USAID | DELIVER PROJECT

Mozambique: Strengthening the Community Health Worker Supply Chain

Preliminary Report

JUNE 2013

This publication was produced for review by the U.S. Agency for International Development. It was prepared by the USAID | DELIVER PROJECT, Task Order 4.

Mozambique: Strengthening the Community Health Worker Supply Chain

Preliminary Report

USAID | DELIVER PROJECT, Task Order 4

The USAID | DELIVER PROJECT, Task Order 4, is funded by the U.S. Agency for International Development (USAID) under contract number GPO-I-00-06-00007-00, order number AID-OAA-TO-10-00064, beginning September 30, 2010. Task Order 4 is implemented by John Snow, Inc., in collaboration with Asociación Benéfica PRISMA; Cargo Management Logistics; Crown Agents USA, Inc.; Eastern and Southern African Management Institute; FHI 360; Futures Institute for Development, LLC; LLamasoft, Inc; The Manoff Group, Inc.; OPS MEND, LLC; PATH; PHD International (a division of the RTT Group); and VillageReach. The project improves essential health commodity supply chains by strengthening logistics management information systems, streamlining distribution systems, identifying financial resources for procurement and supply chain operation, and enhancing forecasting and procurement planning. The project encourages policymakers and donors to support logistics as a critical factor in the overall success of their healthcare mandates.

Recommended Citation

USAID | DELIVER PROJECT, Task Order 4. 2012. *Mozambique: Strengthening the Community Health Worker Supply Chain*. Arlington, Va.: USAID | DELIVER PROJECT, Task Order 4.

Abstract

In 2012, the USAID | DELIVER PROJECT designed and began testing a series of interventions aimed at improving logistics operations and supply chain performance at the last mile of Mozambique's health care system. This report documents the results from a formal survey of the supply chain for community health workers and presents descriptions of the interventions to be piloted and tested.

Cover photo: Community health workers in Manhiça district in Mozambique complete a survey on perceived logistics challenges.

USAID | DELIVER PROJECT
John Snow, Inc.
1616 Fort Myer Drive, 16th Floor
Arlington, VA 22209 USA
Phone: 703-528-7474
Fax: 703-528-7480
Email: askdeliver@jsi.com
Internet: deliver.jsi.com

Contents

Acronyms

AL	artemether-lumefantrine
APE	*Agente Polivalente Elementar*
CCM	community case management
CHW	community health worker
CMAM	*Centro de Medicamentos e Artigos Médicos* (Central Medical Store)
DPS	*Direcção Provincial da Saúde* (provincial level Ministry of Health)
IEC	information, education, and communication
LMIS	logistics management information system
MISAU	*Ministério da Saúde* (Ministry of Health)
MOH	Ministry of Health
NGO	nongovernmental organization
ODK	Open Data Kit
RDT	rapid diagnostic test
RHSC	Reproductive Health Supplies Coalition
SDSMAS	*Serviço Distrital de Saúde, Mulher e Acção Social* (district-level Ministry of Health)
USAID	U.S. Agency for International Development
WHO	World Health Organization

Acknowledgments

The authors wish to express their appreciation to the Ministry of Health in Mozambique, including the Community Health Program, in particular; and the program's partners—UNICEF, Save the Children, and the Malaria Consortium—for their involvement and technical review of proposed interventions. The authors also wish to thank the community health workers and health center and district pharmacy staffs of Manhiça, Marracuene, and Moamba districts for their participation and contribution to the initial survey.

Executive Summary

This report is an interim summary of ongoing supply chain strengthening interventions focused on community health workers in Mozambique. The piloting of these interventions aims to improve the performance of the supply chain that provides these community health workers with antimalarial drugs, rapid diagnostic tests, male condoms, and essential medicines for a variety of treatments.

In order to support the prioritization and design of interventions that would strengthen the *Agente Polivalente Elementar* (APE; in English, multiuse, elementary agents) supply chain, an assessment was conducted to clarify and validate descriptions of the current program as designed, gauge staff understanding of supply chain processes of the program, and identify strengths and weaknesses of the supply chain as designed. The survey focused on the current proposed system and comparable experiences of staff involved with the former APE program, rather than waiting for the new system to be fully implemented and stabilized before introducing interventions.

To summarize the results of the survey, program partners and APEs noted several key challenges to the APE program's logistics system:

- lack of standardized system for reporting logistics data or resupply
- limited APE ability to track data and store commodities properly at their homes
- general concerns about transport for collection and supervision.

Based on specific challenges identified by Mozambique's APE program—best practices, existing frameworks for strengthening the community health worker (CHW) supply chain, and available resources for this pilot—innovative interventions were identified to strengthen the logistics aspects of the program:

- designing and training APEs on an adapted logistics report form and basic storage practices
- providing training and hardware to district supervisors for electronic data capture
- designing logistics process job aids and providing basic logistics training
- providing select APEs with sturdy, secure boxes for commodity storage
- conducting follow-up trainings and routine monitoring and supervision of the interventions.

During several months following the training sessions, the interventions are monitored before an end-line assessment is conducted, which will be used to evaluate the pilot.

Introduction

Numerous countries around the world have established community health programs as a means to expand access to health services among vulnerable populations and these programs are considered a vital component of reaching the health-related Millennium Development Goals (WHO 2010). For family planning, numerous community-based distribution programs have actively contributed to the increased prevalence rates of modern contraceptive methods, predominantly in Asia but also in sub-Saharan Africa (Phillips, Greene, and Jackson 1999). Other services provided by community health workers (CHWs) include community case management, which focuses on the treatment of infectious diseases that cause the greatest burden of morbidity for children younger than five years of age in developing countries—generally, pneumonia, malaria, and diarrhea.

Of many drivers for success of community health programs, an uninterrupted supply of health commodities to CHWs is a critical component (CORE Group 2010). Securing this uninterrupted supply requires strengthening the supply chain that supports CHWs to ensure that the right quantities of the right products are available at the right time, place, and condition and for the right cost.

Funded by the USAID | DELIVER PROJECT Task Orders 4 and 7, this activity explores, pilots, and tests innovative supply chain design interventions for CHWs. The activity will take place in three districts within Maputo province, Mozambique: Manhiça, Marracuene, and Moamba. Two of these districts will receive the intervention, but one (Moamba) will be a control. Particular factors that supported the initial consideration of Mozambique as the location for this activity include the already existing community health program and an indicated need for greater attention and strengthening of the supply chain at the CHW level.

Activity Approach and Methodology

This activity builds on the approaches and findings of previous community health supply chain strengthening work, including work undertaken by the Gates Foundation–funded Supply Chains for Community Case Management (SC4CCM), as well as a Reproductive Health Supplies Coalition grant for exploring community-based–distribution supply chain models. During the project, the following approaches are to be used:

- *Qualitative assessment:* Understand the current and planned supply chain processes, structures, strengths, and weaknesses from numerous perspectives. This will drive and inform the design of the proposed interventions to ensure the interventions address logistics weaknesses and use the existing resources in the best way possible.
- *Intervention design:* Develop a set of implementable supply chain interventions by drawing from country partner perspectives and existing best practice theoretical frameworks for community health supply chain management. This process also includes securing in-country partner commitment.
- *Implementation:* Institute testable improvements to the supply chain, including training of staff on intervention tools, as well as periodic monitoring to track implementation progress.

- *End-line* (after six months of implementation): Capture results of interventions, over time.
- *Sharing and disseminating results:* Support future local and global dialogue on strengthening the supply chain for CHWs.

The success of this approach depends heavily on the input and commitment of all local partners in Mozambique, including national, provincial, district, and local public health staff; nongovernmental organizations (NGOs) and technical assistance partners, at all levels; and, of course, CHWs. These stakeholders will be consulted at every stage in the life cycle of this activity.

