Supply Chains 4 Community Case Management

# Malawi

## Intervention Strategy for Improving the Community Health Supply Chain

## Implementation and M&E Plan

## January 2011 – February 2013

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**SC4CCM Project**

The Improving Supply Chains for Community Case Management of Pneumonia and Other Common Diseases of Childhood Project is funded by the Bill & Melinda Gates Foundation under grant agreement no. OPP1002868, beginning November 2, 2009. The grant is implemented by JSI Research & Training Institute, Inc. The project aims to demonstrate that supply chain constraints at the community level can be overcome, and that doing so may yield significant improvements in the effectiveness, scale, and impact of CCM. SC4CCM will identify, demonstrate, and institutionalize supply chain management (SCM) practices that improve the availability and use of selected essential health products for treating children under five in community-based programs.

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**Abstract**

In 2010, the SC4CCM Project conducted a baseline assessment of the community health supply chain in Malawi. Based on the results of the baseline assessment, SC4CCM developed interventions to learn how to significantly improve CCM product availability at the community level and strengthen the community health supply chain accordingly. This implementation plan presented to the MOH includes the basis for how the interventions were developed and the anticipated methods for monitoring and evaluating the impact of the interventions.

Cover photo: SC4CCM Project. Woman and child outside of a health center. Mulanje, Malawi 2011.

JSI Research & Training Institute, Inc.
1616 Fort Myer Drive, 11th Floor
Arlington, VA 22209 USA
Phone: 703-528-7474
Fax: 703-528-7480
Internet: www.jsi.com

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# Acronyms

| | |
|---|---|
| ACT | Artemisinin-based combination therapy |
| CCM | community case management |
| DPAT | District Product Availability Team |
| EM | Enhanced Management of Community Health Products Intervention |
| EPT | Efficient Product Transport of Community Health Products Intervention |
| HC | health center |
| HF | health facility |
| HSA | health surveillance assistant |
| HTSS | Health Technical Support Services |
| IMCI | Integrated Management of Childhood Illnesses |
| KII | key informant interviews |
| LA | Lumefantrine Artemether |
| LIAT | Logistics Indicators Assessment Tool |
| LMIS | logistical management information system |
| LSAT | Logistics System Assessment Tool |
| MOH | Ministry of Health |
| ORS | oral rehydration solution |
| RMS | Regional Medical Stores |
| SC | supply chain |
| SCM | supply chain management |
| SOPs | standard operating procedures |
| TOC | Theory of Change |

# Executive Summary

In Malawi, SC4CCM's objective is to collaborate with the Ministry of Health (MOH) and its community case management (CCM) and supply chain partners to learn how to significantly and sustainably improve product availability at the community level. The project believes that learning how to achieve significant improvements in supply chains for CCM and other products managed at the community level will lead to significant improvements in product availability for serving clients at the community level.

SC4CCM, in partnership with the Malaria Alert Center (MAC) in Malawi conducted a baseline assessment of the community health supply chain in May-June 2010. Results from the baseline were validated by health workers at all levels of the system and then used to identify chronic weaknesses in the community health supply chain. Intervention strategies were designed based on the premise that improvements needed to result in significant rather than incremental change, and needed to be sustainable from a resource perspective at scale. The strategies evolved through an iterative process, where the project made sure to consult with local level implementers (e.g. district pharmacists or DHOs) and concurrently performed analyses on the sustainability of the approach.

The project identified two major interventions to be tested. The ***Enhanced Management of Community Health Products*** focuses on management practices, takes a team approach to improving product availability, and focuses on creating a customer oriented supply chain. The second intervention, the ***Efficient Product Transport of Community Health Products,*** focuses on identifying improvements in efficiency, specifically around transport and use of the HSA's time. Both interventions include improved data visibility as the cornerstone of each strategy, albeit applied in different ways. This focus on data visibility recognizes that improved data for supply chain decision making is a best practice in supply chain management, without which significant improvements in SC performance and product availability may not be possible to achieve.

The intervention strategies along with the first version of the implementation plan with detailed activities and timeframes was developed in January 2011 and shared with key MOH and other stakeholders in Malawi. Activities identified in the plan began immediately in preparation for launching both interventions in June. The intervention launch will include a training-of-trainers activity and subsequent roll out trainings of all district, health center and HSA staff in the 6 intervention districts. Prior to the TOT, cStock, the SMS reporting and resupply system will go live and be included in the training. SC4CCM has also contracted a partner, Africycle, who will provide a 1-day training for all HSAs in the 3 EPT districts on bicycle maintenance and will provide them with tools necessary to perform routine maintenance. The trainings will be spread over a 3 month period to ensure that cStock can cope with the increasing demand, in readiness for it to be rolled out to all CCM districts in Malawi within the next year.

In September 2013, a midline assessment will be undertaken to measure the impact of each intervention and results will be presented at data validation workshops to ensure adequate consultation. Based on the results and using a consultative process with MOH and partners, a scale up strategy for the community health supply chain will be developed.

# Introduction

The purpose of this document is to share the implementation plan and M&E plan to support the rollout of the intervention strategies for improving the community health supply chain in Malawi. SC4CCM, in collaboration with the Ministry of Health in Malawi and its CCM and supply chain implementing partners, used a systematic process of collecting baseline data and applying it to a framework to best understand what aspects of the community health supply chain in Malawi needed improvement. Using an iterative and consultative process, the project devised a series of interventions to address supply chain weaknesses at the community level. The interventions borrowed ideas from the commercial supply chain world but were adapted to the realities on the ground and screened for their ability to be sustainable at scale. For example, an intervention that first intended to develop a "delivery truck" system using outsourced riders and motorcycles in partnership with a regional NGO evolved into a bicycle maintenance system after extensive local consultation vetoed the idea of motorcycles and a delivery method, and a cost-analysis proved that motorcycles would not be a sustainable investment for the Government of Malawi.

This document also deliberately includes multiple components in an effort to serve as a comprehensive reference for this phase of the project, including:

- Relevant excerpts from the baseline assessment data,
- A description of the Theory of Change both as a technical framework and as an M&E framework,
- The purpose and intent behind the intervention strategies,
- The explanation of our role in the implementation plan and the plan as a gantt chart, and
- The M&E plan

While the document is regrettably long, it pulls together all the pieces that provide the context for the learning phase the project is currently engaged in and will be shared with the MOH and all relevant stakeholders in Malawi.

# Theory of Change for the Community Health Supply Chain in Malawi

In Malawi, SC4CCM's objective is to collaborate with the Ministry of Health (MOH) and its community case management and supply chain partners to learn how to significantly and sustainably improve product availability at the community level. The project believes that learning how to achieve significant improvements in supply chains for community case management (CCM) and other products managed at the community level will lead to significant improvements in product availability for serving clients.

SC4CCM uses a Theory of Change (TOC) that serves as a technical framework for analyzing the performance of community health supply chains in its focus countries. SC4CCM has a project TOC, which serves as the umbrella framework for country-specific TOCs. While all the TOCs aim to achieve the same objective, the country-specific TOCs have variations in steps that constitute the causal pathways that are necessary to achieve that objective. The country level objective for all TOCs on the SC4CCM project is to achieve CCM product availability at the community level when, and in the quantities, needed in order to enable community health workers, called health surveillance assistants (HSAs) in Malawi, to treat common, curable illnesses of childhood in the community.

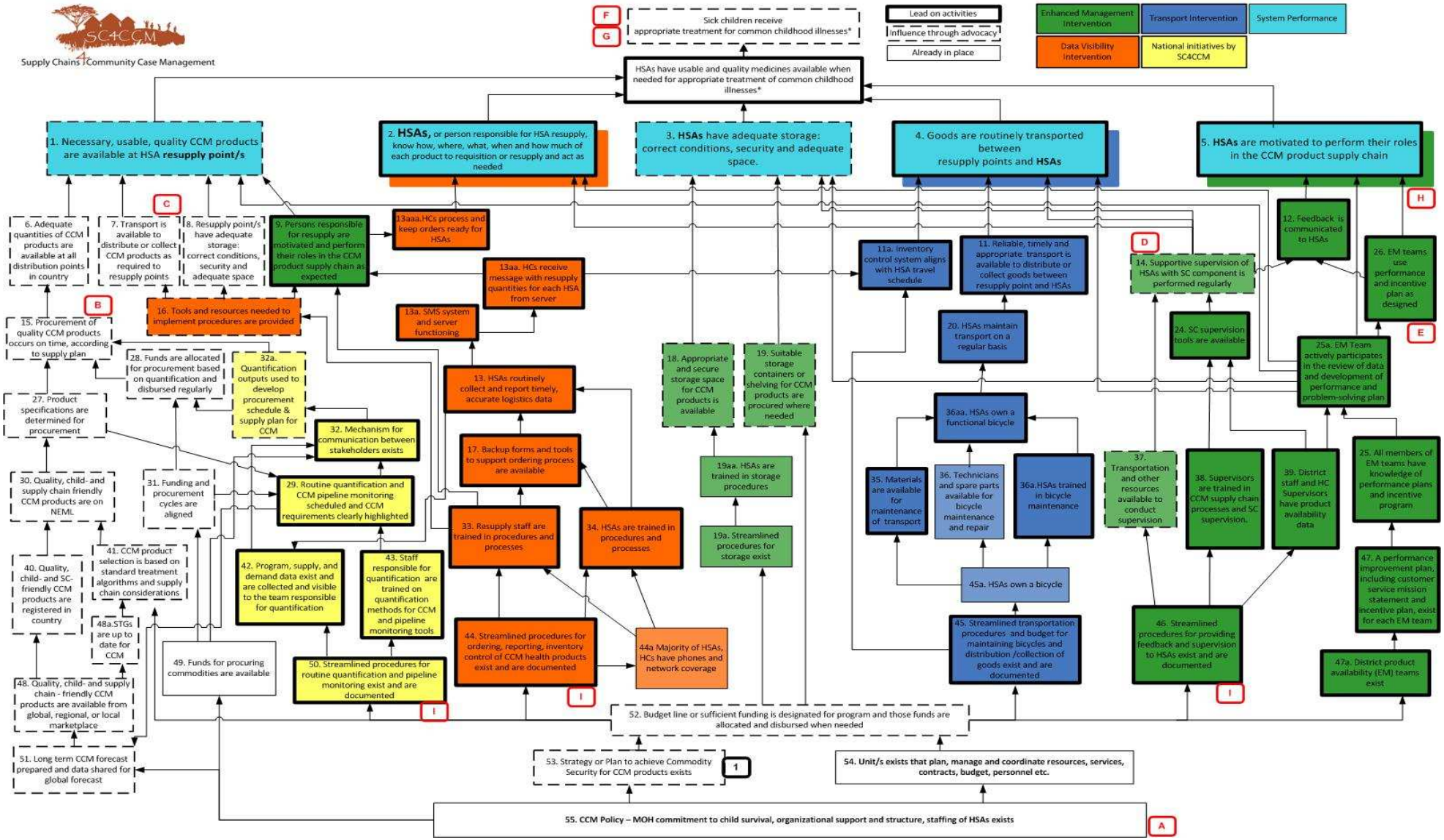
The TOC serves multiple purposes. From an operational perspective, the TOC provides a way in which data can be organized to guide strategic decisions about where in the supply chain to test interventions that are likely to result in significant improvements in product availability, and helps to identify the kinds of interventions that are needed. From a learning perspective, the TOC serves as a monitoring and evaluation framework to guide data collection, analysis and interpretation as well as to develop hypotheses and causal pathways for change within the community health supply chain. Each precondition leading up to the overall main country objective on the TOC has a corresponding indicator to provide an assessment of performance.
Appendix A depicts the complete Malawi-specific TOC, with its causal pathways linked to each of the learning interventions being implemented. The second and third rows show the main country level objective and the five important preconditions that contribute to achieving the main objective.

