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Zimbabwe HIV & AIDS Logistics System Assessment

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Abstract

In July and August 2005, the Ministry of Health and Child Welfare (MOHCW), with technical assistance from the USAID-funded JSI/DELIVER project, conducted an assessment of the performance of the logistics management and supply chain systems for selected commodities used by HIV & AIDS programs in Zimbabwe.

The survey's overall objective was to assess how the logistics systems managed selected HIV & AIDS commodities at public health institutions. This report presents the findings of the assessment as well as the short- and long-term recommendations to improve the HIV/AIDS logistics systems in Zimbabwe. The study revealed high stockout rates for some antiretroviral drugs (ARVs), cotrimoxazole, and rapid HIV test kits. There is no effective logistics management system in place for these commodities. Proposed recommendations include improving supervision, increasing the resource capacity for the AIDS and TB Unit, strengthening the coordination of multiple HIV & AIDS supply chains, and integrating components of the essential drugs and HIV/AIDS logistics management systems.

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Acronyms

AIDS	acquired immune deficiency syndrome
ART	antiretroviral therapy
ARV	antiretroviral
BI	Boeringer Ingelheim
CDC	Centers for Disease Control and Prevention (Atlanta)
DHE	District Health Executive
EDLIZ	Essential Drugs List of Zimbabwe
EGPAF	Elizabeth Glazer Pediatric AIDS Foundation
EU	European Union
FDC	fixed-dose combination
GOZ	Government of Zimbabwe
HIV	human immunodeficiency virus
ICS	inventory control system
JICA	Japan International Cooperation Agency
JSI	John Snow, Inc.
LIAT	Logistics Indicators Assessment Tool
LMIS	logistics management information system
LSAT	Logistics Systems Assessment Tool
MCAZ	Medicines Control Authority of Zimbabwe
MOHCW	Ministry of Health and Child Welfare
MOS	months of stock
MSF	*Médecins Sans Frontières*
NAC	National AIDS Council
NatPharm	National Pharmaceutical Company of Zimbabwe
NETA	National Emergency Taskforce on AIDS
NGO	nongovernmental organization
OI	opportunistic infection
PLWHA	people living with HIV/AIDS
PMD	Provincial Medical Director
PMTCT	prevention of mother-to-child transmission
SDP	service delivery point
USG	United States Government
USAID	United States Agency for International Development
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
VEN	vital, essential, nonessential
WHO	World Health Organization
ZEDAP	Zimbabwe Essential Drugs Action Program

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A very special acknowledgement goes to the assessment team members who worked tirelessly in the field for two weeks. Their commitment is appreciated and valued. Last, but not least, the authors extend a special thanks to USAID/Zimbabwe for funding this activity.

We sincerely hope that the findings and recommendations in this report will improve the logistics management of HIV & AIDS commodities and, ultimately, will improve access to care and treatment for people living with HIV & AIDS.

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Executive Summary

In August 2005, the Ministry of Health and Child Welfare (MOHCW), with technical assistance from the USAID-funded JSI/DELIVER project, assessed the performance of the logistics management and supply chain systems for selected commodities used by HIV & AIDS programs in Zimbabwe.

The survey's overall objective was to assess how the logistics systems managed selected HIV & AIDS commodities at public health institutions.

The team assessed 70 public sector health facilities and found a high stockout rate for all HIV & AIDS commodities, including antiretroviral (ARV) drugs. In addition, the commodities had been out of stock for long periods during the previous six months, January to June 2005. However, there was 100 percent availability of complete first-line ARV regimen on the day of visit. A significant number of facilities were stocked out of nevirapine, rapid HIV test kits, and Diflucan on the day of the visit. Expired stocks of nevirapine and Oraquick were also found at some facilities on the day of visit. The team also found a very high stockout rate of cotrimoxazole during the period under review and on the day of visit. On average, those facilities with cotrimoxazole in stock had very low stock levels. The lead time[1] for delivery of essential drugs was reported to be very long, but the lead time for antiretroviral drugs (ARVs) and prevention of mother-to-child transmission (PMTCT) commodities was often less than one month. There were no standard logistics management forms for the national ARV program. Except for PMTCT, existing logistics management tools do not capture the three essential data items (stock on hand, consumption, and losses and adjustments. Available logistics data were also found to be inaccurate. Most PMTCT sites received formal training on ordering and reporting, but most of the ART facilities did not receive logistics training. It was also noted that fewer than half the surveyed facilities reported receiving logistics training for essential drugs management. The lack of frequent logistics supervisory visits was noted as well.

To address the problems identified in the assessment, the MOHCW should immediately consider revising the existing logistics management tools to ensure that they capture all three essential data elements. It is advisable for the MOHCW to improve the facility-level logistics capacity by obtaining technical assistance to train facility-level staff in logistics management. Logistics capacity of service delivery points can also be strengthened if higher-level staff and program managers increase their support and supervision. There is an urgent need to develop logistics supervisory tools and to increase transport at central, provincial, and district levels. To manage and monitor HIV & AIDS commodity supply chains effectively, the MOHCW should increase the human, technical, and resource capacity of the AIDS & TB Unit. This capacity building should include logistics training and should provide training on procurement planning and pipeline monitoring software. The MOHCW should also consider streamlining and coordinating the multiple HIV & AIDS supply chains by harmonizing the functions of the National Pharmaceutical Company of Zimbabwe (NatPharm), the Central Pharmacy Directorate, and the AIDS & TB Unit. The team advised the MOHCW to conduct or obtain technical assistance to quantify the national program's ARV and rapid HIV test kit requirements. The MOHCW should also consider designing and implementing a logistics management system for essential HIV & AIDS-related commodities.

[1] Lead time is the time between when new stock is ordered and when it is received and available for use.

Background

According to 2003, MOHCW estimates, HIV prevalence among adults ages 15–49 years in Zimbabwe is 24.6 percent. More than 1.8 million people are estimated to be living with HIV & AIDS; of these, 350,000 people living with HIV & AIDS (PLWHAs) are in urgent need of lifesaving antiretroviral therapy (ART) (Zimbabwe MOHCW 2003a). The MOHCW contribution to the World Health Organization (WHO) 3×5 targets is to start 60,000 PLWHA on antiretroviral therapy by the end of 2005. The MOHCW started offering ART in the public sector in April 2004. The program, which began at five public health institutions, has since expanded to 41 health facilities. Almost 10,000 patients are receiving subsidized ARVs under the government program.

More than 200 public health facilities in the country are providing PMTCT services. Several facilities have also started providing active and prophylactic treatment against opportunistic infections (OIs). As a result, the country has received a substantial inflow of HIV-related commodities from various funding sources, including the Government of Zimbabwe (GOZ), donors, private sector organizations, and individuals. The commodities—donated rapid HIV test kits, ARVs for use in PMTCT and treatment of advanced HIV disease—are finding their way into the country through different supply chain systems. Stockouts of HIV-related commodities—for example, nevirapine, rapid HIV test kits, and cotrimoxazole—have been reported at some health facilities. The uninterrupted availability of HIV-related commodities is critical in ensuring effective management of HIV & AIDS interventions. Some of the support programs, such as the United States government (USG) and *Médecins Sans Frontières* (MSF) Spain ARV supply chains, have developed logistics systems; however, the national ART program has not developed a logistics system. Reports of stockouts and expiration of HIV & AIDS-related commodities have been increasing at many of the country's public health facilities.

The MOHCW plans to put more than 60,000 PLWHA on ART by the end of 2005. This commitment has resulted in the establishment and rapid scale-up of the national ART program to more than 41 facilities countrywide within the past year. It is anticipated that ART services will be provided at all the country's 60 district hospitals by December 2005. In line with the MOHCW's National Health Strategy, is its goal to ensure that all health institutions have an adequate and constant supply of essential drugs and medical supplies (Zimbabwe MOHCW 1999), including HIV & AIDS-related commodities. Availability, affordability, and accessibility of ARVs have been identified as an important gap in HIV & AIDS programming in Zimbabwe (Zimbabwe MOHCW 2004). This challenge was also emphasized by participants at the inaugural Zimbabwe National HIV & AIDS Conference in June 2004 (Zimbabwe MOHCW 2003b). Because of the necessity for an uninterrupted supply of HIV & AIDS commodities, in August 2005 the MOHCW, with technical assistance from the USAID-funded JSI/DELIVER project, completed an assessment of the performance of the logistics management and supply chain systems for selected commodities used by HIV & AIDS programs in Zimbabwe.

Objectives of the Assessment

The assessment, predominantly a facility-based survey, had the following objectives—

- Identify and describe the supply chain of selected HIV & AIDS commodities at health institutions.
- Assess the performance of the logistics system for managing selected HIV & AIDS commodities at public health institutions.
- Recommend ways to strengthen supply chain management of HIV & AIDS commodities.

Methodology

A team of representatives from the Zimbabwe MOHCW and JSI/DELIVER conducted the assessment using an adaptation of the JSI/DELIVER Logistics Indicators Assessment Tool (LIAT) and the Logistics System Assessment Tool (LSAT). See appendix 1 for a list of team members.

Study Design

A cross-sectional descriptive study that obtained quantitative and qualitative data was conducted at 70 randomly selected public health institutions in Zimbabwe from July 18 to August 5, 2005. Key informant interviews were also conducted with program managers in the MOHCW AIDS & TB Unit, Pharmacy Directorate, and NatPharm.

Selection of Survey Facilities

Seventy facilities were selected at random from lists obtained from the MOHCW. The sites selected had to provide ART, Diflucan, and PMTCT services as of March 31, 2005. The selection was made using a stratified sampling strategy. The clinics/sites were first stratified into six categories based on the possible combination of the different services offered.

Included in the survey were all 18 ART and 58 Diflucan sites that were providing services by March 31, 2005. A sample size of 70 sites for PMTCT, including 16 ART and 33 Diflucan sites, was selected. See appendix 2 for a list of the facilities that were surveyed.

Data Collection

The Permanent Secretary of Health and Child Welfare gave approval to conduct the study. The Provincial Medical Directors (PMDs) and Directors of City Health Departments gave permission to visit the health facilities. A four-day training session was conducted, which included the following components:

- One day of discussion and review of the study and data collection tool.
- One day to review results of the pre-test and finalize the assessment tool.
- The data collection tool was revised and pre-tested at Harare Central and Howard Mission hospitals. Results of the pretest were included in the final survey, because the pilot sites were included in the study sample.

Data were collected during field visits and key informant interviews with the MOHCW AIDS & TB Unit, Pharmacy Directorate, and NatPharm. The JSI/DELIVER LIAT was adapted for this survey and used to collect quantitative data at the 70 selected sites. From July 25 to August 5, 2005, five teams conducted the field work. Each team had a leader and at least two other members, including representatives from the MOHCW AIDS & TB Unit and PMDs.

Commodities Assessed

The following HIV & AIDS commodities were assessed (see appendix 3 for the full list):

- ARVs for the treatment of advanced HIV
- nevirapine tablets and solution for use in the prevention of mother-to-child transmission of HIV
- HIV rapid test kits (Unigold, Determine, Oraquick, and Virocheck)
- Diflucan for treatment and prophylaxis against OIs
- cotrimoxazole tablets and suspension for the treatment and prophylaxis against OIs
- amoxicillin capsules and suspension for treatment of common bacterial infections
- injection safety commodities—for example, non-sterile latex gloves, disposable syringes and needles, and sharps containers.

Indicators

Quantitative and qualitative indicators were used to assess the logistics system performance.

Quantitative Indicators

Quantitative indicators were used to assess product availability and inventory management practices; including inventory control systems (ICSs); logistics management information systems (LMISs); and storage, logistics reporting, and ordering and institutional support.

Product availability was assessed as—

- percentage of facilities holding appropriate stock levels (i.e., between minimum/maximum stock levels) of the HIV & AIDS commodities at the time of the assessment
- percentage of facilities holding more than appropriate maximum stock levels of the selected HIV & AIDS commodities at the time of the assessment
- percentage of facilities holding less than appropriate minimum stock levels of the selected HIV & AIDS commodities at the time of the assessment
- percentage of facilities that were stocked out of selected HIV & AIDS commodities at any point during the past six months
- average duration of stockout of selected commodities during the past six months
- percentage of facilities stocked out of the commodities on the day of the visit
- frequency of stockouts, average number of stockout by product
- percentage of facilities with expired selected commodities on the day of the visit
- months of stock of viable selected commodities on the day of the visit
- quantity of expired selected commodities on the day of the visit
- months of stock of expired commodities on the day of the visit.

Storage and inventory management were assessed as—

- percentage of facilities meeting at least 80 percent of the acceptable storage conditions (see appendix 4)
- percentage of facilities with updated stockcards for selected commodities
- percentage of facilities with stockcards *not* matching physical counts for selected commodities.

Logistics reporting and ordering was assessed as—

- reported lead time by program.

Institutional support was assessed as—

- percentage of facilities whose staff did not receive training in completing logistics forms.

Qualitative Indicators

Key informant interviews, using questions adapted from the LSAT, were conducted with central-level staff from the MOHCW and NatPharm to understand the challenges facing the logistics systems and to obtain a description of the supply chain system for each of the following commodities:

- MOHCW ARVs for ART
- USG-funded ARVs for ART
- nevirapine for PMTCT
- rapid HIV test kits
- cotrimoxazole, amoxicillin, and consumables listed by the Zimbabwe Essential Drugs Program (ZEDAP).

Data Quality and Analysis

The team leaders were responsible for observing data collection by team members at each facility being assessed. The team members also reviewed all questionnaires at the end of each field day to assess completeness and accuracy and to clarify any data inconsistencies. All the forms were coded, and data were captured into an Epi Info database. Team members used a double entry strategy to validate entries before doing the final data analysis with Stata Software. The analysis was weighted to adjust for the stratified sampling strategy.

Study Limitations

The following limitations may affect generalization of the study findings:

- Central and regional warehouses were not included in the study. Only service delivery points (SDPs) were included in the stock status assessment, so the findings cannot be generalized to the actual national stock status.
- The sample size was not large enough for some specific indicators—for example, the discrepancy between stock on hand recorded on the logistics reports and on stock cards was not included because very few facilities had adequate records to assess this indicator.
- The sampling frame was the 272 facilities where these programs were implemented by March 2005; any generalization of the findings is limited to those facilities. The findings cannot necessarily be generalized to facilities that started offering the services after March 2005.

