Health and Population Adviser

Centers for Disease Control (Zim CDC)

Dr. Michael St. Louis, Director

Ms. Eileen Burke, Laboratory Program Officer

Dr. Shannon Hader

Mr. Paul Nesara, Analyst, Informatics Section

Ms. Margaret Chavazhinji, Secretary

UNICEF

Mr. Kurt Kaufman

UNAIDS

Dr. George Tembo, Country Program Advisor

JICA

Mr. Umetani Tsuneyuki, Project Formulation Advisor

Pfizer Inc. International Philanthropy Programs

Ms. Lisa Herren, Assistant Director

Ms. Jennifer Lissfelt, Diflucan Programme Manager

AmeriCares International Programs

Dr. Kim Thu C. Pham, Medical Director

Ms. Dana Waesche, Project Director

Mr. Marven Moss, Manager of Public Affairs

The LEAD Program

Mr. Lendell Foan, Business Development Specialist

WHO Zimbabwe

Dr. B. Makunike

Appendix D

List of ARVs Registered in Zimbabwe

List of ARVs Registered in Zimbabwe

Drug	Type	Brand name	Manufacturer/ supplier	Patent	Registered	Strength	Form	Comments
Nevirapine	Non-nucleoside reverse transcriptase inhibitors	Viramune	Ingelheim	√	Yes	200 mg	Tablets	
		Viramune	Ingelheim		Yes	50 mg/5 ml	Solution	
		Nevimune	Cipla		Pend	200 mg	Tablets	
		Flaminev	Flamingo		Pend	200 mg	Tablets	
		Nevtpan	Ranbaxy		Pend	200 mg	Tablets	
		Nenivir	Hetero		Pend	200 mg	Tablets	
Efavirenz		Stocrin	Merck			No		
		Sustiva				No	Capsules	
Delavirdine		Prescriptor	Pharmacia			No		
Zidovudine	Nucleoside reverse transcriptase inhibitors	Retrovir	Glaxo Wellcome	√	Yes	50 mg/ml	Syrup	
		Retrovir	Glaxo Wellcome	√	Yes	100 mg	Capsules	
		Retrovir	Glaxo Wellcome		Yes	300 mg	Tablets	
		Zidovir-100	Cipla		Yes	100 mg	Capsules	
		Zidovir	Cipla		Pend	300 mg	Tablets	
		Zidovir	Cipla		Pend	50 mg/5 ml	Solution	
		Aviro-Z	Ranbaxy		Pend	300 mg	Tablets	
		Apo-ziduvodine	Apotex		Yes	100 mg	Capsules	
		Flamizid	Flamingo		Pend	300 mg	Tablets	
		Zido-H	Hetero		Pend	300 mg	Tablets	
		Ginevir	Gosun Pharmaceuticals		Pend	100 mg	Capsules	
Didanosine		Videx	BMS		yes	25 mg	Tablets	
		Videx	BMS		Yes	50 mg	Tablets	

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Drug	Type	Brand name	Manufacturer/ supplier	Patent	Registered		Strength	Form	Comments
		Videx	BMS		Yes		100 mg	Tablets	
		Videx	BMS		Yes		150 mg	Tablets	
		Videx- paediatric	BMS		Yes		2 g	Powders	
		Videx- paediatric	BMS			No	4 g	Powders	Deregistered
Zalcitabine		Hivid	Roche			No		Tablets	
Stavudine		Zerit	BMS			No	15 mg	Capsules	Deregistered
		Zerit	BMS		Yes		20 mg	Capsules	
		Zerit	BMS		Yes		30 mg	Capsules	
		Zerit	BMS		Yes		40 mg	Capsules	
		Zerit	BMS		Yes		1 mg/ml	Powder	
		Stavir	Cipla		Pend		30 mg	Capsules	
		Stavir	Cipla		Pend		40 mg	Capsules	
		Avostav	Ranbaxy		Pend		30 mg	Capsules	
		Avostav	Ranbaxy		Pend		40 mg	Capsules	
		Flamistav	Flamingo		Pend		30 mg	Capsules	
		Flamistav	Flamingo		Pend		40 mg	Capsules	
		Stag-30	Hetero		Pend		30 mg	Capsules	
		Stag-40	Hetero		Pend		40 mg	Capsules	
Lamivudine		Epivir	Glaxo SmithKline	√					
		3TC	Glaxo-Wellcome		Yes		150 mg	Tablets	
Lamivudine (continued)		3TC	Glaxo-Wellcome		Yes		10 mg/ml	Solution	
		Zeffix	Glaxo Wellcome		Yes		5 mg/ml	Solution	
		Zeffix	Glaxo Wellcome		Pend		100 mg	Tablets	
		Lamivir	Cipla		Pend		150 mg	Tablets	
		Flamivud	Flamingo		Pend		100 mg	Tablets	
		Heptavir	Hetero		Pend		150 mg	Tablets	
		Anolam	Ranbaxy		Pend		150 mg	Tablets	