## Baseline Results from the TOC

To develop the Malawi-specific TOC, SC4CCM conducted a baseline assessment in Malawi between May-June 2010 that determined the overall performance of the community health supply chain as well as indicators for each of the five main pre-conditions of the Theory of Change. Full details of the baseline results are contained in a separate report1. Organized by the TOC framework, the results enabled SC4CCM and its partners to identify the major drivers of product availability at the community level and use results for multiple preconditions on the TOC to identify possible solutions to overcoming SC bottlenecks and barriers to product availability at the community level.

[1] SC4CCM. 2011. *Preliminary Report on the Baseline Assessment of Community Case Management Supply Chain.* Arlington, VA. SC4CCM.

**Figure 1: Theory of Change Diagram**



The baseline results suggest that the preconditions that appear to drive product availability at the community level in Malawi are:

- Precondition 1: Product availability at the resupply point,
- Precondition 2: Low levels or lack of knowledge by resupply point about how much product to resupply or how to act as needed,
- Precondition 4: The transportation burden associated with carrying products between resupply point and the HSA, and
- Precondition 5: Motivation of HSAs to perform their supply chain roles.

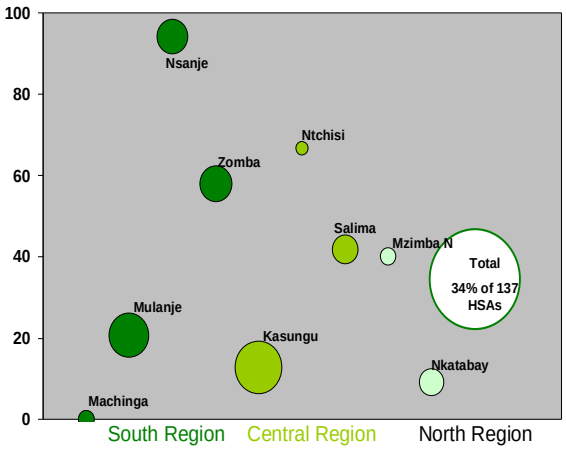
## Precondition 1

Product availability during the survey was low throughout the entire public sector pipeline; only one of the three regional medical stores, only 47% of resupply points and only 34% of HSAs had all three key CCM products in stock on the day of visit. While product availability throughout the entire CCM product pipeline was seen as a major driver of product availability at the community level, it was recognized that this was not the only driving factor affecting product availability at HSAs.

Figure 2 demonstrates how districts had striking differences in product availability as an overall indicator. Some districts, despite experiencing limited funding of their drug budgets, being re-supplied from the same source as others, or receiving support from the same CCM implementing partner performed significantly better than their peers. The project hypothesized that the quality of leadership and level of commitment were factors that contributed to improved product availability despite overall resource constraints.

The low level of commitment to prioritizing product availability at the community level was identified as problematic throughout the system. As many as 28% of resupply points reported turning down product requests from HSAs when they themselves had low stocks, and 17% of HSAs surveyed had been trained in CCM several months before baseline but had not yet received products following their training.

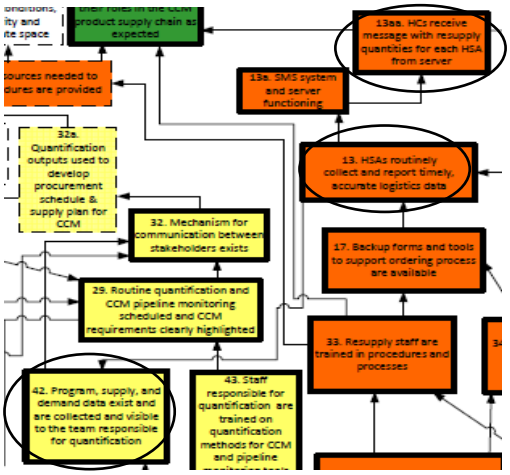
**Figure 2: Percent of HSAs* with 3 Key Products** in Stock on the Day of Visit by District**




*Percent is among HSAs who manage drugs. Size of circle represents number of HSAs in that district.

**cotrimoaxzole, ORS, any type of LA

**Figure 3: Excerpt from TOC Highlighting Data Visibility**




## Precondition 2

HSA consumption data was not consistently available at levels other than health center for making timely logistics

decisions. Only 14% of health centers at the time of survey reported HSA data separately from their own data to the district level, meaning that the vast majority aggregated the data or did not include it at all. Lack of data visibility in a supply chain impedes effective decision-making at all levels and results in poor accountability, poor forecasting, the inability to monitor the national pipeline and take quick actions to avoid stockouts, and a limited ability to advocate for increased funding for product procurement. Data visibility is an intermediary precondition to many of the preconditions in the Theory of Change as highlighted in Figure 3.

### Precondition 4

Routine transportation of products between resupply points and HSAs was observed as both burdensome and time consuming with nearly 90% of HSAs depending on bike or foot to travel on unpaved roads for one to three hours to access the resupply point. The problems identified by HSAs associated with transport included "it was too long to reach the resupply point," "there was no transport available," "the transport was always broken" and "difficulties carrying supplies."

### Precondition 5

Motivation is an essential component of a functioning supply chain, as the tasks required of stock managers are often mundane and laborious. Supervision and feedback are proven sources of motivation for such workers. While high levels of supervision were reported by HSAs and supervisors, this survey found that supply chain management was only included as part of supervision around 50% of the time, and similarly found missing as part of feedback given to HSAs. The qualitative data collected by this assessment also showed the lack of an incentive system for HSAs, which may result in lower job satisfaction over time.

## Learning Hypotheses:

Based on the results from the baseline assessment and analysis within the context of the TOC, SC4CCM and its partners developed an intervention strategy for improving community health supply chains based on the following hypotheses.

1. Creating a customer service oriented supply chain by developing teams that have a sense of urgency around maintaining consistent product availability for HSA commodities, empowering teams by improving data visibility and decision making authority/capacity, and recognizing SC performance and achievements by teams and individuals will significantly improve product availability at the HSA level.

2. Addressing transportation and data visibility challenges between resupply points and HSAs will significantly improve product availability at the HSA level.

These hypotheses have been translated into two interventions for significantly improving product availability at the HSA level:

The first intervention takes a strategic approach of focusing on management practices and thus is named ***Enhanced Management of Community Health Products.***

The second intervention takes a strategic approach of focusing on identifying improvements in efficiency, specifically around transport, and is named ***Efficient Product Transport of Community Health Products.***

Both interventions include improved data visibility as the cornerstone of each strategy, albeit applied in different ways. This focus on data visibility recognizes that improved data for SC decision making is a best practice in supply chain management, without which significant improvements in SC performance and product availability may not be possible to achieve.

In addition to these two interventions, SC4CCM is also working at the national level to support and build capacity in quantification and supply planning for CCM products. While the majority of the project's focus is on identifying supply chain solutions that address specific bottlenecks at the community level, product availability within the national pipeline is a critical prerequisite for ensuring product availability at the community level. Recognizing that a national level intervention is not within the project's mandate and that there are multiple donors and partners at the national level supporting commodity procurement, SC4CCM is limiting its role to a catalytic, advocacy and coordinating one to ensure that CCM products for HSAs are effectively quantified for and that sufficient funding can be made available for their purchase. This explains the lack of an independent intervention strategy for this stream of activities.

## Intervention Strategies for Improving Product Availability at the Community Level

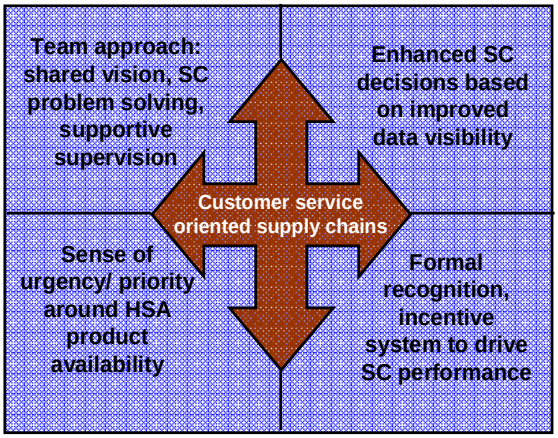
### Enhanced Management of Community Health Products

The Enhanced Management Intervention (EM) aims to help Ministry of Health staff at district, health center, and community level to significantly improve availability of medicines for community health at the HSA level through promotion of high team performance practices. Benefits will also be realized by CCM partners committed to improved drug availability at community level, MOH policy makers committed to assuring progress towards improved child health through improved drug availability, and development partners interested in supporting innovative approaches to addressing drug availability challenges in the public sector health supply chain system.

Experience has shown that despite limited funding of the drug budget, some districts have performed strikingly better in terms of availability of community health products at the district, health center, and HSA levels than others even while being re-supplied from the same source, or receiving support from the same partner. One driving factor for community health product availability is the quality of leadership and level of team cohesion and commitment to community health product availability.

Using a team approach to improve product availability, the Enhanced Management Intervention seeks to achieve the following objectives:

- Promote and foster a team vision and commitment to community health product availability among MOH staff at all levels of the product supply chain
- Promote supply chain goal setting, performance monitoring, and recognition of superior performance to enhance effective team performance
- Improve communication and collaboration among team members bound by a common goal
- Promote the use of data to guide timely problem



solving and decision making at district and lower levels to solve supply chain issues

Improving product availability at community level is a function of many variables, apart from budget amount available at district level. Successful implementation of the Enhanced Management Intervention is expected to bring about the following outcomes:

- Improved quality in leadership and commitment to community health product availability at all levels
- Enhanced teamwork and accountability to collective team goals
- Improved communication and urgency around community health product availability decision-making
- Increased usage of dashboard supply chain data for supply chain decision making
- Enhanced motivation among staff to perform community health supply chain tasks
- Improved supply chain performance planning and monitoring
- Improved community health product availability in intervention districts relative to non-intervention districts.

## Efficient Product Transport of Community Health Products

The Efficient Product Transport Intervention (EPT) aims to support Ministry of Health staff at district, health center, and community levels to significantly improve availability of products for community health by making transportation more efficient and enhancing timely transmission of data between HSA and resupply point (health center or district pharmacy). Benefits will be realized by CCM partners committed to improved drug availability at community level, MOH policy makers committed to assuring meaningful progress towards improved child health through improved product transportation, and development partners interested in supporting innovative approaches to addressing drug availability challenges in the public sector health supply chain system.

Efficient transport of products, by definition, means that the job is accomplished with a minimal expenditure of time and effort. The objectives of this intervention are to:

- minimize travel time purely for the purposes of collecting supplies,
- simplify and automate the resupply process,
- reduce the volumes of products that must be transported, and
- enhance the reliability of bicycles.

There are three key components to achieving an efficient transport system for HSAs:

1. **A continuous review inventory control system** that is flexible and aligned to the routines of the HSAs, allowing HSAs to collect smaller, more frequent top-up orders during their scheduled visits to reduce the requirement for the HSA to make a special trip to pick up products.
2. **An SMS-based reporting and resupply system (cStock)** that calculates resupply quantities automatically for health centers and allows data to be available in advance of the HSA arriving to pick up products.

3. **Regular bicycle maintenance** performed by HSAs that reduces the number and severity of breakdowns and repairs needed to keep the bicycles functioning, thus resulting in more consistent and reliable transport. HSAs are trained in repair skills and provided with the tools necessary to maintain their bicycles.

Successful implementation of the Efficient Product Transport Intervention is expected to bring about the following outcomes:

- Increased HSA time spent in the village treating sick children by reducing the time spent traveling to collect resupplies,
- Reduced transport burden due to a smaller volume of products that must be transported at one time,
- Timely reporting with automated calculation of resupply quantities for a simplified resupply process,
- Less breakdowns and repairs required for bicycles so that they can be used for collecting supplies and other work related activities,
- Enhanced HSA ownership and responsibility towards maintenance of their bicycles.