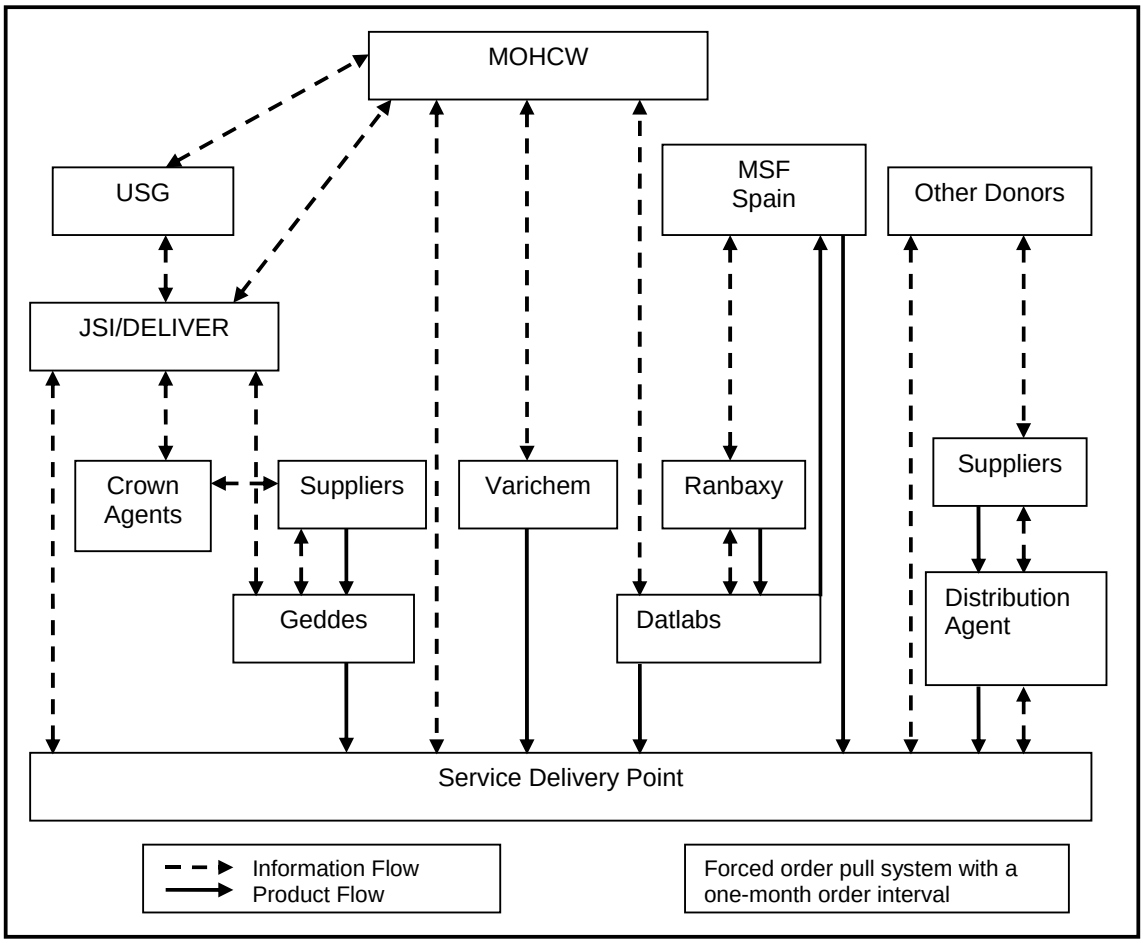
Findings

This section describes the qualitative findings and quantitative results under each category of the selected HIV & AIDS commodities.

Antiretrovirals for Antiretroviral Therapy

The MOHCW started its national ART program in 2004 at five pilot public health institutions: Harare Central, Mpilo Central, Howard Mission and Colin Saunders Hospitals, and Khami Road Clinic. The program has since expanded to 41 sites. Currently, the MOHCW estimates that 10,000 PLWHA are receiving government-subsidized ARVs through the national ART program. Figure 1 represents the MOHCW ARV supply chain.

Figure 1. MOHCW National ARV Supply Chain



Product Selection

The MOHCW developed and disseminated the *Guidelines for Antiretroviral Therapy in Zimbabwe* in December 2003 which were developed by the National Drug and Therapeutics Policy Advisory Committee, in consultation with National Emergency Taskforce on AIDS (NETA), and academic and

clinical practitioners in the country. The aim of the MOHCW is to standardize the approach to HIV & AIDS treatment and promote rational use of ARVs in Zimbabwe. The guidelines have been distributed to public health institutions, nongovernmental organizations (NGOs), and the private sector, and the existing guidelines are currently under review. Table 1 outlines the national ART program regimens according to an addendum in the existing guidelines.

Table 1. Zimbabwe ART Recommended Regimens for Adults

First-Line	Regimen	Products Currently Available	Manufacturer
If body weight less than or equal to 60 kg	Stavudine 30 mg plus lamivudine 150 mg orally once daily for the first 2 weeks	Coviro 30	Ranbaxy
	or stavudine 30 mg plus lamivudine 150 mg plus nevirapine 200 mg orally once daily for the first 2 weeks	stalanev 30	Varichem
		Triviro 30	Ranbaxy
	…thereafter, stavudine 30 mg plus lamivudine 150 mg plus nevirapine 200 mg orally twice daily	stalanev 30	Varichem
		Triviro 30	Ranbaxy
If body weight more than 60 kg	Stavudine 40 mg plus lamivudine 150 mg orally once daily for the first 2 weeks	Coviro 40	Ranbaxy
	or stavudine 40 mg plus lamivudine 150 mg plus nevirapine 200 mg orally once daily for the first 2 weeks	stalanev 40	Varichem
		Triviro 40	Ranbaxy
	…thereafter, stavudine 40 mg plus lamivudine 150 mg plus nevirapine 200 mg orally twice daily	stalanev 40	Varichem
		Triviro 40	Ranbaxy
In cases of nevirapine toxicity	Stavudine plus lamivudine	Coviro	Ranbaxy
	…plus efavirenz	Stocrin	MSD
In cases of stavudine toxicity	Zidovudine plus lamivudine	zidovudine/lamivudine	Varichem
	…plus nevirapine	nevirapine	Varichem
Second-Line	**Regimen**	**Products Currently Available**	**Manufacturer**
In cases of treatment failure using the first-line regimens	Zidovudine	zidovudine	Bristol Myers Squibb
	…plus didanosine	Videx	Glaxo Smith Kline
	…plus lopinavir/ritonavir	Kaletra	Abbott

These guidelines do not specify whether the national program should use generic or innovator drugs. However, the MOHCW decided to use generic triple fixed-dose combination (FDC) ARVs in its national program. Varichem, a local pharmaceutical company, manufactures and supplies triple fixed-dose combinations of the first-line drugs to both the public and private sectors. Ranbaxy, an Indian generic pharmaceutical company, also supplies the Zimbabwe public sector with first-line ARVs.

Forecasting and Quantification

In 2004, the MOHCW AIDS & TB Unit, in collaboration with NatPharm, quantified the first-line drug requirements for the first 2,000 patients in the national ART program. However, despite rapid program expansion, the quantification has not been revised. Consumption data received at the national level are usually too infrequent, incomplete, and late to be used to quantify the increasing ARV needs of the new and rapidly expanding ART program. The average reporting rate for the ART monthly progress reports from January to June 2005 was 85 percent. The ART monthly progress report captures only services statistics, not logistics data—that is, stock on hand, quantity dispensed, and losses/adjustments. There was no evidence that other types of quantification were used—for example, demographic or morbidity methods.

Procurement

The Government of Zimbabwe (GOZ) provides the main source of funds for ARVs for the national ART program. Other donors, including USG and MSF Spain, provide additional funding. The logistician in the GOZ AIDS & TB Unit does the procurement for ARV drugs. To date, procurement has been done through a limited special formal tender, which was awarded to Varichem, a local supplier, and Ranbaxy. The two companies were identified as the sole suppliers of the generic drugs used in the recommended national ART regimens and registered by the Medicines Control Authority of Zimbabwe (MCAZ). The shortage of foreign currency in the country is a major challenge to ensuring a sustainable supply of ARVs. Both Varichem and Datlabs, the procurement and distribution agent for Ranbaxy, are experiencing severe foreign currency shortages as they try to meet planned ART program expansion. In December 2004, the Reserve Bank of Zimbabwe (RBZ) provided foreign currency support to Varichem to procure raw materials to manufacture national ART program drugs. In the first year, U.S.$800,000 was allocated to procure raw materials to manufacture enough triple FDC first-line ARVs for 8,000 patients. To date, almost 50 percent of the raw materials have been used. The MOHCW has submitted another request for foreign currency support to the RBZ, based on the goal of putting 60,000 patients on ART by the end of 2005.

Currently, the AIDS & TB Unit is not conducting procurement planning routinely due to a lack of expertise and capacity. Logistics information for assessing stock status is not always available. The MOHCW plans to shift procurement responsibility to NatPharm, and discussions about how NatPharm will take over the ARV procurement are currently underway.

Crown Agents, an international procurement agent, does USG procurement under a contract managed by the USAID-funded JSI/DELIVER project. MSF Spain procures directly from Ranbaxy.

Storage and Distribution

ARVs are stored at the suppliers' central warehouses. The suppliers distribute drugs directly to the ART SDPs on orders from the AIDS & TB Unit. USG's ARVs are stored at Geddes Ltd., a local private warehouse and distributor, and they are distributed directly to the ART SDPs on orders from JSI/DELIVER. MSF Spain's ARVs are stored at Datlabs Bulawayo and distributed to the Mpilo Hospital site.

Inventory Control

Even though a reporting system and forms for monitoring program progress have been developed, no maximum-minimum inventory control system is in place for the GOZ-funded ARVs in the ART program. Instead, facilities are currently making ad hoc orders. When the program began, an initial quantity of six months of stock was sent to each ART site; the sites are subsequently expected to order drugs based on their planned uptake. However, site staff have not been trained on logistics management and procedures for calculating order quantities. USG drugs have a three-month maximum stock at the SDP level, and the sites receiving these drugs order and receive monthly. Stalanev, Coviro, and Triviro were used as ARV tracers for the study. The quantitative results of the assessment of ARVs are presented below.

Availability of ARVs for ART

More than 30 percent of the ART facilities experienced at least one stockout of the first-line FDC ARVs between January and June 2005 (see table 2). In addition, 12.5 percent of the facilities experienced at least one stockout of the dual combination of lamivudine and stavudine during the same period. Almost 10 percent of the facilities did not have stalanev 30, the most commonly used first-line triple FDC in the national ART program, on the day of the visit. All of the ART facilities were found to be stocked with the recommended dual combination of lamivudine and stavudine on the day of the visit. The dual combination of lamivudine and stavudine is used for initiating ART in the first two weeks in treatment-naïve patients. Patients usually take this combination once daily, in the morning. Nevirapine, which is required to complete the treatment, is taken in through the triple FDC drug, stalanev.

Despite the observed stockouts of different ARVs, it was noted that none of the ART facilities were stocked out of the complete recommended first-line regimen. The observed stockout only limited the choice of ARVs; it did not mean a total stockout of recommended first-line treatment because all of the facilities that were visited had enough appropriate drugs. For example, triviro 30 was available as an alternative option in facilities that were stocked out of stalanev 30, and triviro 40 was available as an alternative to stalanev 40.

However, the observed stockouts remain a major concern because of an increased probability of unavailability of enough options to provide the complete first-line treatment in the new and rapidly expanding ART program. To reduce the risk of drug resistance and treatment failure, ARVs should, ideally, be in full supply for all patients on ART.

Twenty percent of the surveyed ART facilities had less than a one month stock of the most commonly used first-line FDC—stalanev 30. More than 90 percent of the facilities were holding in excess of six months stock of the dual FDC ARV drug, Coviro, on the day of the visit.

Table 2. Availability of ARVs

Product	Facilities Stocked Out Any Time in the Past 6 Months— % (n)	Mean # of Days (Range: min–max) of Stockout during the Past 6 Months	Facilities Stocked Out on Day of Visit— % (n)	Facilities with Less than One Month Stock on Day of Visit— % (n)	Facilities with More than Six Months Stock on Day of Visit— % (n)	Median Months of Stock on Hand (25th–75th percentile)
Stalanev 30	55.6 (9)	28.2 (1–90)	9.1 (11)	20.0 (10)	70.0 (10)	5.7 (3.0–9.6)
Triviro 30	33.3 (12)	19.0 (2–45)	16.7 (12)	10.0 (10)	70.0 (10)	14.3 (1.4–21.8)
Stalanev 40	33.3 (15)	32.8 (6–90)	6.3 (16)	6.7 (15)	53.3 (15)	3.4 (1.9–11.4)
Triviro 40	50.0 (4)	67.5 (45–90)	50.0 (4)	50.0 (2)	50.0 (2)	7.9 (0.6–15.2)
Coviro 30	12.5 (16)	10.5 (7–14)	0.0 (16)	7.1 (14)	92.9 (14)	15.1 (5.5–28.5)
Coviro 40	12.5 (16)	50 (50–50)	0.0 (16)	7.1 (14)	92.9 (14)	11.0 (6.2–21.1)

Inventory Management of ARVs for ART

Eighteen percent of the facilities did not have stock-keeping records for stalanev 30; 6 percent did not have stockcards for stalanev 40 (see table 3). The rest of the ART facilities kept either a stockcard or register that captured stock on hand. Most (up to 93 percent) of the facilities that had stock-keeping records updated them regularly. However, 33 percent of the facilities were found to have a discrepancy of at least 10 percent between the stockcard balance and the physical inventory on the day of the visit. The observed discrepancies in recordkeeping and inventory management compromise the accuracy of data that are available for stock status assessment and product forecasting and quantification.

Forty-four percent of the ART facilities were found to maintain at least 80 percent of the ideal storage conditions (see appendix 4). Only two of the 14 ART sites were found to have a complete set of inventory management tools that capture all three essential logistics data items.

Table 3. Inventory Management of ARVs

Product	Facilities Maintaining Stockcard— % (n)	Facilities with an Updated Stockcard— % (n)	Facilities with Stock on Hand Balance Matching Physical Count within 10%— % (n)
Stalanev 30	81.8 (11)	88.9 (9)	66.7 (9)
Triviro 30	100.0 (13)	84.6 (13)	66.7 (12)
Stalanev 40	93.8 (16)	81.3 (16)	93.3 (15)
Triviro 40	100.0 (5)	60.0 (5)	50.0 (4)
Coviro 30	100.0 (16)	93.3 (15)	81.3 (16)
Coviro 40	100.0 (16)	87.5 (16)	87.5 (16)

Logistics Reporting and Ordering of ARVs for ART

Eighty-one percent of the facilities reported lead-time of at least one month for ordering ARVs. Of the five ART facilities with the most recent LMIS report on file, 60 percent had accurately reported the stock on hand for stalanev 30 on the date of the report (analysis not shown).

