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EVALUATION

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MALAWI COMMUNITY CASE MANAGEMENT EVALUATION

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ACRONYMS

ACT	Artemisinin-based combination therapy
ARI	Acute respiratory infection
BASICS	Basic Support for Institutionalizing Child Survival
BCC	Behavior change communication
CCM	Community case management
CCMDS	Community Case Management Data System
CHAM	Christian Health Association of Malawi
CHW	Community health worker
CIDA	Canadian International Development Agency
C-IMCI	Community integrated management of childhood illness
CMED	Central Monitoring and Evaluation Division
CMS	Central medical store
Cs4CCM	Supply chain for community case management
DHMT	District Health Management Team
DHO	District health officer
EHO	Environment health officer
EHP	Essential Health Package
GFATM	Global Fund to Fight AIDS, Tuberculosis and Malaria
GOM	Government of Malawi
HC	Health center
HCT	HIV counseling and testing
HMIS	Health Management Information System
HMT	Health Management Team
HR	Human resources
HSA	Health surveillance assistant
HSSP	Health Services Strategic Plan
HTSS	Health Technical Support System
IEC	Information, education, and communication
JSI	John Snow, Inc.
IMCI	Integrated management of childhood illness
LA	Lumefantrine artemether
LMIS	Logistics Management and Information System
MCHIP	Maternal/Child Health Integrated Program

MDHS	Malawi Demographic and Health Survey
M&E	Monitoring and evaluation
MDG	Millennium Development Goal
MICS	Multiple Indicator Cluster Survey
MOH	Ministry of Health
MSH	Management Sciences for Health
NGO	Non-governmental organization
NMCP	National Malaria Control Program
OR	Operations research
ORS	Oral rehydration solution
ORT	Oral rehydration therapy
PEPFAR	President's Emergency Program for AIDS Relief
PHC	Primary Health Care (MOH division)
PMCTC	Prevention of maternal to child transmission (of HIV/AIDS)
PMI	President's Malaria Initiative
PPD	Planning and Policy Department
PSI	Population Services International
SCMgr	Supply chain manager
SC4CCM	Supply Chains for Community Case Management
SMS	Short message service
StC	Save the Children
SWAp	Sector-wide approach
TWG	Technical Working Group
UNICEF	United Nations Children's Fund
U.S.	United States of America
USAID	U.S. Agency for International Development
VHC	Village health clinic
UNICEF	United Nations Children's Fund
WHO	World Health Organization

CONTENTS

EXECUTIVE SUMMARY

Millennium Development Goal (MDG) 4 "Improve Child Health" target 4A aims to reduce by two-thirds, between 1990 and 2015, the under-5 mortality rate, which is cited at 120 per 1,000 live births for the country of Malawi. Malawi Demographic and Health Survey (MDHS) preliminary data (2011) estimate a rate of 112.

The World Health Organization (WHO) cites three diseases as among the leading causes of child mortality worldwide: pneumonia (18% including neonates), diarrhea (15%), and malaria (8%). Working in collaboration with the United Nations Children's Fund (UNICEF), WHO developed the integrated management of childhood illness (IMCI) approach to child health as a strategy to reduce death, illness, and disability and to promote improved growth and development among children under 5 years of age. The facility-based IMCI approach includes both preventive and curative components. Still, access to care can be constrained by economic and geographic conditions as well as cultural beliefs and behavioral practices. An extension of IMCI to the community level (C-IMCI) was therefore developed and is known as Community Case Management (CCM).

The Government of Malawi (GOM) initiated community case management (CCM) in Malawi after the establishment and implementation of IMCI at the facility level for several years. Policy and program support for CCM in Malawi was implemented with the use of community-based health workers (health surveillance assistants [HSAs]), who are trained to assess, classify, and refer sick children to higher levels of care, in addition to providing first-line treatment for selected childhood illnesses. The formalized Ministry of Health (MOH) IMCI policy, which includes CCM, provides guidance and standardization for implementing IMCI across sectors as part of MOH's response and serves as a binding arrangement among multiple GOM sectors, international organizations, non-governmental organizations (NGOs), research groups, firms and other private sector groups, health service providers, and communities. The IMCI/CCM policy also directs the work of multiple partners who support IMCI and CCM at the community level in all districts to focus on integrated services, and provides a framework for coordination and partnership among the many organizations and communities. WHO, UNICEF, and Management Sciences for Health (MSH) have been formally recognized for their technical and financial support as early and consistent partners in the development of IMCI and CCM in Malawi.

USAID has funded the Basic Support for Institutionalizing Child Survival (BASICS) program for the period 2007 to 2011. The BASICS portfolio of work included support for the expansion of CCM by the MOH. The overarching BASICS project work began in eight districts, with CCM activities focused on hard-to-reach areas. BASICS has recently supported the expansion of CCM activities in hard-to-reach areas in four additional districts in the country's northern regions. Population Services International (PSI) and Save the Children (StC) provide technical assistance and support to CCM programming with a three-year support (2009 to 2012) project funded by the Canadian International Development Agency (CIDA). PSI provides technical support to five districts in the southern region, using a "whole district" approach. StC works in six districts in the south and central regions, focusing on hard-to-reach communities. Funding from the Bill and Melinda Gates Foundation supports the MOH, strengthens the capacity of the IMCI Unit at the central MOH level, and supports the expanded programming in CCM in the remaining districts.

The MOH has developed the curricula and training manuals, trained, and supported the work of thousands of HSAs, their senior HSA supervisors, mentors, and District Health Management Teams (DHMTs) with the technical assistance of a number of implementing partners. The CCM intervention includes training of HSAs in the IMCI algorithm for identification, assessment, classification, and first-line treatment of children age 2 to 59 months for acute respiratory

infection, diarrhea, eye infections, and malaria. The MOH and implementing partners have stocked drug boxes with artemether-lumefantrine (LA) (two age-appropriate dosages), cotrimoxazole, oral rehydration therapy, chloramphenicol eye ointment, zinc, and paracetamol. A critical tool for the program to train, manage, mentor, support, and monitor the quality of the HSAs' work is the CCM village visit register that incorporates the IMCI algorithm for HSAs' assessment, classification, and first-line treatment and/or referral and the management of CCM essential drugs. The IMCI CCM program in the MOH at the central and district level provides care to hundreds of thousands of children 2 to 59 months of age.

This assessment of the CCM program was done at the request of the Minister of Health with the support of USAID/Malawi. It was done in cooperation with the MOH IMCI, and other units, DHMTs, and others, with support from implementing partners BASICS, PSI, and StC. The assessment was designed to generate information concerning critical lessons learned, as well as promising implementation practices, to inform decision making on CCM implementation in Malawi and to help other countries that are implementing similar programs and seeking information from the experiences of others to accelerate CCM efforts. A variety of methodological approaches was used in the assessment, including interviews, site visits, and observations conducted among key informants knowledgeable about CCM, and the review and extraction of project-generated information and data. The assessment focused on eight components used across a number of CCM implementing countries that are at the core of CCM programming.

Policy and coordination of CCM is centered in the IMCI. A clear policy on CCM is imbedded in IMCI, with strong MOH ownership. DHMTs acknowledge CCM as the policy to be adhered to and implemented within the larger IMCI policy. They actively engage in its implementation in districts. The DHMT's IMCI Officer working closely with the Environmental Health Officer (EHO) and others, under the District Health Officer (DHO), often serves as the coordination point for CCM in the district. These staff assume day-to-day responsibility for the guidance, supervision, monitoring, and reporting of CCM implementation. All partners in the districts recognize the CCM policy as the directive for their collaboration with DHMTs, health centers, village clinics, and communities. At the central level, a Technical Working Group has been constituted to promote inter-agency communication and collaboration; however, there is some concern that government and collaborating partners are not fully using the data on CCM cases/syndromes seen and treated or referred as an essential tool for evidence-based decision making. Strategies for effective communication will assume even greater importance as the process of GOM decentralization to the district level proceeds, and the local governments assume a greater role in the implementation of national policies such as ICMI and CCM.

The HSA is the key human resource (HR) in CCM at the district level. HSAs are government employees. This offers a distinct advantage for CCM in Malawi, when compared to program designs that call on volunteers from the community for implementation of programming. However CCM is only one of many components of the HSA job description, and the HSA is also seen as the potential service cadre for multiple other donor programs. Further expansions of this role are also being discussed, such as provision of CCM for infants aged 0 to 2 months of age; or are being proposed to be logical extensions of current services, such as promotion or provision of HIV counseling and testing. The nexus for decision making on the allocation of HSA time across all tasks within the workload is unclear, and frequent changes in leadership within the DHMTs present a challenge to effective use of this human resource.

HSAs are required to live in the country's more challenged (hard-to-reach) communities. Financial and non-monetary incentives are known to be important motivating factors for retention, and were provided in a prior HR retention program. The issue of incentives will need to be given attention in future budget planning.

CCM services delivered/provided at the village clinic level are well accepted and highly valued by the community as a strategy to increase access to health services. Health facility statistics seem to indicate a reduction in demand for services at health facilities, likely attributable to services delivered by HSAs in the community. The ideal situation would be that HSAs provide services to children who might not otherwise be brought in for care, and HSAs serve as off-site service centers for health facilities.

Issues related to motivation and other limiting factors that affect the decision to access health services have an impact on the use of HSAs. Qualitative assessments are needed to generate information about these factors and the potential for this behavior change to occur. It is also necessary to study the issue of quality, timeliness, and accuracy of "counter referrals," i.e., from health centers to village clinics, in support of the continuum of care. The service delivery approach does not fully address referral, counter referral, and the follow up of children assessed by the HSA or those referred to a health facility.

The current use of the fixed-day/fixed-site village clinic should be assessed to identify options for the most efficient service delivery. It may be in conflict with the CCM message of seeking care within 24 hours of the onset of illness. Alternative options, such as village clinic site rotations, should also be assessed for their impact if the location of a rotating HSA's clinic service is not well known by the community.

The CCM program is also underdeveloped with respect to social mobilization and health communication strategies that encourage the involvement of community members in improving their own health. As an example for CCM, village leaders and community members in many of the sites visited by the team described only a very limited number of things they had done or could do to support the work of the HSA and the village clinic, despite the high value they placed on these services. Information dissemination about CCM and HSA role expansion, with few exceptions, was also limited to word-of-mouth communication among village residents. Similarly, community informants offered few examples of strategies planned by the community to provide support for village residents who experienced a need for an immediate (urgent or emergent) response to a health situation. The team suggests that communities could find further opportunities to support the work of the HSA in the community, or to assist families who need to find ways and means of acting on the recommendation for referral to a higher level of care. The information, education, and communication (IEC) strategy for CCM could be strengthened by endorsement and distribution of materials already developed by implementing partners, as IEC materials and methods are currently not widely available at the community level.

Quality must be at the core of the care provided by HSAs for the four clinical conditions. The HSA uses a precise algorithm for assessment and management of children 2 to 59 months for a limited number of common syndromes such as fever/malaria, fast breathing/pneumonia, diarrhea, and eye conditions. The algorithm provides structure and guidance for quality care, supervision, and reporting. Rigorous evaluations of the quality of care have been conducted, and indicate the need for improving the quality of services provided by HSAs, especially in the identification of danger signs and accurate and early treatment. These quality assessment studies are integral components of continuous quality assessment, and an ongoing program of research needs to be supported. The HSAs' assessments of syndromes are conducted with a high degree of accuracy; however, the drug treatment and/or referral rates are considerably lower in the degree of accuracy and require priority attention for improvement.

Improved high quality supervision and mentorship is also needed. The current approach to supervision of HSAs by the Senior HSA focuses more on ensuring tasks are done, medicine boxes are well-kept well, and the HSAs are using the algorithm. The supervision system is augmented by a mentorship program. Mentors are medical and nursing personnel who provide

clinical guidance to HSAs to improve performance in assessment, classification, and treatment. The initial use of multidisciplinary supervisory teams has been adapted; however, the two research studies show the continuing need for supervision to focus on improving quality of service, drug supplies, and logistics support to HSAs.

Challenges to the supply chain for essential CCM drugs and commodities also have an impact on quality. The first two years of CCM programming were characterized by frequent stock-outs of drugs at both the HSA village clinic and the affiliated health facility levels. This gap was consistent with larger weakness in the MOH Central Medical Stores' country-wide system for drug procurement and supply. Donors and partners developed parallel drug procurement and delivery systems, which, in the short term, made it more likely that CCM drugs would be provided to HSAs; however, the longer-term solution has not yet been defined. There are plans to transition administrative management of the CMS to a trust, which offers the potential for a unified procurement system to serve CCM and other programs. There will be a need for technical assistance to strengthen the CCM (and the larger MOH systems of drug procurement and distribution), including use of the Logistic Management Information System (LMIS).

Technical assistance could also be helpful to personnel at district and facility levels to identify and promote more effective interdisciplinary and interdepartmental strategies for internal coordination of drug accounting and forecasting responsibilities, which are currently not well-coordinated. Coordination of drug forecasting was found generally not to be strong between pharmacists and pharmacy technicians at various facility levels. Training was irregular and did not reach appropriate staff. (The forecasting exercise conducted by the MOH HTTS, supported by USAID/DELIVER and the John Snow, Inc.-implemented Supply Chains for Community Case Management (SC4CCM) project in early 2011, is a notable exception.) Similarly, the HSAs could be provided with additional training and supervision related to their responsibilities for quality control and accounting of their CCM drug supply to improve occasional issues related to unsafe or unsanitary maintenance of drugs and the situation of stock-outs, as documented in various studies, supervisory visits, and observations. For example a study conducted by SC4CCM in December 2010 indicates that only 35% of HSAs had all three key products that are noted in the algorithm needed to treat pneumonia, diarrhea, and malaria.

The government financing of health in Malawi is low, even lower than other countries in the region, and has recently declined even further. This affects the MOH's ability to sustain or expand the CCM program. Per capita expenditure on health is insufficient to cover the package of essential health services. Although there is significant funding from external sources for CCM (more than 70%), external donor funds are not ensured for the near future. There are also challenges in the tracking of multiple sources of CCM financing. In the medium term, with the decentralization of functions to local government and technical assistance/training of DHMT staff, increased software and computers planned for DHMTs, capacity should increase in tracking the various sources of funding from the MOH, local government, donors, and other sources. GOM and donor dialogue on future funding of the CCM program is needed to ensure consistent support for the program.

Monitoring of CCM includes day-to-day tracking of program activities (training and mentorship programs, clients served), and accounting for supplies and commodities used in service delivery. Evaluation of CCM involves assessments of the quality and effectiveness of services rendered. Monitoring and evaluation (M&E) is pursued through tracking of a limited number of focused CCM indicators, using both paper-based and SMS technology for recording and reporting. There have been consistent, persistent concerns about the accuracy and timeliness of data. DHMTs vary in the degree to which they regularly review these data and use it for decision making. The degree to which findings are disseminated back to the community, analyzed, and shared among districts and within the ICMI office and its Technical Working Group members also varies. A

planned roll-out of a web-based health information management system (HMIS) offers the potential for wider information-sharing.

CCM data are not integrated into HMIS, although that is an objective for the near future. The current disaggregation of data greatly limits the degree to which programming outcomes and impact can be directly attributed to CCM interventions. A national evaluation platform currently being designed will assist the MOH and implementing partners in contributing to the type of operational research and impact studies that are critical components of program assessment.

A number of recommendations have been developed by the Assessment Team for consideration by the MOH, donors, and implementing partners, and are threaded throughout the body of the report. This executive summary presents below a *limited number of priority recommendations* addressed to the MOH, donors, and implementing partners.

COORDINATION AND POLICY SETTING

- Support to MOH IMCI leadership of CCM for coordination and policy-setting should continue and be further strengthened with a strong evidence-based approach, using data, studies, and analysis from all partners. A series of more structured, more frequent meetings should be considered, whereby the priorities and timelines for the implementation of decisions are established and monitored.
- Future CCM policy revision and coordination should address the interaction between the MOH/CCM and local government authorities to ensure that future CCM programming receives political, programmatic, and financial support from local authorities.

HUMAN RESOURCES

- A second "time utilization" study should be considered to assess the changes in time allocation to other tasks by the HSAs and their senior HSA supervisors after assuming CCM tasks. This study could also compare HSAs' case load in static village clinics held two to three day per week compared to mobile CCM activities to determine the most efficient use of this human resource cadre.
- Continued MOH and partner official recognition of the importance of the HSA cadre in providing IMCI-CCM services at the community level should be formalized and promoted to increase the credibility of this cadre and increase support for full integration as part of the MOH's health human resource team.
- Early planning is needed in light of potential changes in incentives/salary top-ups within the new five year sector-wide approach (SWAp). Joint, well-coordinated efforts of all partners, led by the IMCI Unit, is needed to define an agreed-upon approach to providing incentives that can support HSAs and other cadres in continuing and expanding, if planned, CCM activities.
- To the extent possible, the IMCI-CCM should advocate for changes in broader ministry and GOM human resource management to stabilize the health leadership that supports the CCM. The IMCI Department could urge partners to help them conduct a small study on the effects of frequent changes in leadership on the management and expansion of the CCM program.

QUALITY OF CARE AND SUPERVISION

- The MOH, donors, and all partners should strengthen the CCM approach to ensure continuous high-quality clinical care by HSAs using a strong evidence-based approach with data from reports, studies, and analyses by all partners.
- Additional training, supervision, and mentoring focused on recognition of danger signs, proper treatment, initiation of first dose, and client follow up should be carried out to improve quality of care. Assuring availability of all four essential drugs should also be a priority to ensure quality care.
- Periodic operations research (OR) studies on quality of care should be conducted, mirroring the research process of the JHU/WHO and MOH SAVE studies to generate data for decision-making.

SUPPLY CHAIN MANAGEMENT

- The MOH, working with the new CMS Trust, should develop a time-bound plan to integrate the management of CCM commodities, currently supplied via the parallel supply chain system, into the CMS/RMS mainstream supply chain system when the Trust is in place. As needed, USAID should support technical assistance for the transition of the CMS to the CMS Trust and for strengthening of a unified supply chain.
- The DHMT should increase internal communication among health facility staff (e.g., pharmacy and laboratory) so that the various departments involved in supply chain management work together more effectively in collecting and compiling drug logistics data. This would improve forecasting and procurement, helping integrate CCM commodities into the main supply chain stream.
- The IMCI unit, working with the DHMT and HSA supervisor, should strengthen the supervision of HSAs on drug supplies management reporting and documentation of drug consumption. The MOH should make necessary changes on the Logistics Management and Information System (LMIS) forms to track lumefantrine artemether (LA) dispensation by age, and disseminate revised forms as soon as possible. The updated LMIS standard operating procedures should also be disseminated to the health units and HSAs.

COMMUNICATION AND SOCIAL MOBILIZATION

- The MOH should take action to endorse the IEC materials that are already available, and facilitate their distribution, with attention paid to distribution in hard-to-reach areas.
- The MOH and partners should collaborate in the development of IEC materials, to avoid duplication of effort and conserve resources; distribution and dissemination throughout the districts could be a joint effort.
- The ICMI unit should consider expansion of social mobilization activities at the village levels, with priority given to creation of action plans that promote early care-seeking and community action plans that will assist families who need to take their children to higher-level facilities for care.

SERVICE DELIVERY AND REFERRAL

- The ICMI unit, DHMTs, and partners should increase their focus on the identification of dangers signs and development of a strong referral and follow-up process to ensure the appropriate continuum of care for every child initially served by HSAs.

- A qualitative study on motivating factors and barriers that affect health-seeking behavior, with a particular focus on the timeliness of decision making and taking action, should be considered by the ICMI Unit and its research partners.
- The ICMI Unit, DHMTs, and partners should ensure that all aspects required for quality service provision are already in place (e.g., training, supervision strategy, drug supply) to support any roll-out of expanded services.
- The ICMI Unit should consider the introduction of promotion of HIV counseling and testing (HCT) as a component of the CCM role, particularly for mothers of breastfeeding children (0 to 6 months).

FINANCING

- Donors and the GOM should conduct serious dialogue that results in the increase of GOM allocations for the health sector to ensure adequate, long-term sustainability of the CCM and other priority programs.
- The CCM donors and partners should develop a simple, adequate, practical approach using computer software to harmonize budget data from multiple external CCM sources. This would supplement MOH efforts to track CCM budgets and reduce the burden on the MOH. USAID should consider technical assistance/support, as needed, for this "harmonization of budget information" effort.

MONITORING AND EVALUATION

- The IMCI and relevant data management units in the MOH should develop strong leadership and provide capacity-building to strengthen the CCM data stream, including the capacity to analyze and interpret data for decision making and the provision of feedback to the community.
- The ICMI and relevant data management units in the MOH should take proactive measures to integrate critical (country and global) CCM indicators into the country's HMIS to ensure that CCM interventions are reflected in country disease incidence and prevalence. (This is already noted as a component of the country's health sector strategic plan.)

I. INTRODUCTION AND BACKGROUND

Millennium Development Goal (MDG) 4 "Improve Child Health" target 4A (UN, 2000) aims to reduce by two-thirds, between 1990 and 2015, the under-5 mortality rate, which is cited at 120 per 1,000 live births for the country of Malawi (USAID, 2010). Malawi is one of the few African countries that have been assessed as having the potential to reach that MDG target (mdgmonitor, 2010). The 2006 Malawi Multiple Indicator Cluster Survey (MICS) showed a sharp decline in the infant and under-5 mortality rates, from 104 and 189 per 1,000 live births, respectively, in 2000 to 72 and 122 in 2006 (MICS, 2008). Malawi Demographic and Health Survey (MDHS) preliminary data (2011) estimate a rate of 112.

The World Health Organization (WHO) cites three diseases as among the leading causes of child mortality worldwide: pneumonia (18% including neonates), diarrhea (15%), and malaria (8%) (WHO, 2010). The burden of these diseases in Africa is similar for pneumonia (18% including neonates), but is greater for diarrhea (18% plus an additional 1% for neonates) and for malaria (16%) (Black et al., 2010).

Malaria remains a leading cause of morbidity and mortality in Malawi. The disease is endemic in the country, where greater than 97% of the population is at risk of infection and the vast majority (86%) resides in rural settings. Transmission is perennial, though increased during Malawi's rainy season from November through April. According to health management information system (HMIS) registry data (which documents mostly clinical cases at health facilities alone), malaria is the primary cause of outpatient visits in the country. Over 6 million cases were captured through this system in 2008. Together malaria and anemia are estimated to be responsible for close to 40% of all hospitalizations and 30% of all hospital deaths in children of less than 5 years of age. The proportion of children with fever who take an anti-malarial drug is cited as 21% in the most recent (2006) MICS and as 28.2% (same or next day) to 43.4% (within a 2-week period) in the 2010 MDHS preliminary data.

