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Ethiopia

International Trachoma Initiative

Zithromax[®] Logistics
System Audit and
Assessment

September 18-28, 2006

Lea Teclemariam



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John Snow, Inc. (JSI) is a U.S.-based health care consulting firm committed to improving the health of individuals and communities worldwide. Our multidisciplinary staff works in partnership with host-country experts, organizations, and governments to make quality, accessible health care a reality for children, women, and men around the world. JSI's headquarters are in Boston, Massachusetts, with U.S. offices in Washington, D.C.; Concord, New Hampshire; and Denver, Colorado. We maintain offices in more than 40 countries throughout the developing world.



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Acronyms

AMREF	African Medical Research Foundation
FEFO	First-to-expire, first-out
ITI	International Trachoma Initiative
LMIS	Logistics Management Information System
PSLD	Pharmaceutical Supplies and Logistics Department
RBH	Regional Health Bureau
SAFE	Strategy combining surgery, antibiotics, facial cleanliness and environmental improvement
SNNPR	Southern Nations Nationalities People's Region

Background

In mid-2005, Ethiopia had an estimated population of 77.4 million¹. Most of Ethiopia's population, 85% of whom live in rural areas, is believed to be at risk of trachoma. No national prevalence data are yet available, but in Amhara Region about 88% of children are infected with *Chlamydia trachomatis*, and trichiasis rates in persons 15 years and older range from 2.5 to 7.1%².

Research conducted in the early 1990s led to the SAFE Strategy which combines *surgery, antibiotics, facial cleanliness and environmental improvement* to fight trachoma. This research also proved that a single oral dose of the antibiotic azithromycin could replace the six-week course of therapy with topical tetracycline eye ointment. With this overwhelming evidence, in 1998, the World Health Assembly called for global elimination of blinding trachoma by the year 2020. This was further highlighted in 2005 for member countries when they were challenged to develop a national VISION 2020 plan in partnership with WHO and collaboration with NGOs and the private sector in support of the global initiative to eliminate preventable blindness.

Key to this proposal has been the International Trachoma Initiative (ITI), which was founded in 1998 by the Edna McConnell Clark Foundation and Pfizer Inc. to eliminate blinding trachoma, the world's leading cause of preventable blindness³. ITI supports national trachoma control programs in countries where the disease is endemic to identify trachoma control target areas and develop national plans for the SAFE Strategy. Pfizer, Inc. plays a significant role in the antibiotic component of the strategy by donating their anti-chlamydial drug, azithromycin (Zithromax[®]).

In 2002, ITI began work in Ethiopia in collaboration with ORBIS. In 2003, the number of partners working with ITI expanded to include the Carter Center and WorldVision in addition to ORBIS. These groups supported implementation of the SAFE Strategy in two regions of Ethiopia (Amhara and Southern Nations Nationalities People's Region (SNNPR)) and in three woredas (districts). Then in 2004, ITI established an office in Ethiopia.

In 2005, ITI's support expanded to two more regions (Afar and Tigray) in partnership with the Tigray Regional Health Bureau and the African Medical Research Foundation (AMREF), supporting 27 woredas in the 4 regions. Implementation of the SAFE Strategy including treatment with Zithromax expanded more than six-fold between 2003 and 2005, from 394,786 treatments in 2003 to 2,618,488 treatments in 2005. Ethiopia's program now covers about 20% of affected districts, and the full SAFE Strategy is being implemented in areas within all of the program districts (refer to Figure 1).

Until the end of 2005, ITI was providing program funds for the implementation of the SAFE Strategy. Beginning in 2006, ITI is focusing efforts on facilitating the provision of Zithromax and working on policies regarding the elimination of blinding trachoma. WorldVision is not participating presently since they do not have funds for Zithromax distribution. Table 1 shows the current partners, regions and number of woredas currently being supported by ITI. Figure 1 shows the districts in Ethiopia where the Safe Strategy is being implemented.

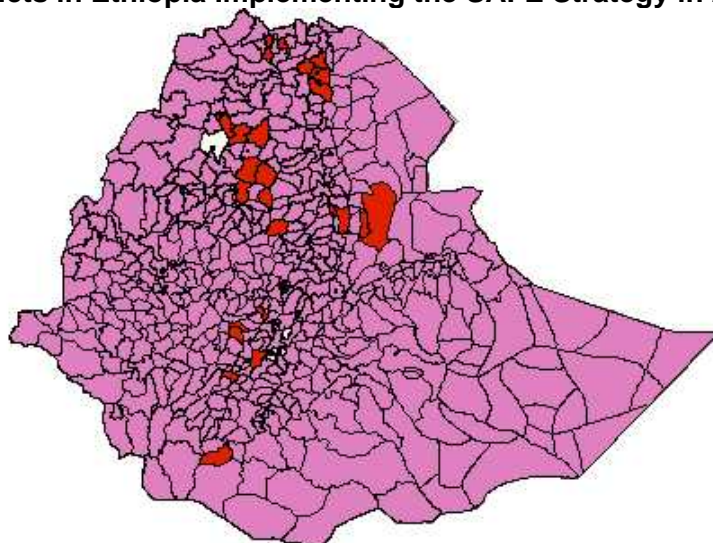
1 2005 World Population Data Sheet of the Population Reference Bureau

2 The Seventh Meeting of the International Task Force for Disease Eradication (ITFDE), January 19, 2005

3 2006, ITI website, About ITI, History and Mission of ITI (<http://www.trachoma.org/history.php>)

Table 1: Partners in Ethiopia and Number of Woredas supported

Regions	Number of Woredas	Partners
Amhara	23	Carter Center
SNNPR	15	ORBIS International
Afar	6	African Medical Research Foundation
Tigray	9	Tigray Regional Health Bureau
Total number of woredas	53	

Figure 1: Districts in Ethiopia Implementing the SAFE Strategy in 2005

Project areas are shaded in red or appear dark grey, depending on how you view this document.