As shown in table 4, the order fill rate was not assessed at most of the ART facilities because reports were unavailable. However, only 6 percent of the facilities with appropriate data had ever received less stalanev 30 than they ordered.

Table 4. Order Fill Rate for Antiretrovirals (n=16)

Product	Facilities That Received Less than Order Quantity— %	Facilities That Received the Order Quantity— %	Facilities That Received More than Order Quantity— %	Facilities with No Data for Assessing Order Fill Rate— %
Stalanev 30	6.3	31.3	6.3	56.3
Lamivudine	31.3	0.0	0.0	68.8

Institutional Support for Logistics Management of ARVs

None of the ART sites has received formal logistics training on how to complete ARV forms and calculate reorder quantities. Only 50 percent of the facilities reported ever receiving on-the-job training on ARV logistics.

It was also noted that 37.5 percent of the ART facilities had never received or had last received an ART logistics supervisory visit from the higher level more than six months before the assessment (analysis not shown).

Prevention of Mother-to-Child Transmission Commodities

The MOHCW started providing prevention of mother-to-child transmission (PMTCT) services in the public sector in 2002. To date, the program has expanded very rapidly to more than 200 health institutions countrywide. The PMTCT program is integrated into antenatal care and offers a wide range of services, including but not limited to—

- counseling and rapid HIV testing;
- nevirapine to HIV-positive pregnant women and their newborn babies;
- cotrimoxazole prophylaxis to HIV-positive pregnant women; and
- cotrimoxazole prophylaxis to babies of HIV-positive women.

Several partners are working with the MOHCW to provide comprehensive PMTCT services throughout the country. A PMTCT partners' forum was formed to coordinate the activities of key partners on the PMTCT program; however, the committee has tended to concentrate more on clinical program issues and less on coordinating PMTCT commodity security.

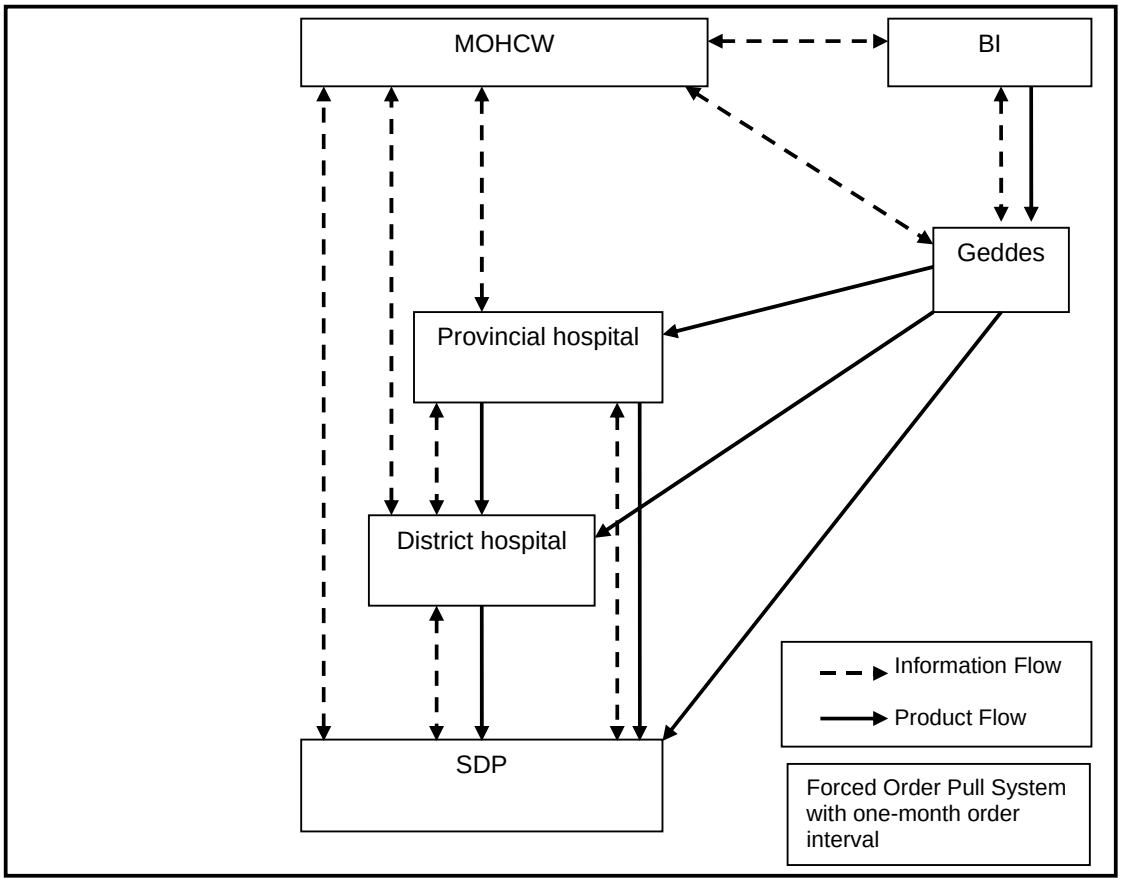
The MOHCW developed and disseminated *Zimbabwe Prevention of Mother to Child Transmission Programme Procedures and Logistics Manual*.[i] The guidelines were developed by the MOHCW in consultation with PMTCT implementers at provincial, district, and site levels. The Elizabeth Glazer Pediatric AIDS Foundation and the Centers for Disease Control and Prevention (CDC) provided technical assistance in developing the guidelines. The manual was designed to help health workers implement PMTCT and, in particular, to assist program managers at the central, provincial, and district levels to monitor the coordinated integration of PMTCT services while ensuring an uninterrupted supply of commodities (Zimbabwe Ministry of Health and Child Welfare 2003).

Product Selection

The MOHCW is using nevirapine in its national PMTCT program. Figure 2 shows the MOHCW PMTCT nevirapine pipeline. The MOHCW recommends the following parallel rapid HIV testing protocol for clinical and PMTCT services:

- Determine
- Unigold
- tie breaker: Oraquick Rapid Test

Figure 2. National PMTCT Nevirapine Supply Chain



Forecasting and Quantification

Quantification of nevirapine and rapid HIV test kits was done in 2003 but has never been reviewed. Consumption data received at the national level are usually too infrequent, incomplete, and late to be used for systematic quantification of the increasing nevirapine and rapid test kit needs of planned program expansion. The average reporting rate for PMTCT monthly progress reports between January and June 2005 was 49 percent. There was no evidence of the use of other types of quantification—for example, demographic or morbidity methods.

Procurement

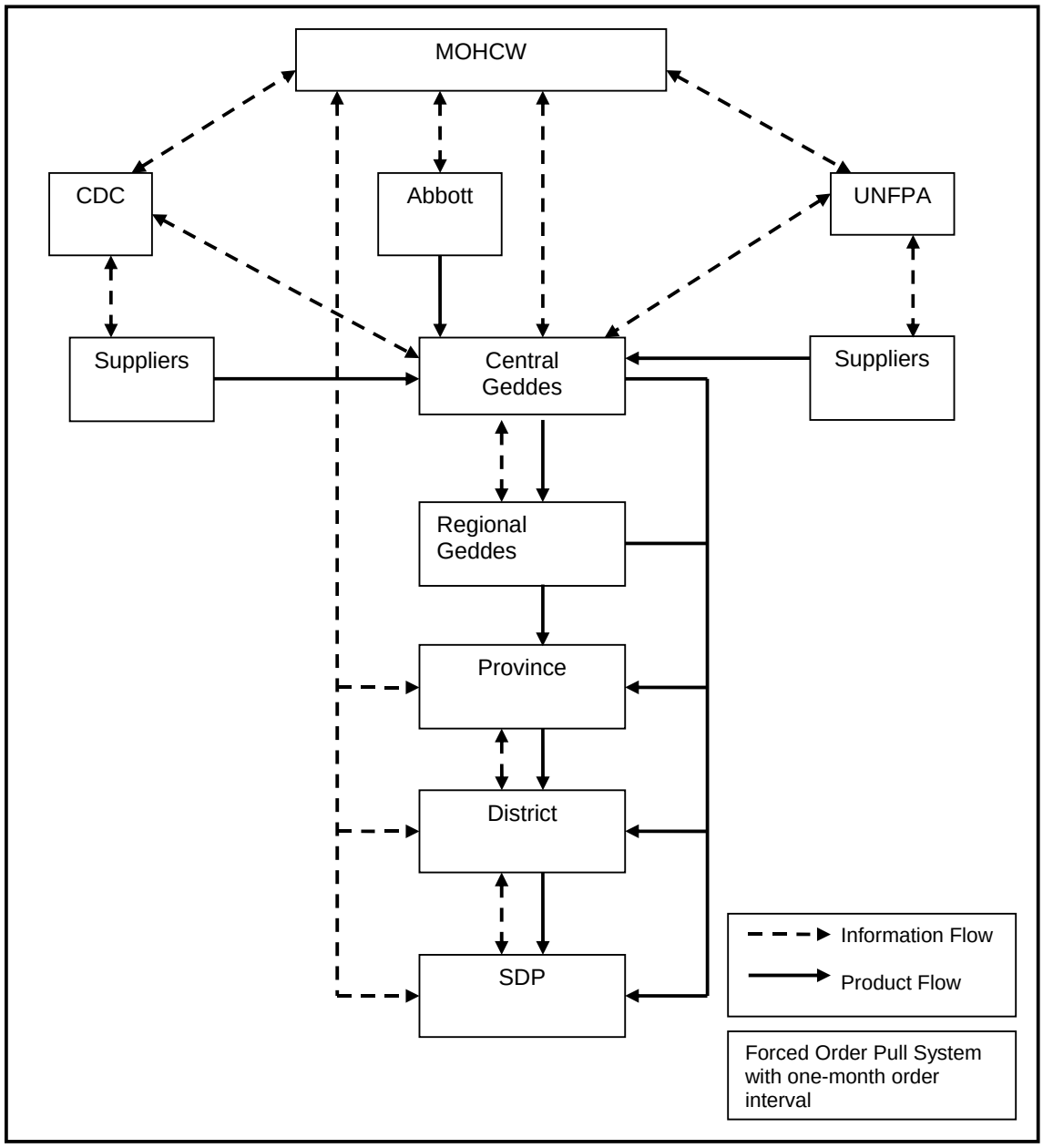
Boehringer Ingelheim (BI) donated nevirapine for the national PMTCT program, and Abbott Laboratories, the CDC, and the United Nations Population Fund (UNFPA) donated the rapid HIV test kits. BI donates all the nevirapine tablets and solution used in the program. Domestic resources from the National AIDS Council have been used once to procure emergency supplies of nevirapine tablets.

Abbott supplies the Determine rapid HIV test kits, while the CDC and UNFPA provide Determine, Unigold, and Oraquick rapid HIV test kits. It is estimated that the CDC provides 50 percent, UNFPA 20 percent, and Abbott 20 percent of the test kits used in the program. Other donors include the United Nations Children's Fund (UNICEF), the Japan International Cooperation Agency (JICA), and the Global Fund to Fight AIDS, TB and Malaria.

Procurement of test kits by the various donors is not coordinated. In addition, the AIDS & TB Unit does not conduct procurement planning routinely because it lacks the expertise and capacity to do so. Logistics information for assessing stock status is not always available.

Figure 3 shows the MOHCW rapid HIV test kits pipeline.

Figure 3. MOHCW National Rapid HIV Test Kits Supply Chain



Storage and Distribution

Geddes Ltd., under a contract with the CDC, stores the nevirapine and rapid HIV test kits. Suppliers deliver the commodities to Geddes, and the SDPs collect from the central and/or regional Geddes warehouses or from the next higher level facility—for example, clinics often order and collect from the District Hospital.

Inventory Control

Even though a reporting system and forms for monitoring program progress have been developed, there is no documented maximum-minimum (max-min) inventory control system in place for the PMTCT program. However, using a pull system, most facilities currently maintain a maximum stock level of three months. Site staff have been trained in logistics management and in how to complete reporting and reordering forms for PMTCT commodities.

Availability of PMTCT Commodities

As illustrated in table 5, at least 30 percent of the PMTCT facilities had a stockout of Unigold and/or Determine rapid HIV test kits during the previous six months. The mean duration of the stockouts was one month for each kit.

- Twenty-eight percent and 7 percent of the facilities were stocked out of the Determine chase buffer during the previous six months and on the day of the visit, respectively.
- Three percent of the facilities were stocked out of Unigold and Determine test kits on the day of the visit.
- Ten percent of the facilities could not provide rapid HIV testing on the day of the assessment because they did not have Determine or Unigold test kits or Determine chase buffer.
- At least 20 percent of the facilities held less than three months' stock of Unigold and Determine test kits on the day of the visit.
- Forty-four percent and 32 percent of the facilities also recorded at least one stockout of nevirapine tablets and solution, respectively, between January and June 2005. The mean duration of nevirapine stockout was 29 days for the tablets and 49 days for the solution.
- Six percent and 24 percent of the facilities were stocked out of nevirapine tablets and solution, respectively, on the day of the visit. Also on the day of the visit, approximately 30 percent of the PMTCT facilities had less than three months of stock (MOS) of nevirapine tablets and 15 percent had less than three MOS of nevirapine solution.
- A stockout of nevirapine tablets and solution at any time at the PMTCT facilities may result in a pregnant HIV-positive woman transmitting HIV to her newborn baby. Such an unacceptable situation seriously compromises the goal of the PMTCT program.

Table 5. Availability of PMTCT Commodities (n=63)

Product	Facilities Stocked Out Any Time in the Past 6 Months— % (n)	Mean # of Days (Range) of Stockout during the Past 6 Months	Facilities Stocked Out on Day of Visit— % (n)	Facilities with Less than 3 Months Stock on Day of Visit— % (n)	Facilities with More than 6 Months Stock on Day of Visit— % (n)	Median Months of Stock on Hand (25th–75th percentile)
Unigold	34.4 (47)	23.8 (1–60)	3.2 (62)	25.9 (59)	38.9 (59)	1.9 (1.0–4.4)
Determine	31.9 (46)	20.5 (1–65)	3.0 (62)	19.7 (59)	30.6 (59)	2.4 (1.4–6.0)
Chase buffer	28.3 (9)	34 (14–54)	6.8 (60)	42.4 (15)	43.8 (15)	3.1 (0.5–6.0)
Oraquick	28.9 (23)	107.5 (6–181)	38.6 (43)	28.7 (17)	57.4 (17)	4.3 (3.2–12.0)
Nevirapine tablet	43.6 (48)	28.6 (1–150)	6.5 (62)	27.6 (55)	68.0 (55)	2.7 (1.8–12.0)
Nevirapine solution	32.2 (44)	48.9 (1–120)	23.6 (59)	14.6 (48)	40.0 (48)	12.3 (4.3–28.2)

Inventory Management of PMTCT Commodities

Almost 75 percent of the facilities were found to maintain stockcards for rapid test kits and nevirapine (see table 6). However, only 34 percent of the sites that were visited maintained stockcards for Determine chase buffer. At least 80 percent of the facilities with stockcards for rapid test kits and nevirapine had updated records. Sixty percent of the PMTCT sites recorded stock on hand of test kits that differed from the physical count by 10 percent on the day of the visit. Almost 40 percent of the facilities were found to have expired Oraquick test kits in stock on the day of the assessment, while

none of the facilities had expired Unigold and Determine kits. Expired stocks of nevirapine tablets and solution were found at 13 percent and 21 percent of the visited facilities, respectively.