Pneumonia accounted for 12% of outpatient visits in 2008 (HMIS data).The 2010 preliminary MDHS data indicate that treatment from a health facility or provider was sought for 66% of children with symptoms of acute respiratory infection (ARI) (presumptive pneumonia) and 59% of the children with fever symptoms. Standard case management of pneumonia, through delivery approaches such as community-based integrated management of childhood illness (C-IMCI) has been demonstrated to be an effective early intervention in cases of ARI, and has been adopted by the Government of Malawi (Government of Malawi [GOM}) (Enarson et al., 2009).

Access to sources of potable water and environmental sanitation has been clearly identified as a fundamental influence on community health, and, in particular, the prevention of diarrhea in children (Tornheim et al., 2009). The 2004 MDHS indicated that only 64% of Malawian households have access to clean water, 20% of these from piped water. The 2010 preliminary MDHS data indicate that 57% of children with diarrhea were taken for treatment to a health facility or health provider, and 69% of children with diarrhea received solution for oral rehydration therapy (ORT) from oral rehydration packets or oral rehydration solutions (ORS) (an increase of 8% since the previous survey).

Working in collaboration with the United Nations Children's Fund (UNICEF), WHO developed the integrated management of childhood illness (IMCI) approach to child health as a strategy to reduce death, illness, and disability and to promote improved growth and development among children under 5 years of age. The facility-based IMCI approach includes both preventive and curative components. The approach is embedded within Malawi's Essential Health Package

(EHP), the statement of health services that are to be provided to the population. Malawi adopted the IMCI strategy in 1998 and implementation began in 1999 (GOM, 2006).

Still, access to care can be constrained by economic and geographic conditions as well as cultural beliefs and behavioral practices. An extension of IMCI to the community level (C-IMCI) was therefore developed and is known as community case management (CCM). CCM is facilitated by the use of community-based health workers who are trained to assess, classify, and refer sick children to higher levels of care, in addition to providing first-line treatment for selected childhood illnesses

The IMCI Unit of the Ministry of Health (MOH) began the CCM rollout in 2009. The initial target was 4,000 hard-to-reach villages across the country with a catchment area of approximately 10% of the population. Health surveillance assistants (HSAs), an integral part of the formal health system in Malawi, provide case management services to sick children at the community level through village health clinics (VHCs) in hard-to-reach areas (more than 8 kilometers from a health center).

The MOH and implementing partners have collaborated in promoting common elements of the scope of CCM. USAID has funded the Basic Support for Institutionalizing Child Survival (BASICS) program for the period 2007 to 2011. The overarching BASICS project work began in eight districts, with CCM activities focused on hard-to-reach areas. BASICS has recently expanded CCM activities in hard-to-reach areas in four additional districts in the country's northern regions. Population Services International (PSI) and Save the Children (StC) conduct CCM programming with three-year support (2009 to 2012) from the Canadian International Development Agency (CIDA). PSI provides technical support to five districts in the southern region, using a "whole district" approach. StC works in six districts in the south and central regions, focusing on hard-to-reach communities. Additional financial support from WHO, UNICEF, and the Bill and Melinda Gates Foundation enable the IMCI Unit to conduct CCM in the remaining regions, with limited programmatic overlap in selected districts.

Technical assistance provided by the implementing partners includes training of HSAs in the IMCI algorithm for assessment, presumptive diagnosis, and treatment of children age 2 to 59 months for acute respiratory infection, diarrhea, eye infections, and malaria. The MOH and implementing partners have stocked drug boxes with artemether-lumefantrine (LA), cotrimoxazole, oral rehydration therapy, chloramphenicol eye ointment, zinc,[1] and paracetamol. A logistics management information system (LMIS) and a CCM visit register were developed so HSAs would be able to report data on assessments and drug usage accordingly.

This assessment of the CCM program, as managed by the MOH with support from three of the country's several implementing partners (BASICS, PSI, and StC) was designed to generate information on critical lessons learned, as well as promising implementation practices, to inform decision making on CCM implementation in Malawi and assist other countries that are looking for ideas to accelerate CCM efforts. Appendix A presents the scope of work for this assessment.

[1] It should be noted that zinc and eye ointment are complementary products.

II. METHODS

This assessment of CCM activities was conducted using a variety of qualitative methods, augmented by review of available quantitative information and data. Background information was obtained through review of documents generated by the GOM, the MOH, and project partners. These materials included policy-level documents that address government health, fiscal, and pharmaceutical policies related to CCM strategic planning and implementation; clinical guidelines and algorithms relevant to CCM; and training curricula for HSAs and supervisors related to clinical care, recording, and reporting. Minutes of meetings of the Technical Working Group (TWG) of CCM implementing partners were reviewed, as were various reports on each partner's program of work (e.g., annual plans, compilations of results of supervisory visits to HSAs, and accounting reports of supplies and commodities purchased and delivered to support CCM in the community). The complete inventory of documents is provided as Appendix B.

The assessment team developed a comprehensive assessment guide that outlined eight essential components of CCM implementation in Malawi. This guide was modeled on documents that had been developed for similar CCM assessments recently conducted in other African counties, including Madagascar, Senegal, and Democratic Republic of the Congo. The assessment guide (Appendix C) served as an interview guide for the conduct of individual and group interviews with representatives of the MOH, USAID personnel, implementing partners, and other key informants (Appendix D).

A site visit was made to the central medical stores in Lilongwe, where an observation was conducted of storage, inventory, and the LMIS inventory system in operation. Drug dispensing facilities were observed at district hospitals and village health centers in the eight districts in which facility site visits were conducted to review conditions under which commodities were stored and accessed.

A total of eight (8) districts were included in the site visit plan. The number of sites and the number of interviews at each site was the maximum number feasible, taking into account both time and budgetary constraints. The districts selected were drawn from those recommended by the Mission to represent settings in which CCM activities have been implemented for a longer period and those in which CCM activities have been introduced more recently. They also reflect districts that were identified by implementing partners as better- and lesser-performing districts.

The Assessment Team was accompanied to each district by one or more representatives of the implementing partner organization, and cross-visits were accommodated in two BASICS districts (Kasunga District [Save the Children] and Salima District [PSI]). USAID representatives also joined the Assessment Team in Salima District. The selected districts and the supporting partner are depicted below:

Table 1. Selected Districts and Their Supporting Partners

Region	District	Partner
Southern	Mwanza	PSI
	Mulanje	StC
	Phalombe	BASICS
	Zomba	PSI
Central	Salima	BASICS
Northern	Nkhatabay	BASICS
	Nkotakota	StC
	Kasunga	BASICS

A similar strategy for interviews and site visits was followed in each district, where possible to accomplish (for example, HSA village clinics were not in operation on the day of visit in certain districts):

District Health Management Team

Interviews with:

- District Health Officer/Health Team (medical, nursing, pharmacy)
- District Environmental Health Officer
- District Malaria Coordinator
- District IMCI Coordinator
- HMIS Representative

Health Facilities – Two per District

Interviews with:

- Health Centre in-charge
- Supervisor of HSA(s)
- Individuals responsible for supervising the coordination of malaria and IMCI activities
- Individuals at the facility level managing supply chain issues

Observations of:

- Drug dispensary (conditions of storage, supply, documentation of stock-outs)
- CCM aggregate data reports (e.g., log books, data summaries posted for review)

Village Clinics – Two per Health Center

Interviews with:

- HSAs
- Village Health Committee (VHC) representatives

Observations of:

- Drug box (conditions of storage, lock/keys, supply, documentation of stock-outs)
- HSA register (completeness of record keeping)
- Service delivery (HSA conducting a child assessment and documenting findings)

The complete calendar of activities is provided as Table 2 in Appendix E. Appendix F provides a statistical overview of the situation of children under 5 years of age in the districts addressed in this assessment.

III. FINDINGS AND RECOMMENDATIONS BY KEY COMPONENTS

COORDINATION AND POLICY SETTING

The policy that defines community case management is imbedded within the MOH IMCI Approach, Policy for Accelerated Child Survival and Development in Malawi, set out in November 2006. The 2006 policy document was the result of a long and intense multisectoral effort of the Government of Malawi, coordinated by the Ministry of Health and Ministry of Women and Child Development, with the collaboration of multiple GOM ministries. This policy was built on the foundation of an initial IMCI Strategy, adopted in 1998 with implementation starting in 1999. The formalized MOH IMCI policy provides guidance and standardization for implementing IMCI across sectors in their response and serves as a binding arrangement among multiple GOM sectors, international organizations, non-governmental organizations (NGOs), research groups, private sector and other groups, health service providers, and communities. The IMCI policy also directs the work of multiple partners who engage in ICMI and CCM to focus integrated service provision, and provides a framework for coordination and partnership among the many organizations and communities that are involved. WHO, UNICEF, and Management Sciences for Health (MSH) have been formally recognized for their technical and financial support as early and consistent partners in the development of IMCI and CCM in Malawi.

The IMCI policy statement specifically addresses case management approaches and the skills needed, and states that "trained Health Surveillance Assistants shall provide treatment for uncomplicated illnesses at home within their recognized mandate." In addition, it clarifies that "the GOM and its partners would adopt a five-day training on IMCI case management for in-service training." IMCI policy further requires that:

- All sick children under 5 must be examined for general danger signs, which indicate the need for referral.
- Irrespective of the present complaint, all sick children must be routinely assessed for specific danger signs.
- All caregivers are to be counseled on how to give treatment and when to return immediately to the health facility.
- All severely ill children will be given pre-referral treatment.

CCM within the IMCI Policy is widely accepted at the central level among all organizations and partners. The IMCI Unit of the Ministry of Health (MOH) serves as the point of coordination of the multiple implementing organizations and partners. The IMCI unit serves in the secretarial role for the Child Survival and Development Committee and the TWG.

Discussions between the Assessment Team and numerous partners confirmed the acceptance of CCM policy and recognition of the role of the IMCI Unit as coordinator at the central level. The high level of coordination and communication among GOM agencies, donors, and other partners was discussed as an important factor in the progress made in establishing and expanding CCM nationally. Minutes of the TWG documented positive collaboration among multiple partners, contributing to CCM decision making and implementation, especially on the programmatic side. The collaboration on the issues of supply chain with the Health Technical Support System (HTSS) was less well developed, especially initially.

The development of a new five-year strategic plan will provide the opportunity for review and revision, as needed, of the overall IMCI/CCM policy and policy statements that govern its strategy and implementation. Continued coordination among multiple partners is planned. In preparation, an evidence-based review of progress to date should be carried out: this would use data and information from studies, program statistics, and research reports, including those noted below.

- Quality of Care Provided to Sick Children by Health Surveillance Assistants in Malawi
- Preliminary Report on the Baseline Assessment of Community Case Management Supply Chain (CS4CCM)
- The Improvement of Health Care Services – Programme of Work II
- Minutes on CCM Review Conducted at Riverside Motel on March 1, 2011
- Health Sector Strategic Plan 2011 to 2016

These and other reports can help provide specific data as an evidence base for decision-making. Partners can bring expertise in the use of data for decision-making methodologies that will sharpen the TWG's capacity to plan and make decisions based on data.

At the district level, the district health management teams (DHMT) readily acknowledge CCM as the policy to be adhered to and implemented within the larger IMCI policy. They actively engage in its implementation in districts. The DHMT's IMCI Officer, working closely with the Environmental Health Officer (EHO) and others, under the District Health Officer (DHO), often serves as the coordination point for CCM in the district; they assume day-to-day responsibility for the guidance, supervision, monitoring, and reporting of CCM implementation. All partners in the districts recognize the CCM policy as the directive guiding their collaboration with DHMTs, health centers, village clinics, and communities. Partners in different districts participate in CCM and provide somewhat distinct support, depending on their own funding agreement and agreement with the GOM/MOH. Partners were requested by the MOH IMCI Unit to work in a/selected district or districts. It is not clear if the IMCI Unit is able to "join/couple" various partners in a district to comply with the policy statement that "the implementing partner that is not able to implement the package of services on its own, should identify complementary partners so as to implement the minimum package at the district level."

With the broader rubric of GOM decentralization at the district level, the Ministry of Local Government has roles and responsibilities that include collaboration in the implementation of national policies such as IMCI and CCM, which the District Health Office coordinates. The Ministry of Local Government's role in providing funds, support, and guidance in the implementation of IMCI CCM policies could not be fully explored by the team due to time constraints. However, the ministry's decision-making and resourcing role will increase in CCM's future and there will be a need for the MOH to provide orientation, training, and support to build the capacity of local government officials to provide guidance, funding, and decision making on priorities such as CCM within their districts. The new Malawi Health Sector Plan 2011-2016 notes that the Ministry of Local Government and Rural Development maintains overall responsibility for delivering health services at district and lower levels in line with the Decentralization Act (1997). Over the period of implementation of the Health Services Strategic Plan (HSSP), the MOH will strengthen its relationships with other GOM ministries and departments, the private sector, and Health Development Partners, with the aim of effectively delivering quality essential health program services (GOM, 2011).

Although CCM activities and issues are reportedly discussed in monthly DHMT meetings, the team was unable to assess the content of meetings that included analysis, support, and coordination for the district's implementation of CCM policy. Discussions with DHMTs raise

concerns that some are not fully using the data on CCM cases/syndromes seen and treated or referred as an essential tool in evidence-based decision-making. At the same time, some reports show that supervision is irregular and there are stock-outs of drugs. Some DHMTs demonstrated their data and analysis and discussed sending out teams to address issues. A structured review of DHMT capacity to use data for decision making could be valuable in strengthening their CCM planning and response capacity while encouraging regular meetings and involvement of the broader DHMT team. It was noted that DHMTs visited by the team readily acknowledged the CCM policy while the strength of commitment to its implementation varied among DHMTs for a number of reasons.

At the central level, additional exchanges of information among partners as part of the TWG and other venues would be helpful. Field visits between partners would also benefit each with insights into the other's technical interventions and approaches, logistics, monitoring and evaluation, and other systems. At the central level, meetings that review the status of CCM implementation in a structured, data-driven approach could also be used; however, minutes of TWG meetings suggest this does not happen with regularity. General TWG discussions and agreements to collaborate are in evidence, but in-depth discussion of bottlenecks to be addressed and the status of implementation based on hard data compiled and analyzed were not in evidence in the minutes of meetings or other documents. Malawi's high level of collaboration is a key to its CCM success. A more in-depth, evidence-driven, regular review of CCM implementation would benefit the program, with partners developing more specific and effective actions with timelines for their achievement. Since data on drug availability is critical to CCM policy implementation, data from the supply chain system could be fully integrated into the evidence base for CCM decision-making among all partners.

Recommendations to MOH and Partners

- Support to MOH IMCI leadership of CCM should continue and be strengthened by a strong evidence-based approach using data, studies, and analysis from all partners. A series of more structured, more frequent meetings should be considered, in which timelines for decision implementation are established and monitored.
- Additional coordination between the review and revision of IMCI CCM technical and management policies and their implementation, and the related CCM drug policies and their implementation, should be given priority in order to address key issues critical to decisions affecting the pace of expansion of CCM.
- Future CCM policy revision and coordination should address the interaction between the MOH/CCM and local government authorities to ensure that future CCM programming receives political, programmatic, and financial support from local authorities.

HUMAN RESOURCES

Human resources (HR) are critical to the success of CCM. The criteria for recruitment of HSAs include literacy and some secondary education; the initial period of training for HSAs is 12 weeks. HSAs are responsible for promotion of environmental health through home visits and inspection of sanitation facilities, collection of vital statistics and maintenance of a village register, response to disease outbreaks, and organization and implementation of outreach campaigns. Their responsibilities also include routine community delivery of various health programs, including family planning, HIV care, directly observed therapy for tuberculosis, nutritional rehabilitation, and malaria prevention activities, in addition to community case management. MOH officials report that the HSAs have 18 program areas of responsibility. Reportedly, a WHO Malawi "time efficiency" study of tasks carried out by the HSAs was done before they

assumed CCM responsibilities. However, despite several efforts, this study could not be located by the team.

Selection criteria for those HSAs that will receive six days of training in CCM generally include prior experience as an HSA and preferably residence in a hard-to-reach area. Additional training is provided preferentially in some districts to HSAs residing in their catchment area.

The priority of the CCM program is to train, place, and support a major cadre of human resources, the HSAs, for service in hard-to-reach areas, i.e., 8 or more kilometers from a health center. Both males and females are recruited as HSAs; they are generally given multiple responsibilities and are later provided with training in CCM. A limited number of HSAs have received CCM training before their general HSA training. Data from the MOH Division of Primary Health Care (PHC), dated April 15, 2011, indicate that 2,994 HSAs were trained in CCM; according to the data, the number of hard-to-reach areas is 3,450, making the proportion of HSA human resources trained compared to the number of hard-to-reach areas 73.25%. The proportions vary by district from 40.8% in Mangochi and 40.87% in Mulanjie to 100% in Balaka, Chitipa, Likoma, and Chiradzulu (Table 3, Appendix F). Some partners report slightly different/higher numbers of HSAs trained, some of whom may not yet be included in the MOH database.

The HSAs' roles and responsibilities have changed somewhat as other program areas have been added to their list of responsibilities. It is not clear who coordinates and approves the assignment of additional tasks and responsibilities to the HSAs. As human resources, HSAs are managed by the Environmental Health Division, but their roles are affected by the decisions of other divisions within the MOH.

With incentives known to increase staff performance, an emergency HR initiative was recently undertaken in Malawi. The emergency plan reportedly topped up the salaries of HSAs, although the official document does not include HSAs as one of the HR categories to receive top-ups (O'Neil et al., 2010). Non-monetary incentives are also recognized as important factors in staff motivation and performance, and a number of these are provided by the MOH and partners to staff involved in CCM. Such non-monetary incentives include supportive supervision by interested and competent senior HSAs, mentoring by clinical staff at facilities, ongoing in-service training sessions, periodic meetings with clinical officers and other HSAs to review/share information, provision of bicycles, etc. A major incentive frequently cited by CCM staff and partners was the additional prestige and respect from the community that comes as a result of the HSAs' CCM work.

Senior HSAs provide supportive supervision to HSAs in a ratio of approximately one senior HSA to ten HSAs. These supervisors, most of whom have received training in CCM, provide a mixture of administrative and CCM clinical supervision/observation for HSAs, using and reinforcing the use of the CCM register/sick child recording form. The Clinical Officer and Medical Officer cadres also provide clinical mentoring but are not generally seen as HSA supervisors. Other oversight/supervision is provided by IMCI officers, Environmental Health officers, nurses, and other cadres in the DHMT who travel in teams to see HSAs and their work in the field. The human resources used to supervise HSAs changed over time as implementers found differences in the effectiveness of different supervisory cadres. The DHO HR cadre is ultimately responsible for CCM at the district level. According to the CCM policy, the village committee also provides supportive supervision to HSAs, including monitoring drug supplies and orienting community members on health issues. The village committee cadre is generally found in the HSA catchment area; their training, capabilities, and time spent in supervision and support of the HSA varies. (Issues related to supervision and mentorship are more fully discussed in later sections of this report.)

The reviews conducted to date of HR-related issues have identified supportive supervision as a major incentivizing factor for HSAs. However, it was also recognized that additional supplies and support are also needed to ensure that HSA performance continues at a high level. Reviews also resulted in adjustments to the use of team supervision, and in the earlier and more complete training of supervisor cadres.

Two other broad HR issues could also affect the future of CCM:

- The critical HR issue of continued funding for top-ups for salaries is a broader issue than CCM that will likely affect motivation of the HSA cadre that received a 26% top-up in the previous Emergency Plan. If top-ups are not forthcoming, the future plans of the GOM/MOH to retain HSAs will need to be addressed at the senior level within the MOH.
- Another HR issue is the high level of staff rotation across the MOH, particularly at the DHMT level, that seriously affects the consistent, senior level of leadership that is needed, as well as critical analysis of CCM implementation and adequate planning and provision of programmatic and drug supply support for CCM.

Recommendations to the MOH

- A second "time utilization" study should be considered to assess the changes in time allocation to other tasks by the HSAs and their senior HSA supervisors after assuming CCM tasks. This study could also compare HSAs' case load in static village clinics held two to three days a week compared to mobile CCM activities to identify efficient use of this HR cadre.
- Continued MOH and partner official recognition of the importance of the HSA cadre in providing IMCI-CCM services at the community level should be formalized and promoted to increase the credibility of this cadre and increase support for full integration as part of the MOH's health HR team.
- Early planning is needed in light of potential changes in incentives/salary top-ups within the new five-year sector-wide approach (SWAp). Joint, well-coordinated efforts of all partners, led by the IMCI Unit, is needed to define an agreed-upon approach to providing incentives that can support HSAs and other cadres in continuing and expanding, if planned, CCM activities.
- To the extent possible, the IMCI-CCM should advocate for changes in broader ministry and GOM HR management to stabilize the health leadership that supports the CCM. The IMCI Department could urge partners to help them conduct a small study on the effects of frequent changes in leadership on CCM program management and expansion.

QUALITY OF CARE AND SUPERVISION

The IMCI Unit, the Environmental Health Division, the Pharmaceutical Services, and other divisions/units at the MOH, together with DHMTs and donors, partners, and others supporting CCM are all aware of the critical importance of the quality of CCM services in the community. The credibility of CCM services provided by HSAs hinges on the use of the evidence-based and clinically proven algorithm that, if adhered to consistently by HSAs, will ensure accurate problem identification and assessment and proper treatment or referral. The steps included in providing quality care include: asking the correct questions for *problem identification*, then carrying out *classification* to decide if there are danger signs or whether the clinical condition can be treated at home, then providing *pre-referral treatment* or *treatment for home care* and later *follow-up*.

Malawi has invested tremendous technical and programmatic resources to support the development of curriculum, training manuals, job aids, and other materials for HSAs, as well as checklists for HSAs and their supervisors and many other resources to support quality care. The training, supervision, support, and supplies, including drugs and equipment, are also key inputs that support community-level implementation of quality CCM by HSAs.