Mozambique APE Program Background

In 1978 Mozambique's Ministry of Health (MISAU) began the *Agentes Polivalentes Elementares* (APEs) (in English; multiuse, elementary agents) program to extend coverage of the national public health system to include underserved rural populations. During Mozambique's civil war, this program eventually ended; it is currently undergoing revitalization under an updated program design. Under this new design, APEs have catchment areas of 500 to 2000 people and have routine tasks including developing strong ties to their community, health promotion and education, family planning counseling, and prevention and treatment of common ailments (WHO 2010). APEs are trained to treat common ailments, including childhood illnesses: diarrhea, pneumonia, malaria, small injuries, worms, and others. To support the curative and preventative services provided by APEs, they should receive two kits of consumables once a month, as well as rapid diagnostic tests (RDTs) for malaria (see appendix A for the commodities and supplies provided to APEs). The kits include one for essential medicines and male condoms, and one for the artemisinin-based combination therapies (ACTs) and RDTs for malaria. During 2012, the delivery of the RDTs changed from being sent separately to the APEs to being included inside the ACT kit. In evaluating the current functionality of the program, WHO noted that, for logistics, supplies are ordered regularly, but are not necessarily delivered to APEs regularly. This often results in stockouts; no process for documentation or information management is followed. The study notes that, as of 2010, the program was still under development (WHO 2010).

To financially support the revitalization of the APE program, various partners have committed funds for initial training, initial equipment for APEs, ongoing supervision, monthly stipends for the APEs—for out-of-pocket expenses, including transportation and to encourage program participation—and the kits of consumable drugs and commodities. These funds have been committed for approximately 25 APEs, in each of a select number of districts across the country, for the next several years, with no current plan for future funding.

Although they are not government employees of the health system, APEs constitute the *last mile* of Mozambique's public health supply chain, which also includes health centers and health posts, district pharmacies (part of *Serviço Distrital de Saúde, Mulher e Acção Social* [SDSMAS]), provincial ministries of health (DPS), and the national MOH, MISAU. At the central level, *Centro de Medicamentos e Artigos Médicos* (CMAM, Central Medical Store) is responsible for central storage and distribution. Parallel to the kit system that provides commodities to APEs, health centers, and health posts, CMAM also stores and distributes commodities to via Classica; which is a pull system that supports health commodity requisitions placed by health centers, hospitals, and district warehouses to the provincial warehouses.

Maputo province's seven districts and three districts—Manhiça, Marracuene, and Moamba—are operating the new APE program (Provincial Directorate of Health 2011); they trained approximately

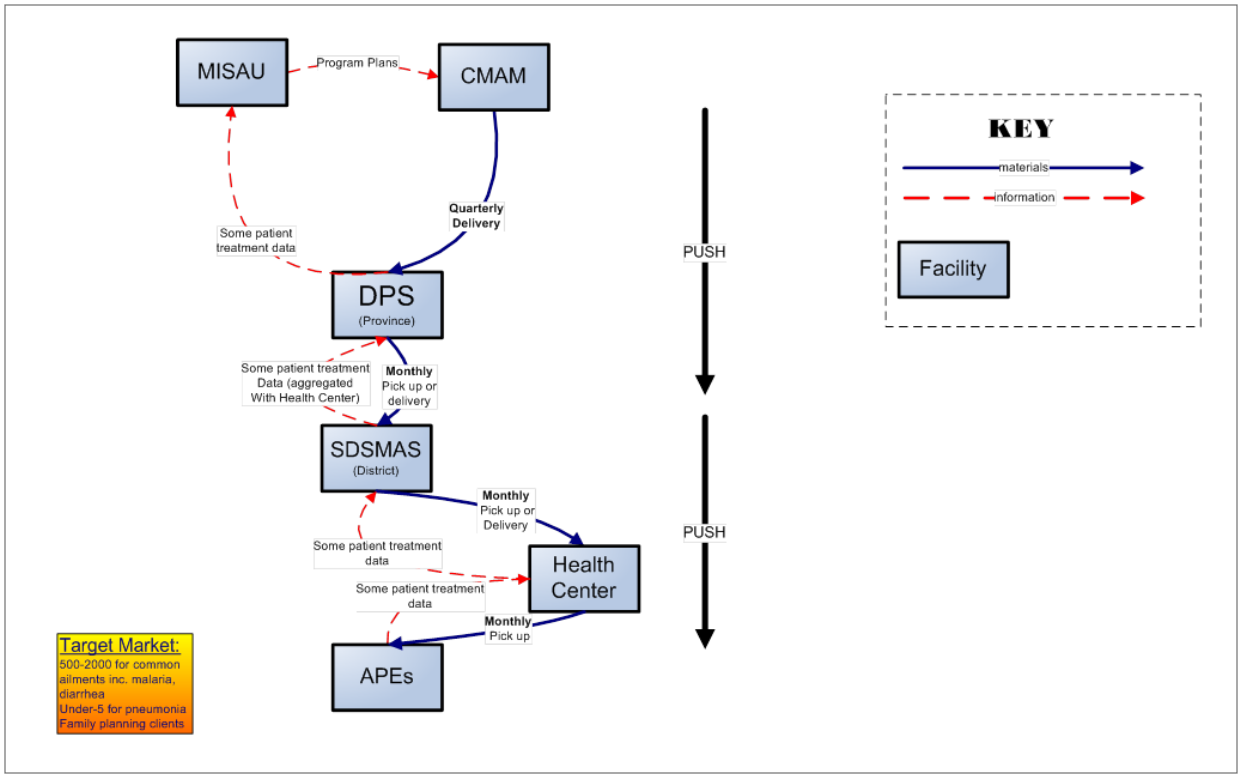
25 new APEs, each, in February 2012; and, in July 2012, they began providing service under the revitalized program.

Mozambique has year-round malaria transmission, with a seasonal peak from December to April. All 21.5 million inhabitants are considered at risk.

Current APE Program Supply Chain

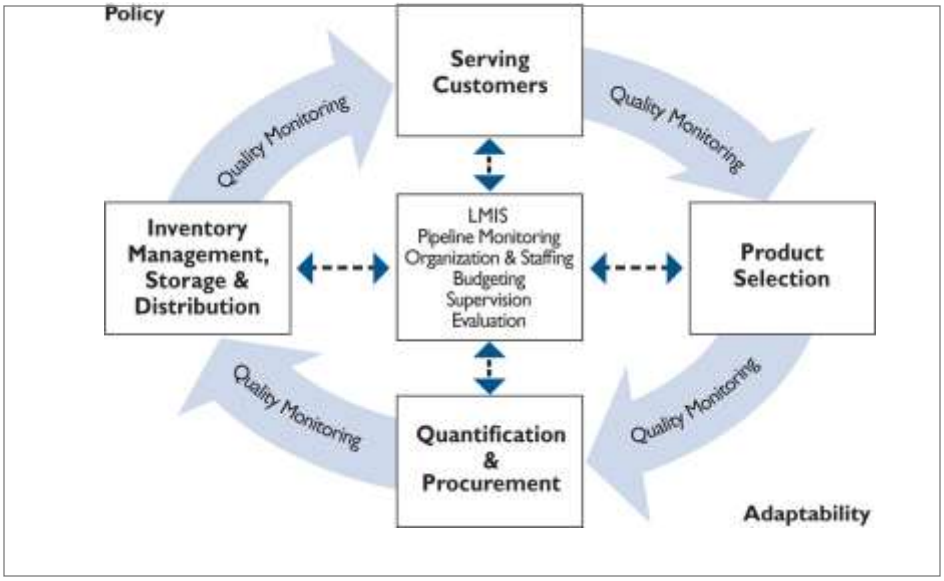
A public health supply chain is a network of interconnected organizations or actors that ensures the availability of health commodities to the people who need them. These organizations include program management and operations staff across tiers of the health system, as well as implementing partners and others that support the public health system. For the APE program in Mozambique, the in-country supply chain comprises the community health staff at MISAU, CMAM staff, implementing partners and funders at the central level, program supervisors and pharmacy staff at the province and district levels, health centers, and the APEs. Figure 1 depicts this supply chain.