In 2005, program funds were provided to the Oromia region according to the national plan that included the region in SAFE Strategy implementation in 2006. However, implementation has been stalled due to the lack of capacity at the regional level to conduct a baseline survey, which is a prerequisite to implementation of the strategy components. Therefore, the program efforts currently focus on four regions.

In 2005, a total of \$503,828 was allocated by ITI for the Ethiopia program to support administration, surveys, surgery, antibiotics, face washing, environmental improvement and monitoring and evaluation.

In 2006, ITI is providing \$182,438 for program support and operating expenses for the ITI/Ethiopia office. The cost of other program activities is to be funded by partners and the Ethiopian government. The goal for 2006 is to provide 5,541,237 treatments with Zithromax.

Purpose of the assessment/audit

The purpose of the assessment is to conduct a logistics field assessment/audit in four regions of Ethiopia using previously customized and tested tools examining supply management issues and the customs clearance process for Zithromax. The information gathered using these tools will guide country-specific supply management, and where necessary, region-specific recommendations for ITI. In addition, if warranted, results will be used to make recommendations on how ITI can effectively interface with the country's customs clearance system. The terms of reference for the assessment/audit can be found in Appendix A.

Methodology

The assessment/audit was conducted using the four generic tools developed by JSI for ITI. Copies of the tools are available from Dr. Amos Sam Abbenyi at ITI in New York.

- ❖ The *Supply Management Audit Customs Clearance Tool* is used to collect information on the clearance process of Zithromax once the shipment arrives in the country.
- ❖ The *Qualitative tool* is used to interview program staff at national and lower levels on the following topics: staffing and organizational support, logistics information management system, forecasting, inventory control procedures, warehousing and storage, quality assurance, transport and distribution, product use and financing.
- ❖ The *Quantitative tool* is used to interview the warehouse manager and/or the store pharmacist stocking Zithromax at different levels of the logistics system on logistics forms being used in the stores, and on use of the logistics information collected. This tool also includes assessment of the maintenance of forms and storage space and capacity, and data accuracy on forms.
- ❖ *Zithromax Simulated Purchase Guidelines* are used to determine whether the donated product has been diverted to the private sector for purchase in the retail market.

The assessment teams were comprised of the partner organizations supporting the trachoma initiative (the Regional Health Bureau in the case of the Tigray Region), JSI logistics advisors, and ITI/Ethiopia and ITI/New York personnel (see Appendix B).

Sites visited

The sites visited were selected under mutual agreement between partners and ITI considering which woreda were easily accessible from the capital of each region given the four days allotted for fieldwork. Three sites were visited at the central level: The National Blindness Prevention Program under the Communicable Disease Department of the Ministry of Health; The Procurement, Supplies and Logistics Department (PSLD) responsible for clearing Zithromax upon arrival in country; and the central warehouse where the product is stored.

Table 2 shows the regions, woredas, and the number of private pharmacies included in the assessment. To determine whether Zithromax has been diverted to the private sector for purchase in the retail market, a total of 15 private pharmacies (urban and rural) were visited.

Table 2: Regions, Woredas and Number of Private Pharmacies included in the Assessment

Regions	Woredas	Number of private Pharmacies
Afar	Gewan	2
Amhara	Bahir Dar	3
	Libokemkem	
SNNPR	Wolkite	3
	Bolososore	
Tigray	Kiliteawlaelo	7
	Workru Town	

Summary of Findings

Custom Clearance Process

The PSLD is the recipient and there are three consignees of the Zithromax donation: AmeriCares, ORBIS and the Carter Center. Prior to the arrival of the shipment, the department receives pre-shipment advice. Once the product arrives in country, this department clears the shipment in about ten days (from notification from customs with necessary documents to transporting the product to the central warehouse). To clear the shipment through customs, the PSLD provides the tax exempt certificate and the inspection report. All fees (taxes and duties) are waived and the department is only responsible for the payment of demurrage charges, if these charges are incurred. Upon the arrival of Zithromax at the central warehouse, a physical inspection is conducted by the team responsible for this activity in the department. If problems are identified with product quality during inspection a report is given to the storage and distribution team leader for follow-up.

Central Level Findings

Organizational Support

The last round of campaigns for Zithromax distribution began in January 2006 and lasted until July 2006. The intervention is being implemented in each woreda for a period of about 15 days as mass treatment with door-to-door treatment for those who were absent during the campaign.

Activities of the National Blindness Prevention Program within the Ministry are implemented by the Task Force for Trachoma Control, a subcommittee of the National Committee for Prevention of Blindness chaired by the MOH with ITI as the secretary. The committee includes all stakeholders involved in implementing the SAFE Strategy and provides key support to the program in all four components of the SAFE Strategy. The program plays a minimal role in most of the logistics functions, except for clearing Zithromax through customs upon arrival in country and storing the product at the central warehouse. Most of the other functions are decentralized to the regional and woreda levels.

The PSLD is also responsible for the supervision of the storage and distribution team. However, monitoring performance of logistics staff is not provided due to understaffing in the program and the PSLD. Partners monitor implementation of the program during the campaign and provide guidelines detailing the responsibilities of staff involved in the distribution of Zithromax. However, there is currently no comprehensive guideline.

Forecasting

Prior to the start of the campaign, census data and expected target population coverage is used to determine the number of people to receive treatment in each catchment area for the first round. Service statistics are used to estimate the number of treatments for subsequent rounds.

The national policy for the treatment of Trachoma stipulates that babies up to a year old and pregnant women cannot be treated with Zithromax. In accordance with this policy, ITI reviews

forecasted quantities of Zithromax need that is submitted by partners from the regions on a yearly basis. The following assumptions are used when reviewing the forecasts.