Eighty-seven percent of the surveyed PMTCT facilities maintained at least 80 percent of the ideal storage conditions.

Table 6. Inventory Management of PMTCT Commodities

Product	Facilities Maintaining Stockcard— % (n)	Facilities with an Updated Stockcard— % (n)	Facilities with Stock on Hand Balance Matching Physical Count within 10%— % (n)	Facilities with Expired Commodities on Day of Visit— % (n)
Unigold	89.8 (62)	85.7 (50)	66.6 (50)	0.3 (62)
Determine	89.8 (62)	82.4 (50)	60.3 (50)	0.0 (62)
Chase buffer	33.6 (62)	—	—	13.9 (58)
Oraquick	77.3 (44)	85.2 (26)	51.3 (26)	37.8 (43)
Nevirapine tablet	75.9 (63)	85.9 (53)	89.2 (52)	12.7 (62)
Nevirapine solution	73.8 (60)	84.2 (51)	91.1 (47)	20.6 (59)

Logistics Reporting and Ordering of PMTCT Commodities

Eighty-four percent of the surveyed PMTCT sites reported at least a one-month lead time for ordering rapid kits. Of the facilities that had the most recent LMIS report on file, 73 percent accurately reported Unigold stock on hand on the date of the report. Similarly, 70 percent of the facilities accurately reported stock on hand of nevirapine tablets. Table 7 shows that the order fill rate was accurate for only 40 percent of the facilities for Unigold and 30 percent for nevirapine tablets. Ten percent and 15 percent of the sites received fewer Unigold and nevirapine tablets, respectively, than the order quantity. However, the majority of the facilities did not have adequate data to calculate the order fill rate.

Table 7. Order Fill Rate for PMTCT Commodities (n=63)

Product	Facilities That Received Less than Order Quantity— % (n)	Facilities That Received the Order Quantity— % (n)	Facilities That Received More than Order Quantity— % (n)	Facilities with No Data for Assessing Order Fill Rate— % (n)
Unigold	9.0 (63)	39.5 (63)	12.0 (63)	39.5 (63)
Nevirapine tablet	14.8 (63)	30.1 (63)	0.2 (63)	54.9 (63)

Institutional Support for Logistics Management of PMTCT Commodities

At least 80 percent of the PMTCT facilities reported having received formal logistics training in completing PMTCT commodity forms and calculating reorder quantities (analysis not shown).

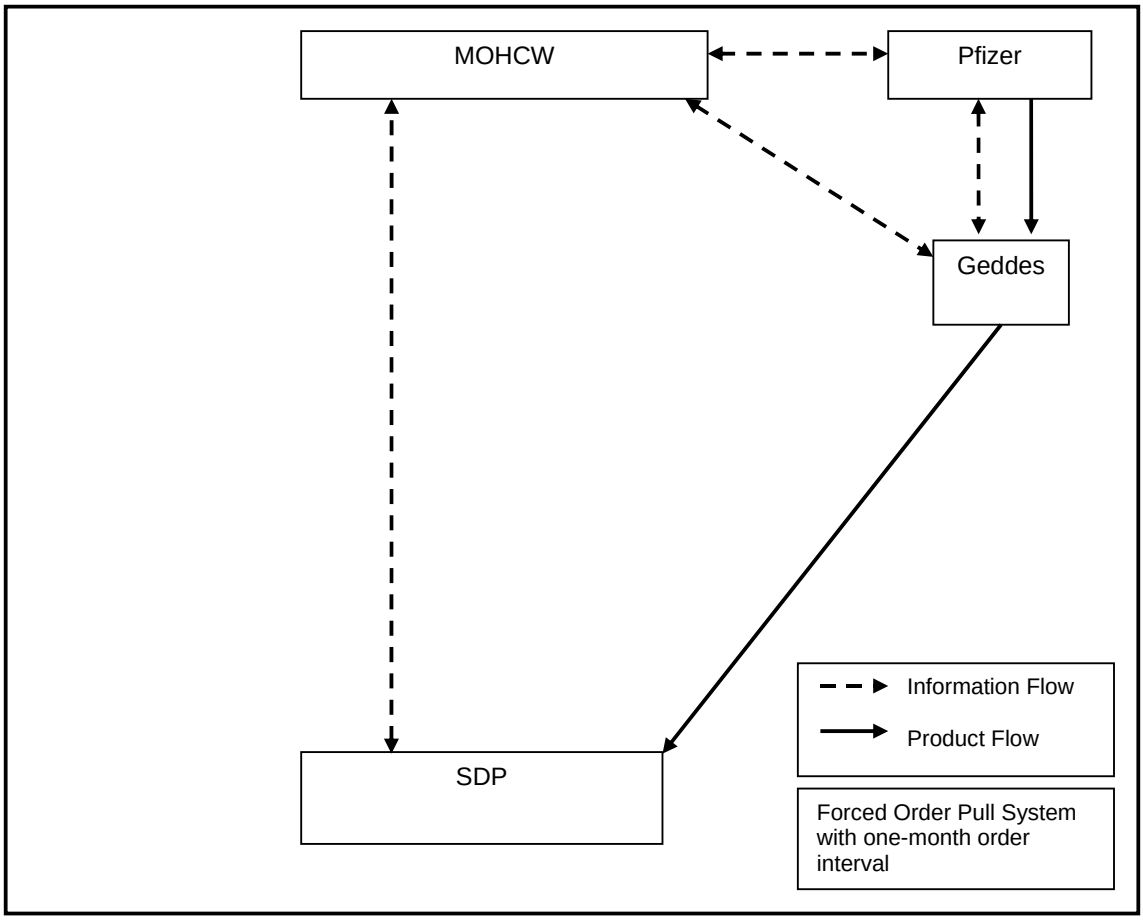
Diflucan

In 2003, the MOHCW started providing Diflucan (fluconazole) in the public sector through the Pfizer Diflucan Program. To date, the program has expanded rapidly to more than 58 health institutions countrywide. The PMTCT program is integrated into comprehensive HIV & AIDS services at central, provincial, district, and specialized clinics—for example, Local Authority Infectious Diseases hospitals.

Product Selection

The MOHCW uses Diflucan tablets, suspension, and injection donated by Pfizer. Figure 4 shows the MOHCW Diflucan pipeline.

Figure 4. MOHCW Diflucan Supply Chain



Forecasting and Quantification

An initial quantification for the Diflucan requirements for the rapidly expanding national Diflucan program was completed, but it has not been systematically reviewed. Consumption data received at the national level are usually too infrequent, incomplete, and late to be used for the systematic quantification of the increasing Diflucan program expansion. The average reporting rate for Diflucan monthly progress reports between January and June 2005 was 32.7 percent.

Procurement

Pfizer donates Diflucan for the national HIV & AIDS program. Domestic resources from the National AIDS Council (NAC) were used once to procure emergency supplies of fluconazole. Currently, the AIDS & TB Unit is not conducting procurement planning routinely because it lacks the expertise and capacity. Logistics information for assessing stock status is not always available. As a result, shipments are delayed and irregular, which substantially compounds the problem of commodity stockouts.

Storage and Distribution

Diflucan is stored at Geddes Ltd. under a contract with CDC. Pfizer delivers the commodities to Geddes and the SDPs collect from the central and/or regional Geddes warehouses.

Inventory Control

Even though a reporting system and forms for monitoring program progress have been developed, there is no documented maximum-minimum inventory control system in place for the Diflucan program. However, most facilities currently maintain a maximum stock level of three months. Site staff have been trained in logistics management and in how to complete reporting and reordering forms for Diflucan commodities.

The quantitative results from the Diflucan assessment are presented below.

Diflucan Availability

Diflucan injection and suspension were introduced into the public sector program in March 2005. Table 8 shows that about 56 percent of the visited sites had at least a single stockout of Diflucan tablets between January and June 2005, with a mean stockout duration of two months. Ten percent of the facilities were stocked out of Diflucan tablets on the day of the visit. It was also observed that on the day of the visit, 33 percent and 72 percent of the sites had less than three months stock of Diflucan tablets and injections, respectively, which put them at high risk for stocking out.

Table 8. Availability of Diflucan

Product	Facilities Stocked Out Any Time in the Past 6 Months— % (n)	Mean # of Days (Range) of Stockout during the Past 6 Months	Facilities Stocked Out on Day of Visit— %	Facilities with Less than 3 Months of Stock on Day of Visit— %	Facilities with More than 6 Months of Stock on Day of Visit— %	Median Months of Stock on Hand (25th–75th percentile)
Diflucan t	55.7 (29)	55.9 (2–120)	10.6 (33)	32.7 (32)	49.6 (32)	3.0 (1.0–5.0)
Diflucan injection	8.5 (7)	35.0 (35–35)	4.1 (10)	72.1 (6)	9.3 (6)	0.2 (0.2–1.6)
Diflucan suspension	0.0 (8)	0.0	0.0 (12)	—	92.0 (8)	3.7 (3.7–6.9)

Inventory Management of Diflucan

All of the sites visited kept stock-keeping records that captured stock on hand; at least 83 percent of the facilities maintained an updated record for all of the Diflucan formulations (see table 9). Twenty-five percent of the facilities had a discrepancy of more than 10 percent between recorded stock on hand and actual physical count of Diflucan tablets on the day of the visit.

At least 80 percent of ideal storage conditions were maintained at 86.2 percent of the Diflucan sites. See appendix 4 for a description of ideal storage conditions.

Table 9. Inventory Management of Diflucan

Product	Facilities Maintaining Stockcard— % (n)	Facilities with an Updated Stockcard— % (n)	Facilities with Stock on Hand Balance Matching Physical Count within 10%— % (n)	Facilities with Expired Commodities on Day of Visit— % (n)
Diflucan Tablet	100.0 (33)	91.9 (27)	74.9 (29)	0.0 (33)
Diflucan injection	100.0 (10)	83.3 (6)	100.0 (6)	0.0 (10)
Diflucan suspension	100.0 (12)	92.0 (8)	94.2 (8)	18.7 (12)

Logistics Reporting and Ordering

On the most recent LMIS report available, 11 of 24 facilities accurately recorded their stock of Diflucan tablets on hand on the date of the report. Table 10 shows that at least 20 percent of the facilities received fewer Diflucan tablets than what they ordered, in cases where relevant data were available to calculate order fill rate.

Table 10. Order Fill Rate for Diflucan Tablets (n=33)

Product	Facilities That Received Less than Order Quantity— %	Facilities That Received the Order Quantity— %	Facilities That Received More than Order Quantity— %	Facilities with No Data for Assessing Order Fill Rate— %
Diflucan tablet	19.6	32.7	5.3	42.4

Zimbabwe Essential Drugs Program (ZEDAP)

In 1988, the ZEDAP was developed and included a full set of modules and manuals. The ZEDAP manuals contain clinical and drug management modules that promote effective and efficient control, ordering, and use of all medical supplies within the MOHCW. Medical supplies are obtained from a variety of sources, including NatPharm and local and international donors.

The MOHCW updates and disseminates the Essential Drugs List for Zimbabwe (EDLIZ), the fourth edition of which was last updated and published in 2000. The National Drug and Therapeutics Policy Advisory Committee, in consultation with health workers at all levels in the Zimbabwe public health care system, develop the EDLIZ. The MOHCW's goal is to standardize the management approach for common medical conditions and to promote rational use of medical supplies in Zimbabwe.

Product Selection

Drugs were selected for inclusion in the EDLIZ using the following criteria, with a special emphasis on proven evidence for their use within the Zimbabwean setting:

- relevance to prevalent diseases
- proven efficacy and safety
- adequate scientific data in a variety of settings
- adequate quality
- favorable cost-benefit ratio
- desirable pharmacokinetics
- possibility for local manufacture
- availability as single-ingredient items.

  (The National Drug and Therapeutics Policy Advisory Committee, Ministry of Health and Child Welfare 2000).

Zimbabwe's generic policy requires that all prescribing be done using the generic name; the dispenser can make generic substitutions—unless bioavailability is an issue—in which case the prescriber must indicate on the prescription that substitutions are acceptable.

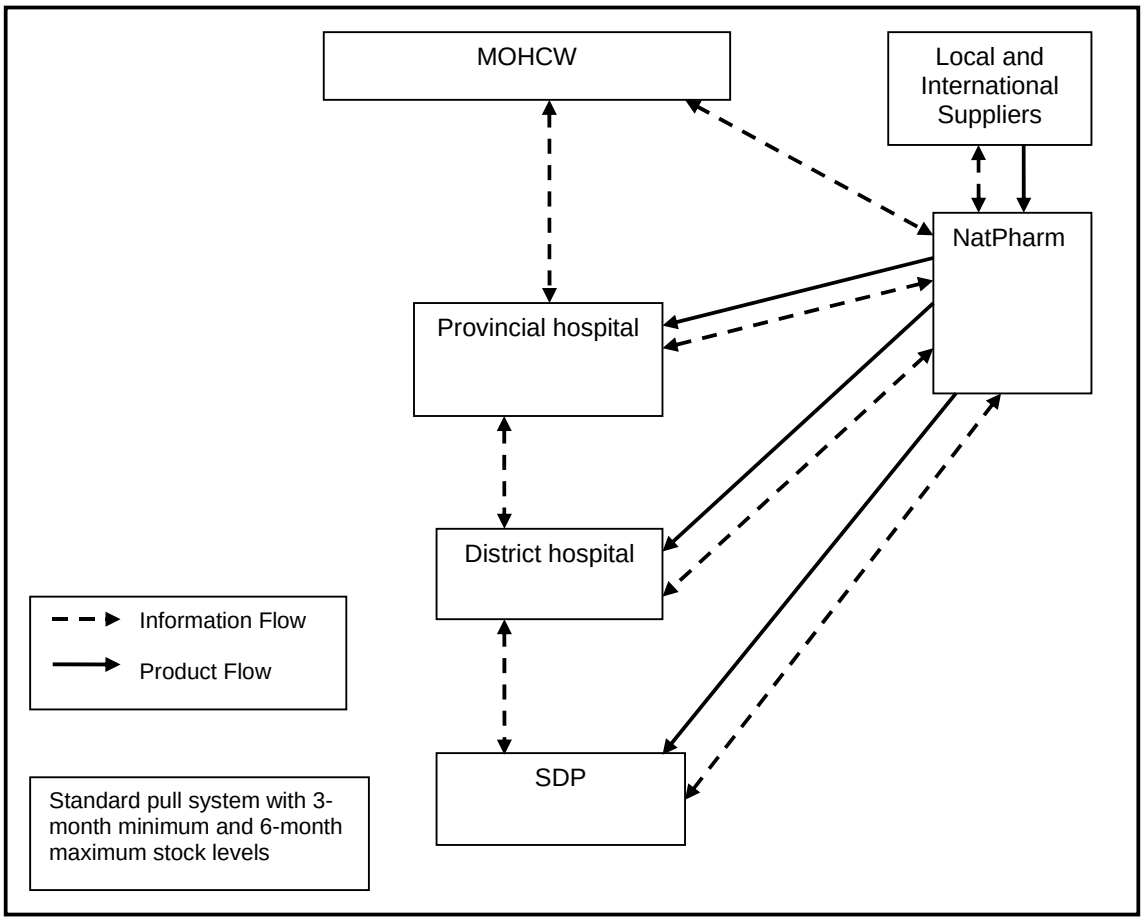
All drugs in the EDLIZ are categorized by level of availability (ABC) and priority (vital, essential, nonessential [VEN] classification). The classifications are as follows:

- C drugs are required at the primary health care level and should be available at all levels of care, for example, cotrimoxazole is a C-level drug.