Figure 1. Mozambique APE Supply Chain (Specific to Maputo Province as of May 2012)



The organizations within the supply chain undertake a series of logistics functions (see figure 2) that ensure health commodities are available to patients when they need them.

Figure 2. The Logistics Cycle



Based on interviews with health system personnel and program partners, the supply chain that delivers commodities to APEs is as follows:

- *Serving patients:* Each APE is given medicines and supplies designed to treat 250 patients per month; although, depending on their catchment area and the season, they may treat more or less. The training for APEs includes treatment regimens for symptoms and conditions they are qualified to treat; including diarrhea and pneumonia in children, anemia, malaria, fevers, and others. For patients that exhibit symptoms of malaria, APEs are required to give the patient a rapid diagnostic test (RDT) for malaria and receive a positive result before dispensing an antimalarial. APEs also provide male condoms to the community.
- *Product selection:* During the planning for revitalizing the APE program, a committee designed the essential medicines kit that APEs would receive—products, formulations, and quantities. APEs also receive four regimens of ACTs, as well as RDTs. See appendix A for a list (in Portuguese) of the commodities provided to APEs.
- *Quantification:* Generally, CMAM collaborates with health program staff to conduct forecasts for commodity purchases. For the APE program, the number of essential medicine kits is based on the number of APEs in the program and their predicted consumption pattern of one kit per month. Implementing partners support the forecasting for antimalarial commodities.
- *Procurement:* CMAM and program partners, on behalf of donors that include UNICEF and USAID, procure kits at a central level. The essential medicines kit is procured, prepacked, by a supplier in India; antimalarial kits are assembled in Maputo after the commodities arrive there.
- *Storage:* Storage occurs at the national, provincial, district, health center, and APE levels. At the national, provincial, and district levels, kits are stored in warehouses, or dedicated store rooms; in health centers, they are stored with other drugs. APEs must keep their commodities at home.
- *Distribution*: Kits are delivered from the central- to provincial-level once a quarter. From there, kits are delivered to districts and delivered from districts to health centers once a month. For

commodities from via Classica, health center staff may need to pick up their commodities, depending on the availability of transport at the district. APEs will pick up their commodities at the health center once a month; they walk, bike, or take public transportation.

- *Inventory control:* APEs receive two kits once a month. Although APEs cannot, according to policy, receive emergency stock between monthly resupplies; in practice, districts may allow this and may request that they have extra stock provided to them in certain situations. However, there is no specific inventory control rule that indicates the exact quantities of emergency drugs or supplementary stock that APEs should be given.
- *Logistics management information system:* Within the APE program, the only logistics data collected and reported has been on the artemether-lumefantrine (AL) tick sheet, which is inside the antimalarial kits for APEs; however, the process for completing this form, and how it is used, has varied across districts and with individual APEs. When APEs collect extra stock from health centers or districts, the amount dispensed is captured within the reporting system for the via Classica (supply chain for most public health commodities). Within via Classica, health centers report to district pharmacies; who, in turn, make requisitions from and send reports to provincial pharmacies.
- *Supervision:* The APE program has established protocols for programmatic supervision between the province and district supervisors, district and health center supervisors, and health center supervisors and APEs. Planned health center supervision of APEs covers several areas, including whether APEs have particular commodities available, have the tools they need, and if they are completing and recording their duties correctly.

Intervention Design Process

Identifying innovative interventions that have a strong possibility of improving supply chain performance for Mozambique's APEs requires understanding the current best practices and the current challenges faced in the country. To determine the potential interventions to support Mozambique's APEs, the approach for this activity included the following elements:

- desk review of the Mozambique APE program and existing supply chain strengthening frameworks, particularly materials targeted to CHW program strengthening
- interviews with local stakeholders about program plans and a formal program assessment to identify logistics challenges experienced by APEs, health centers, district pharmacies, and program supervisors.

Formal Program Survey

To support the prioritization and design of interventions to strengthen the APE supply chain, the USAID | DELIVER PROJECT conducted a survey was conducted to clarify and validate descriptions of the current program, as designed; gauge staff understanding of supply chain processes for the program; and identify strengths and weaknesses of the supply chain, as designed. The survey focused on the current proposed system and the comparable experience of staff involved with the former APE program, instead of waiting for the new system to be fully implemented and stabilized before introducing interventions.

Methodology

To capture responses from different types of respondents, across several levels of the health system, five different assessment tools were created and administered (see table 1).

Table 1. Assessment Tools for Initial Survey

Survey Tool	System Level	Content
Warehouse/pharmacy survey	National, provincial, district	Stock and information management
Supervision survey	National, provincial, district	Supervision, stock, and information management policies
Health center survey	Health center	Supervision, stock, and information management
APE focus group survey	APE	Training, logistics processes, information management
APE site visit survey	APE	Training, logistics processes, resupply process, physical inventory

The assessment was conducted within Maputo province, although it also included central-level staff at the national level. Within Maputo province, the survey covered the three districts that had training for new APEs: Manhiça, Marracuene, and Moamba.

In each district, the assessment included two health centers, or six out of 28 across the three districts. The district APE supervisor helped select the participant sites by identifying the health centers that would supervise APEs under the new program.

APE focus groups included all 50 of the recently trained APEs in the program from Manhiça and Marracuene districts. For Moamba district, however, only 17 out of about 23 APEs attended the focus group.

Three to five APE site visits were conducted in each district, for a total of 12 out of 73 APEs across the three districts. Again, to better identify challenges in the design and implementation of the new program, district APE supervisors helped select the APEs that had been part of both the *old* and *new* programs.

For the pharmacy and supervisor surveys, the sampled respondents represented a census of the relevant population.

Limitations

A primary limitation of the assessment is that the revitalized APE program was not yet operating at the time of the survey because of the central delays in program implementation. This meant that conclusions about the supply chain challenges represent reactions to the design of and training on the new procedures.

Results

Pharmacies

USAID | DELIVER PROJECT 2012

A district pharmacist and her storeroom.

Of the commodities that APEs receive, district pharmacies receive deliveries of essential medicines and APE malaria kits from the provincial pharmacy; but they pick up RDTs from the provincial pharmacy, with other via Classica commodities. Once a month, they distribute these to health centers; although one district noted that the existing transport resources are limited, which results in a non-regular distribution schedule.

To communicate the amount of kits required for APEs, district pharmacies inform the provincial pharmacy of the number of kits distributed in the previous month. Typically, the number is the same each month. At the time of the assessment, APEs and health centers were using RDTs, but they were not in the kits. This meant that district pharmacies managed requisitions for them within the

pull/via Classica system and determined an amount to request based on what was issued the previous month. However, soon after the assessment, RDTs were added to the ACT kits.

Under the previous APE program, the surveyed district pharmacies took varied approaches to filling the commodity requests from APEs. Two of the districts issued kits and, if APEs were stocked out, they would provide emergency commodities from their via Classica stock. Both districts relied on the APE ledger/monthly report. In one of these two districts, the APEs would complete via Classica request forms as was done at the health centers. In the third district, the district pharmacy had supervision and distribution support from an external partner and, therefore, would open malaria kits and deliver commodities to APEs based on the previous month's consumption, as documented in the AL form.

Logistics challenges—

- All district pharmacies expressed concern over the new APE program policy of storing commodities at APEs' homes and the implication for the storage conditions of commodities. They also expressed concern over the APEs' rational use of commodities. For these reasons, all district pharmacies assessed believed they should be directly involved in supervising the APEs.
- Two of three district pharmacies wanted higher quality consumption data from APEs.
- One pharmacy noted that health centers do not submit reports on time; they predicted that APEs will soon have similar reporting challenges.
- District pharmacies have little knowledge of changes/developments for the new APE program.