- ✓ 100% of population – 4% (< than 1 year) – 4% (pregnant women) = 92% eligible population (according to the national policy for trachoma treatment)
- ✓ Of the eligible population (92% of total population) 15% are children 12-59 months and 85% are older than 60 months (5 years)
- ✓ 85% coverage is the target and 1% wastage is anticipated
- ✓ For tablets, an average of 3.03 tablets per person and for pediatric oral suspension, 1 bottle treats 2.97 children (figures include wastage)

Logistics Management Information System

The logistics management information system at the central level for Zithromax consists of two logistics forms (Models) used for all commodities: Model 19 for receipts and Model 22 for issues. Logistics data (stock on hand and quantities dispensed) collected from regions are received, processed by partner organizations and forwarded to ITI upon ITI's request. As a result, logistics data are received by partners but they are not used for logistics decision making at the program level.

Although stock cards for Zithromax were available in the warehouse, these were not usually updated. The quantities of products recorded on stock cards did not match quantities from physical inventory taken on the day of the visit. In addition, it was not possible to reconcile the data based on any other source of information, such as reports. Table 3 shows the percentage of discrepancy, which was found to be significant for tablets at 166%. Even when allowing for a margin of error, discrepancies should not exceed 10%.

Table 3: Percentage of discrepancy between balance on stock card and balance from physical inventory

Product	Unit	Balance on stock card	Balance from physical inventory	Percentage of discrepancy
Zithromax tablets	Bottle	26,064	9,792	166%
Zithromax POS	Bottle	118,320	112,272	5.4%
Measuring cups	Cup	709,920	673,632	5.4%

Transport, Storage and Distribution

Transport and distribution of Zithromax is funded and facilitated by partners. Products are transported from the central warehouse to the zones and in the case of Tigray to the Regional Health Bureau, and in turn to the woreda stores to be distributed during the campaign.

Inspection of the central warehouse indicated that the warehouse met 10 out of 16 storage conditions that serve as proxies to evaluate if the facility is adhering to storage guidelines that prevent common drug quality problems. Notably, the warehouse did not meet some of the

criteria to ensure maintenance of product quality such as managing products according to first-to-expire, first-out (FEFO) and maintaining the roof's integrity to avoid sunlight and water penetration. Examination of the central warehouse also indicated that the current storage space would not be sufficient for future program expansion.

Regional and Woreda Level Findings

There were similar findings in supply management for all the regions visited. These findings are therefore summarized below to give a comprehensive view of the logistics system for Zithromax at the regional and woreda levels. Strengths and weaknesses in the logistics components for each region are presented in Appendix C.

Organizational Support

Partners implementing the program in the different regions have developed guidelines in different formats and in varying degrees of detail on roles and responsibilities during the campaigns. None of the guidelines reviewed included logistics components. The guidelines are made available to the blindness prevention program coordinators at the woreda level and staff also receive 2-3 day training in using the guidelines prior to the start of the program. During the campaign, on-the-job training is provided to improve performance and in some cases during daily review meetings. Consequently, performance monitoring and supervision take place daily during the campaign.

Products are managed (received, stored and issued) by the store pharmacist who is supervised by the woreda program coordinator.

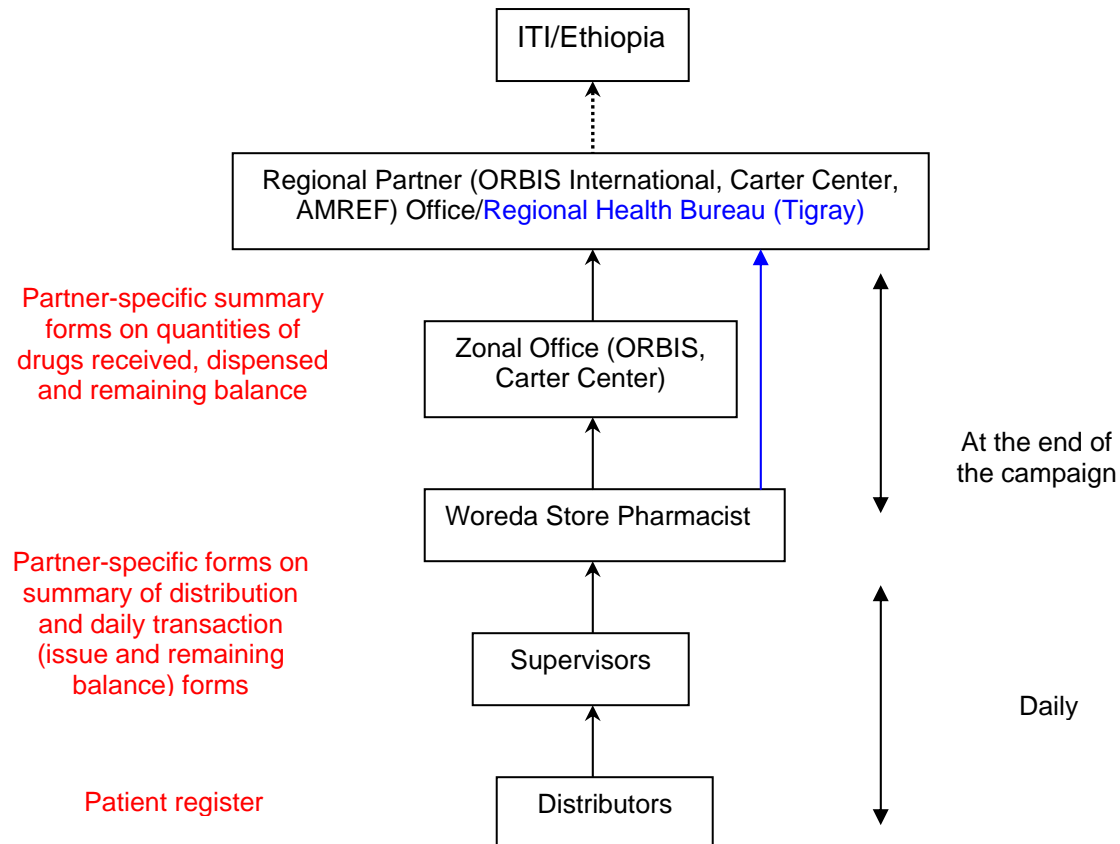
Logistics Management Information System (LMIS)

Before the Zithromax distribution campaign commences, the woreda stores receive the products from either the regional (for Tigray region) or zonal warehouses with the corresponding Model 19 and 22 forms specifying the quantities issued. In the woreda stores, stock cards are supposed to be used to manage all drugs but only one out of the six stores visited actually uses stock cards to manage Zithromax. Practices of drug management could not be observed in Gewane woreda store in the Afar region because stock for this region was stored in the AMREF store in Addis.