- B drugs are found at district hospitals and higher levels of care, for example, amoxicillin is a B-level drug.
- A drugs are only prescribed at provincial and central hospital levels, for example, vincristine.

District hospitals have therapeutics committees with a mandate to develop drug priority lists according to disease patterns in the district and the available budget. However, such prioritization must remain within the EDLIZ restrictions and NatPharm catalogue. Figure 5 shows the MOHCW ZEDAP pipeline.

Figure 5. MOHCW Essential Drugs Program Supply Chain



Forecasting and Quantification

Historically, routine forecasting of national requirements of essential drugs is done manually. The European Union (EU) recently provided a computerized forecasting and quantification tool, and NatPharm staff are undergoing training in its use. Consumption data received at the national level are usually too infrequent, incomplete, and late to allow their use for systematic quantification and forecasting. The requisition forms used for ordering do not capture all of the essential logistics data.

Procurement

The GOZ and the EU are the main funders of essential drugs, and NatPharm is the principal procurement agent for the public health sector. Other sources of supply of essential drugs include Missions, NGOs, and local and international donors. All public health institutions, up to the district hospital level, are allocated an annual budget to procure medical drugs, consumables, and sundries. The budget is managed by the District Health Executive (DHE), and all purchases must be approved

by the PMD. The DHE, which is responsible for all purchases for the district hospital and clinics within the district, is under specific government instruction to procure all medical supplies from NatPharm. Purchases from the private sector are allowed only if the commodities are out of stock at NatPharm. In such cases, NatPharm can authorize the DHE to procure privately.

Inventory Control

The ZEDAP system has an elaborately designed standard inventory control system with minimum and maximum stock levels of three and six months, respectively. However, due to erratic supplies and frequent stockouts, the system does not function as effectively as before. Facilities are currently making ad hoc orders and are no longer following the set order quantities. Most public sector pharmacies are staffed by non-pharmacy-trained personnel with little to no experience in inventory management.

Storage and Distribution

Essential drugs are stored at all levels of the system, from central down to service delivery points. NatPharm has two regional warehouses (in Harare and Bulawayo) and four branches (Mutare, Chinhoyi, Masvingo, and Gweru). Each regional warehouse serves or distributes to the two branches and health facilities in its region, that is, Harare services Greater Harare, Mashonaland East, the Central Provinces, and Harare and Parirenyatwa Central Hospitals. The Harare main stores also service Mutare and Chinhoyi branches, which, in turn, serve or distribute to all public health facilities in Manicaland and Mashonaland West provinces. Likewise, the Bulawayo main stores service all public health facilities in Bulawayo urban, and Matabeleland North and South provinces. The Bulawayo main stores also serve or distribute to the Gweru and Masvingo branches, which, in turn, service health facilities in Midlands and Masvingo provinces, respectively. Through this distribution system, NatPharm serves all public health institutions in the country. The European Commission recently donated five trucks to increase NatPharm's distribution capacity.

Quantitative results of the assessment of essential drugs and consumables appear below.

Availability of Essential Drugs and Consumables for Managing HIV & AIDS

As shown in table 11, 60 percent of the surveyed facilities experienced a stockout of cotrimoxazole tablets and solution during the previous six months, with a stockout duration as long as 178 and 211 days, respectively. Forty percent of the facilities were out of stock of cotrimoxazole tablets on the day of the visit. Furthermore, 82 percent of the sites held less than three months' stock of cotrimoxazole tablets on the day of the visit. Eighty percent of the facilities also had a stockout of amoxicillin suspension during the same period, with a stockout duration as long as 181 days.

Up to 39 percent of the facilities experienced a stockout of 5 ml syringes between January and June 2005; 17 percent were stocked out on the day of the visit. Thirty-five percent and 21 percent of the facilities had less than three months' stock of medium-size disposable latex gloves and sharps containers, respectively, on the day of the visit. There were no expired stocks of cotrimoxazole and amoxicillin on the day of the visit (analysis not shown).

Cotrimoxazole has been proven to be a critical intervention in the management and prevention of OIs, in both pediatric and adult HIV disease. It is particularly life prolonging for PLWHA who may not have access to ART. The uninterrupted supply of cotrimoxazole has, therefore, been recognized as a basic component of primary HIV & AIDS management. The significant number of shortages of cotrimoxazole that were observed during the assessment indicate that a large number of PLWHA may have been denied access to basic HIV & AIDS care and treatment.

Table 11. Availability of Essential Drugs and Consumables

Product	Facilities Stocked Out Any Time in the Past 6 Months— % (n)	Mean # of Days (Range) of Stockout during the Past 6 Months	Facilities Stocked Out on Day of Visit— % (n)	Facilities with Less than 3 Months Stock on Day of Visit— % (n)	Facilities with More than 6 Months of Stock on Day of Visit— % (n)	Median Months of Stock on Hand (25th–75th percentile)
Cotrimoxazole tablet	57.4 (64)	56.0 (0–178)	40.0 (69)	81.8 (66)	8.9 (66)	1.0 (0.6–3.6)
Cotrimoxazole solution	60.2 (53)	66.9 (1–211)	43.5 (65)	69.7 (52)	9.0 (52)	0.6 (0.3–4.6)
Amoxicillin 250 mg capsule	52.5 (52)	50.6 (1–103)	53.3 (56)	83.0 (53)	11.5 (53)	2.7 (1.8–5.5)
Amoxicillin suspension	79.8 (45)	81.9 (2–181)	31.3 (52)	81.1 (46)	7.6 (46)	1.9 (1.1–3.6)
Medium disposable latex gloves	22.1 (55)	8.7 (3–95)	6.0 (69)	35.2 (51)	48.0 (51)	5.7 (2.0–24.3)
5 ml syringe	38.6 (49)	46.9 (1–101)	17.3 (68)	49.5 (46)	32.0 (46)	4.8 (2.5–11.0)
23 g hypodermic needle	4.4 (48)	30.0 (30–30)	6.0 (66)	19.6 (40)	70.7 (40)	14.6 (6.0–52.0)
21 g hypodermic needle	14.2 (50)	62.5 (1–174)	9.4 (68)	23.8 (44)	53.2 (44)	7.8 (3.6–37.3)
Sharps container	15.6 (30)	125.5 (4–183)	10.5 (64)	21.3 (27)	64.1 (27)	7.0 (6.0–16.2)

Inventory Management of Essential Drugs and Consumables

More than 80 percent of the surveyed facilities maintained stockcards for cotrimoxazole and amoxicillin (see table 12). However, only 48.8 percent of the facilities has a stock card for sharps containers. The majority of the facilities that kept stockcards also maintained updated records. At up to 50 percent of the facilities a discrepancy of greater than 10 percent between the stock on hand balance and the team's physical count on the day of the visit was found for 21 gauge hypodermic needles.

Table 12. Inventory Management of Selected Essential Drugs and Consumables

Product	Facilities Maintaining Stockcard— % (n)	Facilities with an Updated Stockcard— % (n)	Facilities with Stock on Hand Balance Matching Physical Count within 10%— % (n)
Cotrimoxazole tablet	99.8 (69)	90.8 (68)	87.7 (67)
Cotrimoxazole solution	84.7 (65)	83.9 (67)	68.5 (56)
Amoxicillin 250 mg capsule	94.6 (56)	89.4 (53)	74.1 (53)
Amoxicillin suspension	94.4 (52)	99.9 (49)	67.1 (49)
Medium disposable latex gloves	77.0 (70)	69.4 (61)	54.3 (55)
5 ml syringe	81.4 (68)	77 (54)	53.6 (52)
23 g hypodermic needle	73.0 (66)	71.2 (51)	64.9 (49)
21 g hypodermic needle	69.1 (68)	73.9 (53)	50.5 (50)
Sharps container	48.8 (66)	68.6 (39)	70.0 (35)

Logistics Reporting and Ordering of Essential Drugs and Consumables

Thirty-nine percent of the facilities reported lead times of at least one month for ordering essential drugs. Stock on hand on the available and most recent LMIS report matched stockcard entry at 69 percent of the facilities. As table 13 shows, 23 percent of the facilities that were surveyed and had adequate data, received fewer cotrimoxazole tablets than had been ordered.

Table 13. Order Fill Rate for Cotrimoxazole Tablets (n=70)

Product	Facilities That Received Less than Order Quantity— %	Facilities That Received the Order Quantity— %	Facilities That Received More than Order Quantity— %	Facilities with No Data for Assessing Order Fill Rate— %
Cotrimoxazole tablet	23.1	29.8	0.0	47.1

Institutional Support for Logistics Management of Essential Drugs

Only 35 percent of the facilities visited reported ever having received formal logistics training in completing essential drugs forms and calculating reorder quantities. In addition, only 41 percent of the facilities reported receiving a logistics supervisory visit for essential drugs during the previous three months (analysis not shown).

The following section summarizes the reported challenges in institutional logistics support.

Findings from Key Informant Interviews

Key informant interviews conducted with program managers and officers in the MOHCW AIDS & TB Unit, using questions adapted from the LSAT, identified the following challenges in logistics management of HIV & AIDS commodities, particularly ARVs:

- *Inadequate logistics training for facility-level staff and lack of a weak inventory control system*
- *Lack of tools and transport for logistics supervisory visits*
- *Lack of computers and software for logistics management at central, provincial, district, and SDP levels.* The MOHCW does not have software for pipeline tracking and/or forecasting. It does not have a dedicated fax machine for receiving reports from SDPs. The only fax machine in the AIDS & TB Unit, shared by the whole unit; was out of service four times during the past three months. The logistician does not have email access in her office.
- *Staff shortage at all levels in the public health system.* Only one central-level logistician is responsible for logistics management of all HIV & AIDS-related commodities, including procurement, pipeline monitoring, and supervision of ART, PMTCT, and Diflucan facilities throughout the entire country.
- *The logistician and facility-level staff are not adequately trained in quantification and forecasting techniques.*
- *Lack of transport for collection of commodities by the facilities.* Although the plan is for NatPharm to be responsible for distribution of HIV & AIDS commodities, the staff interviewed were not sure whether NatPharm had adequate transportation to do so.
- *Lack of coordination of procurement and logistics management of HIV & AIDS-related commodities.* The existing ART and PMTCT partnership has been doing very little coordination to ensure HIV & AIDS commodity security.

Conclusions

The study findings are summarized below:

Product Availability

- There was a high stockout rate of all HIV & AIDS commodities, including ARVs, between January and June 2005, and the commodities were out of stock for long periods during the previous six months. However, enough of the recommended ARVs were available to provide the complete first-line regimen on the day of visit. ART programs should have a zero tolerance for stockout of ARVs; stockouts may result in patients missing their treatment and increasing the risk of treatment failure due to development of drug resistance. It is critical, therefore, that ARVs be available in full supply at all times to avoid the risk of treatment interruption.
- A number of facilities were stocked out of nevirapine, rapid HIV test kits, and Diflucan on the day of the visit. Diflucan stockout means that patients with OIs, such as cryptoccocal meningitis, and who are on maintenance treatment, have a high risk of relapse and, thus, an increased risk of dying. After Diflucan prophylaxis is started, patients should receive their medication without interruption unless their immunity has improved to CD4 counts above 200 and remains at that level for at least three to six months. Nevirapine stockout in a PMTCT program may result in a missed opportunity to prevent transmission of HIV infection from a pregnant HIV-positive mother to her unborn baby. Likewise, a stockout of rapid HIV test kits may prevent testing of pregnant women who may have opted for an HIV test to determine their status and, if it is positive, may miss an opportunity to enroll in the PMTCT program.
- Expired stocks of nevirapine and Oraquick were also found at some facilities on the day of visit. Oraquick is used as a tie breaker in the event of discordant screening and confirmatory HIV tests. Because such cases are very rare in Zimbabwe, however, the result has been significant expirations of Oraquick due to low use. Therefore, health facilities should calculate their average consumption of Oraquick carefully and, to avoid expirations, order appropriate quantities.
- There was a very high stockout rate of cotrimoxazole during the period under review as well as on the day of visit. The facilities that had cotrimoxazole in stock had very low stock levels. Cotrimoxazole is very useful in preventing OIs among PLWHA who may not be receiving combined ART. The use of cotrimoxazole in both adults and children with advanced HIV has been demonstrated to reduce the risk of OIs and improve quality of life. Cotrimoxazole prophylaxis is particularly important in settings like Zimbabwe where ART is not routinely or widely available. In such situations, cotrimoxazole may be the only hope for reducing morbidity among PLWHA, so it is critical that the drugs are available without interruption.

Inventory Management

The national ART program has no logistics system for ARVs, including inventory control systems, LMIS, and scheduled distribution.

Logistics Reporting and Ordering

- The lead time for delivery of essential drugs was reported to be very long; but it was often less than one month for ARVs and PMTCT commodities.
- There were no standard logistics management forms for the national ARV program.

- Except for PMTCT, existing logistics management tools do not capture the three essential data items: stock on hand, consumption/usage, and losses/adjustments. Available logistics data were also found to be inaccurate.