Drug	Type	Brand name	Manufacturer/ supplier	Patent	Registered		Strength	Form	Comments
Abacavir		Ziagen	Glaxo-Wellcome	√	Yes		300 mg	Tablets	
		Ziagen	Glaxo-Wellcome		Yes		20 mg/ml	Solution	
Tenofovir			Unknown			No			
Lamivudine + Zidovudine	Combinations	Combivir	Glaxo-Wellcome	√	Yes		150 mg/300 mg	Tablets	
		Avocomb	Ranbaxy		Pend		150 mg/300 mg	Tablets	
		Duovir	Cipla		Pend		150 mg/300 mg	Tablets	
		Zidolam	Hetero		Pend		150 mg/300 mg	Tablets	
		Lamivudine + Zidolam	Varichem		Pend		150 mg/300 mg	Tablets	
AZT/Lamivudine + Abacavir		Trizivir	Glaxo-Wellcome		Yes		150 mg/300 mg /350 mg	Tablets	
Saquinavir	Protease inhibitors	Fortovase	Roche	√		No			
		Invirase	Roche		Pend		200 mg	Capsules	
Ritonavir		Norvir	Abbott		Yes		100 mg	Capsules	
		Norvir	Abbott		Yes		80 mg/ml	Solution	
Indinavir		Crixivan	MSD		Yes		200 mg	Capsules	
		Crixivan	MSD		Yes		400 mg	Capsules	
		Indinavir	Hetero		Pend		400 mg	Capsules	
		Avirodin	Ranbaxy		Pend		400 mg	Capsules	
		Flamind	Flamingo		Pend		400 mg	Capsules	
Nelfinavir		Viracept	Roche	√	Pend		250 mg	Tablets	
		Viracept	Roche	√	Pend		50 mg/g	Powder	
Amprenavir		Agenerase	Glaxo SmithKline	√	Yes		150 mg	Capsules	
		Agenerase	Glaxo SmithKline	√	Yes		50 mg	Capsules	
Lopinavir + Ritonavir		Combination	Kaletra	Abbott		Pend			Capsules

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Drug	Type	Brand name	Manufacturer/ supplier	Patent	Registered	Strength	Form	Comments
		Kaletra	Abbott		Pend		Solution	

Anti-infective drugs:

Drug	Type	Brand name	Manufacturer/ supplier	Patent	Registered	Strength	Form	Comments
Azithromycin	Anti bacterial & anti myobacterial agents	Zithromax	Pfizer USA		Yes	500 mg	Tablets	
Clarithromycin		Klacid	Abbot		Yes	250 mg	Tablets	
		Klacid	Abbot		Yes	500 mg	Tablets	
		Klacid OD	Abbot		Yes	500 mg	Tablets	
		Klacid P125	Abbot		Yes	125 mg/ml	Granules	
		Klacid P250	Abbot		Yes	250mg/ml	Granules	
		Klacid IV	Abbot		Yes	500 mg	Powder for injection	
Clindamycin		Dalacin C	Pharmacia		Yes	150 mg	Capsules	
		Dalacin C Palmitate	Pharmacia		Yes	125 mg/5 ml	Granules	
		Dalacin C Phosphate	Pharmacia		Yes	150 mg/5 ml	Injection	
	Dalacin	Pharmacia		Yes	2%	Cream		
	Dalacin T	Pharmacia		Yes	1%	Solution		
	Clindamycin	Varichem		Yes	150 mg	Capsules		
Cetrifloxone	Rocephin	Roche SA		?		Injection		
Cefixime	Suprax	Aventis			No	Tablets		
Ciprofloxacin	Ciprobay	Bayer SA		Yes	250 mg	Tablets		
	Ciprobay	Bayer SA		Yes	500 mg	Tablets		
	Ciloxan	Alcon Pharm		Yes	3%	Eye drops		
	Cipointa	International Pharm		Yes	250 mg	Tablets		