APE Program Supervisors

Each district that operates the new APE program has one MOH staff member dedicated to supervising the district's APE program. With the provincial supervisor, these district supervisors conducted the initial training for the new APEs. With the health center staff, these supervisors are expected to regularly supervise the APE program, including the availability of medicines and materials, quality of case management, proper use of tools, and proper completion of reports. In May 2012, all supervisors were trained on the guides and forms that they will use.

Logistics challenges:

- All district supervisors agree that APEs can potentially stock out of drugs and that APEs should go to the health center for additional stock.
- Two district supervisors predict that transport for both supervision and APE service provision and product pickup will be a challenge, and that the partner-funded bicycles provided to APEs will not be used extensively.
- One supervisor thinks that APEs need more information, education, and communication materials (health education brochures and posters).
- Many APEs do not have complete training manuals (missing some or all modules); therefore, they cannot refer to these or use them as job aids.

Health Centers (*Unidade Sanitarias*)

A health center in Maputo province.

Although health centers did not play a formal role in the previous APE programs, the new program will use health centers as resupply points and for direct supervision of APEs. The six health center staff surveyed had different clinical capacities, but all had served at their facility for at least two years. Like most health centers that will supervise the new APEs, the surveyed staff will be responsible for between one and five APEs.

Although at the time of the survey the health centers had not yet received training on their specific roles, all surveyed staff understood and agreed that the health center will play a role in providing both regular kitted commodities, as well as additional/emergency stock from their via Classica stocks.

Logistics challenges:

- When asked, health center staff cited various processes for verifying and filling emergency stock to APEs, meaning that a standard policy has not been introduced that outlines the quantities to provide or the information to collect.
- All surveyed health center staff also noted that transport for future supervision will be a challenge. In some cases, the APE supervisor is the only clinical staff onsite; conducting supervision would require that they close their facility and spend many hours walking to their APEs. Because of this, several health center staff doubted that they would be able to conduct regular supervision.

APEs (from focus groups)

APEs across the three surveyed districts received the same training course. Responding to questions about their knowledge of logistics processes, APEs reported having some knowledge of stock management (mostly related to storage practices) and their resupply process at the health center, but they did not receive any specific module or session on these concepts during their training. APEs also know that they can try to access supplementary and emergency stock from their health center.

APEs expressed interest in receiving more on-the-job training in drug dispensing and additional training in completing the malaria (AL) form; and in obtaining lockers for storage of drugs and commodities in their homes. At the time of the assessment, APEs did not have standard treatment guides for the conditions they're authorized to treat; printing and dissemination of these is planned.

Logistics challenges:

- Many APEs conceded that the distances they must cover for their visits to the community and to collect resupply quantities will be a challenge. As the monthly stipend provided by the program is not a full-time salary, the APEs have to balance their duties with other work. As a result, obtaining transport and having sufficient time is difficult to manage. They said that the bicycles provided to them would not be used extensively because of the condition of the roads, particularly during the rainy season. However, the APEs did concede that they preferred collecting commodities from the health center instead of the district pharmacy, as it is easier to reach.
- APEs also do not support the program's decision to ban the use of APE posts, which some communities had previously used. Instead, the program mandated that service provision and educational activities take place in community homes and that APE commodity kits be stored in APEs' homes. APEs said that this has placed an additional burden on them because they must spend more time traveling and, also, must find a way to properly secure drugs inside their homes. They also said that this is an extra burden on community members, who have difficulty finding the APEs when they have a sick child who needs immediate attention.

USAID | DELIVER PROJECT 2012

An APE at her home, where she will provide health services.

APEs (from site visits)

Individual surveys were also conducted with APEs at their homes. One-on-one interviews with APEs allowed for more individual responses to questions on logistics processes and, in the cases of APEs with experience under the old program (11 of 12), allowed for comparison and evaluation of differences in program policies. All APEs reiterated that they would provide regular reports and collect commodities from their assigned health center. Ten out of 12 indicated that they would be able to get extra products, when needed. APEs also cited the benefit they provide to their communities is personally satisfying.

Logistics challenges:

- For reporting, all APEs mentioned submitting the *relatorio mensal* (monthly report), but only 3 of 12 APEs mentioned the malaria (AL) consumption form, indicating that training and knowledge of this form is inconsistent.
- Although 10 out of 12 said they would use *chapa* (public transport) for at least part of the trip to the health center, the remaining twp 2 said they did not have access to a chapa for any part of the trip. Six out of 12 will travel by foot instead of, or in addition to, the chapa. In terms of time, 3 out of 12 claimed they need at least four hours to get to the health center (one way), while the remaining nine need two hours or less. Individual interviews also stated that they would not be able to use the provided bicycles because of sandy road conditions.

- Out of 11 APEs who had been a part of the old program, seven indicated that they had regularly returned excess commodities; and six indicated that they had stockouts. Specific products varied between APEs, but five of the APEs specified they had stocked out of paracetamol, but four specified albendazole. This situation highlights the basic inefficiency behind the kit-based inventory control: differences in consumption patterns between APEs result in some APEs stocking out of commodities and some being overstocked. As long as the APE program plans to use kits to distribute commodities to APEs, they should ensure that there are clear policies for managing over- and understocks.

Current Supply Chain Challenges

To summarize the results of the survey, program partners and APEs noted several key challenges to the APE program's logistics system:

- no standardized system for reporting logistics data or resupply
- limited APE ability to track data and store commodities properly at their homes
- general concerns about transport for collection and supervision.

Supply Chain Strengthening and Community Health Worker Frameworks

In addition to identifying current and potential supply chain challenges faced by Mozambique's APEs, selection of interventions also considered current best practice thinking. These frameworks informed prioritization of potential interventions and characterization of an *end goal* for the supply chain that serves Mozambique's APEs.

Supply Chain Integration

In the developed world, commercial-sector supply chain managers realized that improving working relationships across supply chain partners—across functional units and between vertical entities—can improve service to the end customer and drive down costs. Although developing country public health systems have obvious differences, when compared to commercial operations, all supply chains face common challenges around sharing information, coordinating partners, and building a shared vision for serving the end customer. Integrated public health supply chains show—

- clarity of roles and responsibilities
- agility in responding to changes in supply and demand
- streamlined processes
- visibility of logistics information across partners
- trust and collaboration and alignment of supply chain objectives across partners.

In addition, over time, commercial sector supply chains have moved toward an integrated state in distinct stages. In public health supply chains, these stages begin at an ad hoc stage, where operational processes and working relationships between partners are undefined and partners interact with each other only during transactions. Defining these processes and relationships, and establishing basic product and information flows within the system, leads to an organized stage;

which contains the building blocks for transition to an integrated stage. From a supply chain strengthening perspective, this means that interventions must first begin with defining basic processes and establishing information flows, before true integration can be achieved (John Snow, Inc. 2012).

SC4CCM Theory of Change

Supply Chains for Community Case Management (SC4CCM), a five-year Gates Foundation–funded project, aims to develop innovative, yet scalable, supply chain solutions that improve product availability for CHWs by providing community case management services for the treatment of childhood malaria, pneumonia, and diarrhea. To identify intervention points, track progress, and quantify outcomes of the interventions, the project has defined the availability of commodities at the CHW level as depending on the following conditions (SC4CCM 2010):

- availability at resupply points
- CHWs knowing how, where, what, when, and how much of each product to requisition; and to act, as needed
- CHWs having adequate storage
- goods being routinely transported between resupply points and CHWs
- CHWs being motivated to perform their roles in the CCM product supply chain.

Although these relationships are not yet proven, the project is testing the hypothesis that interventions that directly or indirectly influence these factors will also influence availability at the CHW.

Community Case Management Essentials

The CORE Group (2010) notes that "there can be no CCM without a constant supply of medicines to treat each of the childhood illnesses." To ensure a constant supply, partners must manage a series of steps, including procurement, distribution and storage, recordkeeping, and rational use of medicines. As this pilot is intended to focus on last mile issues, procurement will not be addressed. However, necessary activities for distribution and recordkeeping include establishing a process through which the CHWs will receive their products, monitoring stocks of medicines within the system, and developing recordkeeping systems and tools (Hasselberg and Byington 2010).