The CCM program is fortunate that, in addition to its own studies and data, its program direction, management, and monitoring of CCM interventions, the IMCI Unit, and its many partners have access to information on the quality of the CCM program from research studies and other sources. These data support the CCM program by contributing valuable information on the quality of CCM implementation.

Several studies that discussed quality of care were reviewed by the team. These included:

- Quality of Care Provided By Health Surveillance Assistants in Malawi (JHU, 2010)
- Partner work plans and reports
- IMCI Unit's Report on Village Clinic Supervision of December 2010
- A draft report on the quality of HSA care in Mulanje District by the DHMT Mulanje and Save the Children
- Preliminary Report on the Baseline Assessment of Community Case Management Supply Chain (Supply Chains for Community Case Management [SC4CCM]/John Snow, Inc. [JSI], 2010)

The team also reviewed the MOH's broader Quality Improvement of Health Care Services component of the Health SWAp 2011 to 2016 (GTZ 2010) for potential linkages of CCM improvement with the planned MOH-wide systematic approach to improving quality in essential health services.

The following discussion first focuses on the clinical aspects of the quality of care provided by HSAs with data from a research study conducted early on during implementation of Malawi's CCM program. The Quality of Care Provided by Health Surveillance Assistants in Malawi (JHU, 2009) study, carried out in late 2009, reported that HSAs' *assessment* of symptoms in sick children in communities was relatively high. (The percentage of children assessed for three common signs of illness – cough, diarrhea, and fever – was 76% overall.) For individual syndromes, the proportion of children assessed for diarrhea was 85%, lower than for cough (91%) and for fever (95%). For the HSAs' assessment of danger signs, just over half of the HSAs (56%) asked caretakers about three key general danger signs (child able to drink or breastfeed, vomits everything, has had convulsions). Only 37% of children were assessed by the HSAs for four physical danger signs. In the HSAs' *treatment* of the sick children assessed, 79% of sick children were correctly treated for fever but only about half of sick children with cough and fast breathing were treated correctly. The study reported that inappropriate use of antibiotics was found, with 27% of children receiving antibiotics not needing them according to CCM protocol. Correct *referrals* and *pre-referral treatment* were provided in just 57% of those needing referral. It was also reported that less than 75% of children with cough were assessed for fast breathing, less than 60% were classified correctly, and slightly over 50% were treated correctly, although there were no stock-outs of the antibiotic. The researchers noted that management of fast breathing needed improvement in both identifying the need to assess fast breathing and in correctly calculating breathing rates.

This research study also identified very limited system support in terms of training, supervisory visit frequency, and quality of care observed, with less than half of supervisory visits including observation of HSAs actually managing a sick child. HSAs with drug boxes had reported stock-

outs during the last three months at the following levels: ORS 41%, cotrimoxazole 10%, LA 1x 6 33%, LA 2x6 32%, and paracetamol 7%. On the day of the study visit, 69% of VHCs reportedly had essential CCM drugs present (ORS, LA, and clotrim).

While the findings of this early study are troublesome, considerable progress has been made by CCM since then to improve the quality of the HSAs' clinical problem identification, assessment, classification, pre-referral treatment/treatment at home, and follow up. The team's observations during site visits and interviews, although not truly representative due to time constraints and sample size, found that HSAs consistently used the algorithm in their register. They methodically use this tool for the identification, assessment, and treatment and referral of sick children. The team noted registers filled out generally well and fully (although some were not filling in the summaries at the bottom of each page). The HSAs were able to discuss the steps in their process to provide care to sick children. In some of the cases observed and in some cases reviewed in the register, the HSAs continue to have difficulty identifying the need to count respirations of children with coughs or to correctly observe fast breathing. This may be due to the fact that a number of HSAs did not have timers, which have been recently supplied in many districts.

In the team's observations, HSAs were generally patient and interacted well with caregivers. HSAs were carefully observed as they explained the medications to be given to a sick child, dosage schedules, and the manner for preparing ORS and first doses of medication. They provided advice on providing sick children with fluids and other attention to be given by caregivers. Reviews of the registers with one HSA noted a dose of clotrim although the child's respiratory rate did not warrant it. This was discussed and the HSA was advised by a clinical officer to find the caregiver and stop the medication. Although adherence to the algorithm was high, the area of follow up after treatment by the HSA was generally characterized by gaps. HSAs stated that caregivers often do not return after their child is treated and the HSAs do not routinely follow up on clients they treat or those who become sicker and are referred to health facilities.

The task of referral was specifically assessed by the team. Generally, the HSAs filled out referral slips and also copied the information into the child's passport book so that the facility was aware of medications started. It was discussed that they did not always get a counter referral from facility staff.

The team's discussion with senior HSAs identified their own use of the algorithm as the tool to supervise the care provided by HSAs. Even so, several stated they could not serve as clinical mentors to assess or mentor HSAs in the quality of care provided, given they lack the required clinical background and qualifications. In some districts the trainers/supervisors have identified which HSAs are currently competent to provide quality care and which require further mentoring.

The team's discussions with medical assistants and clinical officers at the health centers confirmed that these two cadres fill the role of clinical mentors and essentially serve as the "gold standard" for quality clinical care. This was despite the fact that both cadres did not routinely use the algorithm in their own care. The reason for this was discussed with the team and observed at the health centers in the light of the very high case loads, generally around 80-120 clients per day. This is an issue, given that the quality of the HSAs CCM relies heavily on their adherence to the algorithm. District IMCI staff stated that mentors chose days with lighter case loads and mentored one or two HSAs at a time to try to provide adequate time for guidance on clinical issues to the HSAs.

An additional resource for assessing and improving the quality of CCM care by HSAs is provided by the Quality of Care Assessment in Mulanje District, carried out in December 2010 by the Mulanje DHMT and SAVE. Using the same approach and tools as the 2009 JHU study, the preliminary analysis found similar or improved skills in assessment of illness but weaker skills in assessing general danger signs (66%) and the four physical danger signs (56%). The classification tasks were well done, with 85% of HSAs' classifications matching the "gold standard" re-examiner. The proportion of children with cough and fast breathing correctly prescribed all medication was unchanged from the previous study at 63%; only 63% of children were prescribed an antimalarial correctly. Most of the counseling for childhood illnesses was near or above 80%, while the proportion of children receiving the correct first dose improved, but remained low at 57%.

The team was informed of a study that addressed adherence to LA that found that one of the factors strongly correlated with medication adherence was the administration of a first dose by the clinician. The study itself was not provided to or reviewed by the team. Nevertheless, in light of this reported finding – along with the findings from the quality of care studies, which indicated an unsatisfactory proportion (63%) of correct treatment of malaria in the December 2010 Mulanje follow-up study – it would be reasonable to suggest that mentors and supervisors reinforce the assessment algorithm and stress to HSAs the importance of administering the first dose to improve quality of care.

A summary table with quality-of-care indicators with additional data is included in Appendix F as Table 5. Supervision of HSAs was noted as infrequent, with only two-thirds reporting any clinical supervision in the past three months and only 19% observed managing a sick child (Table 6, Appendix F). No mention of peer-to-peer visits was reported in the study, although a few HSAs mentioned to the team that they had participated in interchange with other HSAs as a quality improvement activity.

Although the Mulanje 2010 study was a small one, these preliminary data have great value to the IMCI unit, the MOH, all districts, and partners for addressing gaps in the quality of CCM care. The study's distribution and discussion of the implications and how the data will be used to implement a structured timeline and plan for quality improvement is not known.

At approximately the same time as the Mulanje study, the IMCI unit carried out a supervisory visit in all districts. The findings of the IMCI Unit Village Clinic Supervisory report stated that HSAs were able to carry out all procedures of managing a sick child, i.e., able to follow the sick child recording form. Further, it was reported that 94% of the cases seen were correctly assessed, 82% were correctly classified, and 97% were correctly treated. It is of concern to the Assessment Team that the IMCI Unit and its collaborators in the supervisory visits to assess the quality of HSA care reported such high proportions of correct assessment, classification, and treatment compared to the results of the two carefully carried out quality-of-care studies (JHU and Mulanje district) that assessed the quality of care as much lower. The team was not able to discuss this at length with the IMCI unit but considers that the data from the two studies can challenge the credibility of the findings of the Supervisory Report. The findings, by extension, also raise questions concerning the quality of ongoing supervision and mentoring in the districts.

The Supervisory Report summary was also positive in tone, with strengths, weaknesses, and recommendations discussed in a general fashion. The summary would have benefitted from a strong sense of priorities to be addressed, such as the shortages of drugs and supervision, with a timeline by which activities to improve quality and the changes could be measured. The use of the results of the Supervisory Report during TWG meetings to provide data on CCM quality could be valuable and linked with a time-bound implementation plan for addressing issues. The

Mulanje quality-of-care study (December 2010) could be made available for its data on a small sample of HSAs and for comparison to the Supervisory Report.

The team addressed various factors affecting the quality of CCM programming. In the studies and supervisory reports, as well as in the team's observations, it was recognized that factors affecting quality included HSA skills and performance in assessment, classification, treatment, and referral consistently using the IMCI algorithm include regular supportive supervision, regular high-quality mentoring, and adequate and consistent drug supplies. In addition, support from adequately oriented and committed village committees, and the central and district levels of the MOH and other ministries are important factors for achieving and maintaining CCM quality. An adequate, well-functioning monitoring and evaluation (M&E) system that includes periodic operations research (OR) is also an important factor in helping ensure continued quality in CCM service delivery. Finally, adequate financial, institutional, and political commitments to maintaining resources for the CCM program are vital to the success of the program.

Recommendations to MOH and Partners

- The MOH, donors, and all partners should strengthen the CCM approach to ensure that HSAs are providing services of a continuously high quality, using a strong, evidence-based approach based on reports, studies, and analyses from all partners.
- Re-training of senior HSAs and mentors should be carried out to make sure their supervision and guidance maintains HSA performance.
- Additional training, supervision, and mentoring focused on recognition of danger signs, proper treatment, initiation of first dose, and correct follow up should be provided to improve quality of care. Ensuring the availability of all four essential drugs should also be a priority to support quality care.
- Periodic operations research (OR) studies on quality of care, mirroring the research process of the recently conducted JHU/WHO study, should be conducted to remain knowledgeable about the critical nature of quality to CCM outcome and impact, and to generate data for decision making on aspects of quality that may need enhancement.

SUPPLY CHAIN MANAGEMENT

Current Logistics System for CCM Commodities in Malawi

A properly functioning supply chain is a critical piece of the CCM program. The system for managing CCM commodities supplies in Malawi has evolved over many years, resulting in a lack of a uniform system across Ministry of Health facilities and village health clinics operated by HSAs. This lack of uniform system affects how CCM health commodities are managed and maintained. In general the ordering of CCM commodities occurs on an ad hoc basis, without the use of consumption data that has been generated by the HSAs and sent to the health centers. Although consumption/logistics data should be used to determine resupply quantities and prevent stock imbalances, there have been a considerable number of stock-outs in the CCM supply chain.

In the past, the HSAs in Malawi did not manage drugs and other health products. Instead, their area of responsibility was limited to environmental health tasks such as health education, disease surveillance, and sanitation assessments. In recent years, the role of the HSA has been expanded to include community case management, HIV testing, and family planning.

Availability of Drugs to the HSAs and Village Health Clinics

Data from a survey conducted by SC4CCM in December 2010 indicate that only 35% of HSAs had all three key products – clotrim, ORS, and LA – noted in the algorithm as needed for treating pneumonia, diarrhea, and malaria in stock on the day the survey visit was made. Only 27% of HSAs had the four tracer drugs in stock, which included both strengths of LA in addition to the pneumonia and diarrhea drugs. Health centers assessed had all three key child health products in stock on the day of the visit. Almost all the VHC and hospitals that the team visited reported having been out of stock in the previous months with one or more essential CCM drugs.

The SC4CCM report further noted that 56% of HSAs who manage health products reported traveling between one and three hours to the resupply point in the dry season, meaning that an HSA must dedicate an average of one day per month to collecting supplies. Of the 139 HSAs who managed health products, 79% reported using bicycles, 11% went by foot, 9% used public transport, and 1% used a motorbike. Data from the MOH's IMCI Village Clinic Supervisory Report conducted in late 2010 confirmed the HSAs' difficulty in traveling to get their drug supplies, noting that the average distance between the HSA's placement and the nearest health facility was 14 kilometers.

When asked about problems associated with collecting or receiving health products, 76 of the 139 HSAs who manage health products and responded to the query reported having some kind of problem. Respondents most commonly reported stock-outs at the resupply point, followed by transportation (SC4CCM study).

Transportation of health products was presented as a key problem for HSAs. Nearly 90% of HSAs reported cycling or walking long distances over difficult terrain to access their supplies. Furthermore, the portfolio of products managed by the HSAs is expected to increase, from a current average of 7 products to about 19 products. With different times for delivery of products and different size deliveries, current bicycle- or foot-based transport arrangements may cause even more hardships on HSAs in the future.

Storage and Distribution

The CCM supply chain needs to ensure a consistent, adequate supply of the six drugs that are defined as integral for CCM management (which, in Malawi, includes the three key drugs, plus zinc, paracetamol, and antibiotic eye ointment). The supply of these commodities was found by the Assessment Team to be challenged in Malawi. CCM commodities for the Ministry of Health in general – and, specifically, for the village health clinics – are stored and distributed from both the central medical stores (CMS) and USAID/DELIVER. The commodities that come from donors like the Global Fund to Fight AIDS, Tuberculosis and Malaria (GFATM), the President's Malaria Initiative (PMI), and occasionally other donors, are managed in several supply chain systems parallel to the CMS through USAID/DELIVER. This short-term parallel supply chain system was set up to ensure that U.S. Government drug commodity investments reach village clinics. The rationale for the decision to establish and maintain a parallel system (at least for the near future) was that the CMS did not, and currently does not, have the capacity to manage all CCM commodities.

Through a contract with USAID, JSI (USAID/DELIVER) is responsible for procuring, managing, storing, and distributing LA (both LA 1x6 and LA 2X6) provided by PMI and GFATM. This technical assistance and management of LA commodities across the country is meant to fill in gaps and ease the workload for the CMS. The DELIVER project distributes LA using a third party (Logistics 3PL). This courier delivers the LA directly to multiple health facilities and to DHO offices. Since the LA is not distributed down the supply chain to village clinics, the HSAs

come to the health centers/facilities to pick up their LA supplies. The HSA's supplies sent from the USAID/JSI /DELIVER supply chain are pre-labeled with the village health clinic's name to ensure they are routed to the correct HSAs/village clinics and are not used by the health centers. In the future, when the CMS is functioning, there are plans to eventually have all commodities stored and distributed from the CMS as part of a single unified supply chain.

While a single, unified CMS supply chain is the goal for the near future, the MOH faces challenges because the CMS lacks a sufficiently reliable inventory management system or source of support for managing health commodities procured with Global Fund or other resources. In addition, the fact that the CMS charges 5% of the handling costs for all donor-procured drugs for commodity management, storage, and transportation to the health facilities, and charges 12% for all commodities that are government-procured, has discouraged districts from procuring from CMS. While CMS may have sufficient stock, the districts do not order due to the high costs CMS levies on its stock of commodities.

A major consideration about the future of CMS is how to ensure that a new system could be easily adapted to future changes without causing disruptions to the flow of CCM commodities and information or hinder the management of other commodity categories in Malawi. It is impractical and poor logistical practice to assume that CCM commodities should be handled separately from all other commodities, which is now the case. Distribution and ordering systems should work harmoniously across all commodity categories so that available resources can be used efficiently.

In an attempt to resolve long standing challenges in the procurement and supply management systems the Government of Malawi has recently worked towards changing CMS from a GOM institution to an independent public trust, with a constituted Board of Trustees, to assume responsibility for the running of CMS. It is envisaged that the Trust will be operational by 1st July 2011. The Team was told that the Board has been constituted in mid-May 2011 and plans are moving forward. There is considerable need to strengthen the technical capacity and the credibility of the institution given that recent media reports indicated mismanagement of health products at public health facility levels that, reportedly, culminated in illegal diversion of health products, including those funded by donors. This situation and the findings of recent assessment reports have indicated that there is a need to increase security for the supply chain to ensure delivery of health products to the end users.

The resolution of many of the CMS problems should be addressed when the Trust comes into being. The Trust should address the long standing challenges/issues faced by the supply chain system of the Malawi government. The major roles of the new trust are expected to include:

- Carrying out customs clearance and delivery of procured health products to CMS stores
- Safe and secure storage of pharmaceuticals under good storage practice conditions in designated stores
- Inventory management and record-keeping of stocks and maintenance of a logistics management information system
- Secure delivery of products to designated distribution points in the country
- Facilitating the transitional process from CMS to the CMS Trust

Long-term technical assistance for the CMS Trust is planned through the Global Fund. In addition, technical assistance provided to the Trust will support capacity building for a cross-disciplinary group of staff from CMS, district health offices, and health facilities and some HSAs to manage the drugs along the supply chain.

With these changes, it is also anticipated that the current level of fees levied by CMS – currently some of the lowest in the southern African region – will also be reviewed and revised. This will need to be done with significant analysis and planning to achieve a balance between the Trust's need to be self-sustaining and the level of fees that the DHMTs and health facilities are able to pay. Technical assistance can assist the trust with an in-depth study of the issues to be addressed to achieve a sustainable CMS Trust to meet MOH needs. This approach will help resolve the issues of the current parallel supply chain system that responds to short-term donor and MOH concerns for a consistent supply of key commodities. With the new Trust invested with independence and adequate capability, the mainstream/public sector unified CMS supply chain system will be re-invigorated to serve the need for adequate drug supplies along the entire supply chain down to, and including, the HSAs. The Trust, as it becomes institutionally and managerially capable, with strong drug forecasting, procurement, distribution, tracking, and other capacities, should be able to resolve problems and ensure a strong supply chain and effective delivery of commodities to health facilities, avoiding stock-outs.

Forecasting and Procurement of CCM Drugs and Other Commodities

The role of Health Technical Support Services (HTTS) in forecasting and procurement was discussed in the team's interviews with the director and in other discussions. It was found that the Pharmaceutical Unit of the HTSS department in the MOH maintains overall responsibility for managing pharmaceuticals in hospitals, health centers, and village health clinics in Malawi. The program unit uses logistics and service data to forecast and quantify pharmaceutical commodities. The unit of HTSS has carried out forecasting and quantification for general pharmaceuticals with technical assistance from the USAID/DELIVER and JSI/SC4CCM projects; quantification for the year 2011 was carried out, with CCM commodities among the commodities forecasted in the exercise. Supply needs for supporting IMCI and CCM activities were included in the quantification. The primary sources of data used in forecasting included consumption (logistics) data from Supply Chain Manager® reports and physical inventory data as well as services/program data from program reports and health management information system reports. Historical data and program projections were used and supply plans produced for each commodity forecasted. Data sources used in the quantification included: 1) stock-on-hand data from physical inventories, 2) receipts data from Central Medical Stores, 3) procurement units, and 4) price information from the 2010-2011 CMS catalog. This exercise was good practice; as a result of the exercise, the CCM drugs under IMCI were well quantified. This quantification step will allow for the procurement of adequate quantities as per forecasts and promote the availability of drugs at the village clinics for the treatment of children under 5 served by the CCM program.

Logistics Management Information Systems

The purpose of an LMIS is to collect, organize, and report data that will be used to make decisions. Experience has shown that the management of supply chains for health commodities dictates the need of three minimal and essential data items: 1) stock on hand, 2) consumption and losses, and 3) adjustments. This information must therefore be captured by the LMIS and flow up to the central level of the system to be used for making critical supply chain decisions.

In addition to the three essential data items, some specific data items are also required when managing CCM commodities. These items are the number of CCM children seen disaggregated by age (as per treatment algorithm) and the number of drugs dispensed to patients for monitoring and quantification purposes. Generally three types of records are used to capture these data at the facilities: stock-keeping, transaction, and consumption records. An LMIS report

is then used to transport this information up the system to program managers to make timely decisions.

For the CCM logistics, the team found that the LMIS forms that are available in the health facilities and village health clinics provide the following information.

- Consumption records: A consumption record collects consumption data on a daily basis at the health centers and village clinics. CCM drugs are considered "consumed" when the HSA or other health provider issues the drug to the patients/caregiver that are seen at the health facilities and village clinics. The team's review of these records reviewed the information and found it was adequate.
- Transaction records: Transaction records move with the CCM products as they move between facilities and between HSAs. Examples of these records include invoices, issuing vouchers, and picking slips. Evidence of USAID/JSI/DELIVER delivery slips was evident in the health facilities after delivery of LA.
- Stock-keeping records: The team found that, although there should be uniform LMIS forms for use by all facilities in the country, different facilities, HSAs, and program districts have differently designed LMIS forms. Due to this lack of uniformity, errors can be made in stock-keeping. For that reason, small amendments/changes need to be made on LMIS forms so that they are uniform for the entire country.
- Daily activity registers and reports: It is important to collect information on the number of CCM children seen per day, as well as the number of CCM drugs dispensed to them per day. Disaggregation of these data by age and sex is a good practice for monitoring and evaluation purposes. Daily worksheets are available in the HSAs' IMCI/CCM register; the HSAs were seen by the team doing a tally of this information. Most HSAs usually do this tally on a daily basis.
- LMIS reports: A logistics management information system report collects the logistics data required to make critical supply chain decisions. Both the health facility and HSAs send their monthly reports to the DHO's office. That office, in turn, aggregates all the reports from all health centers and HSAs to generate the district drug order, which is then sent to CMS for drugs to be supplied. While the DHO's office sends in the order to the CMS, the disbursement of drugs to fill the order may not happen, as sometimes the CMS is stocked out. Another issue found by the team is that the districts do not have the funds to pay for an adequate supply of drugs, as previously noted.
- Feedback reports: Feedback reports flowing from the central level to the facilities are also important for a logistics system. Feedback reports inform personnel on how the system is working at their level, motivates them to improve performance, and indicates if any reports have not been completed correctly or if certain products are currently in short supply. In Malawi, there are no supply chain feedback reports that are provided to the HSAs or health centers.

LMIS Support to the CCM

As noted, a complete LMIS is made up of three types of records (stock-keeping, transaction, and consumption records) that collect three essential logistics data items (stock-on-hand, losses and adjustments, and dispensed-to-user data) and the reports that move that data to the personnel making logistics decisions. In Malawi, for CCM drug delivery, a direct delivery system is currently used to send CCM drugs and other health products. This system also uses "issues" data as a proxy for dispensed-to-user data. This system relies entirely on stock cards as the primary source of logistics data, which can cause difficulty.