Drug	Type	Brand name	Manufacturer/ supplier	Patent	Registered	Strength	Form	Comments
Ciprofloxacin (ctd)		Cifran	Ranbaxy		Yes	250 mg	Tablets	
		Cifran	Ranbaxy		Yes	500 mg	Tablets	
		Flox-250	Micro- nova		Yes	250 mg	Tablets	
		Zindocin 250	Pharmanova		Yes	250 mg	Tablets	
		Ciprodac	Cadila		Yes	250 mg	Tablets	
		Ciproflaxin hydrochloride	Varichem		Yes	250 mg	Tablets	
		Quintor -250	Torrent		Yes	250 mg	Tablets	
		Rifabutin	Mycobutin	Pharmacia		No		Capsules
Trimethoprim /Sulfamethoxaz ole	Antiprotozoal agents	Cotrimol	Ipca India		?		Tablets	
		Purbac adult	Pharmacare		Yes		Tablets	
		Utiprim	Datlabs		Yes	100 mg	Tablets	
		Utiprim	Datlabs		Yes	300 mg	Tablets	
		Septrin	Glaxo-Wellcome		No		Injection	
Pentamidine					No			
Pyrimethamine		Daraprim	Glaxo-Wellcome		No		Tablets	
Sulfadiazine								
Folinic acid		Leucovorin	Lederle RSA		No		Tablets	
Acyclovir	Antiviral agents	Viratak	CAPS		Yes	5% w/w	Cream	
		Zovirax (eye)	Glaxo Wellcome		Yes	3%	Ointment	
		Zovirax	Glaxo Wellcome		Yes	250 mg	Powders for injection	
		Zovirax	Glaxo Wellcome		Yes	5%	Cream	
		Herperax	Micro labs		Yes	200 mg	Tablets	
		Herperax	Micro labs		Yes	5%	Ointment	
		Herpex-200	Torrent		Yes	200 mg	Tablets	

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Drug	Type	Brand name	Manufacturer/ supplier	Patent	Registered	Strength	Form	Comments	
		Herpex	Torrent		Yes		Cream		
		Cyclovax	Pharmanova		Yes	200 mg	Tablets		
		Acix	Ranbaxy		Yes	200 mg	Tablets		
		Apo- Acyclovir	Apotek		Yes	200 mg	Tablets		
		Apo - Acyclovir	Apotek		Yes	400 mg	Tablets		
		Apo- Acyclovir	Apotek		Yes	800 mg	Tablets		
		Acyclovir	Varichem		Yes		Tablets		
Cidofovir		Vistide	Pharmacia			No		Infusion	
Ganciclovir		Cymevene	Roche			No		Capsule	
Foscarnet		Foscavir	Astra			No		Infusion	
Amphotericin B	Antifungal agents	Fungizone	BMS		Yes	50 mg	Injection		
Fluconazole		Diflucan	Pfizer		Yes	50 mg	Capsules		
		Diflucan	Pfizer		Yes	150 mg	Capsules		
		Diflucan	Pfizer		Yes	200 mg	Capsules		
		Diflucan	Pfizer		Yes	2 mg/ml	Intravenous solution		
		Diflucan	Pfizer		Yes	50 mg/5 ml	Powders		
		Fungicon -50	Micro labs		Yes	50 mg	Capsules		
		Fungicon - 150	Micro labs		Yes	150 mg	Capsules		
Itraconazole		Sporanox	J & J		Yes	100 mg	Capsules		
Ketoconazole		Ketoconazole	CAPS		Yes	200 mg	Tablets		
		Ketoconazole	Varichem		Yes	200 mg	Tablets		
		Ketoconazole	International Pharmaceutical		Yes	200 mg	Tablets		
		Torrent Ketoconazole	Torrent		Yes	200 mg	Tablets		