Planned Supply Chain Interventions and Monitoring Approach

Based on specific challenges identified by Mozambique's APE program, best practices, and existing frameworks for CHW supply chain strengthening and available resources for this pilot, interventions were identified to strengthen the program and improve product availability.

Designing and Training APEs on Adapted Logistics Report Form

This intervention addresses the identified challenge of no standardized system for reporting logistics data, particularly for the essential medicines kit; which includes essential medicines and male condoms. This leads to partners at the central level not knowing consumption patterns or stock statuses of APE commodities.

To address this challenge, the project designed a tick sheet that will be used as both a consumption record and a report for APEs in the testing districts (see appendix B). To complete the form, APEs will record their initial stock, as well as any extra stock received during the month, fill one bubble for each treatment provided to patients, and record their remaining stock and whether they faced stockouts during the month. APEs will then present this document to their resupply point at the end of the month before receiving their next kit. Based on progress during the intervention period, follow-up training and supportive supervision will focus on APEs who indicate that they have challenges completing the reports accurately.

The intended outcome is that APEs will accurately track and report consumption to the community health program. Health centers or district pharmacies can also, potentially, use these reports to provide emergency or supplementary stock, leading to fewer stockouts of commodities.

Providing Training to District Supervisors for Electronic Data Capture

This intervention complements the APE logistics report by providing a mechanism for district supervisors to rapidly transfer hard copy data to spreadsheet format. The project will provide training for district supervisors in using a mobile phone application, ODK Scan, which was developed through a Grand Challenges Explorations grant from the Bill & Melinda Gates Foundation. The grant is providing the phones and software to the district supervisors.

The application is part of Open Data Kit (ODK), a free and open-source set of tools that helps organizations author, field, and manage mobile data collection solutions. The ODK Scan application also enables the user (in this case, the district APE supervisor) to digitize data from the monthly APE logistics report forms using a mobile phone camera to capture an image of the form and computer vision algorithms to process the tallies and checkbox selections from the form. The user will enter the hand-written numerical data from the form directly into the application, although

images of each data point are stored with the rest of the report's data and displayed for the user to ease data entry. This data can then be submitted wirelessly through a data connection to a central database, or loaded directly onto a computer. All district capitals in the intervention have access to wireless (3G) data connections. During this activity, the data will sit on a password-protected server, which is accessible on the ODK website. Pending the outcome from this activity, discussions will be held to identify potential long-term storage and accessibility options for this data that will fit into MISAU's broader information systems strategy.

The intended outcome is that district supervisors rapidly and accurately report APE logistics data to a central database. This pilot will form a *proof of concept* by having data successfully sent from the districts to an online, password-protected database. In the longer term, this database would reside in a database generally accessible by the MOH. District, provincial, and central staff could eventually use this data for logistics operations and program planning.

Designing Logistics Process Job Aids and Providing Training

This intervention addresses the identified challenge of APEs that have having little familiarity and no direct training on logistics and reordering processes. APEs also expressed an interest in having job aids for routine processes, such as logistics. The project has developed a job aid and associated training that explain the importance of good logistics, depict the monthly ordering cycle, and includes a knowledge check to make sure APEs understand the process (see English version of the job aid in appendix C).

The intended outcome is for the APEs to have a clear understanding of their logistics responsibilities, as well as understanding the importance of activities, such as timely reporting and proper storage. This should motivate and remind APEs to complete logistics tasks on time.

Providing APEs with Sturdy, Secure Boxes for Commodity Storage

This intervention addresses the challenge that APEs currently face of being required to store commodities in their homes. District pharmacists noted with particular concern the inability of APEs to maintain product quality outside the community health posts they previously used. To help APEs secure commodities away from exposure to elements, children, and animals, the project will procure and provide secure, lockable storage boxes to APEs; and will also provide training on proper inventory control and storage practices. Incorporating APE program staff input, this intervention will provide boxes to a small, select number of APEs and ask for basic feedback about their suitability to the program; while all APEs in the intervention districts will receive the storage training.

The intended outcome is that APEs follow proper storage guidelines and use the boxes to secure commodities after receipt.

Supervision of APEs

It should be noted also that although the APE program already has plans to provide supervision to APEs, district supervisors did voice concerns during the survey that this might not occur regularly because of funding constraints. Therefore, this project's funding of district supervisors to accompany monitoring visits can also be considered an intervention, as regular supervision visits are known to improve the performance of logistics roles.

In November 2012, the project staff conducted the trainings mentioned here, with support from the program district supervisors; the intervention contents were reviewed and approved by counterparts at the APE program and CMAM. Two challenges not addressed in this activity are transport for drugs and incentives, because of limited potential scope.

Monitoring and Evaluation Process

This pilot will include evaluation research to track the implementation process and outputs of the interventions according to the proposed logic in table 2.

Table 2. Activity Monitoring and Evaluation Framework

Input (Design, Planning)	Process (Implementation)	Output (Interventions Running)	Outcome (Better Logistics Performance)
Human and financial resources to design interventions, conduct training Printing of materials, hardware and software development	Distribute materials Conduct training Conduct periodic monitoring	Forms completed Forms captured on mobile device Products stored properly in sealed boxes If possible, adequate supplementary stock provided to APEs	Greater visibility into APE activities for all partners (central and district/province) Fewer damaged, expired products Fewer/smaller stockouts

Once a month, for four to six months, the project staff—with a local district supervisor—will visit a random sample of APEs to collect process and performance data. Appendix D is the English version of the monitoring form for APEs, as well as a form to collect data from district supervisors on their experiences with the ODK Scan technology.

A comprehensive end-line assessment will complete the evaluation process and will quantify the outcomes of this project. Conclusions based on the end-line will inform decisions about the value and scalability of piloted interventions within Mozambique and, potentially, about their applicability in other community health contexts.

References

CORE Group, Save the Children, BASICS, and MCHIP. 2010. *Community Case Management Essentials: Treating Common Childhood Illnesses in the Community: A Guide for Program Managers*. Washington, DC: CORE Group.

Hasselberg, Erin, and Julia Byington. 2010. *Supply Chain Models and Considerations for Community-Based Distribution Programs: A Program Manager's Guide*. Arlington,Va: John Snow, Inc.

John Snow, Inc. 2012. *Getting Products to People*. Arlington, Va: John Snow, Inc.

Phillips, James F., Wendy L. Greene, and Elizabeth F. Jackson. 1999. "Lessons from Community-based Distribution of Family Planning in Africa." *Population Council*. Available at http://www.popcouncil.org/pdfs/wp/121.pdf (accessed November 30, 2011).

Provincial Directorate of Health, Government of Maputo Province. 2011. *APEs Situacao Actual*. Maputo, Mozambique: MISAU.

Supply Chains for Community Case Management (SC4CCM). 2011. "Theory of Change Model." *Supply Chains for Community Case Management*. Available at http://sc4ccm.jsi.com/about-sc4ccm/theory-of-change/ (accessed November 23, 2011).

World Health Organization (WHO). 2010. "Global Experience of Community Health Workers for Delivery of Health Related Millennium Development Goals." *World Health Organization*. Available at http://www.who.int/workforcealliance/knowledge/publications/CHW_FullReport_2010.pdf (accessed November 23, 2011).

Appendix A

Relevant Program Forms

Commodities provided to APEs in the revitalized program (as of Fall 2012).