The Malawi health commodities logistics management system is the LMIS that is currently used to track patient data and the CCM drug supply at the community level. Training workshops have been held to build capacity of health facility staff and HSAs in the CCM commodities logistics system that was designed to capture and collect essential data for decision making. The data that the system provides is needed to manage routine resupply to facilities and village health clinics, as well as the monitoring and adjustment of stock imbalances within the VHC network.

Development of a community-level logistics management system was undertaken to enhance the capacity of HSAs and health cadres at facilities using the drugs to correctly fill out LMIS forms, thereby ensuring accurate data on drug consumption for ordering to meet their needs. The team found that HSAs varied in their ability to correctly fill out the forms and calculate consumption for reporting purposes. Further training and supervision on the LMIS reporting mechanism would help HSAs address any difficulties and correct misunderstandings that may hinder reporting.

Supply Chain Manager (SCMgr) is the automated LMIS developed by JSI/DELIVER that district pharmacies in Malawi currently use to order health commodities from regional medical stores for district hospitals and health centers and to report logistics data. As currently configured, SCMgr includes only district-level pharmaceuticals in its product list, and does not include pharmaceuticals/CCM essential drugs used at the health center level and by HSAs. Given that it is an electronic system, if SCMgr were used for CCM commodities from health centers and village health committees/HSAs, the current paper-based reports compiled by health centers would have to be entered into the electronic system at the district level. Future automation of CCM drug consumption data from health centers and HSAs will require that pharmacy technicians be trained to integrate paper-based data from the health centers and HSAs into SCMgr to ensure that the drug quantities needed by these service delivery sites are included in the system.

The team found the current supply chain includes both "push" and "pull" systems that make forecasting and distribution of adequate amounts of CCM drugs very difficult. A "pull" system is one in which personnel calculate supplies and enumerate the quantities they should receive in resupply. In a "push" system, the personnel issuing the supplies (e.g., the central medical stores, JSI/DELIVER) calculate resupply quantities separately from orders/consumption and send out quantities based on their calculations of need. The team found that a push system is currently used to distribute LA. Implementing a push system to resupply parallel commodities will improve the supply of CCM drugs to health centers for HSAs. JSI/DELIVER is able to give re-order quantities to 3PL, the company that delivers drugs to health facilities and DHMTs; information from SCMgr is shared with 3PL. Success of this approach depends largely on in-country capacity at each level along the supply chain as well as the availability of technology. At the same time that the push system is being used by JSI/DELIVER in the short term, there exists a partial "pull' system in that the consumption data from the HSAs is consolidated at the health center level and passed to the district level. These pull/consumption data are currently not used for two reasons: the pharmacist is not yet trained to input these data and the automated system software needs to be revised to include the CCM drugs.

Recommendations to the MOH

- Working with the new CMS Trust, the MOH should develop a time-bound plan to integrate the management of CCM commodities that are currently supplied via the parallel supply chain system into the CMS/RMS mainstream supply chain system when the trust is in place.
- As needed, USAID and other donors should support the provision of technical assistance to transition the CMS to the CMS trust and to strengthen a unified supply chain.

- At the same time that measures are taken to merge HMIS and CCM data, similar measures should be taken to integrate HMIS and LMIS data reports.
- The DHMT should encourage and increase communication among health facility personnel (e.g., pharmacy and laboratory) so that the various departments involved in supply chain management can work together more effectively to collect and compile logistics data. This would facilitate forecasting and procurement, and assist in integrating CCM commodities into the main supply chain stream.
- Working with the DHMT and HSA supervisor, the IMCI unit should strengthen the supervision of HSAs with respect to the management of their drug supplies and the accuracy of completion of drug consumption reporting/documentation.
- The MOH should make the necessary changes to the LMIS forms to enable appropriate tracking of LA dispensation by age, disseminating the revised forms as soon as possible. The updated LMIS standard operating procedures should also be disseminated to the health units and HSAs.
- The health centers and other facilities managing drugs should maintain stock cards for CCM commodities that are issued to HSAs separate from stock cards for the health facilities, so that documentation for the distribution of commodities to the HSAs is available and accountability is supported.

COMMUNICATION AND SOCIAL MOBILIZATION

HSAs were introduced to communities in Malawi as long as two decades ago. HSAs have always been associated with health education and promotion and disease prevention. This role has been expanded over time to include selected aspects of health service delivery. Some of these activities include provision of injectable family planning, promotion of HIV counseling and testing, encouragement to support participation in perinatal care services (antenatal care attendance, facility delivery, and assessment during the immediate postnatal and newborn period). These services often cross boundaries with various international and national health promotion initiatives (parallel programs), such as the Maternal/Child/Newborn Health Program and programs in malaria and HIV prevention.

HSAs are trained to carry out their basic role through a 12-week study curriculum. This basic training is augmented by supplementary training focused on the role's expanded components. The CCM training curriculum is 6 days in length, with an additional 1.5 days dedicated to the logistics management of CCM drugs and commodities.

Community members seem to be accustomed to changes and expansion to the HSA role. The HSAs in each of the districts visited by the Assessment Team described a common approach in which the community was introduced to the expansion of services to include CCM. Village leaders (headman, religious leaders, Village Health Committee members) call a meeting of community members at which the HSA described the new services now available and the manner in which community members can access the services (for example, the HSA would describe the concept and operation of the village clinic). The village leaders then take a role in defining how they and others can be helpful to the HSA in enacting the new services (e.g., finding a site or shelter for the clinic, cleaning the site, bringing chairs, water, and cups as necessary). One committee member serves as custodian of the second key to the locked drug boxes and is sometimes asked to verify the drug count.

Community members were asked how these messages are extended to those who move into the community at a later date. Respondents noted that word of mouth is an effective method of message dissemination in communities. A number of opportunities arise in the course of a day

when community members gather (e.g., drawing water at a common well or shopping at a local market), at which time community news and information is shared.

Key informants noted that a social mobilization strategy had been on the agenda of the TWG that handles CCM for a number of years, but the group had not yet reached consensus on the components. In contrast, the National Malaria Control Programme (NMCP) has developed a detailed communication strategy (MOH, 2009) for communication and social mobilization activities to change malaria prevention behavior. The strategy is based on a well-tested behavior change theory, itself supported by a wealth of experience gained through social mobilization efforts oriented to HIV/AIDS prevention (Ndiwane, 2000). The behavior change communication goals are to:

- Empower communities, families, and individuals to take charge of malaria
- Create a demand for information and services on malaria control
- Stimulate community dialogue, discussion, and action on malaria control
- Increase depth of knowledge and action about malaria prevention and treatment
- Increase coverage of social and behavior change communication to all communities in Malawi

Behavior change goals concerning case management of malaria includes both HSA and care-giver responsibilities for CCM, i.e., a) seek care within 24 hours of the onset of fever, b) complete a full course of drug therapy, and c) take LA as a first-line treatment. The director of the IMCI unit stated that although a similar communication strategy for CCM has not been published, similar behavior change goals related to ARI and diarrhea are integrated into other CCM policy documents and HSA training materials.

Materials and methods for communication and social mobilization cited in the NMCP document include mass media (broadcasting, print, and information technology) and community empowerment (tapping into community systems, such as training of community leaders, HSAs, and volunteers to communicate health promotion messages). Team members noted posters on the walls of health centers, authored by various NGOs and programs, with messages that cross-cut the focus of CCM. These posters depicted care-seeking behaviors and urged prompt treatment for childhood illness. One poster announced the timing of a twice-weekly radio program that delivered health promotion messages (although the health workers at the facility did not know if the program was still on air). Save the Children reports that it is currently discussing with Zodiak radio station the production of programs aimed at promoting care-seeking behaviors and preventing common childhood conditions. Village Health Committee members in one community spoke about a drama group that gave performances from time to time.

There was little information forthcoming from village members about community-based action plans that support community members in seeking out and receiving health care services. For example, community members, Village Health Committee members, and village leaders did not describe any plans developed to assist families who might need to act on a referral to a health facility (e.g., location of a cart or other vehicle that could be borrowed without compensation or the names of volunteers to participate in a carry relay).

Communication and social mobilization activities appear conspicuously in the current year work plans for PSI and Save the Children, but are not prominent in BASICS planned activities. For example, StC reports that it has already developed a behavior change strategy with the help of a child health advisor from Save/Canada. The strategy addresses key behaviors and barriers to

carrying out the behaviors, motivations for behavior change and key communication, and behavior change objectives (StC 2010 annual report).

PSI has already developed a wide variety of posters that depict messages that promote behavior change centered around seeking and providing care for sick children. The messages make the role of the HSA in community-case management quite prominent. The materials are visually appealing, culturally relevant, and effectively communicate non-verbal messages. The Assessment Team was able to extract the message without translation of the written words. PSI stated that these materials had been delivered to the MOH and were awaiting final approval, expected by mid-year 2011, prior to distribution.

UNICEF describes "materials development" as one of the major components of technical assistance it provides throughout the country. UNICEF has produced a visually appealing HSA job aid that depicts many of the cross-cutting messages. As production of this job aid preceded CCM roll-out, only 5,000 pieces were produced, with their distribution not correlated with a later "hard-to-reach" CCM strategy. UNICEF has discussed the reprinting and targeted distribution of this job aid with partners. Feedback has been received from end users indicating that the materials are useful, culturally sensitive, and appropriate; even so, the materials will need to be reviewed, updated, and possibly expanded prior to re-printing.

It follows that the information, education, and communication (IEC) strategy and materials proposed for development by other implementing partners can benefit BASICS and other NGOs engaged in cross-cutting activities in the districts through sharing of materials and close collaboration to avoid duplication of effort. These activities may also serve as impetus to the TWG to move forward with agreement on and approval of a collaborative CCM strategy.

Recommendations for MOH

- The MOH should take action to endorse the IEC materials that are already available and facilitate their distribution, with attention to distribution in hard-to-reach areas.
- The ICMI Unit should encourage the TWG to take action on approval of a written communication and social mobilization strategy that complements and augments the malaria strategy for the other CCM components, and serves as guidance for the technical assistance role that can be played by implementing partners.

Recommendations for Implementing Partners

- Efforts by the MOH and partners to develop IEC materials should be integrated to avoid duplication of effort and conserve resources; distribution and dissemination throughout the districts could be a joint effort.
- Partners should consider expanding social mobilization activities at the village level, with priority given to creating action plans that promote early care seeking and community action plans to assist families who need to take their children to higher-level facilities for care.

SERVICE DELIVERY AND REFERRAL

The CCM component of the ICMI strategy is deliberately structured to focus on three diseases that account for a vast majority of deaths of children 2 to 59 months of age. It emphasizes prompt assessment of clinical conditions and presumptive initial treatment of disease. The ICMI approach has recently been expanded to include newborns and infants age 0 to 2 months, given that neonatal death accounts for a large proportion of deaths of children < 1 year and neonatal

infections may account for as much as 42% of deaths in the first week of life (Thaver & Zaidi, 2009).

The CCM program was initiated in Malawi in 2009 and the country now has slightly over two years of experience with the program as conducted through the HSA and village clinic approach. HSAs provide case management for diarrhea, acute respiratory infections, and malaria, augmented by corollary assessment of evidence of anemia (palmar pallor) and malnutrition (measurement of median upper arm circumference, assessment of skin turgor). HSAs are authorized to dispense oral rehydration solutions, age-appropriate treatment regimens for malaria, antibiotic (chlotrimaxazole) for presumptive pneumonia (rapid breathing, often accompanied by fever and cough), dual-treatment drugs (paracetamol for fever, zinc for diarrhea), and antibiotic eye ointment. Referral to higher levels of care, when indicated, is a particular feature of service.

HSAs provide these assessment and treatment services through the mechanism of "village clinics," which are fixed-day, fixed-site, service delivery settings, located (ideally) centrally within the HSA community service area. The HSA's drug and commodity supplies are stored at or near the service setting, which can be the HSA's personal residence or a community site (e.g., a school or church). Some HSAs have expanded the reach of the village clinic by providing services in any neighboring community in which the HSA might be working on a particular day. A small supply of drugs and recording forms (if not the actual clinical register) are taken in a backpack for off-site use.

Service provision is recorded in a register designed specifically for CCM purposes. The logbook mirrors the clinical algorithm used by the HSA during the assessment process. (See the Quality of Care and M&E sections of this report or additional discussion of this topic.) The register serves to document the number of children assessed for treatment need, treatments provided (presumptive diagnoses), and drugs dispensed (the first level of the LMIS, further discussed in that section of this report). Team members noted a particular flaw in the logbook that confounded accurate reporting of LA dispensation by age and dosage. A model of a form, revised to correct that issue, is provided as Appendix G.

Two-part referral forms augment the register to accommodate appropriate communication of initial findings to the care provider at the next service level facility to which a child may be referred for care. The second part of the referral form is filled in by the facility provider and returned with the child/caregiver, so the HSA is informed of treatment given to the child at the facility and any requirements for follow up.

Service statistics indicate a rapid uptake of CCM services throughout the districts, soon after the HSA training and community orientation processes had been completed. Table 4 in Appendix F depicts aggregate data from a prior 15-month period. These data were drawn from the IMCI Unit's data on "syndromes/cases" seen by the HSAs from January 2010 to March 2011. The IMCI Unit's M&E data show that, of the total of 883,393 new cases/syndromes seen, 450,714, or 51%, were assessed and treated as malaria. Of the 883,393 cases/syndromes seen, the HSAs assessed and treated 283,078 ARI (presumptive pneumonia) syndromes, 32% of syndromes seen (data from PHC, dated April 2011) (Table 4, Appendix F). This level of service delivery confirms the importance of this cadre of MOH human resource. The number of village clinics that contributed data to this aggregate summary report (over 8,000) exceeds by far the number of village clinics proposed to be established in hard-to-reach areas (4,000) that are cited in a various other documents published by the IMCI unit and implementing partners. These aggregate data almost certainly reflect services established in whole districts (such as the PSI approach). It also, perhaps, includes clinics supported by other implementing partners who were not included in the CCM assessment that is the subject of this report; the numbers are

otherwise uninterrupted With HSA training still on-going in some districts, these service statistics can be expected to increase by the next reporting period.

Service statistics for the period July 2010 to March 2011 from Nkhata Bay District indicate that referral statistics generally correlate with service statistics, i.e., that service statistics are almost always higher than referral numbers and that when service numbers increase, referral numbers also increase. However, these patterns are not generalizable, given that many districts have experienced periodic stock-outs of drugs at the village level, which inevitably leads to a referral to the health center for services (which, from time to time, also cannot be accommodated).

Additional constraints on the interpretation of service delivery and referral patterns within districts include such factors as how recently the HSA has been trained (which might result in overconfidence and fewer referrals, or conversely, to lack of confidence and excess referrals); the effectiveness of supervision and mentorship strategies in the district (which have skills reinforcement as an intended outcome); and environmental conditions affecting all parameters of care-seeking behavior (e.g., impassable roads during the rainy season, other demands on caregiver time, such as the need to care for other children or contribute to work in farm fields). The degree to which supervisors engage in assessment of the referral process is unclear, as that component is underdeveloped in the supervisor's checklist.

Still, the team was impressed by the high degree of acceptance of the purpose of HSA provision of CCM in the villages. Community respondents (including mothers of sick children for whom we observed the provision of care) expressed a high degree of trust in the treatment decisions made by the HSA (i.e., if the decision was "no treatment," the caregiver did not go to another provider to seek a drug).

The team questioned whether fixed-day and -time clinics were a deterrent to seeking and receiving care with the first 24 hours. Team members asked whether caregivers would wait until the next regularly scheduled visit to ask for care. Community residents were clear about the fact that the HSA had been explicit about his/her intention to provide round-the-clock services; community members showed no reluctance to ask for services outside of scheduled village clinic days and times. A number of community residents noted that they were willing to look for an HSA in a neighboring village rather than delay asking for services. Even so, the team believed this to be an issue that would benefit from specific assessment.

Team members also queried whether services were being delivered to "new" clients (those who might not otherwise have sought services at the health facility) or whether clients were simply being displaced from the health facility and seeking services at the community level. The team believes that both conditions are true and that both outcomes are desirable. Service providers at selected health centers remarked that there had been a perceptible (and documentable) reduction in demand for services for CCM case conditions, and that referrals that were coming to them were appropriate requests for services (i.e., that the children who were referred were indeed sick, or had a condition that could not be managed at the community level, or were identified as having one of the 12 danger signs noted in the protocol). Still, it would be desirable to conduct a qualitative study of caregivers to attempt to identify the factors that promote decision making to seek health care (e.g., timing, preferred provider, belief systems, and cultural practices) so that constraints and barriers can be addressed through appropriate IEC programming.

Finally the team queried whether the provision of CCM services were adding an untenable burden to the workload of HSAs, or were displacing and distracting from attention to the community surveillance and health promotion components of the HSA job description (18 specific services). Team members were told by District Environmental Health Officers (the

district-level supervisors) that HSAs were encouraged to develop a weekly work plan as a mechanism to ensure that all aspects of the job description were in fact being accommodated, without compromise to any particular set of services. However, it is unlikely that two days of village clinic work does not affect the HSAs' time and attention to other responsibilities (see further discussion and recommendation in the Human Resources section of this report).

Community residents were forthcoming in their requests for new and additional services. They spoke in particular about CCM for children over age 5, for case management of additional illnesses, and even requested care for the elders in the community. Plans have already been made to implement the 0-2 months CCM algorithm, given the compelling meta-analytic evidence that oral antibiotics administered in the community are effective for neonatal pneumonia mortality reduction (Zaidi et al., 2011). The policy and training curricula have been developed and endorsed. The timing of this roll-out is unclear, as it involves an orientation of the HSA to a new algorithm (Vergnano et al., 2005), and the procurement of the drug for immediate treatment (initial dose) of suspected sepsis. It will also necessarily involve either a complete restructuring of the existing clinic register to document both care and treatment, or development of supplementary recording forms, which will complicate the M&E process.

Global agency programming overlaps in many districts (e.g., PMI and the President's Emergency Program for AIDS Relief [PEPFAR]). The Maternal/Child Health Integrated Health Program (MCHIP) works in four districts in the country, using HSAs to increase the availability of community-based maternal child health services. The exclusive breastfeeding rate for children under 4 months is 66.1% (MDHS, 2010). Therefore it is likely that HSAs may currently – or certainly if and when the CCM 0-2 months services are initiated – engage with mothers and their newborns who may be HIV+ or whose sero-status is unknown. It would perhaps be important that all HSAs encourage, provide, or refer patients for HIV counseling and testing (HCT) as a component of their village clinic services. Relevant IEC materials are likely available through these other global resources (although none were reviewed by the CCM Assessment Team).

The NMCP (Malaria Unit) has already endorsed a policy for CCM for malaria in children age 6 to 9. A pilot test has been initiated; 15 HSAs have been trained in the algorithm. This treatment requires a third drug dosage regimen (Government of Zambia, 2009). There was little discussion of the impact of this policy on drug financing, procurement, and distribution to support this service expansion.

These essentially good findings on community support for CCM are tempered by findings documented in a recent operations research study about the quality of care provided by HSAs, which are fully discussed in another section of this report. The need for supervision, mentorship, and retraining cannot be over-emphasized. The clinical register can serve as an invaluable resource for supervision, as it is a precise documentation of the clinical algorithm process as correctly or incorrectly enacted. The register also documents referrals and follow-ups. The team found that the date of follow up was often (actually, in most cases) not completed; thus, although HSAs stated that they do, in fact, check on the condition of the child, it cannot be stated with any degree of certainty that follow-up services are actually being provided, so that component of services remains largely unverified. The team notes that this aspect of service delivery should be enhanced, but acknowledges that to do so will also further impact the time that HSAs would need to allocate to CCM, at the expense of their additional responsibilities.

Additionally, the register does not accommodate any documentation of "next steps taken" to care for children who have not, in fact, recovered. That child might be recorded as a "new client," with symptoms documented and then referred. Such a course of action would result in a

double counting of services and syndromes, and would not fit the purpose of documenting the continuum of care for a single incident of illness.

The team made only limited observations of care provided at the facility level due to time limitations, restricting its inquiries on perceptions about appropriateness of referrals and feedback. Nevertheless, team members received many comments from health providers, community committees, and from mothers of sick children endorsing the value of community-based care, noting the fact that distances to health centers (over 20 km in some cases) was a particularly challenging barrier to health care access. Children may be less likely to be seen within the 24-hour period of onset of illness when caregivers have to find their way to distant facilities and wait in long queues; in several observed instances, there was no health provider at the facility for the purpose (perhaps the provider was simply not there, or was perhaps restricting her/her time to provision of another type of service such as growth monitoring on that particular day). The team's observations at district hospitals were even less encouraging, with queues of at least 50-70 women observed for each provider. It should be noted that there is a substantial challenge to effective mentorship, in those circumstances where HSAs are assigned to these larger facilities to receive such guidance, if they are present for mentorship on high-volume days. There is little time under such circumstances for a provider to dedicate to the best practices that should characterize a mentor's guidance.

Recommendations for MOH and Implementing Partners

- Increase the focus on assessment of the referral and follow-up process to ensure the appropriate continuum of care for every child initially served by CCM
- Consider the design of a qualitative study on motivating factors and barriers that constrain health-seeking behavior, with a particular focus on the timeliness of decision making and taking action
- Ensure that all aspects required for the quality service provision are already in place (e.g., training, supervision strategy, drug supply) to support any roll-out of expanded services to newborns or children of older ages
- Consider the introduction of advice on HCT as a component of CCM, particularly for mothers of breastfeeding children (0 to 6 months)

FINANCING

The financing of CCM and issues affecting its expansion across Malawi are part of the broader MOH and GOM finance situation. This complex financial picture is recognized and has been documented in the Health Sector Strategic Plan 2011-2016.

The assessment provided in the 2011-2016 plan documents that the absolute amount of financing of health care in Malawi is low, with the country decreasing its share of spending on health from its gross domestic product from 12.8% in 2003-2004 to 9.87% in 2008-2009. This percentage is lower than the Abuja target of 15% and lower than most other African countries. On average, the GOM spent 8.4% of its total government revenue on health. In absolute terms, this translated to an average of U.S. $5.7 per capita per annum between 2004-2005 and 2008-2009, far below the estimated cost of the Malawi Essential Health Package of U.S. $17.53 per capita per annum in 2001-2002 (revised in 2008 to U.S. $28). At the beginning of the SWAp in 2004-2005, Malawi's per capita health expenditure was U.S. $20, which increased to U.S. $27 by 2008-2009 (GOM, 2011). This level of spending is contrasted against the needs of the population, with the current estimates of the cost of the essential health package (EHP) in Malawi cited as U.S. $34/per annum.

