Assessment of Community Supplies and Logistics Management System

UNICEF, Ghana

Draft Final Report

Volume 1 of 5

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Acronyms

ACTs	Artemisinine-based Combination Therapies
ADR	Adverse Drug Reaction
APT	Analysis and Planning Tool
ARI	Acute Respiratory Infection
AS-AQ	Artesunate-Amodiaquine
BCC	Behaviour Change Communication
BMC	Budget Management Centre
CBAs	Community Based Agents
CCM	Community Case Management
CDD	Community Drug Distributors
CHC	Community Health Compound
CHN	Community Health Nurse
CHOs	Community Health Officers
CHPS	Community-based Health Planning and Service
CHW	Community Health Worker
C-IMCI	Community Integrated Management of Childhood Illness
CMS	Central Medical Stores
DDHS	District Director Health Services
DDPH	Deputy Director Public Health
DFID	Department for International Development
DHA	District Health Authority
DHMT	District Health Management Team
DMHIS	District Mutual Health Insurance Scheme
DMS	District Medical Stores
DTC	Drug and Therapeutics Committee
EML	Essentials Medicines List
FDB	Food and Drug Board
GDP	Good Distribution Practices
GHS	Ghana Health Service

GMP	Good Manufacturing Practices
GPRS	Ghana Poverty Reduction Strategy
HBC	Home Based Care
H/C	Health Centre
HEWs	Health Extension Workers
HIRD	High Impact Rapid Delivery
HMIS	Health Management Information System
HMM	Home Management of Malaria
ICT	Information and Communication Technology
IMCI	Integrated Management of Childhood Illness
IMNCI	Integrated Management of Neonatal and Childhood Illness
KNUST	Kwame Nkrumah University of Science and Technology
LCS	Licensed Chemical Seller
LMIS	Logistics Management Information System
LMS	Logistics Management System
MOH	Ministry of Health
NHIA	National Health Insurance Authority
NHIS	National Health Insurance Scheme
NQCL	National Quality Control Laboratory
ORS	Oral Rehydration Salts
ORT	Oral Rehydration Therapy
OTC	Over-the-counter
PHN	Public Health Nurse
POW	Plan of Work
RBM	Roll Back Malaria
RDF	Revolving Drug Funds
RDHS	Regional Director of Health Services
RHA	Regional Health Administration
RMS	Regional Medical Stores
SDHT	Sub-District Health Team

SDHMT	Sub-District Health Management Team
SOPs	Standard Operating Procedures
STGs	Standard Treatment Guidelines
UNICEF	United Children's Fund
WHO	World Health Organization

Foreward

This report is presented in five volumes as follows:

Volume 1: Summary Report

Volume 2: Central Region Report

Volume 3: Northern Region Report

Volume 4: Upper East Region Report

Volume 5: Upper West Region Report

EXECUTIVE SUMMARY

Since the official adoption of the “High Impact Rapid Delivery“ (HIRD) approach in Ghana at the end of 2004, UNICEF has been working closely with the government and the Kwame Nkrumah University of Science and Technology (KNUST) to facilitate the expansion of the community health worker (CHW) network in four focus regions of the country towards the achievement of MDGs 4 and 5. The Under 5 Child Health Policy 2007-2015 recognizes the role trained community-based health providers can play to improve access to interventions. However, effective implementation of this strategy depends on availability of essential health commodities for management of malaria, diarrhoea and pneumonia.

Among the challenges faced by the CHWs is the erratic supply of essential medicines, which poses a serious threat to the continued viability of the community case management program. The challenges result not only in stock-outs but also wastage due to expiry. Recent developments within the health sector, such as the National Health Insurance Scheme, have also affected the supply system. Consequently, an assessment of the logistics system (at the regional, district and sub-district levels) supporting community based service provision with a view to addressing gaps and improving commodity supply was recommended.

The assessment was conducted in three stages – the inception phase, data collection from field visits, and synthesis and reporting of conclusions and recommendations. A number of challenges resulted in some of the targeted visits and data collection not being achieved. However, similar findings from data analysis across the four regions, as well as triangulation of data, lend confidence to the validity and representative nature of the findings.

The three major contributing factors to the bottlenecks in the flow of supplies for the C-IMCI programme were delays in CBA refresher training, poor communication and monitoring by the District Health Authorities (DHAs), and programme implementation delays, in particular issues related to pricing policy, slow decision making at the regional level, and lack of or delayed notification by the region to the districts for supplies to be picked up. Based on the findings, it is concluded that the level of priority and urgency that should be given to the programme, in light of its significance to the achievement of the MDGs 4 and 5 by Ghana, is lacking at the leadership level of most districts and sub-districts visited. Inventory management deficiencies and general C-IMCI management challenges also contributed to the bottlenecks.

It is recommended that where contributing factors are of a one-off nature, both UNICEF and the Ghana Health Service seek to take a ‘lessons learnt’ approach to guide future programme implementations and scale-up initiatives. Some of these lessons are outlined, as well as recommendations to address those contributing factors that will continue to have a negative impact on the availability of supplies if not addressed. More detailed recommendations are outlined in the four regional reports that comprise volumes 2 – 5 of the assessment report.

1. Introduction

Since the official adoption of the "High Impact Rapid Delivery" (HIRD) approach in Ghana at the end of 2004, UNICEF has been working closely with government and the Kwame Nkrumah University of Science and Technology (KNUST) to facilitate the expansion of the community health worker (CHW) network in four focus regions of the country towards the achievement of MDGs 4 and 5. The Ghana Health Service (GHS) recognizes the CHW based model as integral to its service delivery if it is to decrease morbidity and mortality among the under-5 age group from malaria, diarrhoea and acute respiratory infection (ARI). Consequently, among the interventions delivered by the CHWs is administering medicines for the treatment of uncomplicated malaria, diarrhoea and ARI in children.

The Under 5 Child Health Policy 2007-2015 recognizes the role trained community-based health providers can play to improve access to interventions. However, effective implementation of this strategy depends on availability of essential health commodities for management of malaria, diarrhoea and pneumonia.

1.1 Problem Statement

Among the challenges faced by the CHWs is the erratic supply of essential medicines, which poses a serious threat to the continued viability of the community case management program, since CHWs could easily lose the confidence of their clients due to prolonged stock out of medicines and commodities. Inherent weaknesses within the community logistics supply chain continue to impede the attainment of the expected results. Issues include lack of consistency as to who and how various commodities are procured, inadequate capacity to forecast requirements, poor storage and distribution. These challenges have persisted despite significant investments made over the last three years by government and UNICEF to provide adequate and suitable transportation, and financial resources to boost field mobility and monitoring by front line supervisors. This results not only in stock-outs but also wastage due to expiry. Recent developments within the health sector, such as the National Health Insurance Scheme, have also affected the supply system. Consequently, a review of the logistics system (at the regional, district and sub-district levels) supporting community based service provision with a view to address gaps and improve commodity supply is recommended.

1.2 Objectives and Activities

The overall objective of this assessment is to review the community health commodity supply system in the regions supported by UNICEF and make recommendations to address gaps or weaknesses found. The results of the review will be used to minimize waste and improve the overall performance of the system and ensure that intended recipients access required treatment.

The specific activities pursued to achieve the overall objective are as follows:

- Review the system for procuring commodities for community based agents in the four UNICEF supported regions (Northern, Upper East, Upper West and Central), including identifying bottlenecks in:
    - estimating the quantities needed,
    - sources and methods by which the commodities are obtained;

- Review the system for distribution and storage of commodities, including:
  - system for receiving supplies ("push" or "pull") and the responsibilities of various levels of the GHS;
  - procedures for monitoring stock of medicines and supplies;
  - procedures for maintaining quality of products.

- Review of record keeping system and tools.

The above activities are to be done for each level (regional, district and sub-district or CHPS zone).

- Assess availability of standard operating procedures (SOPs) manuals at the regional, district and sub-district level.

- Review any available SOPs manuals for health commodities management.

- Work with the regional and district GHS personnel to develop costed plans for community logistics strengthening.

2. Methodology

The assessment was conducted through three stages:

- Stage 1: The inception phase
- Stage 2: Data collection from Field Visits
- Stage 3: Synthesis and reporting of conclusions & recommendations

Stage 1: The Inception Phase

Analysis of available documentation

The main reference documents reviewed by the Consultant included existing policies, legislation, guidelines, SOPs and training material for health commodities management, especially for implementation of community case management. A list of the documents are outlined in ***Appendix 1***.

National Level Interviews

Key managers in the Ministry of Health (MOH) and GHS Headquarters involved in procurement and supply chain management were interviewed. Key persons at UNICEF, Ghana Office and the UNICEF Tamale sub-office were interviewed to identify the strengths and weaknesses of the supplies and logistics system for health commodities and planned interventions to address the challenges. Policy and guideline documentation were also accessed from these key national level persons. A list of the interviewees can be found in ***Appendix 2***.

Development of Assessment Tools

Assessment Tools to be utilized during field visits for collection of primary data relating to health commodities management at the regional, district, sub-district/CHPS compound and CBA levels were developed ***(Appendix 3)***. Based on the review of policy and legal framework documentation, as well as strategic plans, the intentions and expectations of the

community case management approach to treatment of malaria, ARI and diarrhoea in children were determined. These intentions and expectations, together with international standards relating to procurement and supply chain management of pharmaceuticals, were utilized to conduct an analysis of the data collected to determine what is actually happening in the field against what is desired and required.