Contents of New APE Kits (Essential Medicines)			
	Product	Form	Quantity
1	Iron sulfate 90 mg + folic acid 1 mg	Tablet	1×500
2	Paracetamol 500 mg	Tablet	1×1000
3	Paracetamol 250 mg	Dispersible tablet	1×500
4	Mebendazole 500 mg tablet	Tablet	1×100
5	Oral Rehydration Salts (ORS)	Dispersible powder sachets	150
6	Benzene hexachloride 600 mg/60 ml	Lotion	1×10
7	Tetracycline 1% tube 5 g	Ophthalmic ointment	1×25
8	Cetrimide 15% / Chlorhexidine gluconate 1.5%, 500 ml	Solution concentrate	1×1
9	Adhesive bandage (2.5cm × 5m)	Roll	3×1
10	hydrophilic cotton 500 g	Roll	2×1
11	Sterile compression (10 cm × 10 m)	Compression	1×3
12	Gauze ligature (10 cm × 10 m)	ligature	1×12
13	Plastic dispensing envelop (60×80×0.025 mm)	Unit	2×250
14	Zinc 20 mg	Dispersible tablet	400
15	Amoxicillin 125 mg	Dispersible tablet	90
16	Amoxicillin 250 mg	Dispersible tablet	260
17	Male condoms	Condoms	144 (1 box)
18	Soap	Soap	3×1
19	Incinerator box		1
20	Disposable gloves		250 (pairs)

Contents of New APE Kits (Essential Medicines)			
	Product	Form	Quantity
New APE malaria kit contents			
1	Artemether + lumefantrine 20 mg/120 mg	Tablet	30×6
			30×6×2
			30×6×3
			30×6×4
4	Rapid test for malaria (with lancet and pipette)	Rapid tests	200

APE Monthly Activity Report

FICHA DE RESUMO MENSAL DAS ACTIVIDADES DO APE

Direcção Provincial de Saúde de:_____

SDSMAS de: _____

Unidade Sanitária: _____

Localidade_____

Comunidade_____

Mês/ano_____/_____

Nome do APE_____

Visitas domiciliárias	Mulheres Grávidas	
	Mães Pós Parto	
	Recém Nascidos (0-1 mês)	
	Crianças 2 - 59 meses	
	Outros grupos alvos	
	TOTAL VISITAS	

Total de TDR para Malária Realizados	TDR positivo <59 meses	
	TDR positivos >=5anos de idade	
	Outros (negativo ou indeterminado)	
	TOTAL TESTES REALIZADOS	

Diagnóstico/ Tratamento	Malária confirmada <59 meses	
	Malaria confirmada >= 5 anos de idade	
	Malária não confirmada <59 meses	
	Malaria não confirmada >= 5 anos de idade	
	Diarreia	
	Infecções Respiratórias agudas	
	Outros diagnosticos	
	TOTAL CASOS VISTOS	

Transferência para US	Criança com problemas de malnutrição	
	Criança com Vacina incompleta	
	Sinais de perigo	
	Mulher grávida encaminhada a consulta PN	
	Outras causas	
	TOTAL TRANSFERÊNCIAS	

Mortes na comunidade	Recém Nascido 0-1 mês	
	Criança 2-59 meses	
	Mortes maternas	
	Outros grupos	
	TOTAL MORTES	

Palestras	Total de palestras	
Participantes	Total de participantes	
Supervisões Recebidas	Total Supervisões	

Current AL Kit Consumption Form

Folha de Consumo Mensal de Artemeter - Lumefantrina (AL) na Unidade Sanitária

VISTO:

Nome da Província: _____ **Nome do Distrito:** _____

_____

Name da Unidade Sanitária _____ **Nome do ACS:** _____

Responsável Clinico da U.S.

Mês: _____ **Ano:** _____

ARTEMETER - LUMEFANTRINA (AL)

< 3 Anos (5-14 Kg) (6x1 Tratamentos AL)	3 - 8 Anos (15- 24 Kg) (6x2 Tratamentos AL)	9-14 Anos (25 - 34 Kg) (6x3 Tratamentos AL)	>14 Anos (>34 Kg) (6x4 Tratamentos AL)
1 2 3 4 5 6 7 8 9 10	1 2 3 4 5 6 7 8 9 10	1 2 3 4 5 6 7 8 9 10	1 2 3 4 5 6 7 8 9 10
11 12 13 14 15 16 17 18 19 20	11 12 13 14 15 16 17 18 19 20	11 12 13 14 15 16 17 18 19 20	11 12 13 14 15 16 17 18 19 20
21 22 23 24 25 26 27 28 29 30	21 22 23 24 25 26 27 28 29 30	21 22 23 24 25 26 27 28 29 30	21 22 23 24 25 26 27 28 29 30
31 32 33 34 35 36 37 38 39 40	31 32 33 34 35 36 37 38 39 40	31 32 33 34 35 36 37 38 39 40	31 32 33 34 35 36 37 38 39 40
41 42 43 44 45 46 47 48 49 50	41 42 43 44 45 46 47 48 49 50	41 42 43 44 45 46 47 48 49 50	41 42 43 44 45 46 47 48 49 50
51 52 53 54 55 56 57 58 59 60	51 52 53 54 55 56 57 58 59 60	51 52 53 54 55 56 57 58 59 60	51 52 53 54 55 56 57 58 59 60
61 62 63 64 65 66 67 68 69 70	61 62 63 64 65 66 67 68 69 70	61 62 63 64 65 66 67 68 69 70	61 62 63 64 65 66 67 68 69 70
71 72 73 74 75 76 77 78 79 80	71 72 73 74 75 76 77 78 79 80	71 72 73 74 75 76 77 78 79 80	71 72 73 74 75 76 77 78 79 80
81 82 83 84 85 86 87 88 89 90	81 82 83 84 85 86 87 88 89 90	81 82 83 84 85 86 87 88 89 90	81 82 83 84 85 86 87 88 89 90
91 92 93 94 95 96 97 98 99 100	91 92 93 94 95 96 97 98 99 100	91 92 93 94 95 96 97 98 99 100	91 92 93 94 95 96 97 98 99 100
101 102 103 104 105 106 107 108 109 110	101 102 103 104 105 106 107 108 109 110	101 102 103 104 105 106 107 108 109 110	101 102 103 104 105 106 107 108 109 110
111 112 113 114 115 116 117 118 119 120	111 112 113 114 115 116 117 118 119 120	111 112 113 114 115 116 117 118 119 120	111 112 113 114 115 116 117 118 119 120
121 122 123 124 125 126 127 128 129 130	121 122 123 124 125 126 127 128 129 130	121 122 123 124 125 126 127 128 129 130	121 122 123 124 125 126 127 128 129 130
131 132 133 134 135 136 137 138 139 140	131 132 133 134 135 136 137 138 139 140	131 132 133 134 135 136 137 138 139 140	131 132 133 134 135 136 137 138 139 140
141 142 143 144 145 146 147 148 149 150	141 142 143 144 145 146 147 148 149 150	141 142 143 144 145 146 147 148 149 150	141 142 143 144 145 146 147 148 149 150
151 152 153 154 155 156 157 158 159 160	151 152 153 154 155 156 157 158 159 160	151 152 153 154 155 156 157 158 159 160	151 152 153 154 155 156 157 158 159 160
161 162 163 164 165 166 167 168 169 170	161 162 163 164 165 166 167 168 169 170	161 162 163 164 165 166 167 168 169 170	161 162 163 164 165 166 167 168 169 170
171 172 173 174 175 176 177 178 179 180	171 172 173 174 175 176 177 178 179 180	171 172 173 174 175 176 177 178 179 180	171 172 173 174 175 176 177 178 179 180
181 182 183 184 185 186 187 188 189 190	181 182 183 184 185 186 187 188 189 190	181 182 183 184 185 186 187 188 189 190	181 182 183 184 185 186 187 188 189 190
191 192 193 194 195 196 197 198 199 200	191 192 193 194 195 196 197 198 199 200	191 192 193 194 195 196 197 198 199 200	191 192 193 194 195 196 197 198 199 200

Stock Existente no Fim do Mês

Nome e Data:

Appendix B

APE Consumption Pilot Form

Folha de Consumo Mensal de Medicamentos do APE

Província:…….. **VISTO**

Distrito: ……..