Despite the development of a resource allocation formula, currently the allocations do not address differences related to population need, disease burden, or other such factors, but rather are based on the number of facilities and current resources in a district or geographic area. The Health Strategy documented that the GOM remained a major source of health finance in Malawi from 2002-2003 to 2008-2009. At the same time, the GOM's contribution in total health spending over the reference period was 25.4%; this is below the WHO Africa Region average of 45.3% in 2007. Malawi's health system is clearly donor-dependent, hence the need to explore alternative sustainable health financing mechanisms. The funding from multiple external donors currently amounts to more than 70% of the total. The Health Strategy documented that huge amounts of these external donor funds have been disbursed outside of the previous SWAp mechanism. In addition, there was an increase in the number of health projects since the inception of the SWAp that were reportedly developed without consideration of the SWAp's programme of work. This has implications for the MOH's ability to plan and track resources at the central and district levels. The capacity of MOH divisions to track and attempt to allocate large sums from multiple donor funding sources in an organized, disciplined manner is limited due to the low number of finance staff, especially at the central MOH level, and limited availability of computer hardware and software suited for such a complex endeavor.

Ministry-wide issues of effective management of financial resources at the central and district levels, as well as the relatively new role of local government authorities in decision making, also affect the availability and transfer of the consistent, adequate amounts of funding needed to implement CCM as well as other programs. The team observed that there were multiple donor sources of funding, with decisions on allocation and management reportedly coordinated with the MOH, but essentially outside MOH control. The extent to which the CCM donor/partner budgetary information is shared with the IMCI Unit, the financial unit, the DHMT, and others was not assessed by the team due to time limitations.

The team attempted to assess the degree of coordination and shared decision making among the donors and partners providing funding to the CCM; however, this task was unrealistic, given the time limitations and such issues as the existence of varying funding sources, differences in start-up and project implementation timelines, variations in CCM interventions supported, and differences in the reporting requirements of each donor/partner. At the same time, the team recognizes that these and other issues are faced by the MOH in trying to harmonize and plan use of these resources.

Over the medium term, with the decentralization of functions to local government, training of staff, and increased software and computers planned for DHMTs, capacity should increase to allow for allocation and tracking the various funding sources from MOH, local government, donors, and other sources to more effectively and completely fund the CCM program. The Strategic Plan documented that, at district levels, the capacity and manpower for financial management is limited but stronger than at the central level, where manpower is much more severely under-resourced. This may give some hope for future financial planning, allocation, and tracking at the district level.

Given this complex scenario, the IMCI Unit, other divisions at the MOH central level, and the DHMTs tend to program their CCM activities and the expansion of the CCM program without sufficient data on funds planned/available. MOH expansion of HSAs implementing CCM and continuation of their ongoing support to the thousands of HSAs currently providing CCM services is done programmatically within their annual plans, and with varying levels of linkage to budget requirements.

Partners discussed with the team how they supplement CCM budgets in the districts they support with funds for CCM training, supervision, materials, and selected ad hoc needs. It is not

clear if the DHMTs are able to consistently plan on the availability of these resources on a year-to-year basis. It is also not clear if the partners' annual plans and budgets are fully shared with DHMTs, and if the DHMT can harmonize the multiple sources into an overall district CCM plan with budgets. The team recognizes some of the sensitive issues related to partners' sharing budget data with the MOH and DHMTs. The team is also aware of the tenuous situation of the multiple partners in attempting to adequately fund and manage their support to the CCM program without a composite picture of funding and with limited MOH capacity to project the availability of funding support from year to year.

The 40% decline in the MOH budget this year (as reported to the Assessment Team by the ICMI Director) makes the situation even more difficult. The departure of the British envoy to Malawi may also have implications for DFID funding, a major donor to the health sector, at least for the near future.

Recommendations to MOH and Implementing Partners

- CCM donors and partners should develop a simple, adequate, practical approach using computer software to harmonize budget information from the multiple CCM external sources. These data and technical approach would supplement efforts of the MOH to allocate and track CCM budget data and would help relieve part of the burden on the MOH.
- The effort described above would provide results that that the MOH, donors, and partners could use to design, test, and tap as a model for the widespread sharing of data for effective decision-making. The model could also be shared with other CCM countries.
- USAID should consider technical assistance and other support as needed for effective implementation of the donor and partner "harmonization of budget information" effort.

MONITORING AND EVALUATION

M&E of CCM activities involves a network of systems and procedures. It is the essential element for quality assessment of CCM implementation process and outcomes, as well as the fundamental mechanism for generating data on program impact. M&E of CCM activities relies on three major – and a number of minor – parallel systems and strategies.

Health Management Information System

The Health Management Information System for the Government of Malawi is managed by the Central Monitoring and Evaluation Division (CMED) within the Planning and Policy Department (PPD) of the Ministry of Health. The system collects data from all government and Christian Health Association of Malawi (CHAM) facilities.

HMIS data are first generated at the health center. Data are recorded on paper, using standard registers. Quarterly reports (at minimum) are compiled and sent to the district level, where they are entered into the HMIS software. The District Health Office aggregates all information from its facilities and compiles a district report, which is shared with stakeholders at the district level and then forwarded to the MOH/CMED. District and central hospitals transfer data directly to the MOH/CMED, using electronic transmission when and where available. CMED compiles a national report, provides feedback to the districts and central hospitals originating the data, and shares the reports with stakeholders at all levels (Lorscheid & Asperis, 2010). A web-based reporting system, under development for some time, will provide added value; fall 2011 was cited as a potential roll-out date. BASICS has made a contribution to strengthening monitoring and evaluation at the national level by deploying an M&E officer to support

development of M&E capacity within the National Malaria Control Program, and, by extension, within the ICMI Unit with which NMCP interacts, as well as the MOH/CMED in general.

Community Case Management Data System

A separate data register and data transfer system, the Community Case Management Data System (CCMDS) has been developed for tracking CCM clinical service delivery. This system begins at the level of the village clinic, where HSAs enter service information directly into a case register. The case register was designed for the specific purpose of CCM recording and reporting of both clinical services and drug dispensation. The register mirrors the ICMI clinical algorithm that the HSA follows when delivering care. The register therefore serves several useful purposes: as a quality assessment tool, a case recording form (including a reminder for follow up), a referral tracking system, and a record of medicine consumption. (Note the important comment in the Service Delivery and Referral section of this report and Appendix G.)

HSAs sum the total of services rendered and drugs dispensed on a monthly basis, using an aggregate report form. The number and type of indicators reported are focused and limited; this was a deliberate strategy to avoid overburdening the HSA and the CCM M&E system. The Assessment Team reviewed a limited number of the registry forms (which have four cases per page) and the aggregate forms (monthly summary) and found the case numbers to be accurate in essentially all instances of its review. The summaries of drug use were usually accurate, although the form has a technical gap (discussed elsewhere in this report) that could lead to errors in drug requisition.

The HSAs' aggregate forms are presented to the HSA supervisor at the health center. The supervisor, in turn, aggregates village clinic data and sends the information to the District Health Management Office, ICMI Coordinator/Data Management Office, depending on which office has been designated. A final data aggregation occurs at this level and these data are entered electronically. District-level CCM data are then transmitted to the ICMI Office, copied to the implementing partner, and made available to the District Health Management Team as an information source. Table 4 in Appendix F offers an ICMI Office-level summary report of the number of cases seen in village clinics as well as referrals and deaths over the most recent 15-month period. It is noted that, while register data are disaggregated by sex, the summary data were not reported in that manner.

Implementing partners and HMIS personnel in the districts visited reported a chronic issue with late reporting, citing constraints at each level of the reporting system. For example, HSAs state that they run out of monthly aggregate forms. Supervisors report that they do not receive forms from the HSAs in a timely fashion. District personnel state that they feel the need to delay analysis/transmission of aggregate data when a large proportion of health center data have not been received for a particular time period.

Data accuracy has also been a concern, with a number of approaches utilized in an effort to assess and improve data quality. For example a recent annual report by BASICS indicates that the project performed data quality assessments in four districts (Chikwawa, Balaka, Kasungu, and Salima). The activity was conducted jointly with the Central Monitoring and Evaluation Division of the Ministry of Health. The intention of the joint exercise was to identify gaps in data management, suggest ways to address them, and promote the use of valid data as evidence for management decision-making.

The M&E manager in the IMCI Office notes that data accuracy, completeness, and timeliness are her key challenges to data management. Her personal estimate of timeliness (i.e., her subjective sense, not necessarily the objective fact) was higher than her perception of accuracy (which she

estimated at less than 50%). Minutes from meetings of the Technical Working Group (ICMI and supporting partners) contain a number of comments on the need for standardized forms and inquiries into the reasons for late reporting.

Concurrent and parallel systems for monitoring and supporting the quality of care offered by HSAs exist in the mechanisms designed for HSA supervision and mentorship. These include supervisor checklists and summary supervision reports, which are aggregated at the district level, then transmitted (either in paper or electronic form, as available) to the ICMI Unit. The ICMI Unit recently conducted a country-wide, random sample assessment of 48 village clinics, during which data on the monthly summary report forms submitted by the HSA were compared to information documented in the register as a means of assessing the quality of data reporting and recording, which was found to be generally consistent (IMCI, 2010). Findings concerning the quality of care offered by HSAs and the supervision strategy are discussed in other sections of this report. Two of the global indicators recommended for cross-national comparison of CCM programming include caregiver knowledge of illness signs and correct case management practice as determined through supervision reports.

A recurring theme heard in each of the districts visited by the team was that, even given current data constraints, the analysis and interpretation of district-level data, dissemination of data findings within the DHMT (and between districts), and feedback to health facilities and HSAs is weak. The team did observe the presence of hand-drawn charts in some health centers depicting monthly statistics on the incidence of certain conditions or achievements such as vaccination coverage, but these charts were not necessarily current in time; this does, at minimum, indicate some awareness of the value of data for decision-making. However, leadership and capacity building in the use of data, and mechanisms for data feedback, would benefit from technical assistance, capacity building, and health systems strengthening.

The CCM data set is not currently integrated into the HMIS, although there has been discussion and agreement on the need to include selected indicators into the HMIS so that a more complete country profile (e.g., incidence of disease) can be documented. The incorporation of CCM data into the HMIS is the global indicator recommended for cross-national comparisons of CCM programming.

Logistics Management Information System

The CCMDS contains information on drug dispensation at the village clinic level, and is the basic level of the "pull" system for drug requisition by HSAs. (A full discussion of the operating principles of the LMIS is provided in another section of this report.) Medicine and diagnostic availability is the global indicator recommended for cross-national comparisons of CCM programming. Findings from the assessment indicate the need for improvement in systems and strategies to ensure the consistent availability of these commodities.

A question noted in the minutes of the April 2010 TWG meeting was whether the HMIS and the community LMIS would be capable of sharing data. There is no comment in later recorded meetings providing an answer to that query, and the answer remains unclear to the Assessment Team. However, a statement in the 2010 National Malaria Plan also notes that PMI intended to work to extend the LMIS reporting structure to include the C-IMCI intervention to ensure accurate quantification and adequate supply of LA to community drug boxes.

SMS System for Data Reporting

BASICS has invested substantial effort in developing, pilot testing, and capacity building for the use of telephone transmission of data (short message service [SMS]) from the village clinic to the district level, from which aggregate summative data can be compiled. MEDIC MOBILE (a U.S.

Internet technology development firm) was contracted to develop the electronic reporting forms (currently four forms, with 32-52 fields per form) that were then adapted for use in a free software application (Frontline SMS) capable of operating on JAVA-enabled cell phones. The software development firm also conducted trainings over a period of one and a half months to build the capacity of Malawi district-based HMIS personnel and selected personnel from the implementing partners to make adaptations to the software if and when needed, and conduct application downloads between servers and cell phones. BASICS staff stated that they believe there are a sufficient number of trained personnel and they do not anticipate the need for further external support.

BASICS has introduced this system in each of its eight original districts and has immediate plans to introduce the system into the four expansion districts. A comment noted in the September 2009 TWG meeting minutes referred to ZAIN Malawi technology used by the country's malaria program, and encouraged collaboration to avoid duplication. Reception of results from the pilot test of the FrontLine SMS application was noted as an opportunity to identify a best practice. Both Save the Children and PSI have chosen to replicate the BASICS system, although Save has adopted a different roll-out strategy and PSI has not yet begun its roll-out; UNICEF has also expressed an interest. A similar process has been adopted for HIV/PMTCT reporting and recording (Clinton Foundation funding).

The HMIS Officer in Phalombe District, which has longer experience with the system, noted that the incidence of late reporting has been reduced from 80% to 30% following full roll-out of this system in the district. Feedback from other BASICS districts in which the system has been rolled out also indicated an improvement in timely reporting – for example, a range of 14% to 16% late reporting in Kasungu District over the first three months of 2011.

Table 7 in Appendix F cites problems and proposed solutions from BASICS' experience to date. Some of the problems are outside the control of health system and its partners. Achieving some of the solutions is outside of the control of the implementing partners, and would benefit from political advocacy

Operations Research Studies and Outcomes Analyses

The Ministry of Health reported that it is working toward development of a national evaluation platform (a health research agenda and policy), to which any all implementing partners and any initiative could be expected to contribute (MOH, 2011). A research agenda and plan have the potential to provide guidance to strengthen research designs for OR studies, M&E plans for project indicators, and the components of project evaluations that focus assessments on outcomes and impact. A few studies of this nature have been completed or are in process. A detailed documentation of human resources in the country has recently been conducted. The study does not focus on HSAs, but makes specific mention of the HSA cadre as an essential health worker. The IMCI Unit produces aggregate data on the number of HSAs providing CCM, thus meeting the objective of one out of eight global indicators for cross-country comparison of CCM.

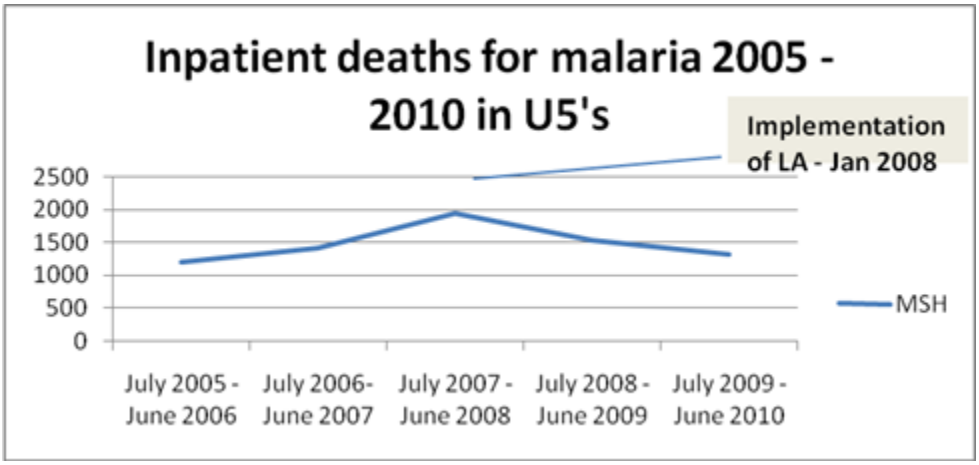
A study of the quality of care provided by HSAs (cited in that section of this report) is an example of a jointly sponsored and collaborative research effort (MOH/Malawi, WHO, Johns Hopkins University, and others). The research design for that study was replicated in the joint MOH/Save the Children study in Mulanje District, allowing for cross-comparison of data and assessment of change. A childhood mortality study, planned under the direction of the WHO Tropical Disease Research Unit in one or more of the PSI-supported districts, was recently postponed/cancelled. These reports are useful in generating data concerning CCM treatment coverage and ratios as well as building caregiver knowledge of illness signs, two of the eight

global indicators recommended for cross-national comparisons of CCM programming. The recent MOH/IMCI's Supervisory Report is an example of a modified OR study that used some of these indicators. Additional studies are needed to confirm the results of actions taken in response to the findings documented in the reports.

HMIS personnel in some districts and implementing partners have been conducting their own outcome analysis in a challenging effort to make the case that reductions in the incidence of the major childhood illnesses addressed by CCM, or reductions in under-5 mortality for specific causes, can be attributed to CCM implementation. It is acknowledged that every analysis will be confounded by external threats to validity of interpretation and attribution – for example, seasonal variations in the incidence of disease, the fact that multiple interventions are occurring simultaneously (e.g., malaria, HIV, and maternal, child, and newborn health activities) in the reporting districts, and the limitations of the data themselves (completeness, correctness, and data source). Nevertheless, a few examples of positive and therefore very encouraging findings can be cited, that, given these reservations regarding interpretation and attribution, could suggest the emergence of statistics that document an impact for the CCM intervention. Kasungu District CCM data indicate a reduction in the case fatality rate for ARI <5 from 5 (per 1,000) in 2004-2005 to 0.8 in 2009-2010. The case fatality rate for diarrhea (<5, per 1,000) was reduced from 4 to 2 over that same timeframe, remarkable in light of a spike in fatalities (to 9/1,000) in 2007-2008. Malaria case fatality using the same parameters was slightly reduced, falling from 3 to 2.

Facility-based HMIS data demonstrate a reduction in malaria deaths in hospital (reported as 15%; data unverified) that almost certainly reflect prompt intervention and treatment of the disease itself, but could also reflect reductions in hospital admissions, attributable to early, timely intervention that reduced the need for hospital referral and community-based treatment that resolved the problem at a less critical stage of the disease.

Figure 1. Inpatient Deaths from Malaria in Children Under 5, 2005 to 2010



Recommendations for MOH

- The IMCI and relevant data management units in the MOH should develop strong leadership and provide capacity building to strengthen the CCM data stream, including the capacity to analyze and interpret data for decision making and the provision of feedback to the community.

- The ICMI and relevant data management units in the MOH should take proactive measures to integrate critical (country and global) CCM indicators into the country HMIS to ensure the reflection of CCM interventions into country disease incidence and prevalence. (This is noted as already a component of the country's health sector strategic plan.)

Recommendations for Implementing Partners

- Efforts should continue to improve use of SMS technology for data reporting.

IV. SUMMARY: PROMISING PRACTICES AND CHALLENGES

Table 1 that follows offers a synthesis of findings documented in this report. The eight essential elements of successful community case management outlined by the IMCI unit are delineated. The eight elements have been reordered to reflect a chronological approach to CCM scale up that the team believes should be followed in any initiative for scale-up. Additional elements have been added in italics that the team views as fundamental to the sustainability of CCM in Malawi and other countries.

The table summarizes the best/promising practices that should be supported, strengthened, or brought to scale by the Government of Malawi, implementing partners, and other stakeholders; the table also sets out for consideration constraints and challenges that must be addressed and resolved to facilitate the way forward. Recommendations for action have been incorporated into the body of this report, with priority recommendations highlighted in the Executive Summary.

Table 2. Summary of Best/Promising Practices and Constraints/Challenges to CCM Sustainability and Scale-up

Essential Elements of CCM Management as Outlined by the IMCI Unit	Best/Promising Practices	Constraints/Challenges
Policy environment	• The nexus of coordination of multiple donor initiatives (health and development) within the ministry is the IMCI Unit. • A clear policy on CCM is imbedded in IMCI with strong MOH ownership. • There is widespread district acceptance of CCM with somewhat different implementation support. • With the planned decentralization of government, the local government authority and the DHMT can plan a strong role in district level coordination and implementation of CCM. • CMS transformation to a trust holds promise to improve overall commodity availability in the country.	• Coordination based on hard data from research studies, supervision reports, and M&E systems is needed to drive decision making for coordination. • Coordination between CCM policy and CCM drug policy should be given high priority. • Decisions on expanding CCM should be reviewed and based on institutional capacity and resource adequacy. • Minister support to expand CCM to under 2 months (but not for over 5 year age groups) should be reassessed; the resources, especially drugs, to expand CCM are not yet identified. • The length of time for coordination among multiple actors may need to be balanced with timelines for taking actions/making changes. • DHMT leadership of CCM is challenged by frequent HR changes.
Financial commitment to CCM as a dedicated proportion of health budget (national and district)	• The Government of Malawi and international donors have made significant investments in HSAs and in CCM because they recognize the value of CCM and other community-based health services. • The second SWAp is planned to continue support for the health sector. • Multiple donors and partners fund various CCM district programs, which has allowed CCM to	• Financing for the health sector is complex. Per capita expenditure is not sufficient for the EHP and affects the development of the CCM. • The process of tracking multiple sources of CCM financing is unclear. TA to support this might be of benefit. • Program units at the central and district levels plan CCM activities with a focus on activities but delinked from budget information.

	expand. • Some increases in DHMT capacity to manage funds could support future decision making on their support to CCM.	• Multiple partner and donor funding is not sufficiently coordinated and transparent to the ministry.
Strengthen drug management system	• Pharmacy personnel at health center and district hospital level (those interviewed) possess appropriate technical skills and background needed to understand the use of drugs and tests. • Drug use information is strong at the village level. It flows well upward to health center and district level. • Storage – appropriate at village and health center levels. • Blister pack drugs are best because they are hard for children to access inappropriately. • Courier is a good (if only short-term) system for distribution to of drugs to HCs. • CCM drugs are part of the overall country drug forecast.	• Inadequate amounts of the six essential CCM drugs to treat children under 5 in the CCM program. • Difficulty comes at various stages when commodities flow from CMS to district to VHC to community; availability of six CCM drugs is generally not consistent; sometimes it requires more than one HSA trip to the health center to receive a full supply. • There is a need for coordination of approaches for the procurement and distribution of drugs; multiple parallel procurements and distributions are accompanied by separate timing and delivery to health centers. • Limited communication between DHMT, SC4CCM, DELIVER constrains the degree to which district and health centers can be made aware of amounts, schedules, etc. • Confusion is created with use of both the push and pull systems for CCM drugs. With the current push system the health centers and HSAs do not know the quantities of CCM commodities they will receive or when delivery will take place. • There are parallel systems set up by separate donors who also do their own distribution. This responded to the stock-out, but results in uncoordinated deliveries at the health center level, with the DHMT not being informed.