## Improving Data Visibility

Incorporating Improved Data Visibility as a core component of each intervention recognizes that enhancing data visibility improves the quality of data available – by providing decision makers at higher levels of the system with more accurate data with which to make supply chain decisions, and by facilitating the decision making process by translating the data into performance reports that can more readily be used for effective decisions. Examples of the kinds of decisions that will be enhanced by having better, timelier data available include:

- Automatic calculation of resupply quantities and data available in advance of the HSA coming to collect supplies will reduce the wait time and burden on the health center staff who can organize supplies ahead of the HSA arriving.
- Development of more comprehensive quantification and supply plans for CCM and other community health level products, using stock on hand and calculated consumption data from the HSA level.

## Parallel Supply Chains – A Potential Risk

Baseline results demonstrated that product availability of the four CCM products at the HSA level were very low. Given the inability of the public sector supply chain over the last few years to reliably ensure availability of sufficient supplies of CCM products for HSAs, CCM partners have begun bypassing the public sector supply chain and delivering cotrimoxazole, LA, ORS and zinc directly to HSAs. While this is an understandable response to the immediate crisis of chronic stockouts of CCM products – particularly LA – at the HSA level, it is an extremely costly, time-intensive and unsustainable solution for this problem in the long term. It is highly unlikely that this mechanism can be sustained over time, even by partners, and has the added disadvantage of further undermining the already fragile public sector supply

chain. Specifically, there is a risk of health workers losing logistics skills when partners could instead be redirecting resources to capacity building activities.

In addition to this CCM parallel supply chain, other donors—namely USAID and the Global Fund—are also in the process of developing a formal parallel system because of their concern about product availability of contraceptives and anti-malarials at all levels of the system. The USAID | DELIVER Project will operate this parallel supply chain on behalf of the donors.

Moving forward the MOH will work to transition CCM partners back towards building solutions with a long term perspective and SC4CCM is interested in finding a solution that can help CCM partners move from this inefficient parallel distribution mechanism to a long term sustainable supply chain that will ensure product availability at the HSA level. However, it is important to note that if the MOH and CCM partners are unable to move away from the CCM parallel system towards a more sustainable supply chain, this poses a great risk to SC4CCM's ability to use its interventions to successfully identify supply chain solutions for HSAs. This is because the success of SC4CCM interventions relies greatly on collaboration with CCM partners.

Currently, the CCM partner parallel system poses a barrier to the SC4CCM intervention efforts. By bypassing the public sector supply chain, the parallel system masks the weaknesses and vulnerabilities of that system and prevents SC4CCM from being unable to accurately pinpoint those weaknesses and test solutions to address them. In effect, the emergency response of the partners poses a barrier to developing a long term, sustainable CCM supply chain since it will prevent the ability to detect changes in performance in the public sector system associated with interventions.

Recognizing the importance of ensuring that HSAs have reliable supplies of products, even during a learning period, SC4CCM has proposed an interim solution to transition CCM products back into the public sector supply chain. SC4CCM proposes that after cStock in Malawi has successfully been implemented in the 6 intervention districts, without waiting for the end of the intervention period, it can be adopted by CCM partners as a way to ensure they have visibility into stock levels of HSAs within their focus districts.

Thus, the project proposes that CCM partners support the roll out of cStock in non-project focus districts of Malawi, and then once data is available to monitor the product availability at HSA level they will pull back from operating a parallel distribution system of products to HSAs, and instead rely on the existing system to take products to HSAs. Once the SMS system is implemented and the parallel distribution system stops, the partners and MOH staff can closely monitor stock levels via the cStock dashboard to ensure HSAs do not reach critical low levels of products. If the HSAs do reach a critically low stock level, partners can make a targeted distribution to solve specific stock level crises. However the intention is that cStock will help HCs and districts make better resupply decisions so that HSAs will experience fewer stockouts moving forward.

## cStock: Anticipated benefits of roll out

The transition from distributing products as a regular occurrence to distributing products only at the time of a known crisis will serve as the first step to phasing CCM products back into the existing supply chain, paving the way for sustainable options to be identified. Furthermore, implementation of cStock will provide a number of far reaching benefits, including:

- MOH and CCM partners will have timely visibility into actual stock levels at all HSAs participating in cStock.

- Costs of distribution are likely to go down significantly without compromising product availability. Because of the timely visibility, partners will be able to distribute in a targeted manner to address specific products and HSAs.
- SC4CCM will have borne the cost for the software development and trained a national team of trainers. Therefore the cost of implementation to partners will be minimal relative to the benefits, especially when viewed in light of being able to inform distribution.
- Partners will also be able to routinely access the cStock dashboard and utilize the information for their routine supervision activities, rather than only using it for emergency resupply.
- At a national level, having cStock provide data from multiple districts will enable the MOH to have more accurate and timely consumption and stock data, which will assist greatly with quantification and supply planning.

# Implementation Plan

The implementation plan outlines the specific activities that the SC4CCM project will oversee, lead and support for each intervention area during the testing phase in Malawi. The implementation plan is divided into activity streams around the intervention groups – data visibility, efficient product transport and enhanced management (see Appendix D).

## Activity Stream 1 – Overall

The first activity stream is focused on mechanisms for communicating with MOH and stakeholders regarding the progress of interventions to share lessons learned and successes. Activities include quarterly CCM logistics meetings to share data from intervention monitoring and pipeline monitoring and semi-annual meetings with intervention districts to share lessons. Keeping stakeholders involved during the testing phase will enable a smooth transition from testing to scale up and institutionalization of the interventions.

## Activity Stream 2 – Monitoring and Evaluation

Activity stream two refers to the monitoring and evaluation activities as outlined in the M&E plan that follows this section. The implementation plan clearly shows the beginning and ending of the testing period in Malawi. The testing period will last at least twelve months covering a full national procurement cycle and multiple reordering cycles at the lower levels.

## Activity Stream 3 – SMS Development and Phase In

Activity stream three details the process of development and phase in of the SMS based reporting and resupply system, called cStock. Within this activity stream are two basic streams of work, the first being around the development of the software and the other around designing the tools and materials for training the users of the system. SC4CCM has subcontracted the development of the software to Dimagi[2] and is working closely with the software developers to ensure the system is technically sound and that the MOH and other stakeholders have adequate opportunity to give inputs into the design of the system.

Simple standard operating procedures (SOPs) and job aids will be developed for the HSAs, HC staff and district staff on how to use cStock. Job aids for HSAs will include illustrations and be produced using durable materials at a size that allows them to be kept in HSA drug boxes.

## Activity Stream 4 – Efficient Product Transport

Efficient product transport has a number of components to implement: the bicycle maintenance, the SMS system and the introduction of new inventory control procedures. SC4CCM has subcontracted the bicycle maintenance component of this intervention to Africycle[3]. The subcontractor will first conduct an assessment of a sample of bicycles used by HSAs in the intervention districts to determine common

[2] http://www.dimagi.com/

[3] http://www.africycle.org/

models of bicycle used by HSAs, the current condition of bicycles, type and frequency of common breakdowns and what tools are most needed to maintain bicycles. Following the assessment materials will be developed to train HSAs in proper routine maintenance and how to identify problems with the bicycle before they require expensive repairs. Africycle will also procure a small maintenance kit to distribute to HSAs at the training that will contain non-consumables such as tools and repair manuals.

SOPs will be developed that clearly outline the overall intent of the intervention, incorporate the procedures for cStock (see activity stream three), and contain roles and responsibilities and job aids providing step by step instructions for each activity. The SOPs will be designed for use by district and health center staff and will be a tool for scaling up the intervention after the testing phase.
HSAs and health center staff will be trained in both cStock and bicycle maintenance as a package to emphasize the relationship of a working bicycle with the procedures of collecting supplies. As mentioned in activity stream three, comprehensive SOPs will be developed that outline the entire intervention package including the new inventory control procedures, the use of cStock for reporting and resupply and the bicycle maintenance.

Two day training workshops will be conducted with the first day dedicated to training on inventory control procedures and cStock and the second day dedicated to hands on training on bicycle maintenance. SC4CCM will train a group of trainers from both the MOH and implementing partners who will be responsible, under the supervision of SC4CCM, for conducting the two day training workshops.

Following the roll out SC4CCM will provide intervention support in the form of joint supervision visits to provide on the job training to HSAs and health centers on all parts of the intervention. Intervention support will target poorly performing HSAs and health centers that require assistance to properly implement the intervention.

## Activity Stream 5 – Enhanced Management

Enhanced management involves establishing District Product Availability Teams (DPATs) comprised of district management, health facility staff, and HSAs who have a shared vision, agreed method for communication and a performance improvement plan. SC4CCM will conduct a two day workshop first with IMCI Coordinators, District Pharmacy Technicians, Cluster Supervisors and Senior HSAs from health centers to develop a district level team. This will be followed by multiple two day workshops with HSAs and health center staff. The Senior HSAs will overlap between the two layers of workshops to ensure coordination and common understanding between district, health center and community level.

The two day workshop will also train staff on the use of the SMS system for reporting and resupply based on standard procedures. In addition district and health center staff will be trained on how to review and use monthly reports from cStock to monitor and track the impact of their improvement plan on their performance in the supply chain.

Once the teams have been established, trained and performance monitoring procedures put in place, SC4CCM will continue to provide targeted intervention support to weak areas to ensure the intervention is properly implemented. Intervention support will include first identifying problem areas with the IMCI coordinator and district pharmacy technician and then participating in joint supervision visits with supervisors and district level staff, as appropriate, to ensure health center and HSAs fully understand their roles in the supply chain.

## Activity Stream 6 – Quantification

SC4CCM will provide technical assistance to the quantification of CCM products during each year of the project. SC4CCM will endeavor to build capacity and institutionalize good quantification practices within both the IMCI unit and HTSS to ensure that products for the community are always in good supply nationally. To achieve this SC4CCM will participate in the annual integrated quantification that is conducted in February and includes all health products in the government health system. SC4CCM will also work with the IMCI unit and HTSS each quarter to update the pipeline database to monitor the stock status and identify procurement needs. The results of the pipeline monitoring will be presented at the CCM logistics meetings included in activity stream one.

## Activity Stream 7 – Sustainability

This activity stream includes the activities undertaken in the development of the intervention strategy to ensure that the strategy has the potential to be scaled up and is sustainable.

# Monitoring & Evaluation Plan

The M&E plan describes how the project intends to monitor and evaluate the interventions developed for Malawi, and test the validity of the country-specific Theory of Change framework. It describes key monitoring and evaluation activities planned post-baseline, and explains the links with the country-specific TOC. Project core and sub-indicators for performance measurement, testing and learning are listed as annexes. This plan will focus primarily on the time frame between intervention start-up and the midline assessment. After midline evaluation activities are completed, results will be used to guide decisions on which strategy or strategies to scale up, if any, and whether any changes in the approaches are called for. An endline assessment will be carried out before the end of the project to assess the effectiveness of strategies selected for scale-up actions as determined by the MOH.

## District selection for intervention and non-intervention groups:

Of the 10 baseline districts visited across the country at baseline (Zomba, Ntchisi, Salima, Mzimba North, Nkotakota, Nsanje, Kasungu, Machinga, Nkatabay, and Mulanje), 6 were chosen to be project intervention districts in order to measure intervention impact over time (see Appendix E). The remaining 4 districts visited at baseline will be considered non-intervention districts, and the project will re-visit them for the midline evaluation only. The process of selecting districts for intervention and non-intervention groups included matching characteristics across the districts. Characteristics of districts were used to create groups that are similar to each other for greater validity when making comparisons. Characteristics from baseline survey and external sources (e.g. most recent DHS, 2004-5 surveillance report, etc) considered for this exercise were the following:

- Total N (HSAs)
- HSAs who manage health products
- HSAs with all 3 products in stock on day of visit
- Distance from HSA to resupply point
- HSA job satisfaction
- Access to mobile phone network
- Access to internet
- Rates of malaria, cough and diarrhea in under 5 population
- Partners supporting CCM (Save the Children, PSI, Basics, UNICEF, WHO)
- Geographic diversity

The evaluation design requires one district from each region (South, Central, and North) to be in the non-intervention group. The selection of districts for the non-intervention group was made by chance when the matching between other zones/regions worked best in that way to create groups with equal characteristics.