During the campaign, the supervisors collect Zithromax from the store and make it available to the distribution teams. Quantities issued from the store are based on the list of people to be treated from the census data. Forms to track daily transactions are developed by the partner organization in the region. These forms track product movement from the stores to the supervisors and the remaining balance at the end of each day when supervisors return to the store. This method of recording the daily transactions has proved to be unwieldy and prone to error.

Data on drugs dispensed is checked against the register by the supervisor and a summary report is provided to the program coordinator in the woreda. Thereafter, the program coordinator is responsible for compiling the data on total quantities of drugs dispensed and percent coverage. They then report to the partner and the RHB. Figure 2 depicts the flow of information on Zithromax through the program.

Figure 2: Logistics Information Flow for Zithromax



Reporting from woredas to the partners is generally done at the end of the campaign and reports are received on time. Similar to the forms used at the lower level, there is no uniformity in the format of the reports; they have different formats that are specific to the partner in that region. In addition, reports do not contain all the necessary logistics data such as losses (e.g., expiries and wastage) and adjustments (e.g., quantities redistributed) and stock on hand (i.e., remaining balance in the woreda store).

Forecasting

To estimate quantities of drugs needed, woredas send partners census data that they collect. Partners then forecast based on assumptions that may differ by region. ITI/Ethiopia therefore reviews the forecasts for each region individually to determine the quantities needed.

Warehousing and Storage

Storage facilities at the regional level, except for Afar, were found to generally meet the sixteen expected conditions for storing Zithromax. Certain procedures for storage that are critical for maintaining the quality of the drug, such as FEFO, are lacking in some woreda stores and clear storage guidelines were not observed. In all of the regions visited, storage space capacity in the woreda stores is not sufficient for program expansion, especially in the Amhara region where implementation of the SAFE Strategy is planned to cover the entire region.

In the majority of the woredas, except in the Amhara region, empty bottles were found outside the warehouse and no clear guidelines on disposal were observed. In the case of Tigray region, woredas visited expressed their preference to recycle bottles but they are awaiting a directive from the RHB. On the contrary in Amhara region, the decision on empty bottle disposal is handled by the woreda committee and the region is not involved.

Transport and Distribution

Transportation of Zithromax is well organized and there is strong collaboration with other partners both in the public and private sectors. Distribution plans for transport are prepared well in advance of the campaign. Products are received in the correct amount and occasionally, the woreda notifies the partner of the need for additional stock prior to the start of a campaign. Stock remaining at the end of a campaign in a woreda is returned to the Woreda Health Office warehouse and is taken to other Zithromax distribution sites in other woredas if it is needed. In Tigray region, the stock is returned to the RHB and it is re-entered on a stock card awaiting distribution for an upcoming campaign in another woreda to facilitate stock movement tracking.

Product Use

Supervisors and distribution teams are trained in the treatment guidelines and provided with a copy of the guidelines for their reference. The guidelines, which contain dosages for adults and children, is translated into the local languages indigenous to the regions and disseminated to staff involved in Zithromax distribution. One complaint noted from the staff is the lack of guidance for children four and five years old. The current guidelines describe dosages for children 1-4 years and >5 years. This leaves out five year olds and it is also confusing since there is a perception that the age bracket of 1-4 years means one year up to four years as opposed to one year through four years.

The country relies on the manufacturer's certificate of analysis as a guarantee for the quality of Zithromax.

Financing

Zithromax distribution in all of the regions except Tigray is supported by partners in the regions. The budget includes cost for the logistics information system (forms) and transportation. Although there has not been a shortage of funds causing program interruption, most of the regions have expressed that current funds are not sufficient for transportation and for program

expansion. In addition, the budgets for Zithromax distribution do not include funds for staff development in logistics.

To reduce the cost of distribution of Zithromax, the Ministry has developed a policy of deploying Community Health Extension Workers during the campaign to dispense drugs. So far, the campaigns have not been conducted by Community Health Extension Workers.

Availability of Zithromax in the Retail Market

Out of the 15 pharmacies visited, only one pharmacy carried the Pfizer-donated Zithromax in Mekele, capital city of the Tigray Region. The tablets were sold for 4 birrs (\$0.46 at 8.7 birrs/\$1). Although a prescription is required for antibiotics, most pharmacies are willing to sell antibiotics without a prescription and do not recommend a visit to a health care provider.

Recommendations

- **Develop a comprehensive guide on service provision and logistics management before, during and after a Zithromax distribution campaign including disposal of empty bottles.**

The guide should contain clear guidelines for dispensing Zithromax with dosing for the relevant age brackets and especially for children 12-59 months. The logistics component of the guide should include inventory tracking, general management of Zithromax including storage guidelines in the regional and woreda stores, and data management during and after distribution. This should be a step-by-step guide detailing the responsibilities of all staff involved in the distribution of Zithromax at all levels of the system (i.e., regional, zonal, woreda and distribution sites). The guide should also consist of job-aids for filling out the LMIS forms used during Zithromax distribution campaign. Options on disposal of empty bottles should also be included in the absence of a clear policy on the handling of empty bottles.