Comunidade: ……..

Nome do APE: ……..

Assinatura
Responsável da U.S. de Referência do

Mês:……..Ano: ……..

Ficha a ser preenchida pelo APE e entregue a Unidade Sanitária de referência até dia 21 de cada mês, durante o período de estudo. Por sua vez, a Unidade Sanitária de referência entregua ao SDSMAS coordenador dos APEs.

Instruções: *Para cada paciente tratado pinte, diariamente, uma bolinha na linha correspondente ao tratamento receitado. No início e no final de cada mês faça a contagem dos medicamentos que dispõe e usados, e preencha nos espaços em branco.*

Medicamentos		Stock no Inicio do Mês	Total Recebido no Mês	Número de Tratamentos Usados	Total Tratamentos Usado	Stock no Fim do Mês	Ruptura de Stock *Durante o mês houve falta de algum medicamento (marcar com um x):*
SRO *1 bolinha = 1 pacote*		*Pacotes*	*Pacotes*	00000 00000 00000		*Pacotes*	Sim ☐ Não ☐
Zinco 20 mg	**Crianças de 2 a 5 Meses** *1 bolinha = 1 criança*	*Comprimidos*	*Comprimidos*	00000 00000 00000		*Comprimidos*	Sim ☐ Não ☐
	Crianças de 6 Meses a 5 Anos *1 bolinha = 1 criança*						
Amoxicilina	**Crianças de 2 à 11 meses *125 mg*** 1 bolinha = 1 criança	*Comprimidos*	*Comprimidos*	00000 00000 00000		*Comprimidos*	Sim ☐ Não ☐
	Crianças de 1 à 5 anos 250 *mg* 1 bolinha = 1 criança	*Comprimidos*	*Comprimidos*	00000 00000 00000		*Comprimidos*	Sim ☐ Não ☐
Artesunato Supositorio	**50 mg (2-12 meses) - *1 supositorio***	*Supositorios*	*Supositorios*	00000 00000 00000		*Supositorios*	Sim ☐ Não ☐
	50 mg (13-42 meses) - *2 supositorios*			00000 00000 00000			Sim ☐ Não ☐
	200 mg (43-59 meses) - *1 supositorio*			00000 00000 00000			Sim ☐ Não ☐
Paracetamol	**Paracetamol 500 mg** *1 bolinha = 9 comprimidos*	*Comprimidos*	*Comprimidos*	00000 00000 00000		*Comprimidos*	Sim ☐ Não ☐
	Paracetamol 250 mg *1 bolinha = 9 comprimidos*	*Comprimidos*	*Comprimidos*	00000 00000 00000		*Comprimidos*	Sim ☐ Não ☐
Sal Ferroso	**Sal Ferroso 90 mg + Ácido Fólico 1 mg** *1 bolinha = 15 comprimidos*	*Comprimidos*	*Comprimidos*	00000 00000 00000		*Comprimidos*	Sim ☐ Não ☐
Tetraciclina Pomada *1 bolinha = 1 Tubo*		*Tubos*	*Tubos*	00000 00000 00000		*Tubos*	Sim ☐ Não ☐

Folha de Consumo Mensal de Medicamentos do APE

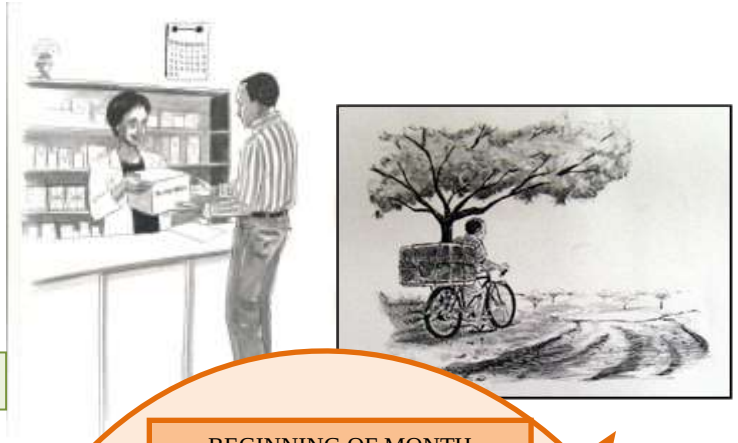
	Medicamentos	Stock no Inicio do Mês	Total Recebido no Mês	Número de Tratamentos Usados			Total Tratamentos Usado	Stock no Fim do Mês	Ruptura de Stock *Durante o mês houve falta de algum medicamento (marcar com um x):*
	Mebendazol 500 mg Comprimidos *1 bolinha = 1 Comprimido*	*Comprimidos*	*Comprimidos*	00000	00000	00000		*Comprimidos*	Sim ☐ Não ☐
Hexacloreto de Benzeno	**Solução 25%** *1 bolinha = 1 Frasco*	*Frascos*	*Frascos*	00000	00000	00000		*Frascos*	Sim ☐ Não ☐
	Pomada 600mg/60ml *1 bolinha = 1 Tubo*	*Tubos*	*Tubos*	00000	00000	00000		*Tubos*	Sim ☐ Não ☐
Fenoximetilpenicilina	**250 mg mg Suspensão** *1 bolinha = 1 doente*	*Frascos*	*Frascos*	00000	00000	00000		*Frascos*	Sim ☐ Não ☐
	500 mg Cápsulas *1 bolinha = 1 cápsula*	*Cápsulas*	*Cápsulas*	00000	00000	00000		*Cápsulas*	Sim ☐ Não ☐
Preservativos Masculinos	**Preservativos Masculinos** *1 bolinha = 1 preservativo*	*Preservativos*	*Preservativos*	00000	00000	00000		*Preservativos*	Sim ☐ Não ☐

CONSUMO DE TESTES RÁPIDOS DE MÁLARIA		**CONSUMO DE AL (Anti malária)**					
No Livro de Registo do APE, conta o número de testes usados neste mês.		*No Ficha de Consumo de AL, conta o número de AL usados neste mês.*					
			6x1	***6x2***	**6x3**	**6x4**	
Stock no Inicio do Mês (incl. Kit) - *Testes*		Stock no Inicio do Mês (incl. Kit AL APE) - *Cartelas*					Data:
No. de TDRs RECEBIDOS Neste Mês - *Testes*		No. de AL RECEBIDOS Neste Mês - *Cartelas*					___/___/_____
No. de TDRs USADOS Neste Mês - *Testes*		No. de AL USADOS Neste Mês - *Tratamentos*					Assinatura do APE
No. de stock de TDRs no Fim do Mês - *Testes*		No. de stock de AL no Fim do Mês - *Cartelas*					
Ruptura de Stock	Sim ☐ Não ☐	Ruptura de Stock	Sim ☐ Não ☐	Sim ☐ Não ☐	Sim ☐ Não ☐	Sim ☐ Não ☐	

Appendix C

APE Job Aid

Collect monthly kits and any additional commodities. Carefully transport commodities to your community.

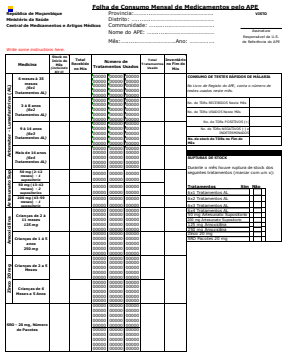


Dispense commodities to patients according to treatment protocols.

Keep activity register and consumption form up to date.

Return to health center with completed forms.

Count remaining stock, complete consumption form and monthly report.



BEGINNING OF MONTH

END OF MONTH

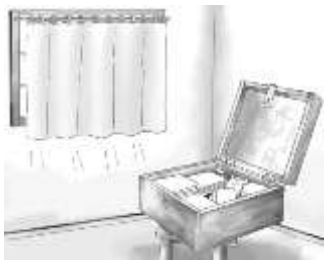
APE Logistics Activities

DURING MONTH

IF YOU ARE STOCKED OUT DURING THE MONTH:

1. Update activity register and consumption form as needed.
2. Call health center supervisor to see if they are available and have emergency stock available.
3. Take forms to health center, collect emergency stock to last until your next visit.
4. Sign any forms needed and update “total recebido” column of consumption form.