# Key M&E activities

## Routine Monitoring for Intervention Impact

Routine data is essential for decision making between periodic surveys to monitor the success of the interventions and adjust them as necessary, to ensure learning is continuous, and to support the achievement of desired outcomes. With the launch of the intervention implementation phase in 2011, the project will immediately begin routine intervention monitoring activities to track progress and to generate data for making programmatic adjustments over the one year testing period.

Routine monitoring will be done over one week of each month by 2 SC4CCM and MOH staff. Monitoring visits will be made to randomly selected resupply health facilities and associated HSAs who operate functional village clinics in the 6 intervention districts. Sampling will include only 'registered' HSAs (i.e. those who have been trained in either SC4CCM intervention package) who manage products. Selection of sites will be done by project staff, at random within each district so that all sites have the same chance of selection each time. HFs will be selected first at random, and then HSAs associated with those HFs will be selected at random, to be evenly divided over the number of sampled HFs.

Intervention monitoring will include visits to approximately 18 HSAs and 6 resupply HFs per intervention group, for a total of 36 HSAs and 12 resupply HFs per quarter. The first monitoring visit will occur following the first phase startup in 2 districts. The second visit will occur one month later in 2 of the 4 rollout districts, and the third will occur the following month with the remaining 2 districts. The project will formally review the first round of quarterly data in November 2011 and share outcomes with partners and MOH. Future monitoring activities will follow the same quarterly schedule over the 12-month implementation period, for four rounds.

Prior to monitoring visits, SC4CCM staff will tap into key information available from the cStock system for the HSAs and HFs they plan to visit. For example, a calculated consumption rate for each HSA will be generated by cStock and used to determine whether stock levels are within a preset minimum and maximum, by product, and therefore considered 'adequate'. Project staff will use a standard tool for routine monitoring visits. Forms will be formatted for and loaded onto smart phones via EpiSurveyor software, and SC4CCM staff will collect data using smart phones. They will send monitoring data by phone directly to a central web-based server from which data can be received, processed and used to generate tailored reports.

Other data sources SC4CCM may utilize throughout the monitoring period include focus groups, management diaries, and routine data from CCM partners or regular supervision visits. Focus groups with HSAs and HFs are planned for early in the intervention start-up phase to diagnose and better understand what is working and not working with the intervention design. Management diaries are an innovative way to help HSA supervisors and district coordinators track their work using performance plans with EM teams (i.e. problems identified, decisions made, action items, etc.). They are minimally structured and intended to serve as a tool for improving management skills by documenting decisions, actions and progress. These diaries will serve as a rich source of data for indicators related to the success of using performance plans as designed in the EM districts. Project staff will tie information from various sources to create a complete picture of intervention performance for each quarterly review.

### Periodic evaluations

In addition to the baseline, SC4CCM will carry out midline and endline assessments during the 5-year grant period in continued collaboration with the MOH. The midline assessment is planned for Fall 2012, and the endline for 2014. Similar to the baseline, assessment tools for these activities will draw from the LIAT (Logistics Indicators Assessment Tool) and LSAT (Logistics System Assessment Tool), both developed by JSI under the first USAID | DELIVER PROJECT and validated for assessing supply chain system performance. The project will employ quantitative and qualitative methods.

The midline assessment will attempt to measure changes in CCM supply chain functionality at the community and HF levels made over the one year implementation phase. The midline will focus on performance of SC4CCM interventions in the testing districts by collecting quantitative and qualitative data on the majority of core and sub-indicators. The study design will be both a longitudinal from baseline to midline, and cross-sectional comparison between intervention and non-intervention groups. Using a 'difference in differences' approach (discussed in the 'Analysis' section) the midline will compare intervention groups to themselves at baseline for select indicators (e.g. product availability), and between intervention and non-intervention groups at one point in time (midline).

In many ways, the midline will look like the baseline survey. The quantitative portion of the midline assessment will cover the 10 districts visited at baseline, using the same sampling methodology (random selection of HFs and HSAs by probability proportional to number of functioning HSA village clinics). The project will continue to work with a local evaluation partner and local data collectors trained to collect data using smart-phone formatted forms for increased speed and efficiency.

Qualitative data collection activities, such as focus groups with HSAs and HFs, will also take place during the midline. Data collected will be used to triangulate quantitative findings. Focus groups intend to evaluate efficacy of interventions, especially aspects of motivation affected by the EM intervention. The project will follow accepted standards for conducting high quality focus groups. A second LSAT workshop will also be held at midline to re-visit supply chain functionality for CCM products at higher levels of the system, and to assess the project's national level efforts.

The project will rapidly analyze midline data to understand intervention performance as it relates to CCM product availability in all 6 intervention districts, and the level of success achieved in following causal pathways set out on the country-specific theory of change. Midline results are intended to inform MOH specifically about the potential for scale up of SC4CCM interventions to a national level.

The endline assessment will also evaluate core indicators related to CCM product availability in the 10 interventions districts where SC4CCM's interventions are expected to continue. However, endline activities will attempt to capture achievements and lessons learned over a much broader geographic area and will likely rely more on qualitative data to evaluate the success of scale up efforts nationwide.

## Theory of Change and Causal Pathways

For evaluation purposes, the TOC provides a basis for tracking pre-conditions and causal pathways hypothesized to achieve reliable CCM product availability at community level. Therefore, in addition to testing significant change in the main project outcome measure (CCM product availability) over time, the project will also evaluate the validity of the TOC and the success of interventions by tracking progress on causal pathways. A causal pathway is a series of sequenced pre-conditions that the project intends to focus on in order to achieve one or more of the main pre-conditions at the top of the TOC.

The way to read the TOC is by starting at the bottom and moving up, understanding the pre-conditions as stepping stones on a causal pathway (different pathways are indicated by color-coding). By doing this, one can understand the sequence of outcomes (in the form of pre-conditions) that the project believes need to occur in order to reach the main preconditions at the top, and ultimately the country level objective of product availability. A causal pathway is created when the project defines an intervention that includes stepping stones all the way from the bottom of the TOC to one of the main preconditions at the top.

The colors of the TOC boxes are a visual representation of causal pathways linked with specific SC4CCM interventions. In Malawi, three causal pathways exist and are related to data visibility (orange), EPT (green), and EM (blue) interventions. Solid color boxes are those that define the intervention; while they are just as clearly on the pathway of that intervention as the light-shaded boxes, they are the ones that the project feels it has significant influence over as part of the intervention. The light-shaded boxes on the causal pathway have a good chance of being affected by the intervention of that color, though the project will not be able to control the degree to which change occurs since this may depend on variables such as decisions made by actors in the CCM supply chain. The border around pre-conditions denotes the relative influence SC4CCM believes it will have on each pre-condition through direct intervention, or advocacy and partnership.

In addition to the causal pathways, yellow boxes represent national level project activities, and non-colored (white) boxes are areas which the project recognizes as pre-conditions but where in most cases will not lead. SC4CCM expects that white box preconditions will be met by either MOH or other partners and the project will intervene on a case by case basis, if relevant and appropriate. The white boxes are usually recognized to be outside the project mandate and are therefore not a purposeful part of the intervention strategy. They will be part of evaluation efforts to determine whether they are in place and contributing to the overall environment as described by the TOC.

By relating indicators to pre-conditions, the project will track the strengths and weaknesses of intervention performance both in terms of overall product availability as well as having the stepping stones in place that lead to change. Throughout evaluation activities, the project will relate indicator results to the sequence of pre-conditions on the TOC to understand and describe where the hypotheses have worked well or where there are still gaps, and why. If the process breaks down at any point and something is not working, for example, the TOC will be the tool that allows the project to understand where, how, and why something did not work. The project hopes to identify weaknesses early enough to adjust the TOC and/or interventions so that significant results are achieved during the life of the project. Midline results will be tied back to the TOC to articulate what has been learned about the project hypotheses and the stepping stones to reaching them. In this way, the project will be able to share results of the learning process and inform future efforts to improve community-level product availability.

## Indicators and Targets

The TOC gives rise to indicators that allow the project to track its progress along causal pathways. Each pre-condition on the TOC has at least one associated indicator that the project intends to monitor. The project identified five main pre-conditions at the top of the TOC (in light blue) as the primary pre-conditions to achieve the project-level objective of CCM product-availability at community level. These main pre-conditions gave rise to the ‘core’ indicators. Lower pre-conditions on the TOC are linked to ‘sub-indicators’.

Prior to the baseline assessment, a general project theory of change was developed with associated indicators as a starting point. Some of these indicators have not changed with the adaptation of the

country-specific theory of change, and will carry forth to be monitored over time. However, with the design of interventions tailored to the CCM supply chain situation in Malawi, new indicators have been added that are specific to project interventions. Therefore, the core and sub-indicators that will be used in Malawi are a mix of original and 'new' indicators.

The project will use indicators in various ways, for diagnostic purposes (during monitoring) and for showing change over time and across intervention groups (at midline). 'Diagnostic' indicators attempt to identify problems either in the supply chain itself or in the intervention design, in order to take action to remedy the problem. Some core and sub-indicators will be comparable over time as they were established prior to the baseline assessment. Others are new and tailored specifically to project interventions, so have no baseline starting point and will only be measured across intervention groups.

Targets are set for indicators to articulate the project's goals and gauge the success of interventions. They will be tracked through both monitoring and periodic evaluation activities. It is important to note that targets for new intervention-specific indicators are essentially best guesses, since no baseline measurements exist. In some cases, indicators operate like checkboxes instead of quantitative goals, and in these cases the target is often 'yes' to signify the associated pre-condition is in place. Indicators associated with pre-conditions for which SC4CCM supports but does not lead have no set targets, as the project's interventions will only affect them indirectly. The time-frame for achieving all targets (unless otherwise noted) is the midline assessment. Targets are provided as part of the indicator tables in Appendix F.

## Analysis

Data collected by SC4CCM will include quantitative information: interview responses, physical inventory, observations of storage conditions and data from cStock; and qualitative information: open-ended questions that are part of routine interviews, focus groups and management diaries. Both types of data will be collected during monitoring and midline activities, analyzed using different methods, and triangulated to validate results. Results will be synthesized and filled into a pre-formatted report template for quarterly review. The presentation of data at midline will include greater depth, as it will cover a more comprehensive set of indicators over a larger sample from all 10 districts (intervention and non-intervention). After midline data are collected and validated, SC4CCM will also attempt to carry out cross-country analyses with Ethiopia and Rwanda for further learning.

### Quantitative Data

Monitoring and midline activities will focus on CCM product availability individually (cotrimoxazole 480 mg tablets, LA 1 x 6 tablets (ACT), LA 2 x 6 tablets (ACT), ORS sachets, and zinc 20mg tablets) and as a bundle (e.g. "all 5 products in stock" or "all 4") The core indicator "all 5 products in stock" is the ideal for HSAs in Malawi, so this will be the ultimate measure of success for the CCM supply chain reaching down to the community level. However, an alternate to this is "all 3 products in stock" (cotrimoxazole, either LA, and ORS) which will be comparable over time with baseline. Several other tracer products, such as those used for family planning services, will also be included for comparison analysis. Product availability will continue to be assessed through monitoring, midline and endline to provide a constant barometer of program success.