Stage 2: Field Phase

This phase involved the collection of data in accordance with the Assessment Tools by way of interviews, observation of storage facilities, and review of relevant SOP manuals, record-keeping systems and reports.

Interviews

The Consultant solicited opinions, feedback and information from:

- Relevant managers in the four UNICEF supported regions and selected districts.
- C-IMCI focal persons at the district and sub-district levels.
- Supervisors of the Community Based Agents (CBAs) and CBAs on their supplies and logistics management practices.

Field Visits

The field phase of the study was planned to include visits to:

- Regional and district stores to observe storage conditions, warehouse management practices and logistics support systems.
- Sub-districts, Community-based Health Planning and Service (CHPS) compounds and selected CBAs to determine how supplies are handled, and the nature of support and supervision systems for CBAs.
- View record keeping and reporting systems and collect historical data on flow of supplies to the communities visited.

For each region the following visits were planned:

- Regional Health Management Team (RHMT)
  - Regional Director of Health Service (RDHS) & Regional C-IMCI Coordinator
- Regional Medical Stores (RMS)
- 2 Districts
  - District Director of Health Service (DDHS), District C-IMCI Coordinator, District Medical Stores (DMS)
- 4 Sub-Districts/CHPS zones
- 8 CBA Supervisors
- 8 CBAs

Stage 3: Synthesis and reporting of conclusions & recommendations

The Consultant sought to utilize a participatory approach to the development of strategies to address any gaps that might be found during the assessment. Consequently, the stakeholder consensus meetings were used, not only to present the assessment findings, but to gain input towards the development of strategies to be implemented in the regions. The premise for this approach is the greater the participation of stakeholders in the decision making process the greater their acceptance of the proposed recommendations. This approach will also contribute to a higher probability of successful implementation of the action plans arising from this assignment.

The steps to be initiated during this phase were therefore as follows:

- Summary findings from the assessment were shared with the UNICEF Ghana Office prior to facilitation of the stakeholder consensus meetings.
- Facilitation of regional stakeholder meetings.
- Preparation and submission of reports on the stakeholder meetings, with preliminary recommendations together with a PowerPoint presentation comprising no more than 25 slides.
- Draft Report with costed Action Plans for each region submitted in accordance with timeline in the agreed Work Plan for review by UNICEF and further input from the RDHS for the relevant regions.
- Submission of the Final Report for the assessment with costed Action Plans.

The Supply Chain Management System Analysis and Planning Tool[1] (APT), a framework for organizing deliberations and supply chain design elements, facilitated analysis of the health commodities supply system. This reference model underscores the importance of viewing the supply chain as a system. As such, each component is interrelated to and interdependent on all the other components. Hence, supply chain excellence requires that each of these components work in concert. In addition, an improvement or adjustment in one aspect of the supply chain will have implications for the other components of the chain and these must be borne in mind if the desired outcomes are to be realized. Any supply chain strategy must consider these interactions and the associated trade-offs that exist among supply chain design alternatives.

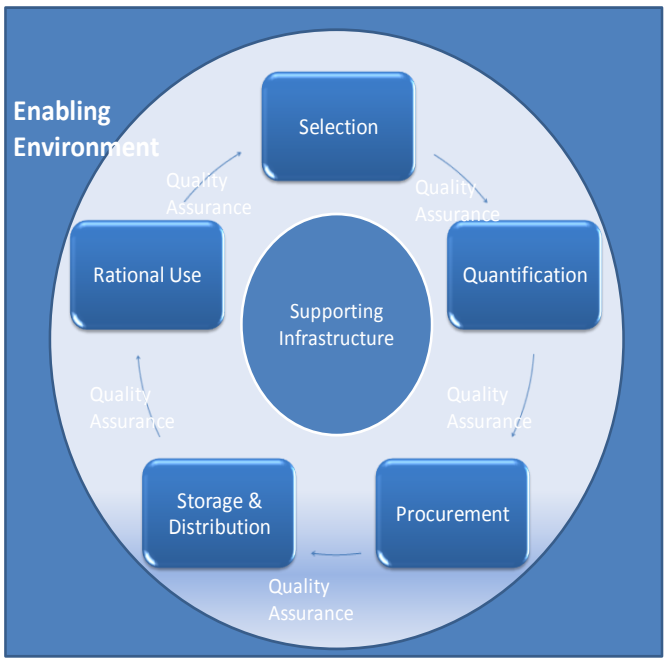
The APT framework also has relevance in recognizing that the supply chain at one level in a system feeds into the supply chain at the next level of the supply system. As a consequence, although the focus of the outcomes from the assessment is the impact that recommended strategies will have on the health commodities supply system at the community level this cannot be divorced from the rest of the supply system. In other words, the supply chain, though operating at different levels (national, regional, district, sub-district and community), must be seen as a continuous, interlocking system and problems at one level will have implications for levels lower down in the system. Thus, a layered approach to the application of the APT framework is utilized. For purposes of this assessment, less emphasis was placed on the selection and rational use components, in keeping with the terms of reference for the assessment.

The layout of the subsequent sections of the report is in accordance with the APT framework. This begins with a discussion of the existing supply chain enabling environment.

[1] The Analysis and Planning Tool (APT) is a process reference model developed by the USAID Supply Chain Management System Project. The APT enables users to address, improve, and communicate supply chain management practices within and between parties involved in an extended enterprise.

The remaining sections of the report are: assessment findings for each supply chain component at the national level and the different levels within each of the four regions visited; the main bottlenecks and recommendations for addressing these; the regional Action Plans, developed in part during the stakeholder meetings; and summary comments and anticipated next steps in the strengthening of the community health commodities supplies and logistics management system.

The SCMS Analysis & Planning Tool (APT)



Enabling Environment - Policies, legal frameworks, SOPs, training material; political, economic, and social dynamics that influence the supply chain

Selection – Activities related to the review of health challenges and treatments and decisions concerning appropriate proscribing of drugs and dosage forms

Quantification – Activities related to the estimation of the quantities of drugs needed

Procurement – Activities related to the acquisition of supplies through purchase, donation or manufacture

Storage & Distribution – Activities related to the holding and movement of materials

Rational Use – Activities that encourage the dispensing of medications appropriate to clinical needs, in doses that meet patient requirements

Supporting Infrastructure – Systems that support supply chain management (e.g. information management, performance management systems)

Quality Assurance –Activities intended to ensure that products meet quality specifications

3. Assessment of LMS for Health Commodities

3.1 The Enabling Environment

The enabling environment for the Ghana health commodities supply chain involves elements of the policy and legal framework, guidelines, strategic plans, standard operating procedures, and training material. Prior to discussion of these elements, an overview of the economic and social dynamics that influence the supply chain would lend valuable insight.

3.1.1 Social and Economic Dynamics

The National Health Policy 2007 noted that, at the current growth rate, Ghana's population will increase by over 50% of the 2000 levels to about 30 million by 2015. Similarly, the urban population will increase to about 51.1% of the total population in 2015. The combined effect of this relatively high growth rate and the youthful and aging population will be to increase the pressure on social services such as health services.

Demographic, lifestyle and environmental factors interact to present high levels of morbidity and mortality in the country. Ghana's disease profile is characterized by high levels of communicable and pregnancy-related diseases. The main causes of morbidity and mortality in children under the age of five years are preventable. They include malaria, pneumonia, diarrhoea and malnutrition. Despite the 28 per cent decline in the under-5 mortality rate between 2003 and 2008 to 80/1000 live births, it is acknowledged that much remains to be

done. With just a mere four years to 2015, there is need for accelerated reduction in under-five mortality if Ghana is to remain on course to achieve its infant mortality rate goal of 40/1000 live births by 2015. Episodes of malaria, pneumonia and diarrhoea can occur concurrently and it has been shown that the mortality rate of children sick with both pneumonia and diarrhoea or malaria is greater than that of either illness alone. An integrated approach for management of malaria, pneumonia, and diarrhoea is thus key in reducing deaths in children under five.