- **Increase active involvement of the Blindness Prevention Program and ITI in the logistics management of Zithromax, especially in logistics data management and in the monitoring and supervision at the central warehouse.**

Logistics management of Zithromax, especially monitoring of logistics data, should be reinforced. Tracking stock movement and receiving reports on quantities dispensed and stock on hand are critical at the central level to maintain adequate stock and most importantly to avoid wastage. A discrepancy of 166% between physical inventory count and quantities recorded on stock cards calls for attention in tracking product movement and data management to make informed decision. Furthermore, the Blindness Prevention Program and ITI need to collaborate to monitor logistics performance in the central warehouse for the management of Zithromax.

- **Design a logistics information system encompassing daily transaction forms and summary reports with the three essential logistics data items (i.e., quantities dispensed, stock on hand, losses and adjustments).**

There is a great need to develop simple daily transaction forms for the monitoring of stock during the campaign period. This will simplify the data management at the woreda and distribution site levels and facilitate tracking and monitoring at the higher levels (i.e., regional and central). Although product loss was reported to be minimal in all regions, losses are not recorded. Tracking product loss using LMIS forms will provide an indicator at the program level. Similarly, redistribution can be recorded as the same column on the forms can be used for adjustments. A suggested daily transaction form is included in Appendix D.

- **Collaborate with organizations supporting the improvement of logistics system management in the country to leverage on performance improvement activities for staff involved in the distribution of Zithromax.**

The program should identify opportunities for staff development. For cost effective measures, the program could identify existing trained staff in logistics in the woredas where the intervention is being implemented to build capacity of those involved during the campaign. In instances where logistics performance improvement activities are provided, the

program should liaise with relevant organizations to involve staff responsible for Zithromax distribution.

- **Mobilize resources for logistics management of Zithromax, including funds to support program expansion.**

The program should advocate for its activities at the national level to mobilize resources for the distribution of Zithromax. Simultaneously, regions should take cost effective measures such as using community health extension workers during the campaigns to dispense drugs. This need is further highlighted in the only region in the country, Tigray, that is self sustaining in the distribution and administration of Zithromax, where the RBH had to leverage resources in order to use the Zithromax stock available.

- **The regional health bureaus and partners in the regions should encourage staff managing Zithromax to apply their essential drug logistics knowledge and practice for the management of Zithromax.**

Staff at the woreda and distribution site levels view Zithromax as a fast moving product that will only be managed during the short period of the campaign. As a result, in some regions stock cards though available were not used for Zithromax. Partners at the regional level supervising staff should therefore promote the application of their essential drug logistics management knowledge and practice to manage Zithromax.

- **The central warehouse, regional health bureaus, woreda level storage facilities and partner organizations should conduct physical inventories of Zithromax stock at the end of each campaign. This will allow the program and ITI/Ethiopia to track stock better and to use the data on stock levels in subsequent Zithromax forecasts.**

It has been established that no physical inventory has been conducted in Ethiopia since the inception of the trachoma control program. Physical inventory should be systematically conducted at least once a year at the end of a campaign in all sites that handle the donated antibiotic. Similarly the central warehouse should conduct a physical inventory after each Zithromax transaction to keep track of stock movement and stock levels. Conducting regular physical inventories and having higher level authorities review the data help to avoid wastage and prevent or identify possible leakage of the donated product away from the trachoma control efforts.

Appendix A: Terms of Reference

JSI public health logistics consultants will work with ITI staff to conduct a logistics field assessment/audit in four regions of Ethiopia using a previously customized and tested tool examining supply management issues of particular concern to ITI. JSI will draft country-specific supply management recommendations for ITI and Pfizer related to the donated Zithromax[®] used to control trachoma in Ethiopia. JSI will also describe the customs clearance process for the donated Zithromax in Ethiopia and make recommendations on how ITI can effectively interface with the country's system.

The deliverable of this consultancy is a technical report that will include the following.

- A report including information on:
 - the accuracy and timeliness of inventory control measures at sites included in the assessment
 - timeliness of submission of forecasting data for the manufacturer
 - security measures
 - storage conditions and
 - transportation security and transportation conditions.
- Region-specific (i.e., Amhara, SNNPR, Afar, and Tigray) and national supply management recommendations addressing:
 - program expansion
 - periodic mass distributions of Zithromax
 - indicators of product loss
 - inventory tracking before, during and after mass distributions
 - FEFO procedures
 - redistribution practices
 - management of empty bottles (reconciliation with dispensing data and discard/defacing procedures)
 - monitoring activities to be undertaken by ITI in-country staff
 - policies and procedures that may be needed and
 - information needed, if any, to generate data on inventory and expiry dates of Zithromax in Ethiopia.
- Description of the customs clearance process for Ethiopia with recommendations on how ITI might more efficiently interface with the country's system.

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Appendix B: Assessment Team & Contacts

Audit/Assessment Team Members

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Aberash Belete, Tigray Regional Health Bureau
Muluken Asres, Carter Center
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Dr. Zeleke Gobie, ORBIS International
Dr. Muluken Melesse, AMREF

Contact Persons

Addis Abeba

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Tsegaye Bedane, Blindness Prevention Expert, MOH

Afar Region

Gewane Woreda

Dr. Muluken Melesse, Program Head
Jewal Yusuf, Family Health Manager
Tadesse Feseha, Acting Program Coordinator

Amhara Region

Mulat Zerihun, The Carter Center Regional Trachoma Coordinator

Bahir Dar Zuria Woreda

Dessalegn Taffere, HIV/AIDS Prevention Expert & Focal Person, Trachoma Control
Yismaw Wondimagn, Health Assistant

Libokemkem Woreda

Moges Asmare, Head, Woreda Health Office
Mituku Reta, Disease Control & Prevention Desk Officer and Focal Person for Trachoma
Yetemegn Abebe, Acting Store Keeper

Gurage Region

Gurage Zonal Health Department

Alemu Berta, Supervisor
Birhanu Fikre, Distributor/MCH coordinator
Endeshawyesus Alemu, Pharmacist