The way SC4CCM will identify the portion of change in product availability over time that is attributable to the project is by comparing changes in product availability between baseline figures to midline figures between the intervention and non-intervention groups. This is done with a differences-in-differences design. Districts were first matched into groups as evenly as possible considering baseline characteristics

as well as certain external dimensions, in an effort to make the groups as similar as possible and ensure the product availability will be starting from approximately the same point in both groups. Therefore, the total change in product availability less natural changes over time minus change attributable to external factors (that will appear in the non-intervention group), will be considered as the change attributable to SC4CCM interventions.

New indicators developed specifically for one intervention group, as well as those created for diagnostic purposes, will generally be examined on their own during routine monitoring. Indicators that apply across both groups (e.g. Data visibility indicators) may be compared by group throughout monitoring and reviewed next to non-intervention districts at midline, using caution in the absence of baseline measures. One example is adequate stock. Because no baseline measure exists for adequate stock indicators, but the project expects to calculate this indicator through the SMS system, the project may attempt to compare adequate stock levels across intervention and non-intervention groups.

### Qualitative Data

SC4CCM will also analyze qualitative data for monitoring and midline evaluation activities. During routine monitoring, open-ended questions are included for HSAs and HF personnel to explore problems with the supply chain and/or barriers to implementing interventions. Project staff will record responses and compile them for quarterly review with quantitative data. Management diaries kept by supervisors will also be observed during routine supervision visits for completion and content. At midline, diaries filled by supervisors and district level coordinators will be reviewed in greater depth to determine the extent to which they were used for documenting decision-making and action-taking by EM teams over the implementation period. Decisions and actions recorded in management diaries will be compiled and assigned to project indicators as appropriate for discussion and reporting at midline.

Focus groups will be conducted and notes-based analysis will be used immediately following each session. Results from multiple focus groups will be synthesized into narratives that link directly to project indicators and highlight discussions pertinent to successful implementation. Focus groups will be used as appropriate to further explore or clarify aspects of indicators that are normally collected quantitatively. For example, they may be used to ask whether HSAs feel the EPT intervention is helping improve their ability to collect and manage health products or about how supervisors accept the use of the management diaries.

## Spillover

SC4CCM anticipates that news of success in either or both of the intervention groups will be difficult to contain, and may entice districts from the other intervention group to try adopting new successful activities before the implementation period ends. Although we believe it would be very unlikely for them to do so successfully, considering the resource and time-intensive nature of the interventions themselves, the project will attempt to prevent, detect and adjust to spillover with safeguards in place and through routine monitoring.

SC4CCM will employ the following safeguards to limit the potential effects of spillover between intervention groups:

- Approach CCM partners with potential interest in implementing intervention solutions and who have the resources to do so, and negotiate with them to avoid working in SC4CCM intervention districts until after the midline is complete.

- During training, emphasize to district facilitators the rationale behind having 2 groups for comparison, and their role in leading their districts to be successful in the designated approach. Key to this will be conveying that both interventions are designed to have an equal chance of success, but any spillover will make it almost impossible to determine what elements have truly worked versus what success was due to chance.
- Monitoring data will be used to connect with district facilitators during intervention support visits to help them carry out the intervention as designed. This will help avoid the temptation of choosing or adapting to an alternate path before the testing and learning phase is over. We assume people will mostly reach for other solutions if there is a perception that things are not going well with their current approach, so preventing this would be a key part of intervention support.

To detect potential spillover as occurs, monitoring tools have been designed to capture and document evidence of unplanned intervention activities in either set of intervention districts. Project staff will be attuned to noticing these warning signs in the data and prepared to share such evidence during quarterly review meetings for discussion of how to resolve. As spillover poses an important risk to the evaluation design of this testing and learning project, detecting and addressing spillover will remain a priority.

In short, we strongly believe the risk of contamination is practically impossible to eliminate, but unlikely to manifest without additional resources. Therefore, with safeguards in place and tools to monitor for potential spillover in order to address it as it may happen, the risk is substantially too low to pose any meaningful threat to the evaluation design.

## Data use and Dissemination

Data collected through routine monitoring will be reviewed quarterly by SC4CCM project staff (including country Resident Logistics Advisor and Logistics Officer, Regional Technical Advisors, and HQ staff). Quarterly data will be shared with MOH counterparts and CCM partners regularly, with the intention of informing as well as seeking broader interpretation and questioning of results.

After midline data collection is complete, results will be compiled and presented in-country for validation following a similar process to the baseline. Once data are validated and recommendations from stakeholders are made in this forum, evaluation results for the intervention-testing period will be documented in a comparison report and disseminated to MOH and other stakeholders for action towards intervention scale-up.

Endline evaluation activities will also be summarized in a final report on scale-up efforts. Periodic evaluation reports will be shared with MOH in a timely manner, and made available online via the SC4CCM website.

# Appendix A

# Description of SC4CCM Theory of Change Model

The SC4CCM Theory of Change model provides the framework for the project assessment, identification of solutions and innovations, monitoring of change and demonstration of success. The interventions and solutions proposed by SC4CCM to strengthen supply chains for community case management are based in the analysis of the relative strength of these system performance elements or causal pathways (color coding) and their preconditions (boxes).

The TOC model diagrams the pathway of change to the intermediate and ultimate goals, or long term outcomes, of the SC4CCM project (represented in the light blue boxes at the top of the diagram). Described below are the key components that make up the pathway of change.

## Key components

**Preconditions -** The preconditions are the building blocks that the project believes necessary to achieving the long term outcomes. The preconditions are represented in the boxes below the two goals and are color coded to represent how each precondition fits into one of three hypothesized causal pathways. The size or position of the precondition box does not indicate the importance or significance of that precondition, each precondition is considered necessary for change to occur.

**Arrows -** The arrows indicate the sequence that preconditions should be addressed, with a belief that one precondition cannot be fully accomplished until the preconditions before are achieved. This sequence creates the pathway of change.

**Interventions -** Interventions are central to the theory of change as they describe the types of activities required to bring about each precondition on the pathway to change. Country specific interventions have been identified according to weak or missing preconditions found in the baseline assessment. Rather than adding more detail to the diagram, these are described in detail in the implementation plan.

**Indicators -** Each precondition is a preliminary outcome with indicators (numbers within each precondition box) that measure the success of interventions adopted to achieve the preconditions.

**Assumptions -** Assumptions, represented by letters, are the necessary factors for change that are outside the project control. These assumptions demonstrate the limitations to what the project can expect to change alone and emphasize the need for collaboration with governments and partners.

# Appendix B

# SC4CCM Theory of Change Assumptions

A Cadre of HSAs exists and HSAs are deployed in adequate numbers and are well distributed in remote, hard to reach areas

B Central level MOH procurement unit exists

C Fuel is available when needed

D An adequate number of supervisors are available

E HSAs are paid regularly and on time

F HSAs are trained to identify, classify and treat or refer common childhood diseases

G Demand for CCM services exists

H HSAs are in that role because they want to be, and are generally motivated to be an HSA (i.e. they have the capacity to be motivated)

I Budget exists for routine quantification and pipeline monitoring; ordering, reporting, inventory control; and providing SC problem-solving and feedback during supervision to HSAs

It is important to note the reality of the situation in Malawi before the intervention-testing period, as several assumptions are not yet fully realized. Specifically related to assumption A, only 1,900 of the total 3,400 HSAs targeted for recruitment and training are currently in place, and not all of those are placed in hard to reach areas. The MOH scale-up of this program is ongoing. In addition, evidence suggests that assumption E, HSAs are paid regularly and on time, is not fully in place.

**Footnotes**

1 A commodity security strategy is not necessary for a CCM program per se, but is a powerful instrument for ensuring availability of product at the community by gaining commitments from stakeholders (includes government and non-government stakeholders).

* Common childhood illnesses include pneumonia, malaria, and diarrhea.

** Vehicles indicate any device or structure that transports persons or things; a truck, car, bicycle, bus.

# Appendix C

# Malawi Implementation Plan

| OBJ | Activity Stream 1 | Overall | 2011 PYr2 Nov '10 - Oct '11 | | | | 2012 PYr3 Nov '11 - Oct '12 | | | | 2013 PYr4 Nov '12 - Oct '13 | | Budget |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Quarter | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | Jan '11- Feb. '13 |
| | | **SA - HQ Lead Contact** | | | | | | | | | | | |
| 1 | 1 | Determine what partners are doing and possibility of leverage | | | | | | | | | | | |
| 1 | 2 | Decide districts for interventions | | | | | | | | | | | |
| 1 | 3 | Finalize implementation plan with inputs from MOH and partners | | | | | | | | | | | |
| 1 | 4 | Orient zonal MOH staff on implementation plan | | | | | | | | | | | $83,078 |
| 2 | 5 | Facilitate semi-annual meetings with testing districts and MOH (HTSS & IMCI) | | | | | | | | | | | |
| 2 | 6 | Share workplans with partners in our intervention districts and coordinate activities where possible | | | | | | | | | | | |
| 2 | 7 | Conduct quarterly monitoring meeting to share data results and national stock status with partners, MOH | | | | | | | | | | | |
| | | **TOTAL ACTIVITY STREAM 1** | | | | | | | | | | | |
| **OBJ** | **Activity Stream 2** | **M&E** | **PYr2 Nov '10 - Oct '11** | | | | **PYr3 Nov '11 - Oct '12** | | | | **PYr4 Nov '12 - Oct '13** | | **Budget** |
| | | | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | |
| | | **MN - HQ Lead Contact** | | | | | | | | | | | |
| | 1 | Develop country specific TOC | | | | | | | | | | | |
| | 2 | Develop M&E plan | | | | | | | | | | | |
| | | i- Determine M&E objectives for Malawi | | | | | | | | | | | |
| | | ii-Define and document core and sub-indicators | | | | | | | | | | | |
| | | iii-Set indicator targets and schedule for monitoring | | | | | | | | | | | |
| | | iv-Narrate causal pathways | | | | | | | | | | | |
| | 3 | Design monitoring tools, reporting system, protocol for use | | | | | | | | | | | |
| | 4 | Develop data dashboard | | | | | | | | | | | |
| | 5 | Train country staff on monitoring protocol and field test/revise tools | | | | | | | | | | | |
| | 6 | Collect and compile data - 2 districts visited (1 per group) each month | | | | | | | | | | | |
| 2 | 7 | Hold quarterly monitoring data review meetings with HQ | | | | | | | | | | | $284,299 |
| | 8 | Conduct focus groups | | | | | | | | | | | |
| | 9 | Develop SOW and release RFP for evaluation partner | | | | | | | | | | | |
| | 10 | Develop midline survey tools, sampling methodology | | | | | | | | | | | |
| | 11 | Select evaluation partner | | | | | | | | | | | |
| | 12 | Train data collection teams, field test/revise tools | | | | | | | | | | | |
| | 13 | Collect midline assessment data | | | | | | | | | | | |
| | 14 | Analyze the Data | | | | | | | | | | | |
| | 15 | Structured focus groups | | | | | | | | | | | |
| | 16 | Data Validation | | | | | | | | | | | |
| | 17 | Finalize results and assessment report | | | | | | | | | | | |
| | | **TOTAL ACTIVITY STREAM 2** | | | | | | | | | | | |