Considerable poverty still exists in some areas and pockets in Ghana. For instance, eight out of ten persons in the three northern regions (North, Upper East, Upper West) are poor and pockets of extreme poverty exist in the regions and in urban areas.[2] Poverty is a major cause of under-nutrition and ill health. It exacerbates the spread of diseases and reduces productivity. It undercuts the effectiveness of health services and slows population control. Indeed, health suffers most in situations where economies have been unable to secure adequate income levels for all, where social systems have collapsed and where environmental resources have been poorly managed. Access to health services is inadequate in deprived and rural areas and the poor suffer from the catastrophic cost of ill health both from the cost of accessing services and from productive days lost.[3]

The Ghana Poverty Reduction Strategy (GPRS) and 5-Year POW objectives of bridging health inequality have led to investments in the CHPS programme and the construction and equipping of health facilities in deprived regions. Despite the considerable investments in the provision of health facilities however, large numbers of the population, particularly those in rural areas and deprived communities still lack access to quality health services. Currently, access to allopathic health services is estimated to be about 35% of the population. The remaining 65% of the population use traditional and alternative medical care. Yet this component of health services is not adequately regulated or fully integrated into the existing health service delivery system. The factors responsible for the poor geographic access include inadequate investments in health facilities relative to need, hard-to-reach communities, sub-optimal spatial distribution of health facilities and lack of communication equipment. Other barriers to health services are financial, organization of service delivery and broad socio-cultural barriers, including gender.[4]

Health System

Ghana has a three-tiered healthcare system: primary, secondary and tertiary. The primary level consists of CBAs, community health compound (CHC-CHPS) and sub-district health teams (SDHTs). The sub-district level, including the health centre and CHPS compound, is responsible for providing clinical, public health and maternity services to the catchment population using a combination of clinic-based, regular outreach and mass campaigns in close collaboration with communities, community institutions and village based health workers. The secondary level, consisting of the district hospitals, serves as the first referral point for the primary level. The tertiary level consists of regional hospitals, which serve as the secondary point of referral. In addition, there are teaching hospitals, which form the apex of specialized care in the country. Procurement and management of health supplies occurs at all levels of the healthcare system. For more detailed information on the Health System reference can be made to two recent studies – (1) *Assessment of Medicines Procurement & Supply Management Systems in the Public Health Sector: A Country Report*, 2009, MOH in

[2] National Health Policy, September 2007, PPME, MOH, Ghana

[3] Ibid.

[4] Ibid.

collaboration with DFID & WHO and (2) *Ghana Health Commodities Supply & Security Systems Review: Final Report,* April 2010, University of Ghana Business School.

3.1.2. Policy and Legal Framework

This section will provide only the relevant policy and legal framework as relates to community case management of children with malaria, diarrhoea and pneumonia as well as procurement and logistics management of the related health commodities. Relevant guidelines, standard operating procedures, strategic plans and training material are also discussed. Appendix 1 contains a catalogue of these and other existing documents should readers require additional information.

Community Case Management of Childhood Illness

The Under 5 Child Health Policy 2007-2015 builds on the previous policy developed in 1999 and complements the Health Sector Programme of Work 2007-2011. Amongst the guiding principles of the policy are the regular review of the minimum essential package of medicines for the management of sick neonates and children at all levels of the health system and the collaborative implementation of child health activities to include community-based volunteers. The minimum package of neonatal and child medicines is currently incorporated into the National Drug Policy. Reviews or updates to the Essential Medicines List (EML) are to be coordinated with the National Drug Programme. The next section will provide more detailed discussion of the EML.

The Integrated Management of Neonates and Childhood Illness (IMNCI) is the primary clinical approach for the management of childhood illness at first level facilities and in communities. IMNCI guidelines are subject to regular review and update. Clinical IMNCI guidelines are adapted for use by community-based providers of care to sick children. The National IMCI Guidelines 2008 is a reference document for details. CHOs and community volunteers are to be trained to provide community-based IMNCI. Interventions to be delivered to infants and children include treatment with Artemisinine-based Combination Therapies (ACTs) for malaria, Oral Rehydration Therapy (ORT) and Zinc for diarrhoea, and oral Amoxicillin for pneumonia.

Malaria

The Home Based Care (HBC) plan for Ghana, which includes Home Management of Malaria (HMM), together with ARI and diarrhoea, is a key component of both the National Malaria Strategic Plan for 2008-2015 and IMNCI and is fully endorsed by WHO and Rolling Back Malaria (RBM). In Ghana, HBC is defined as prevention, early case detection and appropriate and prompt treatment of malaria, ARI and diarrhoea in the community together with other malaria control interventions.[5]. The HMM strategy has been identified as both feasible and effective in achieving this target. This strategy ensures that caregivers and parents recognize symptoms and signs of malaria and respond appropriately and promptly within twenty-four hours of onset by seeking treatment from trained CBAs.

Case Management has been, and continues to be, one of the main strategies for the control of malaria in Ghana. Treatment is generally presumptive and cases of fever are first treated as malaria with the recommended anti-malaria drug. However, the effectiveness of this intervention is highly dependent on anti-malarials, which should not only be safe and effective, but also available, affordable and acceptable to the population at risk. The rational

[5] Home Management of Malaria, ARI and Diarrhoea in Ghana: Implementation Guidelines, September 2010, p. 8.

use of an effective anti-malarial not only reduces the risk of severe disease and death and shortens the duration of the illness, but also contributes to slowing down the development of the parasite's resistance.

ACTs, as per the malaria treatment guidelines, are to be used for treatment of uncomplicated malaria at all levels, including the community. If treatment failure is confirmed, oral Quinine is to be used. According to the Anti-Malaria Drug Policy 2009, Ghana initiated the process of using ACTs in 2002 following WHO recommendations for all countries experiencing resistance to mono-therapies in the treatment of falciparum malaria. Based on evidence of efficacy, compliance, side effects, cost effectiveness, impact on local industry and key demographic variables such as the appropriateness for treating malaria in children under five years and in pregnancy, Artesunate-Amodiaquine (AS-AQ) was selected as the first line drug for the treatment of uncomplicated malaria. However, the implementation process was faced with challenges such as adverse drug reactions, lack of other treatment options and safety concerns. It therefore became necessary to review the drug policy and address all identified concerns. A team commissioned by the Minister of Health was tasked to review existing policy guidelines and select additional ACT drugs and dosage forms to cater for those who, for one reason or another, cannot tolerate AS-AQ. Two additional ACTs, namely, Artemether-Lumefantrine and Dihydroartemisinin/Piperaquine were selected. Nevertheless, AS-AQ still remains the preferred ACT for the treatment of uncomplicated malaria. Standards and guidelines for malaria control, including roles and responsibilities of staff, treatment protocols, and monitoring and evaluation are described in detail in the National Malaria Policy.

Diarrhoea

Oral rehydration therapy (ORT) is to be used for the management of acute and persistent diarrhoea. ORT can include oral rehydration salts (ORS) and/or recommended home fluids (RHF). Low osmolarity ORS is to be used for the management of acute and persistent diarrhoea. ORS is to be packaged in sachets for preparation of 600ml solution. Severely malnourished children with diarrhoea are to be given Resomal instead of standard formulation ORS. Zinc (as acetate, gluconate or sulphate) is to be administered in addition to the ORT in all cases of acute and persistent diarrhoea. The recommended dosage schedule for zinc is:

Children under 6 months:	10mg of elemental zinc per day for 10-14 days
Children 6 - 59 months:	20 mg of elemental zinc per day for 10-14 days

Zinc is to be classified as a class C drug for purchase over the counter. Community-based management of diarrhoea is to be encouraged. Community-based workers who have received training in standard case-management of diarrhoea can give ORT and Zinc to treat diarrhoea. Clinical standards and guidelines for the management of diarrhoea are described in detail in the National IMCI Guidelines.

Acute Respiratory Infection (ARI)

Oral Amoxicillin is to be the first treatment for non-severe pneumonia in children at all levels. Antimicrobial resistance of pneumonia pathogens to Amoxicillin is to be routinely monitored.

Community-Based Care Concept

Early provision of effective medicines to children with suspected malaria, diarrhoea and pneumonia is to be the focus of the strategy to reduce morbidity and mortality. This is to be done by improving early recognition of illness and care seeking from an appropriate provider. An appropriate provider is any provider who has been trained in IMNCI case-management for malaria, diarrhoea and pneumonia, including Community Health Officers (CHOs) and appropriately trained community volunteers who are referred to as community-based agents (CBAs). Community-based management of these illnesses aims to complement facility

based management. CBAs who have received training in standard case-management of these illnesses are allowed to give the appropriate medicines as stated under the Under 5 Child Health Policy. Medicines approved for use by trained CBAs are to be consistent with the IMNCI protocol and CHPS guidelines.

Supervision and Support of CBAs

The Anti-Malaria Drug Policy 2009 stipulates that the Ministry of Health and other stakeholders involved in home management of malaria in the context of the High Impact Rapid Delivery (HIPD) Approach and C-IMCI should ensure that CBAs involved in home management of malaria are adequately supported and supervised. Expanding community activities is seen as one of the strategies to be used to take pressure off facilities and health workers, thereby improving the productivity of existing staff. However, community health workers are to be effectively supported and supervised. IMNCI trained staff should be followed up at their facilities within 6 weeks of completing training. The direct supervisors of the CBAs are the Community Health Officers, who are usually nurses, assigned to CHPS compounds, the first tier of the health system in remote communities. In the absence of these compounds, the responsibility falls on the Public Health Nurse of the sub-district health management team (SDHMT). These supervisors are also to ensure a regular supply of the essential medicines, like ORS and ACTs, to the CBAs, either during the CBA's monthly visit to the SDHMT, or via supplies carried along by supervisors during the course of outreach activities.

C-IMCI and NHIS

In keeping with the Under 5 Child Health Policy, community health providers trained in case-management should be recognized as prescribers under the NHIS to ensure that communities have access to treatment. However, reports are that this had not yet been implemented at the time of this assessment.