Bolososore Woreda

Bergene Mathios, Training Team Leader/Supervisor
Wondifraw Asrat, Pharmacist/Woreda Health Office

Trigray Region

Regional Health Bureau

Araya Kahsu, Deputy Head
Aberash Belete, Prevention of Blindness Focal Person
Zeradawit Negusse, Store Pharmacist
Gide Gebrehiwot, Warehouse Manager

Kiliteawlaelo Woreda

Rea Hadera, Program Coordinator
Desta Kahsay, Supervisor
Gebrehiwot Gebretsadik, Store Pharmacist
Moges Dagneu, Woreda Pharmacist

Wukro Town Woreda

Kiros Demwoz, Health Extension Expert

Appendix C: Strengths/Weaknesses/Recommendations by Region

Blindness Prevention Program and Central Warehouse (Addis)

	Strengths	Weaknesses	Recommendations
Staffing and Organizational Support	<ul style="list-style-type: none"> ▪ Zithromax Distribution Guideline being developed ▪ Development of 5 year strategic plan 	<ul style="list-style-type: none"> ▪ Understaffed program ▪ No mechanisms exist for improving staff performance ▪ De-motivated and poor capacity warehouse staff ▪ No M&E activities undertaken by the program 	<ul style="list-style-type: none"> ▪ Learn from the experiences of Lions Club in Cataract Campaigns ▪ Collaborative program management (FMOH staff should participate in the campaign) ▪ M & E guidelines for Cataract intervention ▪ FMOH must play program ownership role ▪ Collect and analyze data and use results for decision making jointly with partners ▪ Issue and order quantities should be determined by MOH ▪ FMOH/NBPP should play key role in forecasting like other program departments ▪ FMOH should work with DACA to implement laboratory testing of imported Zithromax ▪ Program should be more focused in mobilizing resources to: <ul style="list-style-type: none"> ▪ Improve staff efficiency ▪ Improve supply management ▪ Scale up intervention (limited to 4 regions)
Logistics Management Information System (LMIS)	<ul style="list-style-type: none"> ▪ Reports sent monthly from store -> PSLD -> Management/Program ▪ Use of stock cards and bin cards 	<ul style="list-style-type: none"> ▪ Flow of information exclusively managed by partners (No feedback to FMOH) 	
Forecasting		<ul style="list-style-type: none"> ▪ Exercised by partners; minimal input from FMOH 	
Inventory Control Procedures		<ul style="list-style-type: none"> ▪ Quantity to order and quantity to issue are determined by partners only 	
Warehousing and Storage		<ul style="list-style-type: none"> ▪ FMOH role limited to port clearance and storage 	
Quality Assurance	<ul style="list-style-type: none"> ▪ Good collaboration with Drug Authority Control Agency for product inspection 	<ul style="list-style-type: none"> ▪ No laboratory inspection of Zithromax 	
Transport and Distribution	<ul style="list-style-type: none"> ▪ Timely distribution during campaigns 		
Product Use			
Financing		<ul style="list-style-type: none"> ▪ Limited government funding to the program 	

Afar Region

	Strengths	Weaknesses	Recommendations
Staffing and Organizational Support	<ul style="list-style-type: none"> ▪ Regular/daily supervision during the campaign ▪ Written guidelines ▪ Well trained on the guidelines 		
Logistics Management Information System (LMIS)	<ul style="list-style-type: none"> ▪ Daily tracking of actual consumption ▪ Data on number of patients treated 	<ul style="list-style-type: none"> ▪ Information system does not include SOH, losses and adjustments 	Standardize LMIS that contains information for decision making (consumption, SOH and losses and adjustments) across the country
Forecasting	<ul style="list-style-type: none"> ▪ Will use service statistics in the coming campaign 	<ul style="list-style-type: none"> ▪ Poor forecasting practice in the previous campaign (<50% accuracy) 	Use service statistics, coverage rate and consumption
Inventory Control Procedures	<ul style="list-style-type: none"> ▪ Amount request is obtained ▪ Procedure to prevent emergency order and less than 1 hour lead time ▪ No expiration and damages so far 	<ul style="list-style-type: none"> ▪ No form to track complete logistics data ▪ Amount requested is usually higher than amount dispensed 	
Warehousing and Storage	<ul style="list-style-type: none"> ▪ Stored in Addis ▪ Sufficient shelf space in Afar 	<ul style="list-style-type: none"> ▪ Not air conditioned at the site >30°C 	Provide air conditioner for the store Rearrange woreda warehouse
Quality Assurance	<ul style="list-style-type: none"> ▪ Physical inspection mostly expiration date 		
Transport and Distribution	<ul style="list-style-type: none"> ▪ Budget planned and prepared ▪ Sufficient ▪ Alternative transportation (private) 		
Product Use	<ul style="list-style-type: none"> ▪ Standard treatment guidelines are followed 		
Financing	<ul style="list-style-type: none"> ▪ The following are financed: LMIS, transportation, use of woreda store during campaign 	<ul style="list-style-type: none"> ▪ No budget for logistics staff development and waste disposal 	Provide resources for warehouse improvement, staff development in logistics and waste management