		• Periodic unavailability of drugs (in general) and/or one or more of the "dual drugs" (e.g., paracetamol and LA; ORS and zinc) is a challenge to effective treatment, and requires referrals to health centers, where the same problem may recur.
Provide support for DECs and TWG meetings	• The Technical Working Group including donors and partners function to facilitate collaboration.	
Support training of senior HSAs as C+VC supervisors	• Senior HSAs and EH Officers are key cadres to support HSAs. • Supervisory support provided by senior HSAs and Environmental Health Officers, DHMTs and others is also crucial to program success. • The algorithm provides structure and guidance for quality care, supervision, and reporting by HSAs and supervisors.	• Senior HSAs and EHO cadres need to be trained first (before HSAs) to build their skills and credibility to supervise and support HSAs. • Periodic review of senior HSAs can be used to ensure they can maintain high-quality supervision.
Procure drug boxes: ORT equipment, Bicycles	• Some of the HSA's do not have bicycles and have to travel long distances to access their drugs. • HSAs who have CHAM facilities as the referral facility have to travel even farther distances to the nearest public health center.	• There is a critical need to address the stock-outs that, de facto, equal poor quality CCM care.
Support orientation of Health Center In- Charges	• Referral slips are valuable to report HSA observations on the condition of the child and drugs given to the HC, then back again to the HSA for follow up.	• The accuracy of the appropriateness of HSA referrals is unclear and the follow-up and supervision mechanism for assessing/correcting this process is underdeveloped. • Follow up and recording of the child's condition following referral (on-going status) are not consistently recorded; a mechanism for recording next steps for care (or referral of children who have not improved) is not accommodated by the register.

Train HSAs in CCM	• Quality of CCM care is critical to the credibility of the CCM program. • HSAs are recognized as the appropriate human resource to expand CCM, overcoming initial concerns by regulatory bodies and others. • Incentives (28% top-up of salary) helped with motivation and recognition as a valued HR cadre. • Non-monetary incentives (training, supervision, bicycles, etc.) have helped HSAs remain motivated. • HSA register mirrors the algorithms, thus serving as clinical guidance, training, supervisory, and reporting/documentation purposes. • In the broadest sense expanding HSA CCM services has provided care to hundreds of thousands of children.	• HSA placement in hard-to-reach areas is negatively affected by lack of housing; some DHMTs have addressed this issue. • Task shifting – there is a need to address and regularly reassess the balance of responsibilities of HSAs and ensure coordination among decision makers on adding additional tasks to the HSAs' job description. • If the MOH CCM message is for the caregiver to seek care within 24 hours, there may be a need to revisit the use of a periodic fixed-site/village clinic and consider other options. • Concept of fixed-day clinics confounds the CCM and BCC objective of care-seeking within 24 hours; some may wait to access HSA on next scheduled clinic day.
Support orientation of village health committees	• Village clinics are well accepted and highly valued by community members as a strategy to increase access to health services.	• Community members are requesting "CCM like" services for children of older ages and are also requesting expanded services (care for other clinical conditions), care for children, and adults/elderly.
Develop, disseminate/evaluate IEC materials and a social mobilization strategy	• Consistent strategy that is vested in village headman and VHCs as community organizers and HSA advocates. • IEC strategy is delineated in MOH materials. Malaria is a good (well-detailed) model, and some of the approaches have been incorporated into ICMI materials. StC BCC strategy recently developed and should be shared. • UNICEF communication job aids for HSAs (developed prior to CCM) are valued by HSAs who have them, and are visually appealing for	• Social mobilization strategy is narrow, mostly vested in village leaders. The MOH and partners can bring additional skills and models to augment the approach. • Community-level plans for helping take children to referral centers does not seem to be firmly established in most villages (little mention of planned approaches by VHC members interviewed).

	community learners; could be expanded for additional CCM applications. • PSI materials reviewed are visually appealing, culturally sensitive communication aids that are not dependent on literacy. MOH approval should be encouraged. • HSA training manuals and other materials are clear, competency-based, and widely used as the core of the HSA's CCM activities.	
Support HSA quarterly meetings	• HSAs have crafted strategies to increase their access beyond fixed days (e.g., drugs in backpacks carried during village visits, outreach clinics in multiple villages in their catchment area, 24-hour availability in their homes).	
Support mentorship program	• Mentors provide opportunities for individual HSA clinical assessments and skills reinforcement. • Mentoring by clinical staff is of high value.	• "Timing" and length of training of both mentors and senior HSAs was out of sync with HSA training in some instances; need to ensure that they are well trained in the algorithm prior to mentoring or supervising HSAs. • Training, testing of mentors' skills needed to ensure they are capable of providing high-quality guidance that reinforces correct practices or re-teaching, when necessary. • Need for mentors to carve out the time from busy health center service delivery to provide quality mentoring of HSAs was expressed as a concern by some who practiced in high-volume settings. • There is a need for time-bound action plans to be implemented to systematically improve HSA skills in quality care.
Strengthen M&E system	• Studies on quality of care can provide valuable	• The IMCI December 2010 IMCI Unit Supervisory

	evidence-based assessments of the status of the quality of CCM. These studies can be used by CCM partners. • SMS LMIS data reporting is a good innovative practice. • SC4CCM study provides solid information about the drug situation in the country. • OR and assessment studies are being conducted by stakeholders, with direction and participation of the MOH and collaboration of implementing partners (e.g., quality of care, quality of supervision). • National evaluation platform will provide guidance for studies that can generate information about clinical conditions, interventions, and outcomes, and hold potential for conduct of impact studies. • Indicators selected for CCM M&E are focused and limited, which was deliberate to avoid overburdening the M&E and the HSAs (part of the design). • Data are reviewed at the district level and used for decision making in some districts more than others. • SMS system for data reporting is visionary; difficulties and constraints in the system are being identified and strategies for solving these problems are being worked through. • HMIS web-based system roll-out (anticipated soon) could offer promise for CCM data integration.	Report raises concerns about the reported unusually high level of performance of HSAs compared to studies on quality. Review of the report's methods and results should be done. • Consistent and persistent problems of late reporting from HSA to health center, and therefore from health center to district (both paper and SMS systems). • Need to ensure reliable strategies for maintaining recorded data at VHC level (for verification and back-up purposes) even if SMS system is adopted as primary method of data reporting. • Feedback on analysis of data and findings from data given to VHC and HSA is limited, and not yet strongly tied to decision making at the health center, DHMT, or MOH levels. • CCM data not currently linked to HMIS limits the picture of disease prevalence in the country. • Limited opportunity to compare data from district to district (potential to address this with web-based reporting). • Solutions to SMS problems are not totally within control of CCM implementers. • Supply chain manager software does not accommodate the composite "pull" data from HSAs' CCM drug consumption. District HMIS staff will need to be trained and JSI should adapt the software to accommodate CCM consumption. • LMIS needs to be used consistently across the MOH system. Some minor changes to the MOH form would be helpful (see Appendix G).

APPENDIX A. SCOPE OF WORK

Global Health Technical Assistance Project

GH Tech Contract No. GHS-I-00-05-00005-00

Malawi CCM Evaluation

(Revised: 4-5-11)

I. TITLE

Activity: Malawi Community Case Management Evaluation

Contract: Global Health Technical Assistance Project (GH Tech), Task Order No. 01

II. PERFORMANCE PERIOD (Scope Start and End Dates)

The in-country portion of this assignment will take place in April 2011 (depending upon consultant availability).

III. FUNDING SOURCE

Mission (PMI)

IV. PURPOSE (Purpose of the Work and Anticipated Use of the Findings and Recommendations or Products); AND OBJECTIVES

To assess implementation of community case management (CCM) for integrated management of childhood illnesses in hard-to-reach areas in Malawi. The evaluation should provide tangible and useful lessons learned on CCM implementation thus far, including highlighting best practices to be scaled up and areas for improvement.

General Objective:

- Determine progress made on CCM program activities in relation to planned or anticipated actions outlined in workplans and related documents, and
- Determine the strengths and weaknesses of the existing program and approach.

Specific Objectives:

- Document best practices that have supported CCM programming success in Malawi in USAID/all CCM districts
- Document past and current bottlenecks in CCM program implementation and approaches that were used to overcome them
- Draw lessons learned from country experiences that can inform the design of future programs
- Document any existing evidence of program effectiveness

V. BACKGROUND

In most countries, malaria, diarrhea, and pneumonia are still responsible for a large majority of illnesses and deaths of under-five children. The World Health Organization (WHO) estimates that pneumonia is responsible for 28% of under-five death, diarrhea for 20% and malaria for 20%.

The Integrated Management of Childhood Illnesses (IMCI) program has focused over the years on improving management of childhood illnesses at the health facility level. In most countries where childhood morbidity and mortality are high, access to health facilities and/or the quality of services still represent challenges that jeopardize appropriate care and treatment. Community case management is gaining momentum for its potential to bring appropriate treatment closer to hard-to-reach populations. In Africa, while many countries are still in the beginning stages - at the advocacy level, in the early stage of program implementation, and/or focusing on community management of a single disease, several countries, including Malawi, are on the path to implementing an integrated Community Case Management (CCM) at national scale.

As countries expand their CCM programs and work towards scale up, there are critical lessons learned, as well as promising implementation practices based on existing country programs that should be considered and adapted for the contextual needs of each country.

The documentation of best practices and bottlenecks as well as lessons learned to CCM program implementation is part of the global learning process. It is aimed at assisting countries to accelerate and expand their malaria, diarrheal diseases, ARI and malnutrition prevention and control programs; specifically, to reduce morbidity and mortality of children under the age of five. The final assessment document will inform decision-making on CCM implementation in Malawi and will help other countries that are looking for ideas to that will accelerate CCM efforts.

Malaria Situation in Malawi

Malawi is a landlocked country in southeastern Africa that borders Zambia, Tanzania, and Mozambique. It hosts a population of 13.1 million (2008 population census), of which 51% are women and 17% are children under age five. Malaria is endemic in Malawi, where greater than 97% of the population is at risk of infection and the vast majority (86%) resides in rural settings. Transmission is perennial, though increased during Malawi's rainy season from November through April. Higher malaria transmission occurs along the lakeshore and lowland areas of the lower Shire valley.

Malaria remains a leading cause of morbidity and mortality in Malawi. According to Health Management Information System (HMIS) registry data (which documents mostly clinical cases at health facilities alone), malaria is the primary cause of outpatient visits in the country. In 2008, over six million cases were captured through this system. Together malaria and anemia are estimated to be responsible for close to 40% of all less than five years hospitalizations and 30% of all hospital deaths in children less than five years of age. Currently, 27.6% of febrile children receive an ACT.

Pneumonia is the leading cause of death in children worldwide. Pneumonia kills 4 million people every year — half of these deaths are among children under five and occur in developing countries. The World Health Organization estimates that respiratory infections are responsible for 19% of deaths in children under five. In Malawi, pneumonia accounts for 12% of all outpatient visits. Among children with symptoms of ARI, only about 20% were taken to a health facility. (MDHS, 2004).

Diarrhea diseases are another leading cause of child mortality accounting for 7% of outpatient visits in Malawi. Diarrhea is prevalent in areas where contaminated water or unsafe water is used. Only 64% of Malawian households have access to clean water, 20% of these from piped water. In 2004, 18% of children with diarrhea received treatment and 61% were given ORS. (MDHS, 2004).

Description of Malawi Program

In 2009, the Integrated Management of Childhood Disease (IMCI) Unit of the MOH began rolling out community case management (CCM) in 4,000 hard-to-reach villages across Malawi with a catchment area of approximately ten percent of the population. With the support of WHO, UNICEF, the Canadian International Development Agency, the Bill and Melinda Gates Foundation, and USAID Child Health funding, the CCM program utilizes Health Surveillance Assistants (HSAs), who are an integral part of the formal health system in Malawi, to provide case management services to sick children at the community level through village health clinics (VHCs) in hard-to-reach areas.

Under the CCM program, the MOH has stocked drug boxes with cotrimoxazole, oral rehydration therapy, chloramphenicol eye ointment, zinc and paracetamol. Lacking sufficient national stocks of ACT to fill both the needs of facilities and the CCM program, PMI stepped in to cover the cost of first-line ACT in pilot districts, with the intention of scaling-up AL procurement to cover additional districts in need. PMI also supported the training of HSAs in community case management (CCM) and the community Logistics Management Information System, such that they are equipped to presumptively diagnose and treat acute respiratory infection, diarrhea, eye infections, and malaria using standardized algorithms and report this data accordingly.

With support from PMI and Child Health, USAID has led the development of these community logistics systems, which have been adopted nationally and will be supported in non-USAID districts by other donors. In addition, PMI is procuring approximately two million treatment doses of AL to support the scale-up of the CCM services. PMI funding will also supplement USAID child health funding support for supervision of HSAs providing CCM services.

This program is implemented by the MOH with BASICS (USAID-funded), PSI (CIDA-funded) and Save the Children (CIDA-funded).

VI. SCOPE OF WORK

GH Tech will conduct an independent evaluation of the Malawi CCM program currently implemented in Malawi. The team will design a methodology in line with similar and comparable to CCM evaluations in Madagascar, Senegal and DR Congo.

The CCM evaluation will focus on the overall design of the intervention, the quality of care provided, efficacy of supply chain, and adequacy of human resources. The evaluation will involve stakeholder interviews and site visits. It is anticipated that the team will conduct site visits in 9 of the following districts (3 per partner):

- Balaka, Chikwawa, Kasungu, Mangochi, Nsanje, Phalombe, and Salima (BASICS districts)
- Thyolo Machinga, Mwanza, Neno and Zomba (PSI districts)
- Mulanje, Blantyre rural, Mchinji, Dowa, Nkhotakota and Ntchisi (Save the Children districts)

The final site visit plan will be developed by the team during the team planning meeting.

The evaluation should provide information that can be useful in determining strengths and weaknesses of the program and its various components and help direct future program activities and provide lessons learned throughout the region.

Possible key questions for the evaluation include:

- What components are necessary for implementation at the central level, e.g., political will, resources, etc.?
- What components are necessary for implementation at the district level?
- Can we ascertain what volume of CCM attendees are 'displaced' from health centers vs. 'new' clients that may not seek health care?
- What degree of district engagement is currently supporting CCM implementation? To what degree is this a central initiative?
- To what degree does quality of care, defined as adhering to the algorithm, vary between village clinics? What are key factors in high QoC?
- How functional is the CCM supply chain? To what degree do village clinics experience stock outs?
- Is the referral system from village clinics to health facilities adequate/functional?
- Are services provided through village clinics adequate for majority of under five visits? Are there new services that should be considered?
- How is the supervisory structure operating? Are village health workers regularly being supervised? Is the feedback constructive?
- Other than direct treatment, how well is the village clinic providing appropriate messages regarding preventive practices such as use of an ITN, safe water, etc
- What trainings, tools, etc does an HSA need to provide high quality of care?
- What is the status of program implementation, including performance of health workers and availability of essential drugs and supplies?
- What are best practices and lessons learned for scaling up to date?
- What bottlenecks to scaling up have been identified and how have they been addressed?
- What type of supervision do these providers get, who supervises them and what is the content of the supervision? Is a supervisory checklist used?

VII. METHODOLOGY (Methodology, Techniques and or/Procedures Anticipated/Suggested)

The evaluation team will use a variety of methods for collecting and analyzing qualitative and quantitative information and data. The methods to be used in completing this evaluation will include, but not be limited to: reviewing documentation, interviews, site visits, stakeholder meetings, etc. The following essential elements should be included in the methodology as well as any additional methods proposed by the team:

Document Review

Prior to arriving in country and conducting field work, the team will review various project documents and reports. A list of key documents is included in Section XIV. The USAID/Malawi team will provide the relevant documents for review as soon as possible.

Team Planning Meeting

A two-day planning meeting (TPM) will be held during the evaluation team's first two days in-country with USAID staff. This time will be used to clarify team roles and responsibilities, deliverables, development of tools and approach to the evaluation, and refinement of agenda. In the TPM the team will:

- Share background, experience, and expectations for the assignment
- Formulate a common understanding of the assignment, clarifying team members' roles and responsibilities
- Agree on the objectives and desired outcomes of the assignment
- Establish a team atmosphere, share individual working styles, and agree on procedures for resolving differences of opinion
- Develop data collection methods, instruments, tools and guidelines, and methodology and develop an assessment timeline and strategy for achieving deliverables
- Develop a draft report outline for mission review and approval

In-depth Discussions with USAID/Malawi and Project Staff

Key Informant Interviews

The team will conduct structured interviews with the project staff, key partners and stakeholders. To ensure that comparable information is collected during interviews, the team will develop standard guides reflecting the questions posed by the evaluation scope of work.

Field Site Visits

The team will coordinate with USAID/Malawi to prepare for and conduct site visits while in-country, and to interview key informants at these sites.

VIII. TEAM COMPOSITION, SKILLS AND LEVEL OF EFFORT

The team will consist of two to four team members with one consultant designated as the team leader. The team leader will be responsible for the overall management of the evaluation, including coordinating and packaging the deliverables in consultation with other members of the team. The team leader will develop tools for the assessment and a methodology plan and share it with USAID/Malawi. The team leader will also be responsible for developing the outline for the draft report and submitting the final report within the agreed upon timeline.

The members of the evaluation team should represent a mix of skills assuring that the following technical areas are represented:

- Community service delivery
- Child health
- Quality of care
- Supply chain/logistics
- Experience working in sub-Saharan Africa.

In addition to the technical team members, a local logistics assistant may also be hired to assist the team to administrative and logistical support.

Illustrative Level of Effort:

Task	Team Leader	Other team members (days each)	Logistics assistant
Background Reading and preparation	5 days	3 days	2 days
Travel to country	2-3 days	2-3 days	
TPM in-country	2 days	2 days	2 days
Initial Briefings with mission	1 day	1 day	1 day
Team finalizes methodology plan and submits it to GH Tech and mission for approval	1 day	1 day	1 day
Meetings and interviews with Key Stakeholders in Lilongwe	2 days	2 days	2 days
Field visits	12 days	12 days	8 days
Information analysis and synthesis	2 days	2 days	
Drafting report	5 days	5 days	
Oral Debriefing with Mission	1 day	1 day	1 day
Stakeholders presentation	1 day	1 day	1 day
Team submits draft report and travels home.	2-3 days	2-3 days	
Mission provides feedback on draft report within 10 working days			
Team revises report based upon mission comments	5 days	3 days	
Mission approves unedited draft report			
GH Tech edits and formats draft (approximately 30 days)			

GH Tech submits final edited report to mission			
Mission approves final report			
GH Tech closes out the activity			
Total	43 days	39 days	18 days

IX. LOGISTICS

A six-day workweek is authorized when the team is working in country. The Evaluation team will be responsible for all off shore and in-country logistical support. This includes arranging and scheduling meetings, international and in-country travel (including vehicle rentals), hotel bookings, working/office space, computers, printing, photocopying. A local administrative assistant/secretary may be hired to arrange field visits, local travel, hotel, and appointments with stakeholders.

GH Tech will be responsible for the following:

- Arranging travel in the U.S. and from the U.S. to overseas assignment location (country clearance, visa, plane tickets, hotel reservations, processing travel advance and expenses). Consultants are responsible for arranging in-country travel while overseas and ground transportation in the U.S.
- Hiring a local logistics assistant to schedule travel, arrange meetings and provide other support functions.
- Facilitating contact with USAID staff.
- Instruction and/or assistance with formatting charts, graphs, and tables and PowerPoint slides
- Arranging for editing/layout of final report.

X. DELIVERABLES AND PRODUCTS (Include dates for completion and submission – drafts and final reports and products and for review. Include briefings and PowerPoint files)

The contractor deliverables shall include:

1. A written methodology plan (Evaluation design/operational work plan) prepared during the TPM and submitted to the Mission for review and approval before field work and key informant interviews begin.
2. A draft report outline prepared during the TPM.
3. A Mission and Ministry of Health debrief meeting that will be held before the team's departure and prior to the submission of the draft report
4. Prior to departing Malawi, a draft report addressing key performance findings, conclusions, recommendations and lessons learned will be submitted. The mission will have 10 days following the submission of the draft report to respond and provide written comments and feedback to GH Tech.

5. Upon receiving the mission's comments on the draft report, the team will have 5 days to revise the report, and send the final unedited version of the report to the mission and GH Tech.
6. The final report will be a public document to be posted on the GH Tech website and the DEC. Once GH Tech receives mission signoff on the final unedited report, the document will be professionally edited and formatted. The report will be delivered in electronic form and no printed copies will be required.

XI. RELATIONSHIPS AND RESPONSIBILITIES (USAID)

Before In-country Work

1. Consultant Conflict of Interest. To avoid conflicts of interest or the appearance of a COI, review previous employers listed on the CV's for proposed consultants and provide additional information regarding potential COI with the project contractors or NGOs evaluated/assessed and information regarding their affiliates.
2. Documents. Identify and prioritize background materials for the consultants and provide them, preferably in electronic form.
3. Local Consultants. Assist with identification of potential local consultants and provide contact information.
4. Site Visit Preparations. Provide a list of site visit locations, key contacts, and suggested length of visit for use in planning in-country travel and accurate estimation of country travel line items costs. Missions can protect scarce budgets by using their in-country knowledge to suggest the travel calendar (i.e. number of in-country travel days required to reach each destination, and number of days allocated to interviews at each site).
5. Lodgings and Travel. Provide guidance on recommended secure hotels and methods of in-country travel (i.e., car rental companies and other means of transportation) and identify a person to assist with logistics (i.e., visa letters of invitation etc.)
6. USAID-Supplied Participants. Provide guidance regarding participation in the assignment by Mission and USAID/W staff (i.e., who will participate, how long, source of funding for their participation).
7. Locally-Established Ceilings and Rates. Provide information as early as possible on ceilings for pay to in-country hires, allowable lodging and per diem rates for government officials, stakeholders and MOH staff that will travel/participate in activities with the team (i.e. what is per diem amount? is TL responsible to pay this? length of time? etc.).

During In-Country Work

8. Mission Point of Contact. Throughout the in-country work, ensure constant availability of the Mission Point of Contact person(s) and provide technical leadership and direction for the team's work.
9. Meeting Space. Provide guidance on the team's selection of a meeting space for interviews and/or focus group discussions (i.e. USAID space if available, or other known office/hotel meeting space).
10. Meeting Arrangements. While local consultants typically will arrange meetings for contacts outside the Mission, support local consultant(s) in coordinating meetings with stakeholders.
11. Formal and Official Meetings. Arrange key appointments with national and local government officials and accompany the team on these introductory interviews (especially important in high-level meetings).