Essential Medicines

The National Drug Policy 2004 forms a basis for planning and implementation, monitoring and evaluation of interventions in the pharmaceutical sector. The overall goal of the policy is to improve and sustain the health of the population of Ghana by ensuring the rational use and access to safe, effective, good quality and affordable pharmaceutical products. One of the key objectives is to improve the system of supply and management of drugs by rationalizing the procurement system and improving the drug distribution and management systems at all levels of health care delivery.

The Food and Drugs Law 1992, the Food and Drugs (Amendment) Act 1996, and the Pharmacy Act 1994 provide the legal framework for control of pharmaceutical activities in Ghana. The Essential Medicines List (EML) (6th edition) 2010 and the Standard Treatment Guidelines (STGs) 2010 guide the medicines utilized in the public sector. The EML defines essential medicines as those that satisfy the priority health care needs of the population. They are selected with due regard to public health relevance, evidence on efficacy, safety and comparative cost-effectiveness. The criteria used to guide the selection of medicines were dependent on those used for the selection of medicines for the World Health Organisation Model List of Essential Medicines. The EML stipulates guidelines proposed to confine the circulation of essential drugs to specific and appropriate settings and levels of health care delivery. For this, drugs have been grouped into categories with Level A designating those that are allowed for use at the community level.

At the time of the drafting of the Anti-Malaria Drug Policy 2009, ACTs were classified as 'prescription only' drugs. This meant that they had to be prescribed by a clinician and dispensed by a pharmacist. However, the policy stipulates that the recommended ACTs be

re-classified as Over-the-Counter (OTC) medicines permissible to be dispensed at all levels to ensure ready availability to the general public.

Quantification

Ghana operates a decentralized health system with varying scope of responsibility for logistics management at the different levels – national, regional, district and sub-district health facility/CHPS level – as outlined in Table 1.

Under the National Drug Policy 2004, all major health facilities should have a Drug and Therapeutics Committee (DTC) with responsibility to accurately estimate the pharmaceutical requirements for the hospital and periphery health units served by the hospital. The DTC is also to institute measures to be employed in case of drug shortage.

The implementation guidelines for home management of malaria, ARI and diarrhoea states that to obtain the required quantity of drugs each CBA would need for any given length of time, morbidity levels for malaria, ARI and diarrhoea in the districts should be used.

Table 1: Scope of Logistics Management within the Ghana Health System

Health System Level	Scope of Logistics Management
National Level	Sourcing for funds, forecasting, quantification and procurement planning including selection of suppliers for total national needs and for longer periods – 1 year or more.
Regional Level	Similar to national but plans for only the regional needs and for shorter period of 6 months or less.
District Level	Plans for district/hospital requirements for shorter periods (3 months).
Sub-District Level/CHPS Level	Plan for smaller quantities, shorter periods and more frequently according to the "disease seasons" and patterns. Includes the needs of CBAs in consultation with them.
CBA Level	Plan together with supervisor on needs for relatively shorter periods (2 weeks) for only a selected list of items specific for conditions trained to manage.

Source: Home Management of Malaria, ARI and Diarrhoea in Ghana: Implementation Guidelines, June 2010.

Procurement

The Directorate of Procurement and Supplies in the Ministry of Health is responsible for formulating policies on procurement and supply chain. It coordinates central procurement and supervises the management of the Central Medical Stores (CMS). It is also responsible for monitoring and evaluation of utilization of supplies by GHS, Teaching Hospitals and Agencies contracted by the Ministry to ensure efficiency.

Ghana operates a decentralized drug management system. Local health facilities have autonomy in managing their revolving drug funds (RDF). This increases local management's discretion over drug procurement and pricing, within clear guidelines. Central procurement is advocated, with public facilities being required to buy first from the public sector. However, if

the CMS, RMS or DMS cannot supply, health facilities are allowed to purchase from the private sector in accordance with guidelines and are allowed to mark up at a fixed 10% margin. There have, however, been reports of non-compliance with these guidelines within the public sector. The trend has been increased procurement from the private sector and margins in excess of the prescribed 10% margin. The Policy notes that greater regulation and monitoring is required.

Initially, there was agreement that UNICEF would procure ACTs, Amoxicillin suspension and Zinc tablets directly for the Community Case Management (CCM) program to achieve best prices through economies of scale, while the GHS would provide CBAs with ORS supplies.

The National Drug Policy 2004 states that drugs are to be procured in a manner to ensure that the nation's limited resources are utilized with care to economy, transparency, accountability and efficiency. Appropriate methods are to be adopted to procure best priced and quality medicines in accordance with the Procurement Act 2003.

The Public Procurement Act, 2003 (Act 663) was enacted in 2003 as an Act of Parliament to provide for public procurement; establish the Public Procurement Board; make administrative and institutional arrangements for procurement; stipulate tendering procedures and to provide for the purposes connected with these functions. The Act harmonizes the application of procurement related rules with international conventions and treaties. It aims to foster competition, efficiency, transparency and accountability in the public procurement process. The Act applies to the procurement of goods, works and services financed in whole or in part from public funds. The responsibilities of a procurement entity are defined and each entity is to have a tender committee. The role of the tender committee is to ensure compliance with the Act and that sound judgements are made in procurement decisions and reference is made to the appropriate Tender Review Board for approval if the procurement is above the Committee's approval threshold. Thresholds for Procurement Methods are detailed in the table below.

Procurement Method/Advertisement	**Contract Value/Threshold**
International Competitive Tender	
a) Goods	Above GHC 15.0 Billion
b) Works	Above GHC 20.0 Billion
c) Technical Services	Above GHC 2.0 Billion

The Act outlines procurement rules, such as the preparation of a procurement plan by a procurement entity, the qualification of tenderers, which is spelt out in detail as well as pre-qualification proceedings. Other matters relate to decisions on prequalification; participation by suppliers, contractors and consultants and the record of procurement proceedings. A procurement entity may reject a tender, proposal or quotation at any time prior to acceptance on economic grounds.

Methods of procurement are stipulated in the Public Procurement Act. This may be by competitive tendering, by two stage tendering, restrictive tendering or single source tendering. Procedures for each type of tendering are stipulated. The Act also allows a procurement entity to make requests for quotations. The Act regulates tendering procedures. It is divided into three Sub-Parts: the invitation of tenders and applications to prequalify, the submission of tenders, and the evaluation and comparison of tenders. Provision is made for national competitive tendering and international competitive tendering. A procurement entity may grant a margin of preference for the benefit of work for local contractors.

Health Supplies and Logistics

As part of its National Health Policy 2007, the Ministry of Health has as one of its policy objectives capacity development for health delivery. The objective of this component is to strengthen the capacity of the health system by investing and mobilizing resources, allocating them equitably and ensuring their efficient utilization. Under this policy objective are policy measures to build capacity in the areas of human resources, health infrastructure, and health supplies and logistics. With regards to the latter, the MOH outlines the following:

- Promotion of local production of supplies and logistics including pharmaceuticals and traditional medicines for the national and regional/international markets;
- Strengthening and/or introducing systems for continuous monitoring and assurance of quality, efficacy and safety of medicines, including traditional medicines;
- Ensuring improved financing of essential drugs and logistics in the national budget, and ensuring that health service facilities have sufficient transport and ambulances;
- Orientation of health workers as needed in the national procurement laws and procedures to ensure full implementation of the law within the health sector;
- Re-engineering and modernization of systems for procurement, storage and distribution of supplies and logistics.

In accordance with the Anti-Malaria Drug Policy 2009, the Ministry of Health is to support the local pharmaceutical manufacturing industry to build capacity to meet internationally accepted requirements of Good Manufacturing Practices (GMP) in the production of ACTs. This will facilitate sustainability of this policy, especially the provision of facilities for conducting bioavailability and bioequivalence studies among others, so as to enhance the manufacture and supply of the ACTs to both the public and the private sectors. The Ministry of Health and other relevant agencies are to ensure the availability of all recommended anti-malarials for the treatment of uncomplicated and severe malaria. It was deemed essential for the MOH and its agencies to ensure access and availability of the recommended anti-malarials under the Anti-Malaria Drug Policy in all facilities to ensure smooth implementation of this policy. Sulphadoxine-pyrimethamine, reserved solely for use in Intermittent Preventive Treatment of malaria in pregnancy as prescribed under the Anti-Malaria Drug Policy 2009, is produced locally and is therefore readily available.