Amhara Region

Regional Health Bureau

	Strengths	Weaknesses	Recommendations
Staffing and Organizational Support	<ul style="list-style-type: none"> ▪ Manuals and treatment guideline used 	<ul style="list-style-type: none"> ▪ Lack of logistics components in manuals 	Update manuals while incorporating logistics components
Logistics Management Information System (LMIS)	<ul style="list-style-type: none"> ▪ Forms available and used during mass treatment campaigns ▪ Logistics data used for annual program reviews ▪ TCC reconciles data with treatment reports and supervisor reports 	<ul style="list-style-type: none"> ▪ Difference forms for stock management ▪ No decision on collected data 	Standardize forms Build capacity of program and warehouse managers to make use of collected information
Forecasting	<ul style="list-style-type: none"> ▪ Accurate and standard forecasting formula used for quantification needs ▪ Valid demographic data used for forecasting 	<ul style="list-style-type: none"> ▪ Logistics data not used ▪ No validation of forecast 	Validate forecasts Build capacity of program and warehouse managers in logistics
Inventory Control Procedures	<ul style="list-style-type: none"> ▪ At the end of mass treatment campaign supervisor reports cross-checked with balance stock ▪ No shortages reported ▪ No losses reported 	<ul style="list-style-type: none"> ▪ No storage guidelines ▪ Stock reconciliation not systematic 	Incorporate inventory control procedures in training and supervision manuals Conduct annual inventory at end of each campaign
Warehousing and Storage	<ul style="list-style-type: none"> ▪ Adjustment & redistribution to sites with needs ▪ Instructions for disposal and destruction of empty bottles implemented by woreda committee 	<ul style="list-style-type: none"> ▪ No storage guidelines ▪ No sufficient space in warehousing to cater for program expansion 	Implement storage guidelines with DELIVER assistance Woredas should provide required storage space
Quality Assurance	<ul style="list-style-type: none"> ▪ Limited visual inspection of cartons conducted 	<ul style="list-style-type: none"> ▪ No annual physical inventory ▪ Relies on manufacturer's certificate of analysis for Zithromax 	Investigate causes of Zithromax side effects Conduct systematic visual inspection of tablets and POS
Transport and Distribution	<ul style="list-style-type: none"> ▪ Excellent collaboration and coordination for transportation ▪ Excellent procurement plan ▪ Average cost per head of a dose of Zithromax distributed reduced by 50 percent ▪ Medium size lorry planned to be purchased for Zithromax distribution 		
Product Use	<ul style="list-style-type: none"> ▪ Trained distribution teams and respective supervisors ▪ Daily monitoring of procedures during campaign ▪ Treatment guidelines in local languages provided to distributors 	<ul style="list-style-type: none"> ▪ Reported high rate of side effects from Zithromax including hemorrhoids and anal itches ▪ Relies on manufacturer's certificate of analysis for Zithromax 	Investigate causes of Zithromax side effects Conduct systematic visual inspection of tablets and POS
Financing	<ul style="list-style-type: none"> ▪ Budget line for LMIS, salaries of logistics staff provided 	<ul style="list-style-type: none"> ▪ No line for logistics staff development 	Provide resources for logistics staff development

Bahir Dar Zuria and Libokemkem Woredas

	Strengths	Weaknesses	Recommendations
Staffing and Organizational Support	<ul style="list-style-type: none"> Manuals and treatment guideline used 	<ul style="list-style-type: none"> Lack of logistics components in manuals 	Update manuals while incorporating logistics components
Logistics Management Information System (LMIS)	<ul style="list-style-type: none"> Forms available and used during mass treatment campaigns Logistics data used for annual program reviews TCC reconciles data with treatment reports and supervisor reports 	<ul style="list-style-type: none"> Different forms for stock management No decision made based on collected data 	Standardize forms Build capacity of program and warehouse managers to make use of collected information
Forecasting	<ul style="list-style-type: none"> Accurate and standard forecasting formula used for quantification needs Valid demographic data used for forecasting 	<ul style="list-style-type: none"> Logistics data not used No forecast validation 	Validate forecasts Build capacity of program and warehouse managers in logistics
Inventory Control Procedures	<ul style="list-style-type: none"> At the end of mass treatment campaign supervisor reports cross-checked with balance stock No shortages reported No losses reported 	<ul style="list-style-type: none"> No storage guidelines Stock reconciliation not systematic 	Incorporate inventory control procedures in training and supervision manuals Conduct annual inventory at end of each campaign
Warehousing and Storage	<ul style="list-style-type: none"> Adjustment & redistribution to sites with needs Instructions for disposal and destruction of empty bottles implemented by woreda committee 	<ul style="list-style-type: none"> No storage guidelines No sufficient space in warehousing to cater for program expansion 	Implement storage guidelines with DELIVER assistance Woredas should provide required storage space
Quality Assurance	<ul style="list-style-type: none"> Limited visual inspection of cartons conducted 	<ul style="list-style-type: none"> No annual physical inventory Relies on manufacturer's certificate of analysis for Zithromax 	Investigate causes of Zithromax side effects Conduct systematic visual inspection of tablets and POS
Transport and Distribution	<ul style="list-style-type: none"> Excellent collaboration and coordination for transportation Excellent procurement plan Average cost per head of a dose of Zithromax distributed reduced by 50 percent 2 -3 medium size lorries planned to be purchased for Zithromax distribution 		
Product Use	<ul style="list-style-type: none"> Trained distribution teams and respective supervisors Daily monitoring of procedures during campaign Treatment guidelines in local languages provided to distributors 	<ul style="list-style-type: none"> Reported high rate of side effects including hemorrhoids and anal itches Relies on manufacturer's certificate of analysis for Zithromax 	Investigate causes of Zithromax side effects Conduct systematic visual inspection of tablets and POS
Financing	<ul style="list-style-type: none"> Budget line for LMIS, salaries of logistics staff provided 	<ul style="list-style-type: none"> No line for logistics staff development 	Provide resources for logistics staff development