A functional and reliable LMIS is vital in any public health program. Without reliable data, it is very difficult to monitor stock status and forecast future requirements of commodities. Correct quantification of future drugs needs in a new program, such as an ART program, depends on the availability of accurate logistics data. Failure to accurately quantify or forecast program requirements may result in stockouts and treatment interruptions, thereby risking the development of drug resistance. Inaccurate forecasts and quantifications may also lead to overstocking and drug expirations, thereby wasting valuable resources.

Institutional Support for Logistics Management

- Formal training in ordering and reporting was provided for most PMTCT sites, but most of the ART facilities did *not* receive logistics training. It was also noted that fewer than half of the surveyed facilities reported ever receiving logistics training for essential drugs management.
- The lack of routine logistics supervisory visits was also noted.

Recommendations

To improve the logistics management of HIV & AIDS commodities, the MOHCW is urged to consider the following short-, medium- and long-term recommendations. The short-term recommendations are critical for a well-functioning logistics management system; the MOHCW is advised to implement them as soon as possible.

Short-Term Recommendations

- Revise the existing logistics management tools to capture all three of the essential data elements: stock on hand, consumption/usage, and losses/adjustments. The MOHCW should consider revising the existing logistics management tools as soon as possible.
- Obtain technical assistance to train facility-level staff in logistics management to improve the facility-level logistics capacity.
- Improve support for and supervision of SDPs by higher-level staff and program managers as soon as possible.
- Develop logistics supervisory tools and increase transport for supervision at the central, provincial, and district levels as soon as possible.
- Increase the human, technical, and resource capacity of the AIDS & TB Unit to effectively manage and monitor the HIV & AIDS commodity supply chain. This capacity building should include providing training on procurement planning and pipeline monitoring software. Program managers and logisticians also need training in forecasting and quantification techniques.

Medium-Term Recommendations

- Create and support a post for provincial logistics officers. These officers, who will complement the activities of provincial pharmacists, will primarily be responsible for ensuring accurate collection, collation, and analysis and timely reporting of logistics data and for regularly monitoring the logistics function at the SDPs.
- Strengthen the coordination of the multiple HIV & AIDS supply chains:
  - Coordination can be accomplished by harmonizing the functions of NatPharm, the Central Pharmacy Directorate, and the AIDS & TB Unit.
  - Coordination of donor activities in HIV & AIDS-related commodity supply and logistics management should be included as an integral part of the ART and PMTCT partnership groups.
- Obtain technical assistance to conduct quantification of ARV and rapid HIV test kit requirements for the national program.

Long-Term Recommendations

- Arrange for technical assistance to design and implement a logistics management system for the essential HIV & AIDS-related commodities.
- Integrate components of the essential drugs and HIV & AIDS logistics management systems.

Appendices

1. **Team Members**
2. **Health Facilities**
3. **Assessed Commodities**
4. **Ideal Storage Conditions**
5. **Assessment Tool**
6. **Logistics System Assessment Interview Guide**

Appendix 1: Team Members

Name	Organization	Province	Designation
M. Mundandi	MOHCW	AIDS & TB	Logistician
J. Mboyane	JSI	Washington, DC	Program Coordinator
R. Ncube	Bulawayo City	Bulawayo	ADHS
D. Mpofu	MOHCW	Mat South	PMTCT Focal Person
D. Alt	JSI	Harare	Country Director
T. Batidzirai	MOHCW	Mash West	Pharmacist
R. Mtombeni	NatPharm	Harare	Buyer
J. Nyenwa	JSI	Harare	Survey Manager, Consultant
T. Kufa	JSI	Harare	ART Coordinator
F. Ntondlana	MOHCW	Manicaland	Provincial Pharmacy Tech
T. Simoyi	MOHCW	Harare	Chief Pharmacist
Y. Ouedraogo	JSI	Washington, DC	M&E Advisor
P. Chivese	MOHCW	Mash Central	District Pharmacy Tech
P. Mwazunganya	MOHCW	Mash East	PHSA
A. Karim	JSI	Washington, DC	A&R Advisor
J. Kambarami	MOHCW	AIDS & TB	STI Coordinator
N. Moyo	MOHCW	Masvingo	A/Provincial Pharmacist
T. Mawerera	MOHCW	Midlands	Provincial Pharm Tech
J. Gorejena	Harare City	Harare	Nurse Counselor

Appendix 2: Health Facilities

S/N	Name of Health Facility	Province	District
1	Harare Central Hospital	Harare	Harare
2	Parirenyatwa Central Hospital	Harare	Harare
3	Wilkins Infectious Diseases Hospital	Harare	Harare
4	Budiriro Polyclinic	Harare	Harare
5	St Michael's Mission Hospital	Mashonaland West	Kadoma
6	Chinhoyi Provincial Hospital	Mashonaland West	Makonde
7	Chidamoyo Mission Hospital	Mashonaland West	Hurunngwe
8	Sanyati Mission Hospital	Mashonaland West	Kadoma
9	Karoi District Hospital	Mashonaland West	Karoi
10	Mhondoro Clinic	Mashonaland West	Chegutu
11	Selous Clinic	Mashonaland West	Chegutu
12	Doma Clinic	Mashonaland West	Makonde
13	Gudubu Clinic	Mashonaland West	Makonde
14	Murereka Rural Health Centre	Mashonaland West	Makonde
15	Mutorashanga Clinic	Mashonaland West	Zvimba
16	St Albert's Mission Hospital	Mashonaland Central	Muzarabani
17	Howard Mission Hospital	Mashonaland Central	Mazowe
18	Bindura Provincial Hospital	Mashonaland Central	Bindura
19	Guruve District Hospital	Mashonaland Central	Guruve
20	Chitungwiza General Hospital	Mashonaland East	Chitungwiza
21	Marondera Provincial Hospital	Mashonaland East	Marondera
22	Luisa Guidotti Mission Hospital	Mashonaland East	Mutoko
23	Seke North Polyclinic	Mashonaland East	Chitugwiza
24	Mt St Mary's Hospital	Mashonaland East	Hwange
25	Kadzere Clinic	Mashonaland East	Murewa
26	Nhowe Mission Hospital	Mashonaland East	Murehwa
27	Silveria Mission Hospital	Masvingo	Bikita
28	Chiredzi General Hospital	Masvingo	Chiredzi
29	Collin Saunders Hospital	Masvingo	Chiredzi
30	Masvingo Provincial Hospital	Masvingo	Masvingo
31	Gweru Provincial Hospital	Midlands	Gweru
32	Gweru Infectious Diseases Hospital	Midlands	Gweru
33	St Theresa Mission Hospital	Midlands	Chirumanzu
34	Muvonde Mission Hospital	Midlands	Chirumanzi
35	Silobela Hospital	Midlands	Kwekwe
36	Kwekwe General Hospital	Midlands	Kwekwe
37	Musume Mission Hospital	Midlands	Mberengwa
38	Zvishavane District Hospital	Midlands	Zvishavane
39	Kana Mission Hospital	Midlands	Gokwe
40	Shurugwi District Hospital	Midlands	Shurungwi

S/N	Name of Health Facility	Province	District
41	Mutare Provincial Hospital	Manicaland	Mutare
42	Gombe Rural Health Centre	Manicaland	Buhera
43	Bingaguru Rural Health Centre	Manicaland	Makoni
44	Mayo1 Rural Health Centre	Manicaland	Makoni
45	Matsika Rural Health Centre	Manicaland	Makoni
46	Gowakowa Rural Health Centre	Manicaland	Makowe
47	Muromo Rural Health Centre	Manicaland	Mutare
48	Dangamvura Polyclinic	Manicaland	Mutare
49	Florida Polyclinic	Manicaland	Mutare
50	Zimunya Rural Health Centre	Manicaland	Mutare
51	Hauna District Hospital	Manicaland	Mutasa
52	Old Mutare Hospital	Manicaland	Mutasa
53	Samaringa Rural District Clinic	Manicaland	Mutasa
54	Avilla Mission Hospital	Manicaland	Nyanga
55	Murambinda Mission Hospital	Manicaland	Buhera
56	Rusape General Hospital	Manicaland	Makoni
57	Sakubva Infectious Diseases Hospital	Manicaland	Mutare
58	Pelandaba Polyclinic	Bulawayo	Bulawayo
59	Pumula Polyclinic	Bulawayo	Bulawayo
60	Khami Road Clinic	Bulawayo	Bulawayo
61	Mpilo Central Hospital	Bulawayo	Bulawayo
62	United Bulawayo Hospital	Bulawayo	Bulawayo
63	Thorngrove Infectious Diseases Hospital	Bulawayo	Bulawayo
64	Chinotimba Clinic	Matabeleland North	Hwange
65	Lukosi Mission Hospital	Matabeleland North	Hwange
66	Pumula Mission Hospital	Matabeleland North	Tsholotsho
67	Sipepa Rural Hospital	Matabeleland North	Tsholotsho
68	St Anne's Mission Hospital	Matabeleland South	Bililima
69	Gwanda Provincial Hospital	Matabeleland South	Gwanda
70	Mtshabezi Hospital	Matabeleland South	Gwanda

Appendix 3: Assessed Commodities

1. Unigold Rapid HIV Test Kits
2. Determine Rapid HIV Test Kits
3. Oraquick Rapid HIV Test Kits
4. Virocheck Rapid HIV Test Kits
5. Medium-size disposable non-surgical latex gloves
6. Disposable 5 ml syringes
7. Size 21 gauge hypodermic needles
8. Size 23 gauge hypodermic needles
9. Commercial sharps containers
10. Other sharps containers (card board boxes, tins, plastic containers)
11. Cotrimoxazole 480 mg tablets
12. Cotrimoxazole suspension
13. Amoxicillin 250 mg capsules
14. Amoxicillin 500 mg capsules
15. Amoxicillin suspension
16. Diflucan tablets
17. Diflucan injection
18. Diflucan suspension
19. Nevirapine 200 mg tablets
20. Nevirapine solution
21. Efavirenz 600 mg tablets
22. Stavudine 30 mg capsules
23. Stavudine 40 mg capsules
24. Lamivudine 150 mg tablets
25. Coviro 30 mg (3TC+D4T 30) tablets
26. Coviro 40 mg (3TC+D4T 40) tablets
27. Triviro 30 mg (3TC+D4T 30+NVP) tablets
28. Triviro 40 mg (3TC+D4T 40+NVP) tablets
29. Stalanev 30 mg (3TC+D4T 30+NVP) tablets
30. Stalanev 40 mg (3TC+D4T 30+NVP) tablets
31. Lamivudine 150 mg/Zidovudine 300 mg tablets

Appendix 4: Ideal Storage Conditions

1. 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-to-expire, first-out (FEFO) counting and general management.
3. Cartons and products are in good condition, not crushed due to mishandling. If cartons are open, determine if products are wet or cracked due to heat/radiation (fluorescent lights in the case of condoms, cartons right-side up for Depo-Provera®).
4. The facility makes it a practice to separate damaged and/or expired products from usable products and removes 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.
8. Storage area is secured with a lock and key, but is accessible during normal working hours; access is limited to authorized personnel.
9. Products are stored at the appropriate temperature during all seasons according to product temperature specifications.
10. Roof is always maintained in good condition to avoid sunlight and water penetration.
11. Storeroom is maintained in good condition (clean, all trash removed, sturdy shelves, organized boxes).
12. The current space and organization is sufficient for existing products and reasonable expansion (i.e., receipt of expected product deliveries for foreseeable future).
13. Products are stacked at least 10 cm off the floor.
14. Products are stacked at least 30 cm away from the walls and other stacks.
15. Products are stacked no more than 2.5 meters high.
16. Fire safety equipment is available and accessible (any item identified as being used to promote fire safety should be considered).
17. Medicines are stored separately from insecticides and chemicals.

Appendix 5: Assessment Tool

Logistics Indicators Assessment Tool (LIAT)

Zimbabwe
HIV/AIDS Logistics System Assessment

Interviewer's Guide

Facility Identification	Ask to speak to the person in-charge of the facility. Record the name of the facility and location. Using the codes provided for each question, place all other responses in the boxes on the right.
Information about Interview	Record the date the interview took place and list the names of the interviewers.
Introduction	Use the text here to guide your introduction of the survey to facility staff.
Questions 01 to 04	Receive permission to conduct the interview and record information regarding the interviewee.
Questions 101 to 164	Record responses by clearly circling either the number or letter that corresponds to the interviewee's response. Questions with letters may have multiple responses; questions with numbers have only a single response.
Questions 201 to 211	Record responses by clearly circling either the number or letter that corresponds to the interviewee's response. All questions in this section have only a single response.
1: Stock Status	Record the maximum months of stock, minimum months of stock, and order interval above the . If the interviewee does not know these, mark DK as the response. To fill in the cells, follow the instructions above the table.
2: Main Storage Conditions	Record observations on the main storage area (even if it is a cabinet) by responding to storage conditions 1 to 12 for every facility visited. For large storage areas that require stacking of multiple boxes, continue to complete storage conditions 13 to 17.
3: LMIS Data Quality	Complete the table for all or for a selection of products following the instructions above the table.
4: Forecast Accuracy	Complete the table for all or for a selection of products following the instructions above the table.
End Interview	Ask the interviewee/s if they want to ask you any questions. Thank them for their time and cooperation.

Facility Services and Infrastructure

Facility Identification

Name of the facility_____	
Facility location	
City/town: _____	
Province _____	
District _____	
Code of the facility (Program type and number)	Facility Code ..... ☐ ☐☐☐
If SDP, mark type of facility: 1=Central/Specialist hospital; 2=Provincial hospital; 3=District hospital; 4=Mission hospital; 5=Rural hospital; 6=Rural health centre; 7=Other _____.....	SDP Facility Type ..... ☐
Operating Authority 1=MOH; 2=Local Authority; 3=Mission; 4=Uniformed forces; 5=Private	Operating Authority..... ☐
Facility characteristics: Tarmac to the facility, or at least up to 1 km from the facility? (0=no; 1=yes)	Tarmac..... ☐
Operational electricity on day of visit? (0=no; 1=yes)	Electricity..... ☐
Operational water in the building on the day of visit? (0=no; 1=yes)	Water ..... ☐
Operational telephone or radio on day of visit? (0=no; 1=yes)	External Communication..... ☐

Information about Interview

Date: _____	DAY/ MONTH/ YEAR ☐☐ ☐☐ ☐☐☐☐
Interviewer/s: _____	
_____	

Introduction

Ask for the person in-charge of the facility and show the letter of authorization of the study from the MOH.
Introduce all team members and ask facility representatives to introduce themselves.