| OBJ | Activity Stream 3 | SMS Development & Piloting | PYr2 Nov '10 - Oct '11 | | | | PYr3 Nov '11 - Oct '12 | | | | PYr4 Nov '12 - Oct '13 | | Budget |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | |
| | | **BF - HQ Lead Contact** | | | | | | | | | | | |
| | | *Workstream 1(training and materials development)* | | | | | | | | | | | |
| | 1 | Develop SOPs for SMS use, web access and back up plans for system failure | | | | | | | | | | | |
| | 2 | Develop training for SMS app for district, HC and HAS (training in other workstreams) | | | | | | | | | | | |
| | | *N.B. SMS ToT in other workstreams* | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | **SA - HQ Lead Contact** | | | | | | | | | | | |
| | | *Workstream 2 (software development)* | | | | | | | | | | | |
| | 3 | Decide which department in MOH manages the information | | | | | | | | | | | |
| | 4 | Decide where does the server live and interact with | | | | | | | | | | | |
| | 5 | Set up post paid phone number with telecommunication company | | | | | | | | | | | |
| | 6 | Explore feasibility of web based internet app and phone access | | | | | | | | | | | |
| | 7 | Develop specs for SMS and business analysis | | | | | | | | | | | |
| **2** | 8 | Write software developer RFP and tender out | | | | | | | | | | | **$130,542** |
| | 9 | Contract with software developer | | | | | | | | | | | |
| | 10 | Trip to Malawi for data gathering on business and user requirements | | | | | | | | | | | |
| | 11 | System design (between DIMAGI and JSI) | | | | | | | | | | | |
| | 12 | Development (coding, and integration as needed) - pre-tests | | | | | | | | | | | |
| | 13 | Beta version finalized (pre-pilot version) | | | | | | | | | | | |
| | 14 | Pre - implementation (pilot) | | | | | | | | | | | |
| | 15 | Software finalized | | | | | | | | | | | |
| | 16 | Phase in roll out (Nkhatabay & Nkhotakota) | | | | | | | | | | | |
| | 17 | System roll out (Nsanje, Kasungu, Machinga & Mulanje) | | | | | | | | | | | |
| | 18 | Support roll out trouble shooting | | | | | | | | | | | |
| | 19 | Finalize user manual | | | | | | | | | | | |
| | 20 | Finalize technical documentation | | | | | | | | | | | |
| | 21 | Long term ad hoc support and system adjustments | | | | | | | | | | | |
| | | **TOTAL ACTIVITY STREAM 3** | | | | | | | | | | | |

| OBJ | Activity Stream 4 | Efficient Product Transport | PYr2 Nov '10 - Oct '11 | | | | PYr3 Nov '11 - Oct '12 | | | | PYr4 Nov '12 - Oct '13 | | Budget |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | |
| | | **SA - HQ Lead Contact** | | | | | | | | | | | |
| | 1 | Identify transport support options | | | | | | | | | | | |
| | 2 | Decide which transport option/support we will do/provide | | | | | | | | | | | |
| | 3 | Decide who in MOH at district level becomes focal person for coordination purposes | | | | | | | | | | | |
| | 4 | Develop concept note for bicycle maintenance plan | | | | | | | | | | | |
| | 5 | Undertake pre-contract discussions with contractor to finalize maintenance plan | | | | | | | | | | | |
| | 6 | Contract maintenance service provider [tripartite - JSI/MOH/contractor] | | | | | | | | | | | |
| | 7 | Africycle to conduct mini assessment | | | | | | | | | | | |
| **2** | 8 | Africycle to develop training material for HSAs on bike maintenance | | | | | | | | | | | **$288,982** |
| | 9 | Develop orientation material for district, HC, and HSA level | | | | | | | | | | | |
| | 10 | Adjust HSA ICS and prepare job aids and related supervision checklists | | | | | | | | | | | |
| | 11 | Orient MOH staff on maintenance and train on SMS procedures | | | | | | | | | | | |
| | 12 | Conduct ToT with central and district staff (SMS & new ICS - with 5.5) | | | | | | | | | | | |
| | 13 | HSA trainings on new ICS and bike maintenance (Nkhatabay) | | | | | | | | | | | |
| | 14 | HSA trainings on new ICS and bike maintenance (Machinga & Mulanje) | | | | | | | | | | | |
| | 15 | Provide intervention support through joint supervision | | | | | | | | | | | |
| | | **TOTAL ACTIVITY STREAM 4** | | | | | | | | | | | |

| OBJ | Activity Stream 5 | Enhanced Management--rename | PYr2 Nov '10 - Oct '11 | | | | PYr3 Nov '11 - Oct '12 | | | | PYr4 Nov '12 - Oct '13 | | Budget |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | |
| 2 | | **BF - HQ Lead Contact** | | | | | | | | | | | $276,620 |
| | 1 | Identify MOH central person for SC performance | | | | | | | | | | | |
| | 2 | Facilitate the identification of supply availability teams in each district | | | | | | | | | | | |
| | 3 | Develop curriculum for team building for workshop | | | | | | | | | | | |
| | 4 | Align with district and partner plans to schedule team building workshops | | | | | | | | | | | |
| | 5 | Conduct ToT with central and district staff (SMS & EMA - with 4.12) | | | | | | | | | | | |
| | 6 | Conduct team building workshops & SMS training (Nkhotakota) | | | | | | | | | | | |
| | | a. D-HC (one district with reps from all HC staff) | | | | | | | | | | | |
| | | b. D-HC-HSA (one for each HC in all 3 test districts) | | | | | | | | | | | |
| | 7 | Conduct team building workshops & SMS training (Nsanje, Kasungu) | | | | | | | | | | | |
| | | a. D-HC (one district with reps from all HC staff) | | | | | | | | | | | |
| | | b. D-HC-HSA (one for each HC in all 3 test districts) | | | | | | | | | | | |
| | 8 | Document SC performance monitoring procedures agreed to at team building workshop | | | | | | | | | | | |
| | 9 | Strengthen supervisory skills through mentorship, OJT and refresher trainings as needed | | | | | | | | | | | |
| | | **TOTAL ACTIVITY STREAM 5** | | | | | | | | | | | |

| OBJ | Activity Stream 6 | Quantification | PYr2 Nov '10 - Oct '11 | | | | PYr3 Nov '11 - Oct '12 | | | | PYr4 Nov '12 - Oct '13 | | Budget |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | |
| 3 | | **AH - HQ Lead Contact** | | | | | | | | | | | $37,145 |
| | 1 | Collect CCM service and logistics data, clean and organize | | | | | | | | | | | |
| | 2 | Participate in national quantification and report writing | | | | | | | | | | | |
| | 3 | Coordinate quarterly meetings to review stock status and pipeline (in cooperation with M&E team) | | | | | | | | | | | |
| | 4 | Monitor national stock status and coordinate with partners to address and mitigate potential overstocks or shortfalls | | | | | | | | | | | |
| | 5 | Develop procurement landscape for CCM products | | | | | | | | | | | |
| | | **TOTAL ACTIVITY STREAM 6** | | | | | | | | | | | |

| OBJ | Activity Stream 7 | Sustainability | PYr2 Nov '10 - Oct '11 | | | | PYr3 Nov '11 - Oct '12 | | | | PYr4 Nov '12 - Oct '13 | | Budget |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | |
| 4 | | | | | | | | | | | | | $31,145 |
| | 1 | Explore cost implications of transportation strategy (eliminate Riders option) | | | | | | | | | | | |
| | 2 | Design SMS strategy and system to suit current availability of mobile phones at HSA level | | | | | | | | | | | |
| | 3 | Identify roles of MOH staff at all levels of the system in EM design | | | | | | | | | | | |
| | 4 | Identify key MOH partners at central level to build ownership and participate in key decisons and design features | | | | | | | | | | | |
| | | **TOTAL ACTIVITY STREAM 7** | | | | | | | | | | | |
| | | **TOTAL IMPLEMENTATION BUDGET*** | | | | | | | | | | | $1,131,812 |

*** Budget figures include field operation costs for the entire period**

**Key**

- SC4CCM responsible for activity
- Part of larger activity
- Contractor primarily responsible for activity
- Complete
- Underway

Project Year for SC4CCM corresponds to fiscal year of JSI R&T. Timeframe for implementation activities is calendar year January 2011 - February 2013.

| | |
|---|---|
| Quarter 1 | November, December, January |
| Quarter 2 | February, March, April |
| Quarter 3 | May, June, July |
| Quarter 4 | August, September, October |

# Appendix D

# SC4CCM Intervention and Non-intervention Groups

| | | | | |
|---|---|---|---|---|
| **Group A:** Non-intervention | Zomba (S) | Ntchisi (C) | Salima (C) | Mzimba N (N) |
| **Group B:** Data visibility and Enhanced Management | Nkotakota (CE) | Nsanje (SW) | Kasungu (CE) | |
| **Group C:** Data visibility and Efficient Product Transport | Machinga (SE) | Nkatabay (N) | Mulanje (SE) | |

# Appendix E

# Summary of Core Objective Level Indicators

**Main SC4CCM Objective: (Ensure that) HSAs have usable and quality medicines available when needed for appropriate treatment of common childhood illnesses**

| Summary Indicators | N | % HSAs In Stock on DOV at BL | Total % estimated at ML with partner interventions | SC4CCM TARGET % contribution to total | % HSAs with Adequate Stock at BL | Total % estimated at ML with partner interventions | SC4CCM TARGET % contribution to total | % HSAs reporting no stockouts in past month at BL | Total estimated at ML with partner interventions | SC4CCM TARGET % contribution to total | Source/ frequency |
|---|---|---|---|---|---|---|---|---|---|---|---|
| All four products (Cotri, both LA, ORS) | 139 | 23 | 55-70 | 15 | NA | 40-55 | 15 | 17 | 50-65 | 15 | Midline/monitoring |
| All three products (Cotri, either LA, ORS) | 139 | 35 | NA | NA | NA | NA | NA | 25 | NA | NA | Midline/monitoring |

**ToC Box 1: Necessary, usable, quality CCM products are available at HSA resupply points**

| Summary Indicators | N | % HFs In Stock on DOV at BL | Total % estimated at ML with partner interventions | SC4CCM TARGET % contribution to total | % HFs with Adequate Stock at BL | Total % estimated at ML with partner interventions | SC4CCM TARGET % contribution to total | % HFs reporting no stockouts in past month at BL | Total estimated at ML with partner intervention | SC4CCM TARGET % contribution to total | Source/ frequency |
|---|---|---|---|---|---|---|---|---|---|---|---|
| All four products (Cotri, both LA, ORS) **EM districts only* | 77 | 30 | 70-85 | 15 | NA | 60-75 | 7-10 | NA | 65-80 | 15 | Midline/monitoring |
| All three products (Cotri, either LA, ORS) **EM districts only* | 77 | 46 | NA | NA | NA | NA | NA | NA | NA | NA | Midline/monitoring |