12. Other Meetings. If appropriate, assist in identifying and helping to set up meetings with local professionals relevant to the assignment.
13. Facilitate Contacts with Partners. Introduce the team to project partners, local government officials and other stakeholders, and where applicable and appropriate, prepare and send out an introduction letter for team's arrival and/or anticipated meetings.

After In-Country Work

14. Timely Reviews. Provide timely review of draft/final reports and approval of the deliverables.

XII. MISSION AND/OR WASHINGTON CONTACT PEOPLE/PERSON

Katherine Wolf

XIII. COST ESTIMATE - TBD

XIV. REFERENCES (PROJECT DOCUMENTS)

Background documents for this assignment will include, but not be limited to the following:

- Project workplans and related documents
- CCM Evaluations from Madagascar, Senegal, and DR Congo
- Malaria Indicator Survey
- BASICS Mid Term Evaluation
- Malawi MOP

APPENDIX B. DOCUMENTS REVIEWED

MSH (BASICS)

CCM Implementation Activities and BASICS Role in Support for the MOH in Malawi.

Final report, FY 2010.

Malawi Malaria Indicator Survey. Final report, 2010.

Malawi Malaria Operational Plan FY 2010.

Mid-term Evaluation. Final report, March, 2010.

Quarterly Report October 2010 – December 2010.

(Various documents from mid-term review)

Work Plan Year 4. (WORD and EXCEL)

Activity Report 1st Quarter 2011. (quarterly CCM review meeting for HSAs)

PowerPoint Presentations

2nd RCHF Presentation Template.

CCM in Cameroon.

GOVERNMENT OF MALAWI

Health Sector Strategic Plan 2011 – 2016.

ICMI Unit. *Report on Village Clinic Supervision*. 2010

Malawi Health Commodities Logistics Management System at the Community Level. Standard Operating Procedures Manual. Lilongwe, HTSS Pharmaceuticals, 2010.

GTZ

Kirsten Lorscheid and Gary Asperas. Continuous Quality Improvement of Health Care Services in Malawi – Preparation of Building Block 4 of the Health SWAp POW 2011 to 2016. 2010

JSI (USAID/DELIVER)

LA Stock-out Trends. (Excel graph)

Preliminary Report on the Baseline Assessment of Community Case Management Supply Chain. 2010.

Draft 2011 Quantification for CCM Commodities.

DELIVER Work Plan and Strategy.

Country Task Order Reports, October 2010 through March 2011.

JHU, MOH, WHO, UNICEF

Quality of Care Provided to Sick Children by HSAs in Malawi. Final report, 2010.

MALARIA CONTROL PROGRAM

MCP Malawi workshop meeting folder. (reports and PowerPoint presentations)

MEASURE AND GOM NATIONAL STATISTICAL OFFICE

Malawi Demographic and Health Survey 2010: Preliminary Results. (2010)

MSH (EMERGENCY HUMAN RESOURCES PROGRAM) AND DFID

O'Neil., M., Z. Jarra, L. Nkosi, et al. *Evaluation of Malawi's Emergency Human Resources Programme*. July 2010.

PSI

CS and Malaria Annual Work Plan, 2011.

Mwanza District Hospital, Integrated Management of Childhood Illnesses. IMCI report on village clinics supervision, conducted from 01/03/2011 to 16/03/2011.

A variety of IEC materials (posters, flyers) related to CCM activities.

SAVE THE CHILDREN

CCM Master Plan.

Minutes on CCM Biannual Review, March 2011.

Presumptive Treatment of Fever. Annual narrative report, 2009.

Presumptive Treatment of Fever. Annual narrative report, 2010.

Annex 6 to 2010 report: *Quality of Care Assessment in Mulanje District: Preliminary Findings*.

UNICEF/GOVERNMENT OF MALAWI NATIONAL STATISTICAL OFFICE

UNICEF and Government of Malawi. *Monitoring the Condition of Children and Women. Malaria Indicator Cluster Survey 2006*. National Statistical Office, 2008.

WHO/UNICEF

Standards of Care Children – HIV-exposed and Infected Infants and Children.

USAID

Malawi Country Health Statistical Report, 2010. Available at: http://pdf.usaid.gov/pdf_docs/PNADR587.pdf

APPENDIX C. ASSESSMENT GUIDE

Malawi Community Case Management Evaluation

Methodology and Work Plan

PURPOSE

To assess implementation of community case management (CCM) for integrated management of childhood illnesses in hard-to-reach areas in Malawi. The evaluation will focus on identification of tangible and useful lessons learned on CCM implementation thus far, including highlighting best practices to be scaled up and areas for improvement.

OBJECTIVES

General Objective:

- Determine progress made on CCM program activities in relation to planned or anticipated actions outlined in work plans and related documents, and
- Determine the strengths and weaknesses of the existing program and approach.

Specific Objectives:

1. Document best practices that have supported CCM programming success in Malawi in USAID/all CCM districts
2. Document past and current bottlenecks in CCM program implementation and approaches that were used to overcome them
3. Draw lessons learned from country experiences that can inform the design of future programs
4. Document any existing evidence of program effectiveness

WORK PLAN

The approach to this work will include a combination of desk review and qualitative data collection in the field. The desk review will explore and synthesize information from existing data that are published in documents such as annual reports of the implementing partners and operational research studies.

The data collection techniques will involve semi-structured individual and/or group interviews with country representatives at ministry and district level, implementing partners (USAID/BASICS, Population Services International [PSI] and Save The Children/Malawi [StC]), and other stakeholder groups. Discussions with Health Surveillance Assistants (HSAs) and, if possible, direct observation of their interactions with clients will be conducted in selected sites to provide a better understanding of the current practices and operating procedures.

The day-to-day calendar of work and the overall assessment plan are reflected in the team work plan table.

Participant Selection

Districts

A total of eight (8) districts are included in the site visit plan. The number of sites and the number of interviews at each site will be the maximum number feasible, taking into account both time and budgetary constraints.

The districts selected were drawn from those recommended by the Mission, to represent settings in which CCM activities have been implemented for a longer period, and those in which CCM activities have been introduced more recently. They also reflect districts that have been identified by implementing partners as the better- and lesser-performing districts. The selected districts and the supporting partner are:

Southern Region

- Mwanza (PSI)
- Mulanje (StC)
- Phalombe (BASICS)
- Zomba (PSI)

Central Region

- Kasunga (BASICS)
- Nkhotakota (StC)
- Salima

Northern Region

- Nkhata Bay (BASICS)

Individuals to be Contacted within Districts

The District Health Officer and selected members of the District Health Management Team (DHMT) will be interviewed. The district plan is presented in the following table.

	Date	District	People to See in the District
1.	Tuesday 26 April	Mwanza	**District Management** • District Health Officer/Health Team (IMCI, Malaria, Nursing Officer.) • District Malaria Coordinator • District IMCI Coordinator **Health Facilities – Two (if scheduling allows)** • Health Centre in-charge • Supervisor of HSA • Individuals responsible for supervision of coordination of malaria and IMCI activities • Individuals at facility level who manage supply chain issues. • Village clinics – two (if possible) • HSA • Central/Regional/Medical stores-in-charge • Village Health Committee representatives
2.	Wednesday 27 April	Mulanje	
3.	Thursday 28 April	Phalombe	
4.	Friday 29 April	Zomba	
5.	Tuesday May 3	Nkhatabay	
6.	Wednesday May 4	Nkhotakota	
7.	Thursday May 5	Kasungu	
8.	Tuesday May 10	Salima	

Interview Guides

Eight components related to successful implementation of CCM activities were identified and abstracted from the protocols prepared by others who were conducting similar CCM program assessments in Senegal and the Democratic Republic of the Congo (DRC). This focus on a common set of key components allows a cross-comparison of findings across these components, across CCM implementation countries.

Guiding questions for interviews were presented in the Senegal and DRC. These questions were reviewed and adapted for the Malawi context, and additional questions were developed by the team for the specific purpose.

Technical Analysis, Preparation of the Report and Debriefing.

The team will prepare an analytical report of the findings from this assessment for review and comment by the Mission, and then presented to stakeholders for comment. The report will present the teams' synthesis of findings, our reflections on best/promising practices for CCM implementation and scale-up in the country, and on factors that may be serving as limiting factors to full implementation. Conclusions will be drawn, and practical recommendations will be offered for consideration.

TEAM WORKPLAN

Malawi CCM Assessment

Objectives from Malawi SOW	Key Components	Quantitative Indicators (Data to be requested from implementing partners as documented in annual reports and M&E documents)	Qualitative Questions Relating to Best Practices, Bottlenecks, and Lessons Learned Across Program to Date: Three Implementing Partners
General objective: • Determine progress made on CCM program activities in relation to planned or anticipated actions outlined in work plans and related documents • Determine the strengths and weaknesses of the existing program and approach			
Specific objectives: 1. Document best practices that have supported CCM programming success in Malawi in USAID/all CCM districts 2. Document past and current bottlenecks in CCM program implementation and approaches that were used to overcome them 3. Draw lessons learned from country experiences that can inform the design of future programs 4. Document any existing evidence of program effectiveness.			
General	Country context (health system, geopolitical, epidemiological, etc)	• Proportion of U5 deaths from malaria, pneumonia & diarrhea • Proportion of children stunted, wasted • Annual incidence (if available) of childhood malaria, pneumonia, diarrhea	• What is the structure of the health system (decentralized, etc)? • What are other large-scale initiatives for child health undertaken during the same period as CCM?
1, 2, 4	1. Coordination and Policy Environment		• What is the national policy for CCM? Please explain. • How is the CCM policy incorporated into the national MOH/IMCI policy? • What types of coordination exist, e.g., political will, resources, etc., to support CCM at the central level?

Objectives from Malawi SOW	Key Components	Quantitative Indicators (Data to be requested from implementing partners as documented in annual reports and M&E documents)	Qualitative Questions Relating to Best Practices, Bottlenecks, and Lessons Learned Across Program to Date: Three Implementing Partners
			• How do the MOH CCM unit/working group and their regular meetings support coordination and policy setting for CCM? • How do they review progress and future plans at the central and district levels? • What coordination and policy support is there for CCM at the district level? • What degree of district engagement is currently supporting CCM implementation? To what degree is this a central initiative? • Has the CCM policy and coordination changed significantly since the start? Why and how? • What are the benefits of the coordination? • What are the lessons learned? • What are the past and current bottle necks? • What is the evidence of the effectiveness of the CCM coordination and policy setting?
1, 2, 3	2. Human Resources	• No. of HSAs conducting routine CCM activities/targeted no. of HSAs (over time where available) • No. of HSAs in service at implementation site/ no. of HSAs trained (measurement of CHW retention) (over time where available) • Annual attrition rate of HSAs (if available)	• What are criteria for recruitment of HSAs? • What is the HSAs' role in the formal health system? • What are their responsibilities to serve the community? • How has these responsibilities changed over time? How has this affected CCM? • How do community committees and health staff support HSAs in CCM? • How has the support been maintained?

Objectives from Malawi SOW	Key Components	Quantitative Indicators (Data to be requested from implementing partners as documented in annual reports and M&E documents)	Qualitative Questions Relating to Best Practices, Bottlenecks, and Lessons Learned Across Program to Date: Three Implementing Partners
			• What incentives and motivation do HSAs receive? What is the retention rate and strategy? • What are the lessons learned in HSA recruitment, training, and retention? • What are the bottle necks/constraints in supporting HSAs? •
1, 2, 3, 4	3. Supervision and Performance Quality Assurance	• Proportion of HSAs who participated in at least 1 supervisory activity during the prior 3 months where a sick child interaction was observed and skills coaching provided • Proportion of HSAs who received at least 1 supervisory visit in the community during the prior 3 months where a sick child visit was observed and skills coaching provided	• Has the supervision /QOC changed over time? How and why? • What CCM training is provided to supervisors? What does this training include? • What are the main bottle necks to supervising HSAs in CCM Initially? Over time? Currently? • To what degree does quality of care/adhering to the algorithm vary among HSAs? • What are key factors in high QoC in CCM? • How is the supervisory structure for CCM operating? How are HSAs being regularly supervised? • How constructive is the feedback on CCM by supervisors and mentors? • What trainings, tools, supervision, mentoring best support HSAs to provide high quality of care? • What is the status of performance of HSAs? • What are the best practices in CCM QOC?

Objectives from Malawi SOW	Key Components	Quantitative Indicators (Data to be requested from implementing partners as documented in annual reports and M&E documents)	Qualitative Questions Relating to Best Practices, Bottlenecks, and Lessons Learned Across Program to Date: Three Implementing Partners
1, 2, 3, 4	4. Supply Chain Management	• Proportion of CCM implementation sites with stock-outs of any CCM drugs or RDTs within the last 30 days	• How functional is the CCM supply chain? • What is the status of the availability of essential drugs and supplies? • How can the CCM better predict their supply chains needs at each levels? • Does the essential drug list include all CCM medicines and RDTs, when appropriate? • What are the longer-term financing strategies for CCM commodities? • Is the CCM supply chain integrated into the national supply chain system? Has this changed over time, how and why? • How is quantification done for CCM at the community level? Is it integrated into the national drug supply chain? If so, how? • What is the main bottleneck/constraint in supply chain management for CCM? In the past? Currently? • What are the best practices factors for CCM supply management? • To establish current information: to what degree do village clinics experience CCM stock commodity outs? And how can stock-outs be stopped?
General, 1, 2, 3	5. Communication and Social Mobilization	• Proportion of parents/guardians of sick children who receive all recommended key messages according to their gold	• What materials have been used to train HSAs in health service delivery (e.g., training curriculum)? • What are the messages and materials related to CCM that the HSA has at hand that can be

Objectives from Malawi SOW	Key Components	Quantitative Indicators (Data to be requested from implementing partners as documented in annual reports and M&E documents)	Qualitative Questions Relating to Best Practices, Bottlenecks, and Lessons Learned Across Program to Date: Three Implementing Partners
		standard diagnoses • Proportion of parent/guardian who can accurately recite recommended key messages	used to educate the community? *How and by whom were they developed? Have these changed over time?* • What are the messages to be delivered by HSAs to clients? Have these changed over time? • How are the messages presented to the community (e.g., street theatre, pamphlets, radio)? Please provide a sample of informational materials that you distribute to the community. • How well (to what extent?) are appropriate messages regarding preventive practices (e.g., use of an ITN, safe water, etc.) (i.e., those that go beyond teaching about problem recognition that leads to the request for treatment) being provided to the community? • Who else in the community provides support to the HSA for distributing messages and encouraging requests for service?
General 1, 2, 3, 4	6. Service Delivery and Referral	**(NOTE: We can request that QA and M&E data related to the following indicators be provided to us, or extract what might be available from recent reports and documents.)**	• Which of the (4) CCM services has HSA been trained to perform? Which do they perform with regularity? • Does the HSA perform each of these functions on a regular basis? (check register) • Is the referral system from village clinics to health facilities adequate/functional? • How does the health facility provide information back to the community/village about the health needs of children referred for

Objectives from Malawi SOW	Key Components	Quantitative Indicators (Data to be requested from implementing partners as documented in annual reports and M&E documents)	Qualitative Questions Relating to Best Practices, Bottlenecks, and Lessons Learned Across Program to Date: Three Implementing Partners
		Quality • Proportion of children correctly treated for all gold standard diagnoses – (QA/QI?) • Proportion of children with danger signs or signs of severe disease referred • Proportion of referred children received at the referral facility • Proportion of children treated correctly and timely for all gold standard diagnoses (QA/QI) **Access** • No. of CHWs providing CCM services (with training & drugs) per 1,000 under-5 population in rural areas (at national and each district level) **Utilization** • Number of sick child encounters/1,000 children in a given catchment area/year • Avg. number of sick child encounters by CHW in a given catchment area in one month	care? • How do Village Health Committees help to address issues that may arise (e.g., need for transportation, access to the drug box, "coverage" in the event of absence of the HSA)? • Are services provided through village clinics adequate for the majority of under-five visits? Are there new services that should be considered? • What is your opinion about expanding the role of HSAs to such areas as a. the care of newborns, age 0 – 2 months b. assessment of the mother following childbirth c. HCT d. distribution of more methods of family planning (e.g., condom, pills)

Objectives from Malawi SOW	Key Components	Quantitative Indicators (Data to be requested from implementing partners as documented in annual reports and M&E documents)	Qualitative Questions Relating to Best Practices, Bottlenecks, and Lessons Learned Across Program to Date: Three Implementing Partners
		Coverage • % of children aged 0-59 months with fever receiving appropriate antimalarial drugs • % of children aged 0-59 months with suspected pneumonia receiving appropriate antibiotic • % of children aged 0-59 months with diarrhea receiving ORS OR RHF OR increased fluids and continued feeding	
1, 2, 3	7. Financing	• % of CCM program budget provided by host government	• What is the MOH's long-term financial plan to support CCM components in their budget? • What support is provided for CCM outside of government sources? • What are the significant bottle necks/ constraints in financing? • What are the lessons learned? • How can these be addressed?
1, 2, 3, 4	8. M&E and Health Information Systems	• Proportion of districts where CCM is implemented incorporating CCM data for planning and decision making in their annual plans • Proportion of implementation	• How was the CCM monitoring system designed? • How is it integrated into the National HMIS? • How are data used to improve program performance? How is feedback given to HSAs? • How are HSAs trained to analyze and use their

Objectives from Malawi SOW	Key Components	Quantitative Indicators (Data to be requested from implementing partners as documented in annual reports and M&E documents)	Qualitative Questions Relating to Best Practices, Bottlenecks, and Lessons Learned Across Program to Date: Three Implementing Partners
		sites providing complete monitoring data	own data? • Is there an operations research agenda for CCM? Is it documented and circulated among stakeholders? • What promising new methods and strategies are being proposed to strengthen the M&E system? (Please describe the use of SMS for both client and drug supply recording and reporting)

APPENDIX D. PERSONS CONTACTED

MALAWI

U.S. Agency for International Development

Chimwemwe Chitsulo, M&E & Learning Specialist

John Collins, Education Officer

Katherine Wolf, Sr. Malaria Advisor

Centers for Disease Control and Prevention

Jessica Oyugi, Resident Advisor

Government of Malawi

Central Medical Stores

Francis Chafulumira, Acting Director of CMS/Controller

Ministry of Health

Clifford Dedza, IMCI Pharmacy Technician

Godfrey Kandewele, HTSS-Senior Logistics Officer

Angella Mtimuni, M&E Officer

Hudson Zithane-Nkunika, HSS Coordinator

Humphrey Nsona, IMCI Unit

John Sande, Malaria Case Management Officer

Johns Hopkins U, Center for Communication Programs

Glory H. Mkandawire, Project Director

JSI (USAID/DELIVER)

Willy Kabyya, Malaria Logistics Advisor

Leslie Patykewich, Technical Advisor

JSI (USAID/SC4CCM/Malawi)

Boniface Chimphanga, Logistics Officer

Amos Misomali, Logistics Advisor

Medic Mobile

Isaac Holeman, Chief Strategist

MSH (USAID/BASICS)

Timothy Kachule, Child Health Advisor

Ruthia Kainsea, (Salima District)

Emmanuel Kaonga, Nakata Bay District Coordinator

Dyna Khonde, Zomba District Coordinator

Doreen Machinjiri, Phalombe District Coordinator

Kuzemba Mulenga, Salima District Coordinator

Ngwire Munthali, Community Liaison Officer (Kasunga District)

Jane Ngwira, Kasunga District Coordinator

Rudi Thetard, Chief of Party

PSI

Gloria Chiutsi, Program Assistant

Dyson Liuomwa, Research & M&E Officer

Robert Mahala, Project Coordinator, CCM

Charles Yuma, Director of Child & Reproductive Health

Save the Children/Malawi

Elena Bisika, Data Officer (Kusanga District)

Joby George, Sr. Manager for Health

Webster Kachere, Assistant Project Officer (Nkotakota District)

Salim Sadruddin, Child Health and Nutrition Advisor

Gilbert Soko, Asst Project Office (Mulanje District)

Ignatio Wachepa, M&E Officer

KASUNGA DISTRICT (BASICS Supported)

District Health Management Team

Joster Banda, Chief Clinical Officer

Ketroin Kondowe, Environmental Health Officer

Messiah RL Moyo, Malaria Coordinator

Obvious Mtamba, ICMI Coordinator

Rumbain Mugwozho, Environmental Health Officer

Pharmacy Personnel

Arnold Mkangala

Chamwavi Health Center

HSA

Data clerk

Sr. Medical Assistant

Chambwe Village Clinic

HSA (1)

Linyangwa Health Center

Mphungu Village Clinic

HSA

Members of the Village Health Committee (4)

MULANJE DISTRICT (STC Support)

District Health Management Team

Annie Dilla, IMCI Coordinator

Bosco Kalua, District Environmental Health Officer

Issac Kampondeni, Malaria Coordinator

Alinafe Mangulenje, District Nursing Officer

Elizabeth Nkosi, District Medical Officer

Mulanje District Pharmacy personnel

Roy Makaika, Pharmacy technician

Mimosa Health Center

Douglas Nakoma, CCM Assistant Supervisor

Nurse/midwife

Mimosa Village Clinic

HSA

Village headman

Members of the Village Health Committee (2)

Njilima Village Clinic

HSA

Village headman

Member of the Village Health Committee (1)

Bondo Health Center

Ngwezu Village Clinic

MWANZA DISTRICT (PSI Supported)

District Health Management Team

Arth Champi, Matron

William Chammudzi, CCM Trainer

David Chitembwe, C-IMCI Coordinator

Titus Divala, District Medical Officer

Jams Liuma, HMIS Officer

Bwanali Jerni, District Health Officer

Alfred J Phiri, District Environmental Health Officer

Mwanza District Hospital Pharmacy personnel

Chithuambwi Village Clinic

Member of Village Health Committee (1)

Sudolu Village Clinic

HSA

Thambani Health Center

Sr. HAS (1)

HSA (2)

Village Clinics

HAS (1)

MA (1)

NAKOTABAY DISTRICT (BASICS Supported)

District Health Management Team

Gabriel Chiepta, Community IMCI Coordinator

Eltha Chimbe, Nursing Officer

Austin Chomo, District ICMI Coordinator

John Mpoha, District Environmental Health Officer

Vincent Masoo, Assistant Statistician

Harrison Sikalamuk, Malaria Coordinator

Pharmacy Personnel

Kondwani Shaba, Pharmacy technician

Maula Health Center

Sr. HSA

HSA

Village Headman (1)

Members of the Village Health Committee (4)

Mothers of sick children < 5 years of age (2)

Mpomba Health Center

Mdyaka Village Clinic

NKOTAKOTA DISTRICT (Save The Children Supported)

District Health Management Team

L. Chewere, District Nursing Officer

W. Chisenga, District Health Officer

Addone Chisi, HMIS Officer

R.B Kayira, District Health Environmental Officer

Donex Mwale, ICMI Coordinator

Pharmacy Personnel

M. Zawdla

Nagale Health Center

Medical Assistant

HSA supervisor

HSA (4).