The National Drug Policy 2004 attributes improvement in medicines distribution to decentralization of the health service and the revolving drug fund (RDF) concept. It was noted also that the role of the Central Medical Stores (CMS) was not fully clarified. The need for a comprehensive distribution arrangement to move pharmaceutical products and other medical supplies from medical stores to service points to remove the major bottleneck to access of medicines was emphasized. The CMS Strategic Plan 2004-2009 meets the need to tackle the essential agenda for CMS – reviving the operations of CMS in a business-oriented setting. The focus is to set up the basic infrastructure for a sustainable, efficient, customer-focus, business-oriented agenda for CMS by prioritizing the identifiable areas that can be tackled to improve the operations of CMS. These areas are deemed essential to the overall developmental framework for CMS. Measurable indicators are included to enable review of progress in a consistent way. The areas that included in this initial plan dwell on availability, accessibility, efficiency, marketing, financial sustainability and computerization of CMS – areas considered tangible but at the same time flexible to coordinate. For CMS to make strides in the reforms sought some general pre-requisites were outlined including: the maintenance of government and donor funding; ready availability of technical support, particularly in the area of evaluation of systems, computerization and operational research; health sector reforms do not lead to increased bureaucracy; CMS being fully funded as a BMC with a contractual agreement and clear performance targets; clear directions and guidance continues to be forthcoming from headquarters; better job definitions and

conditions of services for key staff; and a systematic appraisal method with an appropriate reward system. At the time of the drafting of the strategic plan the following challenges associated with the CMS operations were noted as needing to be addressed:

- A liberal philosophy of allowing debt build up had resulted in major customers having age old debts that may have to be considered bad debts. The debt owed to CMS was believed to be in the 20 to 30 billion cedis bracket but there was recognition that data clean up was needed as there were inconsistencies in data capture at the outset when the initial inventory software was installed at CMS. To allow this debt to build up and freeze CMS' capital would put CMS at risk of insolvency.

- Problem of non-availability of supplies resulting in low service levels and drop in sales.

- CMS losing ground in the commodity business due to its traditional customers procuring a large percentage of health commodities outside the confines of CMS.

- Decentralized systems at all levels gave regions the autonomy to procure health services outside the prescribed sites. Market forces were already at play and the economic environment was having an obvious impact on CMS' ability to reach out to its nominal clients.

Based on these challenges, the CMS is under performing and the lower prices to be gained through economies of scale from bulk procurement are not being realized.

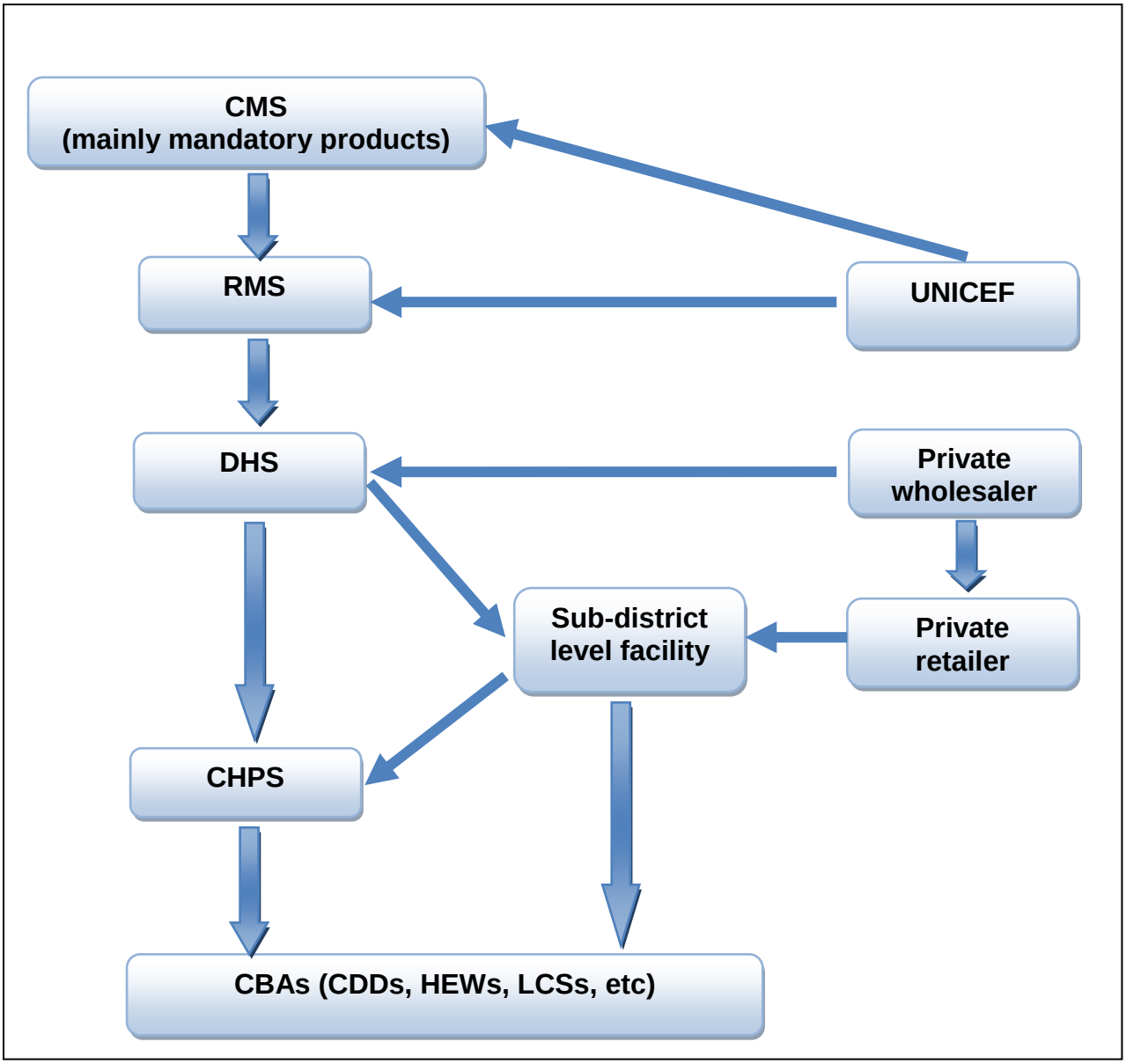
The Ministry of Health through its drug regulatory agencies, the main one being the Food and Drug Board, is to ensure regular maintenance of suitably constructed and equipped storage facilities at every level in public and private sectors. Regular monitoring should be carried out to check the quality of medicines at all levels to ensure that these are not deteriorating under prevailing storage conditions. All facilities (private pharmacies, shops and government dispensaries) storing and dispensing medicines are to maintain records on all medicines at the facility at all times. Disposal of medicines, the management of storage facilities, and distribution of medicines are to be in accordance with the Food and Drugs Act 1996.

Community Level

The Implementation Guidelines for Home Management of Malaria, ARI and Diarrhoea indicates that drugs required for treating malaria, ARI and diarrhoea are considered to be 'mandatory' products for every CBA and as such are to be distributed along the recognized distribution systems of the Ministry of Health; from the CMS through to the Regional Medical Stores (RMS) down to the CBAs (refer to Fig. 1). However, as at January 3, 2011, the Logistics Management of Public Sector Health Commodities in Ghana Standard Operating Procedures June 2010 are to be implemented nationwide and will see the gradual phasing out of District Medical Stores' storage of health commodities as well as health facilities no longer being authorized to procure health commodities from private sector suppliers. A scheduled delivery system is to be implemented from CMS to RMS and from RMS to health facilities and CHPS zones.

The CBAs' training manual contains a chapter dealing with the management of drugs and supplies that outlines the importance of proper storage and record keeping of medicines under their care. To ensure proper record keeping and storage a special Tool Kit and Record Books have been designed for use by the CBAs including books/tally cards for drugs received/dispensed, books for recording NHIS/cash received, and a CBA Register to record

Fig. 1: Commodity Supply Chain in Ghana (Public Sector)



Source: Adapted from Home Based Management of Malaria, ARI and Diarrhoea: Implementation Guidelines, June 2010.

treatment information. Under the home based care program, the CBA should maintain tally card information on the amount of drugs received and stock balance should be provided. There should be relevant staff trained at the sub-district level to study the records for effective stock management. Subsequently, for any given time, CBAs are to be given 2 weeks' supply of drugs but to prevent stock outs CBAs may be given drugs based on the distance from the nearest facility and the consumption pattern. The CBA must discuss problems with drugs and supplies with his/her supervisor as soon as it arises and should immediately inform the supervisor if something unusual happens to the drugs. The CBA must check all items collected before leaving the point of collection.

With regards, to storage conditions to be followed by CBAs, the training manual provides guidelines for proper storage of medicines including that these should be stored in the boxes provided under lock and key, in a cool and dry place, and have proper labelling. Instructions

are also provided about the need for CBAs to check on expiry dates and to avoid dispensing drugs that are close to their expiry dates or already expired. CBAs are advised to return all such expired drugs to the CHO or clinic. Medicines are to be dispensed on the principle of FEFO to avoid expiries.

The CHOs' training manual 2009 contains a module dedicated to the CHO's role in supporting Community Health Volunteers (CHVS), with one unit of the module dealing with support to be given with the management of supplies and logistics. The unit stipulates that to succeed in their work the CHO, volunteers and the community must together develop the logistics and supplies system. The CHO and the CHVs must have an organized way of efficiently managing or distributing their supplies. Procedures for storage, making requisitions and issuing supplies outlined in the unit include the following:

- CHVs need to know how to properly store drugs in a cupboard, trunk or box that can be closed and possibly locked.
- It is preferable to keep these drugs and supplies on a shelf in a cupboard or in a box to protect the materials from moisture, sunlight and children.
- Supplies must be kept in a well-ventilated or an airy place that is not extremely warm.
- As much as possible, follow the "First-Expiry-First-Out" method of inventory distribution.
- CHVs should be assisted or taught to keep accurate records and to periodically count the quantity of the different drugs they have in stock. If they do this once every month, they can estimate how many they distribute monthly and replenish their stocks accordingly. They can also use this method of counting to estimate the expiry dates of their products.
- Inform CHVs not to distribute any expired materials to clients but return them to the supplier and order new stocks. Damaged supplies should also be reported to the appropriate authority for disposal.