**ToC Box 2: HSAs, or person responsible for CCM resupply, know how, where, what, when, and how much of each product to resupply**

| Summary Indicators | N | % Trained for SC4CCM interventions at BL | TARGET % | Source/frequency |
|---|---|---|---|---|
| Training fundamentals - HSAs | | 0 (zero) | 90 | Midline/monitoring |
| Training fundamentals - Resupply points (HF) | | 0 (zero) | 95 | Midline/monitoring |
| | N | BL | TARGET | Source/frequency |
| % HSAs who report they submit SC reports to higher level | 139 | 99 | 99 | Midline |
| % HSAs submitting reports through SMS system | | 0 (zero) | 85 | Midline/monitoring; server reports |
| % HSAs sending complete* SMS messages/HSAs submitting SMS | | 0 (zero) | 95 | Midline/monitoring; server reports |
| % HFs receiving (SMS) reports on time** from HSAs/HCs who receive reports *EM districts only | 70 | 56 | 90 | Midline/monitoring; server reports |
| % Fill rate, by product | | NA | 50-65 | Midline/monitoring; server reports |
| % HSAs taking correct action*** when at emergency order point | | 0 (zero) | 90 | Midline/monitoring; server reports |
| **'Complete' defined as each HSA reporting on all products they manage* | | | | |
| ***'On time' defined as at least once per month* | | | | |
| ****'Correct action' defined as sending emergency order SMS to HF* | | | | |

| ToC Box 3: HSAs have adequate storage: correct conditions, security and adequate space | | | | |
|---|---|---|---|---|
| | N | BL | TARGET | Source/frequency |
| % HSAs with storage area secured with lock and key | 139 | 71 | 80-85 | Midline/monitoring |
| % HSAs with sufficient storage space | 139 | 90 | 90-95 | Midline/monitoring |
| % HSAs storing damaged/expired product separately/HSAs w damaged/expired product | 57 | 79 | 85-90 | Midline/monitoring |

| ToC Box 4: Goods are routinely transported between resupply points and HSAs | | | | |
|---|---|---|---|---|
| | N | BL | TARGET | Source/frequency |
| % HSAs with a functional bicycle/HSAs who own a bicycle | | NA | 90-95 (EPT) | Midline/monitoring |
| % HSAs who travel by bicycle to HF | 139 | 79 | 88-90 (EPT) | Midline/monitoring |
| Average time (days) between SMS order and receipt | | 0 (zero) | 3 days (EPT) | Midline/monitoring; server reports |

| ToC Box 5: HSAs are motivated to perform their roles in the CCM product supply chain | | | | |
|---|---|---|---|---|
| | N | BL | TARGET | Source/frequency |
| % HSAs who report they have influence in decision-making about how to manage their products | | 0 (zero) | 65-70 (EM) | Midline/monitoring; focus groups |
| % HSAs who believe reporting stock on hand & picking up products is an important part of their job | | 0 (zero) | 75-80 (EM) | Midline/monitoring; focus groups |
| % HSAs who report they get the support they need for managing products *(including problem-solving)* | | 0 (zero) | 75-80 (EM) | Midline/monitoring; focus groups |
| % HSAs who believe the SMS reporting system is an effective way to manage health products compared to the paper system | | 0 (zero) | 75-80 | Midline/monitoring; focus groups |
| % HSAs who receive feedback on managing products during or after supervision/HSAs receiving supervision | 139 | 69 | 85-90 | Midline/monitoring |
| % HSAs who receive feedback on managing products/HSAs who receive feedback | 97 | 82 | 90-95 | Midline/monitoring |

# Appendix F

# Malawi Sub-Indicators

| TOC Box # | Outcome: **Data Visibility** | **Proposed Indicators** | **Baseline Results** | **Targets** | **Data Source and Frequency** |
|---|---|---|---|---|---|
| 13aaa | HFs process and keep orders ready for HSAs | • Number and % of HSAs who report they do not have to wait for product order to be filled after arriving at HF | • 60% reported waiting less than 1 hour | • 80-85% | • Monitoring<br>• Midline |
| 13aa | HFs receive message with resupply quantities for each HSA from server | • Number and % of SMS messages received by HF from the server, as recorded on HF log sheet (of # of SMS messages sent to HF by server)<br>• [qualitative] If incomplete, document reasons log sheet is incomplete. | • 0 (zero) | • 90% | • Server reports<br>• Log sheets<br>• Monitoring<br>• Midline |
| 13a | SMS system and server functioning | • % time cStock server is online in past 30 days (*recognizing periodic electricity outages*) | • 0 (zero) | • 85-90% | • Server reports<br>• Monitoring<br>• Midline |

| | | | | | |
|---|---|---|---|---|---|
| 13 | HSAs routinely collect and report timely, accurate logistics data | • Number and % of HSAs who successfully send SMS messages to server in last 30 days<br>• [qualitative] Reasons reports are incomplete, late or not sent at all | • 0 (zero) | • 90% | • Server reports<br>• Monitoring<br>• Midline |
| 17 | Backup forms and tools to support ordering process are available | • Number and % of HSAs who have job aids for completing SMS<br>• Number and % of HSAs who have CCM requisition forms | • 0 (zero)<br>• 3% HSAs ran out of forms | • 95%<br>• NA | • Monitoring<br>• Midline<br>• Program records |
| 33 | Resupply staff are trained in procedures and processes | • % of HF with at least one person trained in procedures and processes for CCM resupply using SMS | • 0 (zero) | • 95% | • Monitoring<br>• Midline<br>• Program records |
| 34 | HSAs are trained in procedures and processes | • Number and % of HSAs trained in mobile transmission of SC reports | • 0 (zero) | • 95% | • Monitoring<br>• Midline<br>• Program records |

| | | | | | |
|---|---|---|---|---|---|
| 44 | Streamlined procedures for ordering, reporting, inventory control of CCM products exist and are documented | • Existence of SOPs that outline how to use SMS system (cStock) | • No | • Yes | • Country Implementation Plan |
| | (*indirect*) | | | | |

| | | | | | |
|---|---|---|---|---|---|
| 44a | HSAs, HFs have phones and network coverage | • % HSAs with a functional mobile phone<br>• % HSAs who have network coverage<br>• % HFs with a functional mobile phone<br>• % HFs who have network coverage | • 94% HSAs who manage have a mobile phone<br>• 85% HSAs have network coverage at work at least sometimes<br>• 89% of HSAs who manage and their HF have mobile phones<br>• 67% of HSAs who manage and their HF both have network at least sometimes | | • Monitoring<br>• Midline |

| | | | | | |
|---|---|---|---|---|---|
| 16 | Tools and resources needed to implement procedures are provided | • % of HF with copy of Standard Operating Procedures (SOPs) | • 53% HFs had a copy of SOPs at BL | | • Midline |

| TOC Box # | Outcome: **Efficient Product Transport** | **Proposed Indicators** | **Baseline Results** | **Target** | **Data Source and Frequency** |
|---|---|---|---|---|---|
| 11 | Reliable, timely, and appropriate transport is available to distribute or collect goods between resupply point and HSAs | • % HSAs who travel by bicycle to HF for collecting products (*compared to foot, public transport, motorbike*)<br>• % of collection/delivery days in last 30 days where a bicycle was available and capable of carrying full product order (*the amount requested or calculated amount needed*)<br>• [qualitative] If transport was not available, document reasons why not. | • 79% of HSAs travel to HF by bicycle, 11% by foot, 9% public transport, 1% motorbike | • 85-90% (EPT)<br>• 85-90% (EPT) | • Monitoring<br>• Midline |
| 11a | Inventory control system | • Number and % of HSAs who report no extra trips made to HF for product collection (of those with functional bikes) | • NA | • 75% (EPT) | • Monitoring |

| | | | | | |
|---|---|---|---|---|---|
| | aligns with HSA travel schedule | | | | • Midline |
| 20 | HSAs maintain transport on a regular basis | • Number and % of HSAs who report conducting regular bicycle maintenance in the past 30 days/those who own a bicycle<br>• Number and % of HSAs who report deliveries have been delayed or canceled because of a non-functional bicycle in the past 30 days/those who own a bicycle | • NA<br>• NA | • 90% (EPT)<br>• 5-10% (EPT) | • Monitoring<br>• Midline |
| 36aa | HSAs own a functional bicycle | • Number and % of HSAs with a functioning bicycle on day of visit/those who own a bicycle | • NA | • 85-90% (EPT) | • Monitoring<br>• Midline |
| 36a | HSAs trained in bicycle maintenance | • Number and % of HSAs trained in bicycle maintenance and appropriate product handling | • 0 (zero) | • 95% (EPT) | • Monitoring<br>• Midline |
| 35 | Materials are available for maintenance of transport | • Number and % of HSAs with a bicycle that is non-functional on day of visit due to lack of materials for maintenance /those who own a bicycle | • NA | • <5-10% (EPT) | • Monitoring<br>• Midline |
| 45 | Streamlined transportation procedures and budget for maintaining bicycles and distribution/ collection of | • Existence of SOPs that outline how to use EPT system | • No | • Yes | • Country Implementation Plan |

| | | | | | |
|---|---|---|---|---|---|
| | goods exist and are documented | | | | |
| | (*indirect*) | | | | |
| 6 | Technicians and spare parts available for bicycle maintenance and repair | • Number and % of HSAs who report having access to a bicycle technician for maintenance and repairs/those who own a bicycle<br>• Number and % of HSAs who report having access to spare parts for repairs/those who own a bicycle | • NA<br>• NA | | • Monitoring<br>• Midline |
| 45a | HSAs own a bicycle | • Number and % of HSAs who own a bicycle | • NA | | • Monitoring<br>• Midline |

| **TOC Box #** | Outcome: **Enhanced Management** | **Proposed Indicators** | **Baseline Results** | **Targets** | **Data Source and Frequency** |
|---|---|---|---|---|---|
| 9 | Persons responsible for resupply are motivated and perform their roles in the CCM product | • Number and % of EM teams who made and documented evidence-based decisions designed to improve CCM product availability at HSA resupply points<br>• Number and % of EM teams who documented acting upon/implementing evidence-based decisions to improve CCM product availability at HSA resupply points (of those who made | • 0 (zero)<br>• 0 (zero)<br>• 0 (zero) | • 70-80% (EM)<br>• 70-80% (EM)<br>• 65-75% | • Monitoring<br>• Midline<br>• Meeting records |

| TOC Box # | Outcome: Enhanced Management | Proposed Indicators | Baseline Results | Targets | Data Source and Frequency |
|---|---|---|---|---|---|
| | supply chain as expected | evidence-based decisions)<br>• Number and % of re-supply persons with accurate knowledge of the SMS system (cStock) SOPs | | (EM) | • Focus groups |
| 12 | Feedback is communicated to HSAs | • Number and % of HSAs who report receiving feedback after supervision<br>• Number and % of HSAs who report receiving feedback that **includes how to manage products** (of those who receive feedback)<br>• HSAs characterize communication with their Supervisor about managing products as effective (of those who receive feedback on managing products) | • 59% HSAs receive **any** feedback during supervision<br>• NA<br>• NA | • 60-70% (EM)<br>75-85% (EM) | • Monitoring<br>• Midline<br>• Focus groups |
| 24 | SC supervision tools are available | • Number and % of Supervisors who have a reference copy of supervision checklist and job aid<br>• [qualitative] If supervision checklist or job aid are unavailable, which one and why? | • 0 (zero)-job aid; NA-checklist | • 85-90% (EM) | • Monitoring<br>• Midline |
| 25a | EM team actively participates in the review of data and development | • Number and % of EM teams who document problem-solving process through management diaries (*district and HC level*)<br>• Number and % of HSAs who report their Supervisor uses the performance plan to help them resolve issues<br>• Number and % of EM teams who meet with the frequency outlined | • 0 (zero)<br>• 0 (zero)<br>• 0 (zero) | • 80-85% (EM)<br>• 75-80% (EM)<br>• 75-80% | • Monitoring<br>• Midline<br>• EM team |

| TOC Box # | Outcome: Enhanced Management | Proposed Indicators | Baseline Results | Targets | Data Source and Frequency |
|---|---|---|---|---|---|
| | of performance and problem-solving plan | in their performance plan (*midline only, ask District*)<br>• HSAs believe they have strong leadership for product management | • NA | (EM) | records<br>• Focus groups |
| 25 | All members of EM teams know of performance plan and incentive program | • Number and % of HSAs who know their team performance goals<br>• Number and % HSAs who report knowing ways to receive recognition for good work<br>• Number and % of Supervisors who have performance goals written for their EM team in their management diary or written performance plan<br>• Number and % of Districts who have performance goals written for their EM team in their management diary or written performance plan | • 0 (zero)<br>• 0 (zero)<br>• 0 (zero)<br>• 0 (zero) | • 70-80% (EM)<br>• 70-80% (EM)<br>• 80-85% (EM)<br>• 80-85% (EM) | • Monitoring<br>• Midline<br>• Focus groups |
| 26 | EM teams use performance plans and incentive program as designed | • Number and % of EM teams who made and documented evidence-based decisions designed to improve CCM product availability at HSA level<br>• Number and % of EM teams with documented evidence-based decisions acted upon/implemented to improve product availability at HSA level (of those who made evidence-based decisions)<br>• Number and % HSAs who report receiving an incentive (*when they do a good job managing products*) | • 0 (zero)<br>• 0 (zero)<br>• 0 (zero)<br>• 0 (zero) | • 70-80% (EM)<br>• 70-80% (EM)<br>• 60-65% (EM) | • Monitoring<br>• Midline<br>• Program records<br>• Focus |