Mansanjere Health Center

Banga Village Clinic

Village headman

Msangu Village Clinic

Village headman

Members of the two Village Health Committees (9)

PHALOMBE DISTRICT (BASICS Supported)

District Health Management Team

Rose Gomiwa, HSA Supervisor

Mary Lujere, IMCI Coordinator

Andie Mzosankila, HMIS Officer

Francis Nabedi, IMCI Supervisor

Judith Phameya, Malaria Coordinator

Raphael Piringman, District Health Officer

Pharmacy Personnel

Joe Manje, Pharmacy technician

Phalombe Health Center

Sr. HSA

MA

Kalinde Health Center

Likatchale Village Clinic

Chanasa Village Clinic

HSA

Members of Village Health Committee (3)

Mothers of sick children (2)

SALIMA DISTRICT (BASICS Supported)

Martas Bondwe, Principal Nursing Officer

Arthur Champiti, District Nursing Officer

A.M. Ganizani, District Environmental Health Officer

Fredson Kamberi, Hospital Administrator

Bethred Modipwin, HMIS Officer

Packson Tsiki, Hospital IMCI Coordinator

Khombedza Health Center

Limbani Mateyu, Medical Assistant

Aaron Banda, Medical Assistant

Samuel Chimwaza, Assistant Environmental Health Officer

Makiiyonie Health Center

Kamvanjiru Village Clinic

Makho Village Clinic

HSA

Village headman and 2 members of the Village Health Committee

WORLD HEALTH ORGANIZATION

Leslie Mgalula, Medical Officer (Partnership for Maternal, Newborn and Child Health/Malawi)

UNICEF

Texas Zamasiya, Child Survival & Development Specialist

ZOMBA DISTRICT (BASICS Supported)

Reuben J Chikadza, C-IMCI Coordinator

Elizabeth Chingayipe, District Environmental Health Officer

Duncan Lupiya, ICMI Coordinator

Nita Nayeja, District Medical Officer

Chingale Health Center

Officer in Charge

HSA Supervisor (for the Health Center)

HSA Supervisor (for CCM)

Chingale Village Clinic

HSA

Village Chief

Member of the Village Health Committee

Mothers of sick children <5 years of age (2)

Mmambo Health Center

Julius Gulani – Senior HSA

Benson Kormpapa – SHSA

H. Sekelesda – AEHO

I Lyhanso – MA

E Banda – Nurse

Chingale Health Center

Chingale Village Clinic

HSA (3)

Matete Village Health Clinic

APPENDIX E. CALENDAR

SCHEDULE FOR THE USAID MALAWI COMMUNITY CASE MANAGEMENT EVALUATION

April-May 2011

Date	Time	Venue	Contact/Activity	Contact Details	Comments
Sunday 10 April					
Monday 11 April April			BACKGROUND READING		ALL CONSULTANTS
Tuesday 12 April					
Wednesday 13 April					
Thursday 14 April					
Friday 15 April					
Saturday 16 April			Travel		All consultants
Sunday 17 April			Travel		All consultants
Monday 18 April		Check in at Capital Hotel	Team arrives in Lilongwe		All consultants
Tuesday	09.30	Capital Hotel	Kate Wolf	0999964353	All consultants

Date	Time	Venue	Contact/Activity	Contact Details	Comments
19 April	15.00	Capital Hotel	Sr. Malaria Advisor/USAID Initial briefing with the Mission Timothy Kachule Child Health Advisor/BASICS	0888966979 0991955249	
Wednesday 20 April	08.30 11.00	CHSU USAID DELIVER	Humphrey Nsona IMCI Unit, MOH Willy Kabuya Malaria Logistics Advisor JSI (USAID/DELIVER	0999510272 01752030	All consultants All consultants
Thursday 21 April	09.00 10.30 14.00	JSI JHU-CCO JSI SC4CCM/Malawi	Leslie Patykewich, Tech Advisor Salim Sadruddin, C Health/Nut Adv Joby George, Sr Mgr Health Gloria Mkandawire, Project Dir. Boniface Chimphanga, Logistic Off. Amos Misomali, Logistics Adviser		All consultants JF/RS RS/AA
Friday 22 April	9 – 5	Capital Hotel	Team Planning Document review		All consultants
Saturday 23 April	9 – 5	Capital Hotel	Document review		Consultant preference
Sunday 24 April	**REST DAY**				
Monday	09.00	Travel to Blantyre	(stay at Mount Soche)		All consultants

Date	Time	Venue	Contact/Activity	Contact Details	Comments
25 April	17.00	(stay at Mount Soche Hotel)	Meeting with PSI Team Dyson Liuomwa, Research & M&E Robert Mahala, Prj Coord CCM Charles Yuma, Dir Child & Reproductive Health	01877 345/01874 139 0999951128 0999955650	Accompanied by: T Kachule (BASICS)
Tuesday 26 April		Mwanza – (PSI) 0800 0900 – 1045 11 – 12 1300 – 1400 1430 – 1600	Depart hotel Meeting with District Health Management Team (DHMT) District Pharmacy Chithuambwi Village Clinic Sudolu Village Clinic Thambani Health Center with 4 HSAs (stay at Mount Soche)		All consultants Accompanied by T Kachule (BASICS) R Mahala (PSI) AA JF and AA JF and AA RS
Wednesday 27 April		Mulanje – (StC) 0800 0915 – 1100 1130 – 1215 1215 – 1300	Meetings in the field Depart hotel Meeting with DHMT Mimosa Health Center HSA/staff Bondo Health Center Mimosa Village Clinic HSA	Gilbert Soko:0999255023	All consultants Accompanied by T Kachula (BASICS) G Soko (StC) JF RS/AA JF RS/AA

Date	Time	Venue	Contact/Activity	Contact Details	Comments
		1330 - 1400	Ngwezu Village Clinic Njilamba Village Clinic HSA (stay at Mount Soche)		JF
Thursday 28 April		Phalombe –(BASICS) 0730 0915 – 1030 1030 - 11 1100 – 3 P 1145 – 1230 1245 – 1415 (stay at Mt Soche)	Meetings in the field Meetings in the field Depart hotel Meeting with DHMT Phlamobe Health Center Kalind Health Center Likatchale Village Clinics Chanasa Village Clinic M&E Officer (A Mzosankila)		All consultants All consultants Accompanied by T Kachula (BASICS) JF RS/AA RS/AA JF JF
Friday 29April		Zomba – (PSI) 0730 0915 – 1030 1045 -1215 1230– 1430	Meetings in the field Depart hotel Meeting with DHMT Chingale Health Center Mambo Health Center Matete Village Health Clinic Chingale Village Clinic	Mary Baloyi 0999214977	All consultants Accompanied by T Kachula (BASICS and Mary Baloyi (PSI) JF/AA RS RS JF/AA

Date	Time	Venue	Contact/Activity	Contact Details	Comments
		(stay at Mt. Soche)			
Saturday 30April	09.00		Drive back to Lilongwe		Check in at Capital Hotel
Sunday 1 May	**REST DAY**				
Monday 2 May		(stay in Mzuzu Hotel)	Drive to Mzuzu		All consultants
Tuesday 3 May		Nakata Bay (BASICS) 0800 0915 – 1030 1045 -1215 1230– 1430 (stay in Mzuzu Hotel)	Meetings in the field Depart hotel Meeting with DHMT Maula Health Center Mpomba Health Center Mdyaka Village Clinics		All consultants Accompanied by T Kachula (BASICS) JF RS/AA JF RS/AA
Wednesday 4 May		Nkhotakota (StC) 0700 0915 – 1100 1145 -1230 1300 - 1345 1415 – 1500 1600 – 1700	Meetings in the field Depart hotel Ngala Health Center Banga Village Clinics MsanguVillage Clinics Masenjere Health Center Meeting with DHMT		All consultants Accompanied by T Kachula (BASICS) Ignatio Wachepa (StC) JF/AA JF/AA RS All consultants

Date	Time	Venue	Contact/Activity	Contact Details	Comments
		(stay at Safari Lodge)			
Thursday 5 May		Kasungu (BASICS) 0700 0915 – 1030 1045 -1215 1230– 1430 (stay at Kasungu Inn)	Meetings in the field Depart hotel Meeting with DHMT Chamwavi Health Center Chambwe Village Clinic Linyangwa Health Center Mphungu Village Clinic Nkwayule Village Clinic		All consultants Accompanied by T Kachula (BASICS) Ignatio Wachepa (StC) JF/AA RS JF/AA RS JF/AA RS
Friday 6 May			Drive to Lilongwe Interpretation and analysis		All consultants Check in at Capital Hotel
Saturday 7 May		Capital Hotel	Interpretation and analysis		All consultants
Sunday 8 May	**REST DAY**				
Monday 9 May	09.00 11.00 15.00	CHSU MOH MOH	John Sande, Malaria Case Management Officer,MOH Hudson Nkunika, HSS Coordinator, MOH Humphrey Nsona, ICMI Coordinator (revisit) Angela Mtimuni, M&E Officer	0888374043 0888320917 (Secretary) 01789400 or 0999563354	All consultants All consultants
Tuesday	07.00	Salima (BASICS)	Meetings in the field		All consultants Accompanied by USAID: Kate

Date	Time	Venue	Contact/Activity	Contact Details	Comments
10 May		0730 0915 – 1100 1145 -1230 1300 - 1430 1415 – 1500	Depart hotel Meeting with DHMT Khombedza Health Center Makho Village Clinic Kamvanjiru Village Clinic Makiyonie Health Center		Wolf and John Collins Accompanied by PSI: Robert Mahala JF/AA RS JF/AA RS
Wednesday 11 May	09.30 1400 1500	WHO Central Med Stores UNICEF	Dr. Leslie Mgalula-Medical Officer, Maternal, neonatal program Mr Francis Chafulumira, Acting Director of CMS/Controller Texas Zamasiya Child Health Advisor	01772755 01 789 400	All consultants All consultants JF/RS
Thursday 12 May	0900 – 1500 1000 - 11 1500 - 1630	Capital Hotel JSI/SC4CCM JSI/DELIVER	Drafting report Amos Musomali Bonifance Chimpanga Logistics Officer Leslie Patykewich Rudi Thetard, CoP (BASICS)	All consultants AA/RS RS/JF	All consultants

Date	Time	Venue	Contact/Activity	Contact Details	Comments
Friday 13May	0900 – 1500 1000 – 1100 1730 - 1900	Capital Hotel	Drafting report Godfrey Kadewele-Deputy Director of Pharmaceutical-Senior Logistics officer MoH Isaac Holeman, Chief Strategist, Medic Mobile		All consultants AA/RS
Saturday 14May		Capital Hotel	Drafting report		All consultants
Sunday 15 May	**REST DAY**				
Monday 16 May		Capital Hotel	Drafting report		All consultants
Tuesday 17 May	11.00	USAID Office	Oral debriefing with Mission		All consultants
Wednesday 18 May	09.00	MOH/BASICS/CHSU (TBD)	Stakeholders presentation		All consultants
Thursday 19 May		Capital Hotel	Submit draft/depart country		

APPENDIX F. TABLES AND FIGURES

Table 2: Demographic and Health Profile of Districts Included in the Assessment

Indicator	National	Kasunga	Mulanje	Mwanza	Nkhatabay	Nkhotakota	Phalombe	Salima	Zomba
Population	13,066,320	616,065	525,429	94,476	213,779	301,868	313,227	340,327	670,533
Region		Central	Southern	Southern	Northern	Central	Southern	Central	Southern
Land area (km^2)	94,276	7.878	2,056	826	4,071	4,259	1,394	2,196	2,580
Population	139	616,085	525,429	94,476	213,779	301,868	313,227	340,327	670,533
N of health centers **	328	10	17	10	12	9	9	14	13
Under-5 mortality rate	122	132	107	137	81	118	161	144	138
Neonatal mortality rate	33	30	39	41	21	22	40	34	48
Infant mortality rate	72	80	77	78	58	59	104	75	85
Total fertility rate	6.3	6.1	4.5	6.0	4.5	6.2	6.9	7.1	5.5
Under-5 stunting (2SD)	0.46	0.469	42.8	50.6	37.1	44.0	0.468	37.6	51.5
Under-5 wasting (2SD)	0.035	0.019	3.1	1.9	6.4	3.6	0.041	3.1	2.5
Proportion of children with diarrhea treated with and ORS	0.55	0.445	69.0	67.5	69.3	54.6	0.608	53.5	65.7
Proportion of children with fever treated with an antimalarial	0.211	0.139	36.2	23.4	28.8	29.7	0,207	22.8	31.2
Proportion of children sleeping under an ITN	0.247	0.168	22.2	20.0	15.6	41.5	0.214	22.8	26.4
Proportion of children with suspected pneumonia treated with an antibiotic	0.295	0.126	(31.0)	39.6	*	43.7	0.089	50.3	(47.7)

(Figures in parentheses are unweighted; * indicates fewer and 25 unweighted cases); ** (Data from MoH website varies from partner information)

Sources: http://www.childinfo.org/files/MICS3_Malawi_FinalReport_2006_eng.pdf; http://www.state.gov/r/pa/ei/bgn/7231.htm; http://www.statoids.com/umw.html; http://unstats.un.org/unsd/demographic/sources/census/2010_PHC/Malawi/Malawi_Report.pdf; http://pdf.usaid.gov/pdf_docs/PNADR587.pdf

Table 3. HSAs Trained in CCM as of APRIL 15 2011

District	n Village Clinics	n Hard-to-reach Areas	Proportion of the Hard-to-reach with a Village Clinic (%)	n HSAs Trained in CCM	HSAs in Hard-to-reach Areas Trained in CCM	% of HSAs Trained in CCM Compared to Number of Hard- to-reach Areas
KASUNGU	105	198	53	120	120	60.61
SALIMA	51	90	57	52	52	57.78
NSANJE	71	80	89	111	111	138.75
BALAKA	84	104	81	104	104	100.00
ZOMBA	70	136	51	298	70	51.47
MANGOCHI	60	152	39	62	62	40.79
PHALOMBE	72	92	78	84	84	91.30
CHIKWAWA	65	78	83	65	65	83.33
MZIMBA (north)	107	125	86	107	107	85.60
MZIMBA (south)	85	281	30	78	85	30.25
KARONGA	105	120	88	105	105	87.50
NKHATABAY	60	60	100	60	50	83.33
RUMPHI	19	50	38	46	46	92.00
CHITIPA	46	60	77	60	60	100.00
LIKOMA	5	5	100	11	5	100.00
NTCHEU	97	165	59	102	102	61.82
DEDZA	64	120	53	67	67	55.83
LILONGWE	116	136	85	114	114	83.82
NKHOTAKOTA	118	134	88	121	121	90.30
NTCHISI	99	99	100	99	99	100.00
DOWA	163	249	65	232	232	93.17
MCHINJI	121	142	85	125	125	88.03

CHIRADZULU	45	50	90	50	50	100.00
MWANZA	45	52	87	55	41	78.85
NENO	40	48	83	41	41	85.42
BLANTYRE	101	99	102	101	101	102.02
MACHINGA	23	90	26	160	73	81.11
MULANJE	87	230	38	94	94	40.87
THYOLO	19	205	9	270	138	67.32
TOTAL	**2143**	**3450**	62	**2994**	**2524**	73.16

Source: IMCI Unit Malawi MOH

Table 4. N of Cases Seen in Village Clinics (Jan 2010 – March 2011)

Syndrome	Cases		Referrals		Deaths	
	2-11 months	12-59 months	2-11 months	12-59 months	2-11 months	12-59 months
Malaria	107,950	342,764	12,435	29,334	34	53
Diarrhea	37,422	62,351	2,473	4,057	3	5
Pneumonia	75,683	207,395	4,603	6,896	13	11
Conjunctivitis	7,689	15,105	2,373	5,236	0	0
Malnutrition			1,123	2,844	6	8
Anemia			975	2,241	8	6
Other			6,910	12,941	2	5
N of clinics reporting				8,839		
N of clinics in districts				13,258		
Total new cases seen				**883,393**		
Total deaths				**154**		

Source: IMCI Unit

Table 5. Primary Quality of Care Indicators: Quality of Care Assessment in Mulanje District – Preliminary Findings.

Indicators		SC Results (41 sick children)		JHU result (382 sick children)	
		#	%	%	95% CI
Assessment					
A1	Proportion of children checked for presence of cough, diarrhea and fever (n=41)	39	95	77	(72 – 82 %)
A2	Proportion of children with cough assessed for the presence of fast breathing through counting of respiratory rates (n=26)	24	92	71	(63 – 79%)
A3	Proportion of sick children assessed for 3 general danger signs (n=41)	27	66	56	(50 – 63%)
A4	Proportion of sick children assessed for 4 physical danger signs (n=41)	23	56%	37%	(30-45%)
Classification					
C1	Proportion of children whose classifications given by HSA match all the classifications given by IMCI-trained clinician/evaluator (n = 41)	16	39	44	(38-49)
C2	Proportion of children whose classifications for common illness (pneumonia, fever and diarrhea) given by HSA match	35	85	68	(62 – 73%)

	those classifications given by IMCI-trained clinician/evaluator (n = 41)				
Treatment of common illnesses					
T1	Proportion of children with cough and fast breathing and/or fever correctly prescribed all medications (antibiotic and/or antimalarial) for their illness(es) (n=32)	20	63	63	(56 – 69%)
T2	Proportion of children with cough and fast breathing who are prescribed an antibiotic correctly (n = 10) *	7	70	51	(37 – 65%)
T3	Proportion of children with fever prescribed an antimalarial (ACT) correctly (n = 30)	19	63	79	(74 – 85%
Rational use					
RU1	Proportion of children without cough and fast breathing who leave the HSA without having received an antibiotic (n = 30)	25	85	73	(66 – 80%)
Counseling for child illness					
T5	Proportion of children who need an antibiotic, ORS and/or antimalarial who receive the correct first dose in the presence of an HSA (n = 35)	20	57	31	(24 – 38%)
IC1	Proportion of children prescribed ORS, antimalarial, and/or oral antibiotic who received dose, duration and frequency counseling messages about administering treatments (n = 35)	33	94	69	(62 – 76%)
IC3	Proportion of children who had their vaccination status checked (n = 38)	33	94	75	(61 – 74%)
IC4	Proportion of children with diarrhea whose caretakers are advised to give extra fluids and continue feeding (n = 9)	7	78	56	44 – 68%)
					** Indicators should be viewed with caution due to the very small sample size.*

Table 6. Proportion of iCCM-trained HSAs Reporting Supervision Among 79 HSAs in Mulanje District, October – November 2010 (mapping study)

	StC Mulanje (n = 79)	
	#	%
Routine supervision in last 3 months		
HSA received any iCCM supervision in community	61	77
HSA received more than one iCCM supervision visit	36	46
Actions taken during community supervision visit (n = 61)		
Reviewed treatment register and reports	58	95
Delivered supplies	35	57
Used a supervision checklist	59	97
Clinical supervision at HF in last 3 months		
HSA received at least one clinical mentoring session at HF	54	68
HSA received more than one clinical mentoring session at HF	40	51
Actions during mentoring session (n = 54)		
Observed HSA manage a sick child	14	25
Demonstrated how to care for a sick child	40	74

Table 7. Problems and Proposed Solutions to SMS Data Transmission

Problem	Proposed solutions(s)
Server not available (turned off, no electricity)	Dedicated server/24 hour generator
Data not received by server, but HSA record indicates "message sent"	Personnel at server end need to reply when message received; HSA needs to verify receipt and resend if necessary.
Misdirected messages (sent to another SMS server)	Solution to be proposed by the company; perhaps a dedicated server.
Air time expires	Need for better estimations; restriction of phone for personal use; creation of a "hotline" number that would operate in the event that air time was not available.
No network service	Government/MoH to take advocacy action with cell providers and request booster service in areas, for the health of the community.
Batteries discharged (some batteries switched at recharging centers for lesser quality products)	Solar rechargers purchased.
Manual entry error rate	Comparisons of paper and electronic data indicate a small data entry error rate; paper systems maintained as a back-up system during the learning curve period.

APPENDIX G. MODEL: AMENDMENT TO IMCI CCM REPORTING FORM

FORM 1A

IMCI VILLAGE CLINICS MONTHLY REPORT FORM FOR UNDER 5s

Village Clinic---------- Month----------

GVH---------- Year----------

TA---------- HAS Name----------

District---------- Date of reporting----------

Nearest Health Facility----------

Condition/Age	**2-35 Months**	**36-59 Months**	**Totals**	**2-35 Months**	**36-59 Months**	**2-35 Months**	**36-59 Months**	**Totals**	**2-35 Months**	**36-59 Months**	**Totals**			
Malaria/Fever														
Pneumonia/Fast Breathing														
Red Eye														
Malnutrition														
Aneamia/Pallor														
Other Conditions														

Total															
	New Cases By Gender														
	Males														
	Females														
Name of Drug/Supply/Stock Item															

Date	**Product Code**	**Drug**	**From/To**	**Opening Stock**	**Quantity Received**	**Quantity Dispensed**	**Losses/Adjustments**		**Loans to/From**		**Closing Stock**	**QTY Used last Month**	**Qty Used Month Before Last Month**	**Requisition Quantity**	**Remarks**
				A	B	C	D	E	In	Out	F	G	H	I=(C+G+H)-F	
		LA 6X1	CMS	20	30	20	0	0	0	0	30	10	10	10	3 Expired
		LA 6X2													
		ORS													
		Paracetamol													
		Cotrimoxaxole													
		Zinc													
		Eye Ointment													

APPENDIX H. REFERENCES

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