Medicina	Stock no Início do Mês (incl. Kit C) Comprimidos	Total Recebido no Mês Comprimidos	Número de Tratamentos Usados	Total Tratamentos Usado	Inventário no Fim do Mês Comprimidos
6 meses à 35 meses (6x1 Tratamento AL)			●●●●● ●●●●● 00000 ●●●●● ●●●●● 00000 ●●●●● 00000 00000 ●●●●● 00000 00000 ●●●●● 00000 00000		



Maintain good storage conditions.

Appendix D

Monitoring Forms (English)

APE Site Visit
Monitoring and Evaluation Form

Província: _____ Distrito: _____
Communidade: _____ Nome do APE: _____
Dia: _____Mês: _____Ano: _____

Consumption Form			
1. Did you receive training in stock management for the products you manage?		☐ Yes	☐ No
2. Can I see the job aids that are specific to the management of health products?		☐ Yes	☐ No
3. Do you use the consumption form to keep track of your health products?		☐ Yes	☐ No
4. Do you have any problems completing the consumption form?		☐ Yes	☐ No
5. If yes, what problems do you have? (write response):	☐ Form is too long ☐ Form is complicated ☐ Lack of stationary / supplies	☐ Don't know how ☐ Other (Specify):_____	
Reviewer: Ask the APE to show you a copy of the form and explain how to complete it. Then, take a photo of the form.			
6. Does the APE have a copy of the consumption form for this month?		☐ Yes	☐ No
7. Is the APE filling in the form for this month?		☐ Yes	☐ No
8. Is the APE filling in the form correctly?		☐ Yes	☐ No
9. If not, what are the problems the APE is having with the form? (write all):			

Product Supply			
10. How often do you receive a new supply of commodities?	☐ Less than once per month ☐ Whenever I need more ☐ Other _____	☐ Every month ☐ Every week	
11. When was the last time you received commodities?	☐ Within past week ☐ Within past month	☐ More than one month ago	
12. Where did you go the last time you received commodities?	☐ Health Center ☐ District	☐ Other APE ☐ Other _____	
13. What commodities were you resupplied with last time? (check all that apply)	☐ APE Kit ☐ AL Kit	☐ RDTs ☐ Other _____	
14. Did you receive extra stock of any of the following commodities? (check all that apply)	☐ AL ☐ RDTs	☐ Amoxicillin ☐ Condoms	☐ Paracetamol ☐ ORS
15. If yes, did you receive the extra stock at the same time you received regular resupply?		☐ Yes	☐ No
16. Did you submit your consumption form at the time of resupply?		☐ Yes	☐ No
17. Did you experience a stock out of any commodity in the previous calendar month?		☐ Yes	☐ No
18. If yes, which of the listed commodities did you stock out of? (check all that apply)	☐ AL ☐ RDTs	☐ Amoxicillin ☐ Condoms	☐ Paracetamol ☐ ORS

Product Storage *Reviewer: Ask to see where (s)he stores the products.*		
19. Does the APE have a storage box?	☐ Yes	☐ No
20. Is the APE using appropriate storage?	☐ Yes	☐ No
21. Are supplies stored in a dry area, out of direct sunlight?	☐ Yes	☐ No
22. Are condoms and other latex products stored away from electric motors and fluorescent lights?	☐ Yes	☐ No
23. Are medical supplies stored separately, away from insecticides and chemicals?	☐ Yes	☐ No
24. Are cartons arranged so that any arrows point up?	☐ Yes	☐ No
25. Are there any damaged or expired products in the storage box?	☐ Yes	☐ No
26. Is the storage box locked when not in use?	☐ Yes	☐ No

Prescription Patterns. *Reviewer: Ask the APE to tell you what (s)he dispenses to the following patients. Be sure to include units.*		
27. Amoxicillin	Child 2–11 months:	Child 1–5 years:
28. Zinc	Child 2–5 months:	Child 6 months to 5 years:
29. Mebendazole	Child:	Adult:
30. Paracetamol	Child 2–5 months:	Child 6 months to 5 years:

Physical Inventory *Reviewer: Count the following products on hand*		
Commodities	Stock available?	Stock on hand
Rapid Diagnostic Test for Malaria (RDT)	☐ Yes ☐ No	
Paracetamol	☐ Yes ☐ No	
ORS	☐ Yes ☐ No	
Male Condoms	☐ Yes ☐ No	
Amoxicillin	☐ Yes ☐ No	
Zinc	☐ Yes ☐ No	

District Site Visit
Monitoring and Evaluation Form

Província: _____ Distrito: _____
Dia: _____Mês: _____Ano: _____
Method of data capture (ODK Scan or Summary Form) ☐ Scan ☐Form

Consumption form – Questions for District APE Coordinator		
1. Do you regularly receive consumption forms from the APEs?	☐ Yes	☐ No
2. Do you believe that the information on the consumption form represents the actual usage of these products?	☐ Yes	☐ No
3. Why or why not? (write response):		
4. In your opinion, do you believe the information on the form is useful to have?	☐ Yes	☐ No
5. Why or why not? (write response):		
Ask the Coordinator to show you copies of the forms they have received for the previous month		
6. Have you completed the processing of forms this month using the ODK Scan?	☐ Yes	☐ No
7. How much time did you spend processing the forms this month? (write response in minutes):		
8. Count the number of forms received during the previous month and enter total:		
9. How many of the forms were unique reports (i.e., only one report from each APE)?		
Review the forms for completeness, messiness, and accuracy		
10. Are the forms generally complete?	☐ Yes	☐ No
11. Are the forms generally legible?	☐ Yes	☐ No
12. Are the forms generally accurate (i.e., circles for quantities used filled properly, totals added correctly, math for each column is correct, etc.)?	☐ Yes	☐ No
13. Do you think APEs need additional training in completing the consumption form?	☐ Yes	☐ No
ODK Scan- Questions for District APE Coordinator		
14. Do you have the device with ODK Scan installed?	☐ Yes	☐ No
15. If no, why not? (write response): 16.		
17. If yes, can you show me the device?	☐ Yes	☐ No
18. If no, why not? (write response):		
19. Is the device functioning currently? Turn on the device to see if it is functioning currently.	☐ Yes	☐ No
20. Are you using the device to scan APE consumption forms? Ask to see a copy of the most recently scanned copy of the form, and then mark "yes" or "no."	☐ Yes	☐ No
21. How do you characterize your satisfaction with the device?	☐ Very satisfied ☐ Satisfied	☐ Neutral ☐ Not satisfied ☐ Very unsatisfied
22. Please state your reasons for satisfaction or dissatisfaction:		
23. Have you had any problems using the device this month?	☐ Yes	☐ No

24. If yes, please describe the problems you have had this month or are having. *(write responses if different from selections, check all that apply)*	☐ Device Errors ☐ Error in ODK application ☐ Can't remember how to use ODK applications ☐ Incorrect data ☐ Can't keep the device charged	☐ Battery problem ☐ Network problems ☐ Not enough time to scan the forms ☐ Other *please specify:*
Ask the Coordinator to show you how to process a form using the device		
25. How much time did it take the Coordinator to process the form (enter in minutes)?	☐	
26. Did the supervisor have problems with the application?	☐ Yes	☐ No
27. What problems did they have? Please describe.		
28. Observations:		

For more information, please visit deliver.jsi.com.

USAID | DELIVER PROJECT
John Snow, Inc.
1616 Fort Myer Drive, 16th Floor
Arlington, VA 22209 USA
Phone: 703-528-7474
Fax: 703-528-7480
Email: askdeliver@jsi.com
Internet: deliver.jsi.com