| TOC Box # | Outcome: Enhanced Management | Proposed Indicators | Baseline Results | Targets | Data Source and Frequency |
|---|---|---|---|---|---|
| | | • [qualitative] (*question to Supervisor/District*) What is working/not working about the performance plans? (*question to HSA*) Are the performance plans contributing to support you in the way you need to manage your products? | | | groups |
| 38 | Supervisors are trained in CCM supply chain processes and SC supervision. | • Number and % of supervisors trained in supervision of procedures and processes for CCM product SC | • 66% supervisors trained to be supervisors (*not only in SC*) | • 85% (EM) | • Midline<br>• Monitoring<br>• Program records |
| 39 | District staff and HF Supervisors have product availability data | • Number and % of District staff who access product availability data from cStock<br>• Number and % of Supervisors who access product availability data from cStock | • 0 (zero)<br>• 0 (zero) | • 80-85%<br>• 80% | • Program records<br>• Monitoring<br>• Midline<br>• Supervisor records |
| 46 | Streamlined procedures for providing | • Existence of SOPs that outline how to use performance plans to improve HSA performance for SC functions | • No | • Yes | • Country Implementation |

| TOC Box # | Outcome: Enhanced Management | Proposed Indicators | Baseline Results | Targets | Data Source and Frequency |
|---|---|---|---|---|---|
| | feedback and supervision to HSAs exist and are documented | | | | Plan |
| 47a | District product availability (EM) teams exist | • # of EM teams formed | • 0 (zero) | • 55 across Kasungu, Nsanje, Nkotakota | • Program records<br>• Midline |
| 47 | A performance improvement plan, including customer service mission statement and incentive plan, exist for each EM team | • Number and % of EM teams with performance improvement plan developed and finalized<br>• % of EM teams who distributed copies of performance improvement plan to team members | • 0 (zero)<br>• 0 (zero) | • 100% (EM)<br>• 100% (EM) | • Program records<br>• Midline |

| TOC Box # | Outcome: **Enhanced Management** | **Proposed Indicators** | **Baseline Results** | **Targets** | **Data Source and Frequency** |
|---|---|---|---|---|---|
| | | | | | |
| | *(indirect)* | | | | |
| 6 | Adequate quantities of CCM products are available at all distribution points in country | • Number and % of RMS with key CCM products in stock on day of visit (or day of LMIS report), by product | • 33% of 3 RMS had all 3 products in stock | | • Midline<br>• LMIS<br>• Meeting records<br>• Quarterly pipeline monitoring |
| 7 | Transport is available to distribute or collect CCM products as required to resupply points | • Number of EM teams with documented evidence-based decisions designed to improve transport from RMS to HF<br>• [qualitative] Reasons collections/deliveries do not result in HF obtaining correct amount of all supplies needed | • 25-30% use facility vehicle, 21% pub. transport, 4% motorcycle, 4% bicycle<br>• NA | | • Midline<br>• Transport records<br>• Meeting records |
| 8 | Resupply points have adequate | % of HFs that meet key storage conditions:<br>• % HF with storage area secured with lock and key | • 5% HFs, 0 RMS fail to store products | | • Midline |

| TOC Box # | Outcome: Enhanced Management | Proposed Indicators | Baseline Results | Targets | Data Source and Frequency |
|---|---|---|---|---|---|
| | storage: correct conditions, security, and adequate space | • % HF with sufficient storage space<br>• % HF who store damaged/expired products separately | under lock and key<br>• 17% HFs, 2/3 RMS say space is not sufficient<br>• 17% HFs, 0 RMS fail to store damage/exp products separately | | |
| 14 | Supervision of HSAs with SC component is performed regularly | • Number and % of HF and/or district staff supervisors trained in supply chain supervision<br>• [qualitative] Do HF Supervisors report using the supply chain supervision tool (and find it useful)?<br>• [qualitative] Do HSAs report receiving supervision visits that include discussion of supply chain topics? | • 82% HSAs received supervision visit over past 3 months<br>• NA | | • Midline<br>• Program records<br>• Supervisor records<br>• Focus groups |
| 18 | Appropriate and secure | • Number and % of EM teams who made and documented evidence-based decisions designed to improve HSA storage conditions | • 56% used | | • Monitoring |

| TOC Box # | Outcome: Enhanced Management | Proposed Indicators | Baseline Results | Targets | Data Source and Frequency |
|---|---|---|---|---|---|
| | storage space for CCM products is available | (including security and efficient organization of drug box)<br>• Number and % of EM teams who documented acting upon/implementing evidence-based decisions to improve HSA storage conditions (including security and efficient organization of drug box) | lock and key | | • Midline |
| 19 | Suitable storage containers or shelving for CCM products are procured where needed | • Number and % of EM teams who made and documented evidence-based decisions designed to procure drug boxes for HSAs when needed<br>• Number and % of EM teams who documented acting upon/implementing evidence-based decisions to procure drug boxes for HSAs when needed | • 92% of HSAs who manage products had a drugbox at BL | | • Monitoring<br>• Midline |
| 19a | HSAs are trained in storage procedures | • Number and # HSAs trained in appropriate storage procedures | • 93% of HSAs who manage | | • Midline |
| 19aa | Streamlined procedures for storage exist | • Streamlined procedures for storage exist (Y/N) | • Yes | | |
| 37 | Transportation and other | • Number and % of supervisors who cite lack of transport as a | • NA | | • Monitorin |

| TOC Box # | Outcome: Enhanced Management | Proposed Indicators | Baseline Results | Targets | Data Source and Frequency |
|---|---|---|---|---|---|
| | resources available to conduct supervision | reason for not performing supervision on schedule<br>• Number and % of EM teams who made and documented evidence-based decisions designed to procure transport for supervision visits when needed<br>• Number and % of EM teams who documented acting upon/implementing evidence-based decisions to procure transport for supervision visits when needed | | | g<br>• Midline<br>• Supervisor records |

| TOC Box # | Outcome: National level Initiatives | Proposed Indicators | Baseline Results | Target | Data Source and Frequency |
|---|---|---|---|---|---|
| 32 | Mechanism for communication between stakeholders exists | • Mechanism is in place for communication between stakeholders and donors – (Y/N) | • (see LSAT notes) **No** | • Yes- (*Quarterly CCM logistics meetings*) | • LSAT<br>• Midline |
| 29 | Routine quantification | • Annual routine quantification carried out for CCM | • (see LSAT | • Yes | • LSAT |

| | | | | | |
|---|---|---|---|---|---|
| | and CCM pipeline monitoring is scheduled and CCM requirements clearly highlighted | products -(Y/N)<br>• Quantification review conducted every six month for CCM products<br>• Routine pipeline monitoring is done and includes CCM requirements -(Y/N)<br>• CCM pipeline monitoring results prepared for and presented at quarterly CCM logistics meetings -(Y/N) | notes) **No, not for CCM** | • Yes<br>• Yes<br>• Yes | • Quarterly CCM logistics meeting minutes |
| 42 | Visibility of program, supply and demand data exists | • Consumption data from HSA level is visible to team responsible for quantification of CCM products-(Y/N)<br>• Persons responsible for quantification believe they have adequate data accessible to them for quantification of CCM products -(Y/N) | • NA | • Yes<br>• Yes | • LSAT<br>• Midline |
| 43 | Staff responsible for quantification are trained | • Staff responsible for quantification are trained in carrying out quantifications for CCM products (training includes classroom, on-the-job training, and coaching) – (Y/N) | • (see LSAT notes) **No, not for CCM** | • Yes | • LSAT<br>• Midline |
| 50 | Streamlined procedures for routine quantification and pipeline monitoring exist and are documented | • Procedures for routine quantification of CCM products exist – (Y/N)<br>• Pipeline monitoring is regularly conducted for CCM products – (Y/N) | • (see LSAT notes) **No, not for CCM** | • Yes<br>• Yes | • LSAT<br>• Midline |

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| | *(indirect)* | | | | |
| 15 | Procurement of quality CCM products occurs on time, according to supply plan | • Product is received in country at or before national product levels reach a minimum (Y/N) | • (see LSAT notes) **No** | | • LSAT<br>• Pipeline monitoring<br>• Quarterly CCM logistics meetings<br>• Midline |
| 27 | Product specifications are determined for procurement | Product specifications are determined for procurement (Y/N) | • (see LSAT notes) **Yes** | | • LSAT<br>• KII<br>• Midline |
| 28 | Funds are allocated for procurement based on quantification and disbursed regularly | • Funds are allocated for procurement based on quantification and disbursed regularly, at district level (by commodity) (*categories: 0-50%, 50-80%, 80-100%*)<br>• Funds are allocated for procurement based on quantification and disbursed regularly, at national level (by commodity) (*categories: 0-50%, 50-80%, 80-100%*) | • (see LSAT notes) **Mixed** | | • Quarterly CCM logistics meetings |
| 32a | Quantification outputs used to develop procurement schedule & | Quantification outputs used to develop procurement schedule & supply plan for CCM (Y/N) | • NA | | • LSAT<br>• KII<br>• Midline |

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| | supply plan for CCM | | | | |
| 30 | Quality, child- and supply chain friendly CCM products are on NEML | • CCM products are on NEML (Y/N)<br>• Quality, child- and supply chain friendly CCM products are on NEML (Y/N) | • (see LSAT notes) **Yes** | | • LSAT<br>• KII<br>• Midline |
| 31 | Funding and procurement cycles for CCM products are aligned | Funding and procurement cycles for CCM products are aligned (Y/N) | • (see KII notes) **No** | | • LSAT<br>• KII<br>• Midline |
| 40 | Quality, child- and SC-friendly CCM products are registered in country | • CCM products are registered in country (including cotrimoxizole, ACTs, ORS, and zinc) (Y/N)<br>• CCM products that are registered are quality-assured, child- and SC-friendly (Y/N) | • (see LSAT notes) **Yes, except zinc** | | • LSAT<br>• Midline |
| 41 | CCM product selection is based on standard treatment algorithms and supply chain considerations | • CCM product selection is based on standard treatment algorithms (Y/N)<br>• CCM product selection is based on supply chain considerations (Y/N) | • (see LSAT notes) **Yes for STAs, No for SC** | | • LSAT<br>• KII<br>• Midline |
| 48a | STGs are up to date for | STGs are up to date for quality, child- and SC-friendly CCM | | | • Malawi National |

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| | quality, child- and SC-friendly CCM products | products (Y/N) | | | Program<br>• KII<br>• Midline |
| 48 | Quality, child- and supply chain - friendly CCM products are available from global, regional, or local marketplace | Quality, child- and supply chain - friendly CCM products are available from global, regional, or local marketplace – (Y/N) | • (see LSAT notes) **Mixed** | | • WHO-Medicines for Children Initiative<br>• KII<br>• Midline |
| 51 | Long term CCM forecast prepared and data shared for global forecast | Long term CCM forecast prepared and data shared for global forecast (Y/N) | • (see LSAT notes) | | • LSAT<br>• KII<br>• Midline |
| 52 | Budget line or sufficient funding is designated for program and those funds are allocated and disbursed when needed | Budget line or sufficient funding is designated for program and those funds are allocated and disbursed when needed (Y/N) | • (see LSAT notes) **Mixed** | | • LSAT<br>• KII<br>• Midline |

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| 53 | Strategy or Plan to achieve Commodity Security for CCM products exists | Strategy or Plan to achieve Commodity Security for CCM products exists (Y/N) | • (see LSAT notes) **No, not for CCM** | | • LSAT<br>• KII<br>• Midline |

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