Explain the objectives of this survey:

Good day. My name is _____. My colleague(s) and I are representing the Ministry of Health and Child Welfare in Harare. We are conducting a survey regarding the health commodity logistics system. We are looking at the availability of selected commodities and information about how you order and receive those products. We are visiting selected health facilities throughout the country; this facility was selected randomly to be in the survey. The objectives of the survey are to collect current information on logistics system performance and stock status of key health products.
This is not a supervisory visit and your name will not be recorded so that you may feel free to be candid in your responses to our questions. This is a system assessment and it is not looking at individuals' performance.

The results of this national survey will provide information to make decisions and to promote improvements. The survey may be conducted again in the future to measure changes in the logistics system.
We would like to ask you a few questions about the products and supplies available at this facility. In addition, we would like to actually count selected products you have in stock today and observe the general storage conditions. Do you have any questions?

No.	Question	Code Classification	Go To
01.	Can we continue?	Yes.....1 No 0	➔STOP
02.	Title of person interviewed for this section	_____ _____ _____	
03.	Number of years and months you have worked at this facility?	Years: _____ Months: _____	
04.	Who is the principal person responsible for managing medical supplies at this facility?	Nurse ..... 1 Clinical Officer ..... 2 Pharmacy Technician ..... 3 Dispensary Assistant ..... 4 Pharmacist ..... 5 Other (Specify) _____ 9	

Speak to the person in-charge of the pharmacy.

Ask the following questions of the facility pharmacy manager. After asking the questions in this section, visit the warehouse, storeroom, or storage area where the health products listed are managed. If you are referred to another staff member for the stocktaking exercise, introduce the survey goals and objectives as you did during the introduction. Hand the respondent the list of products that are included in the survey, and explain that we will refer to the list for some of the following questions.

No.	Questions	Code Classification	Go To/ Comments
	Rapid HIV Test Kits (PMTCT)		
101	Title of person interviewed for this section	_____ _____ _____	
102	Number of years and months you have worked at this facility?	Years: _____ Months: _____	
Do you use and fill out the following logistics forms to manage rapid HIV test kits?			
103	A. stock cards	Yes ..... 1 No 0	
	B. daily register	Yes ..... 1 No 0	
	C. other _____	Yes ..... 1 No 0	
104	Do you use ordering forms/reports for rapid HIV test kits?	Yes ..... 1 No 0	➔ 109a
105	Do these ordering forms/reports for rapid HIV test kits include the following?		
	A. stock on hand	Yes ..... 1 No 0	
	B. quantities used	Yes ..... 1 No 0	
	C. losses and adjustments	Yes ..... 1 No 0	
106	How often are these ordering forms/reports for rapid HIV test kits sent to the higher level? (Circle all that apply.)	Monthly ..... A Quarterly ..... B Semi-annually ..... C Annually ..... D Other ..... W	
107	When was the last time you sent an ordering form and report for rapid HIV test kits at this facility?	Never ..... 1 Within the last month ..... 2 2 months ago ..... 3 3 months ago ..... 4 More than 3 months ago 5	
108	How often are you supposed to send rapid HIV test kits reports to the higher level? (Circle all that apply.)	Monthly ..... A Quarterly ..... B Semi-annually ..... C Annually ..... D Other ..... W	
109a	Are there any facilities that send ordering forms/reports for rapid HIV test kits to this facility?	Yes ..... 1 No 0	➔ 111

109	How many facilities are supposed to send ordering forms/reports for rapid HIV test kits to this facility?	|___|___|	
110	How many facilities submitted ordering forms/reports for the month of May 2005?	A. |___|___| B. Ask to see reports and check here if verified. (0=no; 1=yes) |___|	
111	How did you learn to complete the ordering forms and records used for rapid HIV test kits at this facility? (Circle all that apply.)	Never learned.....A During a logistics workshop ...B On-the-job training .....C On-the-job (self-learning) .....D Other (specify) _____W	
112	How many emergency orders for Unigold HIV test kits did you place in the last 3 months?	None.....0 1 .....1 2 .....2 3 .....3 More than 3 .....4 NA/DK 9	
113	Who determines this facility's resupply quantities of rapid HIV test kits? (Circle all that apply.)	The facility itself .....A Higher-level facility .....B Other (specify) _____ W	➔115
114	How does your facility determine its resupply quantities of rapid HIV test kits?	Formula .....1 Don't know .....2 Other means (specify) 8	
115	Who is responsible for transporting rapid HIV test kits to your facility? (Circle all that apply.)	Local supplier delivers .....A Higher level delivers .....B This facility collects .....C Other (specify) _____W	
116	What type of transportation is most often used for rapid HIV test kits?	Facility vehicle .....1 Public transportation .....2 Private vehicle .....3 Boat.....4 Motorcycle .....5 Bicycle .....6 On foot .....7 Other (specify) _____9	
117	On average, approximately how long does it take between ordering and receiving rapid HIV test kits?	Less than 2 weeks .....1 2 weeks to 1 month .....2 Between 1 and 2 months .....3 More than 2 months 4	

Consumables and Essential Drugs

117a	Title of person interviewed for this section	_____ _____ _____	
117b	Number of years and months you have worked at this facility?	Years: _____ Months: _____	

Do you use and fill out the following forms to manage consumables?

118	A. stock cards	Yes ..... 1 No 0	
	B. daily register	Yes ..... 1 No 0	
	C. other _____	Yes ..... 1 No 0	
119	Do you use ordering forms/reports for consumables?	Yes ..... 1 No 0	

Do you use and fill out the following forms to manage essential drugs?

120	A. stock cards	Yes ..... 1 No 0	
	B. daily register	Yes ..... 1 No 0	
	C. other _____	Yes ..... 1 No 0	
121	Do you use ordering forms/reports for essential drugs?	Yes ..... 1 No 0	
122	Do ordering forms/reports for essential drugs include the following?		
	A. stock on hand	Yes ..... 1 No 0	
	B. quantities used	Yes ..... 1 No 0	
	C. losses and adjustments	Yes ..... 1 No 0	
123	How often are ordering forms/reports for essential drugs sent to the higher level? (Circle all that apply.)	Monthly ..... A Quarterly ..... B Semi-annually ..... C Annually ..... D Other ..... W	

124	When was the last time you sent an order/report for essential drugs at this facility?	Never ..... 1 Within the last month ..... 2 2 months ago ..... 3 3 months ago ..... 4 More than 3 months ago 5	
125	How often are you supposed to send essential drugs reports to the higher level? (Circle all that apply.)	Monthly..... A Quarterly ..... B Semi-annually ..... C Annually ..... D Other ..... W	
126a	Are there any facilities that send ordering forms/reports for essential drugs and consumables to this facility?	Yes .....1 No 0	➔ 128
126	How many facilities are supposed to send ordering forms/reports for essential drugs to this facility?	|___|___|	
127	How many facilities submitted ordering forms/reports for essential drugs for the month of May 2005?	A. |___|___| B. Ask to see reports and check here if verified. (0=no; 1=yes) |___|	
128	How did you learn to complete the ordering forms/reports for essential drugs used at this facility? (Circle all that apply.)	Never learned.....A During a logistics workshop ....B On-the-job training .....C On-the-job (self-learning) .....D Other (specify) _____W	
129	How many emergency orders for medium latex gloves did you place in the last 3 months?	None..... 0 1 ..... 1 2 ..... 2 3 ..... 3 More than 3..... 4 NA/DK 9	
130	How many emergency orders for cotrimoxazole did you place in the last 3 months?	None..... 0 1 ..... 1 2 ..... 2 3 ..... 3 More than 3..... 4 NA/DK 9	
131	Who determines this facility's resupply quantities of essential drugs? (Circle all that apply.)	The facility itself ..... A Higher-level facility ..... B Other (specify) _____W	➔133
132	How does your facility determines resupply quantities of essential drugs?	Formula ..... 1 Don't know ..... 2 Other means (specify) _____8	

133.	Who is responsible for transporting essential drugs to your facility? (Circle all that apply.)	Local supplier delivers ..... A Higher level delivers ..... B This facility collects ..... C Other (specify) _____W	
134.	What type of transportation is most often used for essential drugs?	Facility vehicle ..... 1 Public transportation ..... 2 Private vehicle ..... 3 Boat..... 4 Motorcycle ..... 5 Bicycle ..... 6 On foot ..... 7 Other (specify) _____9	
135.	On average, approximately how long does it take between ordering and receiving essential drugs?	Less than 2 weeks ..... 1 2 weeks to 1 month ..... 2 Between 1 and 2 months ..... 3 More than 2 months 4	
136.	During the last year, did you receive supervisory visit for <u>essential drugs</u> that included drug management (e.g., stock cards checked, reports checked, expired stock removed, supplies checked)?	Never received .....1 Within the last month .....2 Within the last 3 months .....3 Within the last 6 months .....4 More than 6 months ago .....5 Other (specify) _____9	

ARV Drugs for ART

140a	Title of person interviewed for this section	_____ _____ _____	
140b	Number of years and months you have worked at this facility?	Years: _____ Months: _____	

Do you use and fill out the following forms to manage ARV drugs?

141	A. stock cards	Yes..... 1 No 0	
	B. daily register	Yes..... 1 No 0	
	C. other _____	Yes..... 1 No 0	
142	Do you use ordering forms/reports for ARV drugs?	Yes..... 1 No 0	
143	Do these ordering forms/reports for ARV drugs include the following?		

	A. stock on hand	Yes .....1 No 0	
	B. quantities used	Yes .....1 No.....0	
	C. losses and adjustments	Yes .....1 No.....0	
144	How often are ordering forms/reports for ARVs sent to the higher level? (Circle all that apply.)	Monthly.....A Quarterly .....B Semi-annually .....C Annually .....D Other (specify) _____W	
145	When was the last time you sent an order/report for ARV drugs at this facility?	Never .....1 Within the last month .....2 2 months ago .....3 3 months ago .....4 More than 3 months ago 5	
146	How often are you supposed to send ARV drugs reports to the higher level? (Circle all that apply.)	Monthly.....A Quarterly .....B Semi-annually .....C Annually .....D Other (specify) _____W	
14a	Are there any facilities that send ordering forms/reports for ARV drugs to this facility?	Yes .....1 No.....0	➔ 149
147	How many facilities are supposed to send ordering forms/reports for ARV drugs to this facility?	|___|___|	
148	How many facilities submitted ordering forms/reports for ARV drugs for the month of May 2005?	A. |___|___| B. Ask to see reports and check here if verified. (0=no; 1=yes) |___|	
149	How did you learn to complete the ordering forms/reports for ARV drugs used at this facility? (Circle all that apply.)	Never learned.....A During a logistics workshop ...B On-the-job training .....C On-the-job (self-learning) .....D Other (specify) _____W	
150	How many emergency orders for 1st line ARV drugs used for ART did you place in the last 3 months?	None.....0 1 .....1 2 .....2 3 .....3 More than 3.....4 NA/DK 9	

151	How many emergency orders for other ARV drugs for ART did you place in the last 3 months? *Specify drug(s)* _____	None ..... 0 1 ..... 1 2 ..... 2 3 ..... 3 More than 3 ..... 4 NA/DK 9	
152	Who determines this facility's resupply quantities of ARV drugs? (Circle all that apply.)	The facility itself ..... A Higher-level facility ..... B Other (specify) _____ W	➔154
153	How does your facility determine its resupply quantities of ARV drugs?	Formula ..... 1 Don't know ..... 2 Other means..... 8	
154	Who is responsible for transporting ARV drugs to your facility? (Circle all that apply.)	Local supplier delivers ..... A Higher level delivers ..... B This facility collects ..... C Other (specify) _____ W	
155	What type of transportation is most often used for ARV drugs?	Facility vehicle ..... 1 Public transportation ..... 2 Private vehicle ..... 3 Boat ..... 4 Motorcycle ..... 5 Bicycle ..... 6 On foot ..... 7 Other (specify) _____ 9	
156	On average, approximately how long does it take between ordering and receiving ARV drugs?	Less than 2 weeks ..... 1 2 weeks to 1 month ..... 2 Between 1 and 2 months ..... 3 More than 2 months 4	
157	When did you receive your last supervision visit for ART that included drug management (e.g., stock cards checked, reports checked, expired stock removed, supplies checked)?	Never received ..... 1 Within the last month ..... 2 Within the last 3 months ..... 3 Within the last 6 months ..... 4 More than 6 months ago ..... 5 Other (specify) _____ 9	

Thank your for you time and information. You have been very helpful. Our remaining questions will require looking at products in the storeroom and speaking with the person who oversees the store.

When in the Store Room (if with a different person):

Introduce all team members and ask facility representatives to introduce themselves.

Explain the objectives of this survey:

Good day. My name is _____. My colleague(s) and I are representing the Ministry of Health and Child Welfare in Harare. We are conducting a survey regarding the health commodity logistics system. We are looking at the availability of selected commodities and information about how you order and receive those products. We are visiting selected health facilities throughout the country; this facility was selected randomly to be in the survey. The objectives of the survey are to collect current information on logistics system performance and stock status of key health products.

This is not a supervisory visit and your name will not be recorded so that you may feel free to be candid in your responses to our questions. This is a system assessment and it is not looking at individuals' performance.

The results of this national survey will provide information to make decisions and to promote improvements. The survey may be conducted again in the future to measure changes in the logistics system.

We would like to ask you a few questions about the products and supplies available at this facility. In addition, we would like to actually count selected products you have in stock today and observe the general storage conditions. Do you have any questions?

No.	Question	Code Classification	Go To
201	Are stock cards for essential drugs recorded using the smallest unit of count?	Yes (always) ..... 1 No (not always)..... 0 Not applicable 9	
202	Are stock cards for consumables recorded using the smallest unit of count?	Yes (always) ..... 1 No (not always)..... 0 Not applicable 9	
203	Are stock cards for ARV drugs recorded using the smallest unit of count?	Yes (always) ..... 1 No (not always)..... 0 Not applicable 9	
204	Are stock cards for rapid HIV test kits recorded using the smallest unit of count?	Yes (always) ..... 1 No (not always)..... 0 Not applicable 9	
205	Is there a record where quantity of essential drugs dispensed to patients is recorded for inpatients?	Yes ..... 1 No 0	
206	Is there a record where quantity of essential drugs dispensed to patients is recorded for outpatients?	Yes ..... 1 No 0	
207	Is there a record where quantity of ARV drugs dispensed to patients is recorded for outpatients?	Yes ..... 1 No 0	

Table 1. Stock Status (January 2005 through June 2005 and the day of visit)

Column:
1. Name of all authorized products that will be counted
2. Unit of count for the product

Note*:* Columns 1 and 2 should be filled out before questionnaires are printed for the survey.