With regards to sourcing supplies, the CHO training manual outlines six sources from which the CHV can procure his/her supplies. These are as follows:

- Personal purchases by the CHV
- District Health Administration/MOH/GHS kits and boxes
- District Hospitals
- District Assemblies
- Religious organizations like churches and mosques
- NGOs and research organizations

CHOs are expected to assist the CHV to acquire supplies from the appropriate source by helping the CHV determine logistics and supplies needed; establish and maintain appropriate stock levels; develop a cordial relationship with the CHV sources of supplies; and help the CHV establish or maintain a timely delivery/collection arrangement for the supplies. The procedure to be used by CHOs in issuing/distributing supplies to the CHVs should include collecting supplies for the CHV on schedule; entering supplies collected in a supplies notebook, opening a separate section or page for each item supplied, or alternatively a tally card/bin card may be used with a separate one for each item issued; indicating the number for each item, quantity, cost and supply date: and obtaining the signature or mark of the CHV for supplies distributed. A copy of the list of supplies issued out to each CHV should be provided to the Sub-district Head, and the Community Health Committee (CHC). The CHC is expected to closely monitor the drug collection and dispensing channels of the volunteer while the CHO supervises the CHV's technical competence and performance.

Quality Assurance

The National Drug Policy 2004 states that the Ministry of Health will establish and maintain an adequately equipped and manned National Quality Control Laboratory (NQCL) under the Food and Drug Board (FDB). The NQCL is to carry out strategic testing of drug products moving through the drug supply system in both the public and private sectors. If a NQCL is unavailable other local and international quality control testing facilities should be utilized. The Food and Drug Board is to maintain a list of registered drug manufacturers and quality control facilities.

Medicines being imported into Ghana must be registered with the Ministry of Health through its Food and Drug Board. In addition, each drug being imported must be accompanied by a Certificate of Free Sale indicating use in the country of manufacture and should be certified under the WHO Certification Scheme on the Quality of Pharmaceutical Products Moving in International Commerce.

The FDB has responsibility for monitoring the quality as well as any reported Adverse Drug Reactions (ADRs) resulting from the use of all anti-malarials, whether locally produced or imported, in accordance with the provisions of the Ghana National Drug Policy.

With regards to CBA capacity and handling of supplies, the guidelines stipulate that the following should be monitored at the district and community levels to ensure that they comply with standards of quality assurance:

- Certification and refresher for CBA
- Appropriate, adequate and safe (clean) storage facility
- CBA being trained in the correct handling of drugs

These are to be monitored during quality assurance spot checks and any errors rectified.

Health Information

Health information provides the information support to the decision-making process at all levels of the health system. Health information is particularly important for resource allocation and public health action in countries such as Ghana, where resources are limited; unwise allocation of resources can lead to wastage and the difference between survival and death.

In its National Health Policy 2007, the MOH has as its health information policy objective to promote the generation and use of evidence for decision-making, programme development, resource allocation and management through research, statistics, information management and deployment of ICT. Policy measures relevant to this assessment include:

- To define a core set of sector-wide indicators comprising health status, health system and health determinants indicators, as well as indicators for measuring the performance of components of the health system;
- To support the development of an integrated and consolidated national health information system linked to sub-systems in agencies and BMCs at all levels of the health delivery system;
- To continue to strengthen (i) population-based data sources comprising vital registration and surveys; (ii) health service-based records comprising administrative records, service records and health and disease records; and (iii) surveillance systems drawing on the combination of data sources as appropriate;
- To develop a monitoring and evaluation plan based on data needs and the data sources;

- To strengthen monitoring and evaluation functions and their integration into the national managerial process through the implementation of effective information systems.

With regards to the Health Management Information System (HMIS) and monitoring at the community level, policy documents stipulate that the routine data is to be reviewed and used for problem solving. District Managers should be trained in data for decision-making. Collection of programme data in order to determine whether or not programme activities are reaching children effectively is to be done continuously. Implementation of activities is to be tracked by measuring programme outputs, such as training coverage, CHPS coverage, supervisory coverage, availability of essential medicines. Most output measures are to be collected from routine reports available to regional and district managers. Output data are also to be collected from health facility assessments and supervisory visits. An emphasis is to be placed on collecting community-based data, where possible. Methods for routine collection of community-based data should include community-based surveillance using community-based volunteers. Regular community-based data is to be used to provide information on how well program activities are reaching communities, and if not, why not.

The implementation guidelines for home management of malaria, ARI and diarrhoea stipulate that CBA supervisors should record the following with regard to health supplies provided to the CBAs:

- Items received from the District Health Management Team (DHMT)
- Items issued to every CBA working under his/her supervision
- If money is involved, all monies received from each CBA
- All items returned due to damage or expiry (to be kept at health facilities until written off by auditors)

Responsibilities of the CBA in logistics record-keeping are as follows:

- Quantities of items received from supervisor
- Quantities of each drug or item used
- Quantity remaining at the end of each reporting period (monthly)
- All monies collected (where payment is involved) and given to the supervisor

The CBA training manual for home management of malaria, ARI and diarrhoea requires that a monthly reporting form be filled out by each CBA and given to the CHO or supervisor during the monthly meeting. The information to be provided includes:

- Name of community
- Name of CBA
- Name of CHO/supervisor
- Month/Year
- Number of children brought to CBA to be checked for illness
- Number of children with danger signs
- Number of children with fever
- Number of children with fast-breathing
- Number of children with diarrhoea
- Number of children referred to a trained health worker
- Number of reported ADRs and referred
- Drugs out of stock for more than 7 days

Training

In keeping with the roll out of the Anti-Malaria Drug Policy 2009, a comprehensive training programme was to be conducted for all relevant healthcare providers prior to the roll-out of

public education programmes. Training programmes were to be organized at all levels of the health care system to include licensed chemical sellers, medicine counter/pharmacy assistants, community leaders and workers to understand the policy. Public education was to be directed at all target groups including health professionals, community-based service providers and the general public using the appropriate tools and media.

Under the Home Based Care (HBC) plan all CBAs are to undergo 5-day training programme sessions on home-based management of malaria, ARI and diarrhoea. The training focuses on causes of malaria, and early signs and symptoms of the three illnesses. The CBA is also to be trained to identify signs and symptoms of severe illness and refer promptly. Other areas include behaviour change communication (BCC) relevant to medication and feeding during illness. CBAs should also be trained on how to administer treatment drugs, pre-referral treatment and referrals, record keeping and maintenance of CBA registers, drug management, follow-up of clients, and compliance monitoring. Other topics include procurement, supply management and Logistics Management Information System (LMIS). During training of CBAs, CHOs and sub-district staff should necessarily be present.

The IMCI Guidelines also provide seven modules that guide the training of health workers in the delivery of case management for the treatment of childhood illness. It emphasizes an integrated approach to treatment, recognizing that many times children present with more than one illness but early symptoms can be treated with a similar approach.

Monitoring & Evaluation

The Ministry of Health is to define performance indicators for monitoring and evaluation of policy implementation. The Anti-Malaria Drug Policy 2009 states that relevant indicators are to be developed to measure and monitor the availability and accessibility to the general public of the products that fall under this policy.

The framework for monitoring the Anti-Malaria Drug Policy 2009 should include the following:

- Prescribing and dispensing practices at all service delivery points are to be monitored to enhance rational use of the anti-malarials.
- The Ministry of Health (MOH) and its agencies to conduct regular surveys to assess patient compliance and acceptance of the drugs under this new policy.
- Post marketing surveillance and laboratory testing to be conducted by the FDB to ensure that both imported products and locally manufactured products meet the relevant pharmacopoeia and manufacturing standards of quality and efficacy.
- The FDB is also to be required to furnish the MoH with periodic updates of the quality of products on the market.
- GMP audit inspections of manufacturing facilities both local and overseas to be rigorously enforced by the FDB.

Under the National Drug Policy, CBAs are required to document all cases treated as well as drug sales. Supervision is key to ensuring effective implementation in accordance with set guidelines. Regular and scheduled supervisory activities at all levels are important to the success of the community case management program. Supervision of CBAs is the direct

responsibility of CHOs (where they are present) and where there is no CHO, the SDHT staff in charge of the catchment area is responsible. During the supervisory visits, CHOs and health workers are required to collect the data for collation at the sub-district levels. However, CBAs are encouraged to submit their own data. The roles and responsibilities in supervision at all levels are clearly laid down in the guidelines. The relevant issues for CBA supervision by CHO/SDHT are as follows:

- CBAs available and working
- Constant availability of supplies of drugs for CBAs
- Adequacy of drug storage conditions

Supervisory visits are expected to occur every fortnight.