Drug	Type	Brand name	Manufacturer/ supplier	Patent	Registered	Strength	Form	Comments
		Funginoc	Torrent		Yes	2%	Cream	
		Nizoral	Zimbabwe Pharmaceutical		Yes	2%	Shampoo	
		Phytoral	Micro labs		Yes	200 mg	Tablets	
		Phytoral	Brown & Buck		Yes	2%	Ointment	
		KNZ 200	Global remedies		Yes	200 mg	Tablets	
Vinblastine	Anti cancer	Velbe	Eli Lilly		No		Injection	
		Vinblastine PCH (Vinblastine sulphate)	Pharmachemie		Yes	10 mg/10 ml	Injection	
Etoposide		Vepesid	BMS		Yes	100 mg	Injection	
		Vepesid	BMS		Yes	100 mg	Capsules	
Bleomycin		Blenoxane	BMS		Yes	15 mg	Injection	
Vincristine		Oncovin	Eli Lilly		Yes	1 mg	Injection	
Isoniazid	Anti TB	Isoniazid	Varichem		Yes	100 mg	Tablets	
		Isoniazid	Pharmanova		Yes	100 mg	Tablets	
		Isoniazid	Datlabs		Yes	100 mg	Tablets	
		INH	CAPS		Yes	100 mg	Tablets	
		Isoniazid	Umedica		Yes	100 mg	Tablets	
		Isoniazid elixir	Varichem		Yes	50 m/5 ml	Elixir	

Abbreviations

BMS = Bristol-Myers Squibb South Africa J & J = Johnson and Johnson

Pend = registration pending at time of report publication

Appendix E

**Proposed “Stages of Readiness” to Guide
Assessment of Site Readiness for ARV
Introduction**

Proposed “Stages of Readiness” to Guide Assessment of Site Readiness for ARV Introduction

The goal of the stages rating is to develop a set of criteria for selecting ART sites not based on site type, but on capacity, vision, and activities to rationally introduce and expand ARV use.

Five stages are proposed for rating sites based on certain criteria: leadership, vision, planning, staff and other site capacity, and resources. Examples of technical assistance, training, and resource needs are suggested for each rating. The stages rating can be used for program start-up and expansion to identify steps needed to move a site along the stages to an Action rating (Stage 2) and, ultimately, support, maintenance and expansion.

Stage 1: Support, maintenance, and expansion

Ideally, sites administering ARVs should meet the criteria listed below. These sites are already operational and working well, but they may require assistance in maintaining or expanding current efforts. They may also serve as training sites for sites in the other stages. Luisa Guidotti Hospital was identified as a site with an ongoing, full-spectrum ARV program.

Already prescribe ARVs
Have protocols for patient ARV initiation and follow up
Have adequate staff resources or knowledge of and plans to fill gaps
Base most/all screening and monitoring laboratory capacity on protocols
Have defined spectrum of care for each site and linkage with other sites to access services not provided, including:
VCT
Primary care
OI management
TB management
Counseling
Access to assistance with concrete support (food, housing, etc.)
Home-based care
Family planning
Have some system for monitoring patients, managing side effects, and assessing quality/effectiveness of care
Have secure supply chain, including local storage and dispensing and knowledge of future ARV supplies
Have adequate supplies of medications for management of HIV- and ARV-related side effects
Conduct appropriate education and adherence services/monitoring

Sites at this stage may need help to meet completely or improve in some of these criteria, but most efforts will be in maintaining or expanding capacity, ongoing education (patients and providers), and QA.

Stage 2: Action

These sites are nearly ready or have already started ARV therapy, but need assistance in more than one or two areas. Examples of sites at this stage are Howard Hospital and private clinics run by corporations such as Hippo Valley Estates or TA Holdings. Efforts are aimed at improving/ensuring rational and safe use of ARVs or addressing limited areas before relatively rapid introduction of ARVs.