SNNPR

Garage Zonal Health Department and Bolososore Woreda

	Strengths	Weaknesses	Recommendations
Staffing and Organizational Support	<ul style="list-style-type: none"> ▪ Measuring stick and laminated dosage guidelines are available. ▪ Supervision and monitoring. ▪ Pre distribution training given. 	<ul style="list-style-type: none"> ▪ Copy of guidelines is not available for quick reference. 	Define and enforce procedures and guide lines. Training and retraining on supply chain re supply procedures.
Logistics Management Information System (LMIS)	<ul style="list-style-type: none"> ▪ Government and ORBIS forms are used together. 	<ul style="list-style-type: none"> ▪ Losses and adjustments are not recorded. ▪ Stock cards or bin cards are not used. 	Develop, introduce and disseminate appropriate LMIS recording the 3 essential logistics data items Define the reporting system (levels, periodicity...) Feed back provided to lower levels.
Forecasting	<ul style="list-style-type: none"> ▪ Based on census or potential consumers. 	<ul style="list-style-type: none"> ▪ Not participatory. 	Need to be more participatory involving woreda and zonal staffs.
Inventory Control Procedures	<ul style="list-style-type: none"> ▪ Daily reporting of Distributors to Supervisors about their balance. ▪ Uses shortest pipeline 	<ul style="list-style-type: none"> ▪ Stock card and Bin card are not used ▪ No ways of tracking losses 	Stock cards and bin cards should be used.
Warehousing and Storage	<ul style="list-style-type: none"> ▪ Products are arranged and expiry dates are visible. 	<ul style="list-style-type: none"> ▪ IT has sufficient space but no shelves, no racks, not clean ▪ Empty bottles found out side of the warehouse on the floor. 	Shelving and racks are needed.
Quality Assurance	<ul style="list-style-type: none"> ▪ External observation and expiry dates are checked. 		Need to be done at national level.
Transport and Distribution	<ul style="list-style-type: none"> ▪ Partners and government coordination is good ▪ Village based distribution. 		
Product Use	<ul style="list-style-type: none"> ▪ Lamented dosage guide and stick were distributed. 	<ul style="list-style-type: none"> ▪ Guideline is not available. 	Guideline for infection prevention and treatment need to be disseminated.
Financing	<ul style="list-style-type: none"> ▪ Coordination between government and partners. 	<ul style="list-style-type: none"> ▪ Waste management budget was not used 	Need to utilize the budget for waste management.

Tigray Region

Tigray Regional Health Bureau

	Strengths	Weaknesses	Recommendations
Staffing and Organizational Support	A comprehensive training of trainers for pre-distribution, distribution and post distribution checklist	A step by step guide does not exist on record keeping and tracking drug movement during the campaign period	Build on existing training documents to develop a standard operating procedures
Logistics Management Information System (LMIS)	All records for drug consumption and drug distribution exist. LMIS forms also exist (Model 19, 22, patient register and tally sheet)	No specific guidance on handling of data- reconciliation of data and process for analyzing data	Build on existing training documents to develop a standard operating procedures
Forecasting	Data is compiled from all woredas. Accuracy of forecast is good (75-99%)		
Inventory Control Procedures	Correct amounts of the drug are received, except for the last distribution	No system for tracking product loss, stock issued minus ending balance is assumed to be dispensed to patients	Include a daily procedure of comparing drug issued to drug dispensed to patients
Warehousing and Storage	Storage quality and space are satisfactory. Physical inventory is conducted every 3 months for selected drugs which includes Zithromax		
Quality Assurance	Quality assurance is the responsibility of the store pharmacist.		
Transport and Distribution	Vehicles are borrowed from other sectors and fuel and drivers per diem is financed by the RHB		
Product Use	OJT is provided during distribution and any deviation from the standard treatment guidelines is handled at that point		
Financing	Budgeting is done once a year and microplans are prepared.	The recent change in administrative lines within the region has stretched the budget and budget not flexible to accommodate expansion	Regional budget should either advocate for more resources from the Federal government or work with ITI to identify an NGO to support expansion of the initiative in the region.

KiliteAwlaelo (Wokru Village) and Wokru Town Woredas

	Strengths	Weaknesses	Recommendations
Staffing and Organizational Support	Guidelines are available for staff	Guidelines are not comprehensive enough	Prepare comprehensive guidelines and disseminate
Logistics Management Information System (LMIS)	Data on patients, drug consumed, received and remaining available-Models are used for issues to be recorded at the end of the campaign Tally sheet and patient register in use	Cumbersome-time consuming to compile certain forms may be error prone Stock cards are not being used.	Uniform data collection forms-service and logistics
Forecasting			Woreda only provides census data
Inventory Control Procedures	Correct amounts of the drug are received, except for the last distribution	No system for tracking product loss, stock issued minus ending balance is assumed to be dispensed to patients	Include a daily procedure of comparing drug issued to drug dispensed to patients
Warehousing and Storage	Storage quality is satisfactory. Physical inventory is conducted at receipt of the drug and at the end of the campaign	Storage space may be an issue. Empty bottles are kept outside the store waiting for directive from RHB- Woreda prefers to recycle bottles	RHB to give directive on empty bottles Alternative storage area to be identified prior to expansion of program
Quality Assurance	Quality assurance is the responsibility of the store pharmacist and is done upon receipt		
Transport and Distribution	Vehicles are borrowed from other sectors and fuel and drivers per diem is financed by the RHB- Woreda prepares budget in preparation to the campaign		
Product Use	On-the-job training is provided during distribution and any deviation from the standard treatment guidelines is handled at that point		
Financing	Budgeting is done once a year at the region level and microplans are prepared.	The recent change in administrative lines within the woredas has stretched the budget and budget not flexible to accommodate expansion	Regional budget should either advocate for more resources from the Federal government or work with ITI to identify an NGO to support expansion of the initiative in the region.

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Appendix D: Suggested Daily Transaction Form

Period of campaign:		_____ to _____							
Region:		_____			Woreda:		_____		
Name of Supervisor:		_____							
Columns		A	B	C	E	F	G	H	I
N°	Product Descriptionn	Beginning balance	Quantities dispensed/ consumed	Losses and adjustments	Stock on Hand/Ending Balance (Remaining Balance)	Quantity Supplied	Supplied by: Name and Signature	Received by: Name and Signature	Date
		A= E+F			E= A - (B+/-C)				
1	Zithromax tablets								
2	Zithromax POS bottles								
3	Measuring Cups								
4									
5									
6									
7									
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10									
11									
12									
13									

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