Monitoring output indicators utilized to measure the progress of community based case management include:

- Number of children 6 months to 5 years put on ACTs
- Number of children 6 months to 5 years put on Amoxicillin
- Number of children 6 months to 5 years put on Zinc/ORS (to be disaggregated into Zinc and ORS)
- Number of CBAs with stock outs of 7 days or more within the past one month of ACTs
- Number of CBAs with stock outs of 7 days or more within the past one month of Amoxicillin
- Number of CBAs with stock outs of 7 days or more within the past one month of Zinc/ORS

Tally cards for stock keeping, including a record of treatment given and quantity of drug given is to be compiled daily by the CBAs and aggregated on a monthly basis. The information is to be forwarded to the CHPS compounds and health centres for sub-district summaries for final collation at the district level. This is forwarded to the regions for onward submission to the national level. Data is to be cleaned and analyzed on a monthly basis. This should be aggregated quarterly to give information on morbidity and mortality of the three diseases in the community. Feedback should be sent to lower levels for decision-making.

Drug Financing

Availability of financing for the procurement of drugs is the lifeline of the whole system of drug management. The government of Ghana, under its National Drugs Policy 2004, states its intention to continue to finance procurement and management of adequate quantities of good quality essential drugs in the public sector. Funding will also be achieved through collaboration with the private sector and donor agencies. The National Health Insurance Scheme (NHIS) was established to facilitate access to medicines at service delivery points.

In keeping with the need to foster nationwide implementation of the programme associated with the Anti-Malaria Drug Policy 2009 mechanisms were to be put in place to ensure minimal price disparities between products from the public and private sectors. There appears to be no written policy stipulating whether CBAs can charge for medicines used to treat clients. This is however implied by the wording of the training manuals for both the CBAs and CHOs, which make reference to the possibility of monies being collected by CBAs and accurate record keeping by CHOs of such monies collected from CBAs, respectively.

Increasing the use of the HIRD approach by districts is expected to bring more donor funding to Regions and Districts for essential child health packages. It is felt that in order for this funding to be used more effectively, it is critical that strategies for reaching communities and improving quality are included and budgeted realistically.

National Health Insurance Scheme

The 'Cash and Carry' system of paying for health services still remains a financial barrier to health services, particularly among the poor. An exemption policy targeting the poor, pregnant women, children and specified diseases, was implemented alongside the Cash and Carry programme. The package of exemptions was not always clearly specified; the policy was not adequately funded; and implementation suffered from managerial and operational difficulties. As a result, the exemptions policy had limited success in removing the financial barriers to health services. Government introduced the National Health Insurance Scheme (NHIS) as a social protection policy with the objective of improving financial access to quality health services.

The National Health Insurance Authority (NHIA) was established under the National Health Insurance Act 2003, Act 650, as a body corporate. The object of the Authority is to secure the implementation of a national health insurance policy that ensures access to basic healthcare services to all residents. In order to become a member of the National Health Insurance Scheme (NHIS) one needs to be registered, following the payment of a registration fee, and issued with a Health Insurance Membership ID Card. One needs to pay the appropriate premium (except those belonging to the exempt group) to benefit from the NHIS. The coverage of NHIS has been increasing steadily. All districts have functional District Mutual Health Insurance Scheme (DMHIS). Once registered, persons are eligible to receive covered services free of cost at the point of service. The level of coverage is still not as high as desired so the financial barriers to services experienced under the Cash and Carry system still remain albeit to a lesser degree.

Among those groups considered exempt are children under 18 years. Although the Under 5 Child Health Policy 2007-2015 states that community health providers trained in case-management should be recognized as prescribers under the NHIS to ensure that communities have access to treatment, this had not been implemented at the time of this assessment. The CBA training manual, however, directs CBAs to record all necessary information for sick children who report with a NHIS card on the Home-Based Care NHIS claim form. The form is to be submitted to the CBA's supervisor for processing of the NHIS claim.

The introduction of the more expensive ACTs for the treatment of malaria had cost implications. To reduce the increased cost burden of these ACTs on the most vulnerable populations and to ensure their availability and affordability to the population, the recommended ACTs were incorporated into the National Health Insurance Medicines List.

3.2 FIELD VISIT FINDINGS

This section contains a summary of the key observations from the field visits to the four regions. Detailed findings are outlined in the individual regional reports that comprise volumes 2 -5 of this compendium of reports.

Preliminary field visits were conducted in the Central and Northern Regions over three days, January 25th – 27th, 2011. The aim was to gain some familiarity with the field conditions so as to facilitate fine tuning the Work Plan and the assessment tools. Consequently, the reports for these two regions include the findings for both the preliminary visit and the extended field visit.

The dates and the number of days for the major field visits to the four regions are detailed in Table 2.

Table 2: Itinerary of Field Visits

REGIONS	DATES VISITED	Number of days
CENTRAL	February 2 - 4	3
NORTHERN	February 8 - 11	4
UPPER EAST	February 14 - 15	2
UPPER WEST	February 17 - 18	2

The targets for the field visits and actual achievements are outlined in Table 3.

Table 3: Field visit outcomes versus targets

TARGETS	CENTRAL	NORTHERN	UPPER EAST	UPPER WEST
RDHS & Regional Coordinator	DDPH	RDHS, Regional Coordinator, DDPS	RDHS & Regional Coordinator	RDHS & Regional Coordinator
RMS	RMS	RMS & UNICEF Stores	RMS	RMS
2 DISTRICTS -DDHS -Focal Person -DMS -Records	3 Districts 3 DDHS 3 Focal Persons 2 DMS 2 – BIN Cards 1- D/List	3 Districts 3 DDHS No Focal Persons 1 DMS 1 - BIN Cards 2 – Poor records	2 Districts 2 DDHS 2 Focal Persons 1 DMS 1 - BIN Cards 1 - D/List	2 Districts 1 DDHS 2 Focal Persons 2 DMS 2 - BIN Cards
4 Sub-Districts -In-Charge - Focal Person - Stores - Records	5 H/C, 1 CHPS 6 In-charge 6 Focal persons No Stores 1 – BIN Cards	3 H/C 1 In-Charge No Focal Person No Stores No Records	3 H/C, 1 CHPS 4 In-Charge 3 Focal Persons 1 Stores 1 – BIN Cards	4 H/C 4 In-Charge 4 Focal Persons 2 Stores 2 – BIN Cards
8 Supervisors 8 CBAs	4 Supervisors 4 CBAs	No Supervisors No CBAs	3 Supervisors 2 CBAs	10 Supervisors No CBAs

The following challenges contributed to the target shortfalls:

- The distance between the regions, districts and communities resulted in reduced time for visits
- Various GHS and UNICEF activities conflicted with the scheduled visits, including regional and district performance reviews and CBA training.
- Unavailability of CBAs for interviews as many were tending their gardens and farms or just could not be contacted.
- The inability of CBA supervisors to leave the health facility to accompany the Consultant to visit the CBAs and to act as interpreter.
- Missing stock records and reports.
- Lack of institutional memory.
- Key persons were travelling at the time of the visit.
- Challenges with follow up communication.

In general terms, these challenges resulted in data gaps, particularly in tracking the flow of supplies down to the community level; minimal sub-district data for the Northern Region; and a low number of CBA visits. Despite these limitations, the data collected was deemed to be sufficient to arrive at conclusive findings based on the similarity of findings across the four regions and access to alternative data sources.

KEY OBSERVATIONS

The findings are reported in accordance with the components of the logistics cycle: quantification, procurement, distribution, and inventory management. Supply chain and quality assurance issues are also discussed. This is followed by findings related to the C-IMCI programme in general. For each set of findings, best practices are outlined, together with a discussion of the issues that appear to be contributing to the weaknesses or deficiencies observed.

Quantification

A variety of bases for quantification were being used at the different levels in the supply system. These are outlined in Table 4.

The CHPS CHO training manual gives minimum attention to logistics management although CHOs are given the responsibility to determine the re-supply quantities for the CBAs. Consequently, a number of CBAs visited were found to have been oversupplied with medicines. In addition, based on the consumption rate reflected in their Registers there was a high probability that some of these medicines would expire before they are exhausted.

Table 4: Quantification approaches

SUPPLY CHAIN LEVEL	BASIS OF QUANTIFICATION
UNICEF Accra	Number of CBAs and estimated number of cases to be treated
UNICEF Tamale	Population size and number of facilities for allocation to regions (2:1:1)
REGIONAL C-IMCI COORDINATOR	Number of trained CBAs; Under 5 population
DISTRICTS	Number of volunteers in each sub-district. CBA reports. No basis.
SUB-DISTRICTS	No basis. Usage levels by the CBAs. CBA reports.

The Adjusted Consumption Method or The Patient Morbidity-Standard Treatment Method are the two best practice quantification approaches. As noted in Table 4, it is only some of the sub-districts that are using consumption data obtained from the CBAs to determine re-supply quantities. The departure from best practice is due to the unavailability of data, inaccurate data, data not being available in a timely manner and lack of knowledge of the two best practice methodologies. As the regions move towards the use of the Report, Requisition, Issue and Receipt Voucher (RRIRV), consumption data will become available to facilitate the consumption method of quantification.

Procurement

All C-IMCI supplies are sourced from overseas suppliers. All, except ORS, were being procured by UNICEF up to the time of the assessment. However, due to inconsistent supplies of ORS being provided to the CBAs via the GHS supply system, UNICEF had taken the decision to procure ORS supplies for a period of one year, during which time the GHS supply system is expected to implement strategies toward sustainability. UNICEF had already placed its order for ORS but these had not yet arrived. Inconsistent supplies of ORS were reportedly due to the high level of indebtedness of the districts and sub-districts to the RMS in all regions.