3. Whether or not the product is managed at this facility, answer Y for yes or N if no. Note that for some products, at certain levels all facilities should manage the product. In such cases, this column should be marked Y.
4. Check if the stock card is available, answer Y for yes or N for no.
5. If a facility does not have the unit of count preselected for the study (noted in column 2), record the unit of count which is actually used at this facility.
6. Check if the stock card had been updated within the last 30 days, answer Y for yes or N for no. Note: If the stock card was last updated with the balance of 0 and the facility has not received any resupply, consider the stock card up-to-date.
7. Record the balance on the stock card.
8. Record if the facility has had any stockout of the product during the most recent 6 full months before the survey, answer Y for yes or N for no.
9. Record how many times the product stocked out during the most recent full 6 months before the survey according to stock cards, if available, or to a key informant if not. Note source information.
10. Record the total number of days the product was stocked out during the most recent full 6 months before the survey.
11. Record the quantity of product dispensed to users (from register/reports) or issued from the storeroom (from stock card) during the most recent 6 months before the survey for all commodities except for ARVs. For ARVs take last two month's consumption. For HIV test kits and ARVs preferably use dispensed to user data from registers or reports. For consumables, amoxicillin, and cotrimoxazole use issues data (stock card).
12. Record data source. Indicate S for stock card (i.e., issues data), and R for reports or register (i.e., dispense to user data).
13. Record the number of months the issued data represents (may be less than 6); record the months for which there is any data recorded, including 0.
14. Record the quantity of product in the storeroom. Estimate to ¼ of a bottle for open containers or tablets.
15. Record if the facility is experiencing a stockout of the product on the day of the visit, *according to the physical inventory*, answer Y for yes or N for no.
16. Record the quantity of expired products. Count all expired products on the day of the visit. If there are products that are near expiry (within one week), note in the comments section.

Note: For any product that experienced a stockout in the last six months (including the day of the visit), please note reasons (by product).

Table 1a. Rapid HIV test kits

Product	Study Unit of count	Managed at this facility? (Y/N)	Stock card available? (Y/N)	Actual unit of count at this facility	Stock card updated? (Y/N)	Balance on stock card	Stockout most recent 6 months? (Y/N)	Number of stockouts (most recent 6 months)	Total number of days of stock-out(s)	Total dispensed (most recent 6 months)	Source of data (S stock card; R=report / register)	Number of months of data available	Physical inventory (in store room)	Stockout today? (Y/N)	Quantity of expired products
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Unigold	Test														
(PMTCT)															
Determine	Test														
(PMTCT)															
Chase buffer	Bottle														
(PMTCT)															
Oraquick	Test														
(PMTCT)															
Virocheck	Test														
(PMTCT)															
Unigold	Test														
(ART)															
Determine	Test														
(ART)															
Chase buffer	Bottle														
(ART)															
Oraquick	Test														
(ART)															
Virocheck (ART)	Test														

Comments:

Note: For any product that experienced a stockout in the last 6 months (including the day of visit), please note reasons (by product).

Table 1b. Injection safety consumables

Product	Study Unit of count	Managed at this facility? (Y/N)	Stock card available? (Y/N)	Actual unit of count at this facility	Stock card updated? (Y/N)	Balance on stock card	Stockout most recent 6 months? (Y/N)	Number of stockouts (most recent 6 months)	Total number of days of stock-out(s)	Total issued (most recent 6 months)	Source of issues data (S= stock card; R=report / register)	Number of months of data available	Physical inventory (in store room)	Stockout today? (Y/N)	Quantity of expired products
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Medium size disposable latex gloves	Glove														
Disposable syringe	5ml syringe														
Needle	Size 23G needle														
Needle	Size 21G needle														
Commercial sharps container	Cont-ainer														
Other sharps container Specify…… …… …..... (cardboard box, plastic container, etc)	Cont-ainer														

Comments:

Note: For any product that experienced a stockout in the last 6 months (including the day of visit), please note reasons (by product).

Table 1c. Drugs for managing opportunistic infections

Product	Study Unit of count	Managed at this facility? (Y/N)	Stock card available? (Y/N)	Actual unit of count at this facility	Stock card updated? (Y/N)	Balance on stock card	Stockout most recent 6 months? (Y/N)	Number of stockouts (most recent 6 months)	Total number of days of stock-out(s)	Total issued (most recent 6 months)	Source of data (S stock card; R report / register)	Number of months of data available	Physical inventory (in store room)	Stockout today? (Y/N)	Quantity of expired products
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Cotrimoxazole suspension	100ml Bottle														
Cotrimoxazole 480 mg	Tablet														
Amoxicillin 125mg suspension	100ml Bottle														
Amoxicillin 250 mg	Capsule														
Amoxicillin 500 mg	Capsule														
Diflucan 200 mg	Tablet														
Diflucan Injection	Vial														
Diflucan suspension	35 ml bottle														

Comments:

Note: For any product that experienced a stockout in the last 6 months (including the day of visit), please note reasons (by product).

Table 1d. ARV drugs

Product	Study Unit of count	Managed at this facility? (Y/N)	Stock card available? (Y/N)	Actual unit of count at this facility	Stock card updated? (Y/N)	Balance on stock card	Stockout most recent 6 months? (Y/N)	Number of stockouts (most recent 6 months)	Total number of days of stock-out(s)	Total dispensed (most recent 2 months)	Source of data (S stock card; R=report / register)	Number of months of data available	Physical inventory (in store room)	Stockout today? (Y/N)	Quantity of expired products
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Nevirapine PMTCT	200mg Tablet														
Nevirapine solution PMTCT	Milliliter														
Stalanev 30	30mg Tablet														
Stalanev 40	40mg Tablet														
Coviro 30	30mg Tablet														
Coviro 40	40mg Tablet														
Triviro 30	30mg Tablet														
Triviro 40	40mg Tablet														
Nevirapine (ART)	200mg Tablet														
Stavudine 30 mg	30mg Capsule														
Stavudine 40 mg	40mg Capsule														
Lamivudine	150mg Tablet														
Efavirenz	600mg Capsule														
Kaletra															
Videx 50 mg	Capsule														

Table 1d (continued). ARV drugs

Product	Study Unit of count	Managed at this facility? (Y/N)	Stock card available? (Y/N)	Actual unit of count at this facility	Stock card updated? (Y/N)	Balance on stock card	Stockout most recent 6 months? (Y/N)	Number of stockouts (most recent 6 months)	Total number of days of stockout(s)	Total issued (most recent 2 months)	Source of issues data (S=stock card; R=report / register)	Number of months of data available	Physical inventory (in store room)	Stock-out today? (Y/N)	Quantity of expired products
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Videx 200 mg	Capsule														
Retrovir 200 mg	Tablet														
Triomune 30															
Triomune 40															
Lamista 30															
Lamista 40															
Duovir															
Combivir															

Comments:

Table 2a. ARV Drug Storage Conditions (only assess main store)

Ask facility manager where the main storage area for ARV drug is located. _____. Assess storage condition of main storage area only. Place a check mark in the appropriate column based on visual inspection of the storage facility; note any relevant observations in the comments column. ***To qualify as "yes," all products and cartons must meet the criteria for each item.***

No.	Description	Yes	No	Comments
01.	Products that are ready for distribution are arranged so that identification labels and expiry dates and/or manufacturing dates are visible.			
02.	Products are stored and organized in a manner accessible for first-to-expire, first-out (FEFO) counting and general management.			
03.	Cartons and products are in good condition, not crushed due to mishandling. If cartons are open, determine if products are wet or cracked due to heat/radiation			
04.	The facility makes it a practice to separate damaged and/or expired products from usable products and removes them from inventory.			
05.	Products are protected from direct sunlight at all times of the day and during all seasons.			
06.	Cartons and products are protected from water and humidity during all seasons.			
07.	Storage area is visually free from harmful insects and rodents. (Check the storage area for traces of rodents [droppings or insects].)			
08.	Storage area is secured with a lock and key, but is accessible during normal working hours; access is limited to authorized personnel.			
09.	Products are stored at the appropriate temperature during all seasons according to product temperature specifications.			
10.	Roof is always maintained in good condition to avoid sunlight and water penetration.			
11.	Storeroom is maintained in good condition (clean, all trash removed, sturdy shelves, organized boxes).			
12.	The current space and organization is sufficient for existing products and reasonable expansion (i.e., receipt of expected product deliveries for foreseeable future).			

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

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

Additional guidelines for specific questions:

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

Item 3: Check cartons to determine if they are smashed due to mishandling. Also, examine the conditions of the products inside opened or damaged cartons to see if they are wet, cracked open due to heat/radiation or crushed.

Item 4: Conduct the discarding of damaged or expired products according to the facility's procedures (this may differ from one facility to another). 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 in a clinic with a key.

Item 16: Fire safety equipment does not have to meet international standards. Consider any item identified as being used to promote fire safety (e.g., water bucket, sand). Do not consider empty and/or expired fire extinguishers as valid fire safety equipment.

Table 2b. HIV Rapid Test Kit Storage Conditions (only assess main store)

Ask facility manager where the main storage area for HIV rapid test kit is located. _____. Assess storage condition of main storage area only. Place a check mark in the appropriate column based on visual inspection of the storage facility; note any relevant observations in the comments column. ***To qualify as "yes," all products and cartons must meet the criteria for each item.***

No.	Description	Yes	No	Comments
01.	Products that are ready for distribution are arranged so that identification labels and expiry dates and/or manufacturing dates are visible.			
02.	Products are stored and organized in a manner accessible for first-to-expire, first-out (FEFO) counting and general management.			
03.	Cartons and products are in good condition, not crushed due to mishandling. If cartons are open, determine if products are wet or cracked due to heat/radiation			
04.	The facility makes it a practice to separate damaged and/or expired products from usable products and removes them from inventory.			
05.	Products are protected from direct sunlight at all times of the day and during all seasons.			
06.	Cartons and products are protected from water and humidity during all seasons.			
07.	Storage area is visually free from harmful insects and rodents. (Check the storage area for traces of rodents [droppings or insects].)			
08.	Storage area is secured with a lock and key, but is accessible during normal working hours; access is limited to authorized personnel.			
09.	Products are stored at the appropriate temperature during all seasons according to product temperature specifications.			
10.	Roof is always maintained in good condition to avoid sunlight and water penetration.			
11.	Storeroom is maintained in good condition (clean, all trash removed, sturdy shelves, organized boxes).			
12.	The current space and organization is sufficient for existing products and reasonable expansion (i.e., receipt of expected product deliveries for foreseeable future).			

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

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

Additional guidelines for specific questions:

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

Item 3: Check cartons to determine if they are smashed due to mishandling. Also, examine the conditions of the products inside opened or damaged cartons to see if they are wet, cracked open due to heat/radiation or crushed.

Item 4: Conduct the discarding of damaged or expired products according to the facility's procedures (this may differ from one facility to another). 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 in a clinic with a key.

Item 16: Fire safety equipment does not have to meet international standards. Consider any item identified as being used to promote fire safety (e.g., water bucket, sand). Do not consider empty and/or expired fire extinguishers as valid fire safety equipment.

Table 3. LMIS Data Quality: Usable Stock on Hand at Time of Most Recent LMIS Report

Column:

1. List the same products as in table 1 or use a sample of those products. Include only those products that are managed by the facility. (Note: Do this before finalizing the questionnaire and making photocopies.)
2. Obtain the most recent LMIS report showing the selected products from MOHCW Central Office before going to the field or obtain a copy from the facility, and record the stock on hand from the LMIS report in column 2. If no report is available write none and go to the next product.
3. Write the quantity of usable stock on hand from the stock records from the time of the selected LMIS report.
4. Calculate the percentage of discrepancy by subtracting quantities of stock on hand from the LMIS report (column 2) from quantities of stock on hand from stock records (from time of LMIS report [column 3], divide this by quantities of stock on hand from stock record [column 3], and multiply by 100).
5. Note the reasons for any discrepancy.

Method/Brand/Product	Usable Stock on Hand			
	According to most recent LMIS report	From stock ledger or stock cards from time of LMIS report	% Discrepancy (col.3 col.2/col.3) *100	Reasons for discrepancy
1	2	3	4	5
Unigold test (PMTCT only)				
Cotrimoxazole 480 mg Tablet				
Diflucan Tablet				
Nevirapine Tablet PMTCT				
Stalanev 30mg Tablet				
Lamivudine 150mg Tablet				

Table 4. Percentage Difference between Quantity Ordered and Quantity Received

Begin by asking when the product was last received and work backwards to look for that order

Column:
List the same products as in table 1 or use a sample of those products. (Note: Do this before finalizing the questionnaire and making photocopies.)
Enter the quantity ordered for the last order period for which products should have been received (i.e., don't include open orders whose expected receipt date has not arrived).
Enter the date the order was placed.
Enter the quantity received in the last order.
Enter the date the order was received.

Method/Brand/Product	Quantity Ordered for Last Order Period	Date Order Placed	Quantity Received in Last Order/Procurement	Date Order Received
1	2	3	4	5
Unigold test (PMTCT only)				
Cotrimoxazole 480 mg Tablet				
Diflucan Tablet				
Nevirapine Tablet PMTCT				
Stalanev 30mg Tablet				
Lamivudine 150mg Tablet				

Ask the person/people you interviewed if they want to ask you any questions.

Comments or general observations on products management:

Thank the person/people who talked with you. Reiterate how they have helped the program achieve its objectives, and assure them that the results will be used to develop improvements in logistics system performance.

Notes/Comments

Appendix 6: Logistics System Assessment Interview Guide

1. Who are the main suppliers of commodities being assessed?
2. Describe the procedures that are followed in procurement of the commodities being assessed
3. Describe the procedures for:
   a. managing and using the logistics management information system?
   b. forecasting quantities needed?
   c. procurement?
   d. inventory management, storage, and distribution?
   e. product selection?
   f. staffing of logistics positions?
   g. budgeting for the logistics system?
   h. supervision and staff development?
4. Are there documented guidelines for the above activities?
5. Do LMIS or other information system reports received at the central level provide information on stock status at the SDP level (i.e., do central level staff have accurate routine information on which SDPs are stocked out, understocked, adequately stocked, or overstocked)? Explain
6. What is the approximate percentage of information system reports received in time to be used for logistics decisions at each level of the system?*
7. Explain how forecasting is done:
   a. dispensed-to-user data?
   b. distribution/issues data?
   c. stock on hand at all levels?
   d. demographic data or disease prevalence/morbidity?
   e. service statistics?
   f. are forecasts validated by comparing previous estimated consumption with actual consumption?
8. Has a quantification and or forecast of the national requirements for the program (ART, Diflucan, PMTCT) been conducted? If so when was the first quantification done? When was the last quantification done? Are forecasts updated at least annually?
9. Is pipeline status regularly monitored so that procurement decisions can be made and actions can be initiated in time to avoid stockouts?
10. Describe the challenges that the program is currently facing in logistics management of the selected HIV and AIDS commodities.

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