Sites have/may have:	Sites need/may need:
Defined spectrum of care and established linkages for services not provided directly	To expand scope of limited number of services
Started administering ARVs on small scale	A scale-up plan with human resource needs clearly defined
Already developed knowledge of or experience with ARVs	Further training or more extensive staff training
Secure supply chain	Assistance in logistics/secure supply
Model of care and can identify gaps in staffing	Help in staff resource and retention
Working draft guidelines or unwritten policies	Formal protocols for eligibility, regimens, monitoring
Some form of patient tracking exists	QA strategy
Identified initial source of ARVs or funds for purchase	Commitment for ARVs
Access to appropriate lab monitoring	

Stage 3: Preparation (pre-action/on the verge sites)

These sites have a vision and a leader committed to introduction of ARVs and are on the verge of beginning to prepare for introduction of ARVs. They have demonstrated initiative or quality performance in some areas of HIV care (OI, PMTCT), but are missing some components. Examples of sites at this stage are polyclinics in Chitungwiza and Bulawayo as well as such corporations as Delta Holdings. These sites require more capacity building and funding, but they have potential to start ARV therapy in a matter of three to nine months if resources are available to address needs.

Sites have/may have:	Sites need/may need TA and funding for:
Vision and will with leader responsible for project	Design of program, including identification of space, spectrum of care
Some services, which may include: VCT PMTCT Counseling Home-based care OI prevention/treatment Primary HIV care TB program Family planning	Adoption of protocols for ARV use Laboratory capacity
Reliable but not necessarily adequate supply chain plan	Assistance with improving policies and procedures for supply chain management
	Personnel: staffing plan, recruitment, training at all levels
	Assistance in identifying source for ARVs if not through MOH
	Tracking and QA

Stage 4: Contemplation

These sites have a leader with some vision and interest in ARVs and HIV/AIDS capacity and experience limited perhaps to only PMTCT and HIV primary care. They are making efforts to expand services through linkages and staff training.

Sites at this stage need assistance in program design and implementation in a number of areas. These are ideal sites to replicate models proven to be effective in similar settings. These sites might be considered for follow up of patients on ARVs as a first step, with capacity to initiate ARVs in the future.

Sites have/may have:	Sites need TA and funding for:
Some vision and will with leadership at some level, not necessarily physician/nurse	Design of program, including identification of space, spectrum of care
Some services, which may include VCT PMTCT Counseling Home-based care OI prevention/treatment Primary HIV care TB program	Adoption of protocols for ARV use Laboratory capacity Coordination of programs to ensure follow up and continuum of care
Reliable but not necessarily adequate supply chain plan	Assistance with improving policies and procedures for supply chain management
	Adequate personnel: staffing plan and positions filled, recruitment, training at all levels
	Assistance in identifying source for ARVs if not through MOH
	Tracking and QA

Stage 5: Precontemplation

These sites are only doing HIV care in the context of regular care and are not considering ARVs based on capacity constraints, unwillingness, or other barriers.

Sites at this stage need training and education to expand capacity and knowledge and move to contemplation stage. Other help is needed in technical assistance and appropriate direction to begin program design and planning based on replication of models in use in Zimbabwe, assessment of current capacity, and projecting for staff and other resources required before ARV introduction. These sites might be considered for follow up of patients on ARVs as a first step, with capacity to initiate ARVs in the future.

Zimbabwe: ART Program—Issues and Opportunities for Initiation and Expansion

Sites have/may have:	Sites need TA and funding for:
	Designation of a leader and training to develop vision and will to embark on ARV program Design of program, including identification of space, spectrum of care Development of referral mechanisms with ARV sites
Limited services, which may include VCT PMTCT Counseling Home-based care OI prevention/treatment Primary HIV care TB program	Adoption of protocols for ARV use Laboratory capacity Coordination of programs to ensure follow up and continuum of care
Reliable but not necessarily adequate supply chain plan	Assistance with improving policies and procedures for supply chain management
	Adequate personnel: staffing plan and positions filled, recruitment, training at all levels
	Assistance in identifying source for ARVs if not through MOH
	Tracking and QA

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