None of the local manufacturers in Ghana are WHO prequalified. Overseas sourcing results in long lead times and the need to maintain high levels of inventory to prevent stock-outs. Procurement has not been consumption driven. This, together with lower than expected usage, resulted in an oversupply of AS-AQ Tablets and a high level of expiries. Another contributing factor was the seeming lack of collaboration between the GHS and the various programmes providing anti-malaria drugs.

The regions will have to address the ineffective operation of the GHS revolving fund system or the inconsistent supply of ORS will continue after the UNICEF supplies are exhausted. Building the capacity of the local manufacturers to become WHO prequalified would make a

significant difference to lead times and overall availability for those items manufactured locally.

Distribution

C-IMCI supplies are being distributed using a mix of push and pull systems. When a consignment arrives, the Regional C-IMCI Coordinator prepares a distribution list with allocation quantities for the districts. There is usually a balance remaining at the RMS and the districts are required to send requisitions to the RMS to access these supplies until the next consignment arrives. The C-IMCI supply system is running parallel to the GHS supply system. The districts are required to pick up the allocations from the RMS and they in turn prepare distribution lists for the sub-district health facilities. Whereas, sub-districts can order their routine supplies directly from the RMS, they must obtain C-IMCI supplies from the DMS. The existence of this parallel system requires that staff exert extra effort to deal with multiple systems, resulting in inefficiency and delays in pick up and onward distribution to the sub-districts by the districts.

There is no standard procedure being followed by the districts in their distribution of supplies to the CBAs. The existing SOPs do not provide detailed guidelines for supplies management down to the community level and many of the SOPs are not being followed.

The Upper East Region is the only region operating a scheduled delivery system. However, even in this system, the C-IMCI supplies have to be picked up by the districts based on the parallel nature of the system. The Upper East Region is also the only region that has an appropriate vehicle for transportation of medicines. All other regions, DMS and sub-districts transport their health commodities in open back pick-ups. None of the three regions without a scheduled delivery system had a distribution plan to guide its implementation.

Best practice requires the use of a push system when starting a new programme or where there is a shortage of supplies. In all other cases, a pull system is advocated. The Implementation Guidelines for Home Management of Malaria, ARI and Diarrhoea stipulates that supplies for CCM should not be provided via a parallel system but through the GHS routine supply system and that after the initial distribution a pull system should be utilized.

WHO Good Distribution Practices (GDP) provides the standards for the distribution of medicines, which are not being fully complied with by any of the four regions. Scheduled delivery is the preferred approach to distribution as it offers the benefits of cost savings, manpower efficiency, consistent supply flow and enhanced planning.

The factors contributing to the divergence from best practices are as follows:

- Misunderstanding or miscommunication of UNICEF's intent for C-IMCI supplies to be distributed through the GHS routine supply system.
- Historical practice of pushing programme supplies through a parallel supply system.
- Lack of knowledge of best practice.
- Insufficient funding to purchase appropriate vehicles.
- Lack of technical support for preparation of distribution plans.

Inventory Management

Inventory management covers storage conditions and monitoring the quantities of stock on hand. Most sub-district facilities do not have a designated supplies management person.

Most times this role is an add-on to an already overloaded CHO, CHN, PHN or midwife who has no requisite training to manage supplies.

Storage conditions are inappropriate at both the district and sub-district levels with none of these facilities having air-conditioning. Most of the cartons were not placed on pallets and there was a general lack of proper layout of stocks due to limited space.

All of the stores, including the RMS, are operating manual inventory management systems. Many sub-districts did not have BIN cards. Distribution lists were the only records available at most of the health centres and CHPS compounds. The BIN cards for the C-IMCI supplies were poorly maintained, in general, even at the RMS. Most had no pack size, issue unit, strength or dosage form; none had expiry dates. Inventory records were indicative of weak inventory management capacity including conflicting information, missing dates, discrepancy between physical stock and computed balances and discrepancy between records at different levels. It was obvious that there is no periodic inventory audit throughout the supply chain to ensure accountability. There was a general lack of proper filing systems for BIN cards and when the person with responsibility for managing the supplies was absent the stock records were inaccessible even to the DDHS or the Sub-District Leader.

Inventory management best practices include:

- Automated inventory management systems for accuracy, efficiency and optimal use of limited storage space.
- Storage conditions in accordance with manufacturers' labelling requirements.
- Written guidelines for stores layout and conditions, preferably in the form of a checklist.
- Monitoring and supervision of lower level by higher level with regional oversight by the RMS of all levels of the supply system.
- Periodic reconciliation of records between levels in the supply chain.
- Centralized access to inventory records for decision making and monitoring.
- BIN cards with full item specification; not just distribution lists.
- Standard Operating Procedures available to guide inventory management practices.

Factors contributing to the inventory management deficiencies include:

- No core group to guide C-IMCI or routine supplies management at the regional level.
- Supplies management is seen as a clerical function, not requiring any formal training.
- Underestimation of the importance of inventory management.
- The monitoring role of the RMS Pharmacist is not acknowledged.
- Inadequate funds to allow for designated supplies management persons at the sub-district level.
- Lack of inventory management knowledge throughout the system.
- Lack of funding and technical support for training.
- Lack of funds to refurbish and expand stores.

- No electrical power at many of the health centres.
- Lack of awareness of the importance of inventory records as a monitoring and audit tool.

Supply Chain

Personnel time and effort having to be divided between the parallel C-IMCI system and the routine supply system resulted in low effort and priority being given to the C-IMCI programme. The efficiency of the supply chain was being hampered by the lack of carton specification, no standardization in pack size designations, inaccurate information between the district and sub-district, and no issue units or pack sizes. In addition, the flow of information is delayed at times, such as notification by the RHA about the arrival of consignments. The feedback mechanisms from the RMS to the Regional C-IMCI Coordinator and from the sub-district facilities to the DHA were lacking. There was evidence of poor monitoring of the sub-districts by the DHAs, which resulted in districts not following up to ensure sub-districts picked up their supplies from the DMS, even after months of delay. This contributed to major bottlenecks in the flow of supplies between the DMS and the sub-districts.

Significant bottlenecks were detected in the flow of C-IMCI supplies. Contributing factors and their level of impact are outlined in Table 5.

The major contributing factors to the bottlenecks were delays in CBA refresher training, poor communication and monitoring by the DHA, and implementation delays. Although implementation delays and delays in CBA refresher training are one-off situations, they are an indication of the existence of capacity gaps within GHS, both in terms of manpower and funding, and that the requisite technical and financial support was either inadequate or lacking. Some of the other contributing factors – pricing policy, slow RHA decision making, lack of or delayed notification by the RHA to the DHAs – are further evidence of the weak capacity at the regional level that attended the roll out of the programme.

A number of CBAs indicated that there was a significant delay, sometimes as long as 5 months, between the completion of their initial C-IMCI training and the provision of supplies. In some districts, the programme had suffered significant setbacks during the initial roll out due to inconsistent supplies of AS-AQ Tablets, not because these supplies were unavailable but due to poor management and leadership during the implementation phase, which led to inordinate delays in the provision of supplies down to the community. The scale up of the programme, with the need to conduct CBA refresher training was being used to revitalize the CBAs who had become demotivated. However, the scale up was not going as smoothly as desired due to delays in conducting the refresher training as both funds and manpower were stated to be in short supply. Some two months after the completion of CBA refresher training, some sub-districts had either not received supplies of Amoxicillin Suspension and Zinc Tablets, which were still at the DMS, or had received them but had not yet distributed them to the CBAs, for no apparent reason. It can only be concluded that there is a low level of priority being given to the C-IIMCI at both the district and sub-district level. Many of the DDHS had delegated the responsibility for the C-IMCI to the Disease Control Officer, DPHN or some other officer from the DHMT and were not taking a personal interest in the programme, neither were they aware of the progress of the programme, particularly as this relates to the distribution of supplies to the CBAs.

At one point, UNICEF was requested by the NMCP to delay off-shore procurement of AS-AQ Tablets because of a glut of that item in the GHS supply system. Consequently, a hold was placed on the distribution of those supplies that had already been procured. This did not contribute to any reduction in the availability of the drug. There appeared to have been some delay between the arrival of Amoxicillin Suspension and Zinc Tablets. This resulted in some

Table 5: Factors contributing to bottlenecks

Factors	Regions	Districts	Time delay (mths)	Total time (mths)
CBA refresher training	Central	Mfantseman	4½	**75½**
		Ajumako EE	8	
		Gomoa West	7	
	Northern	Chereponi	10	
		Nanumba North	10	
	Upper East	Bawku West	7	
		Kassena Nankana West	7	
	Upper West	Wa West	11	
		Lawra	11	
Poor communication & monitoring	Upper West	Wa West	9	**32½**
		Lawra	23½	
Implementation delays	Upper East	Bawku West	13½	**25½**
		Kassena Nankana West	12	
	Upper West	Wa West	9½	
		Lawra	22	
Glut of AS-AQ Tablets in the health system	Northern	Chereponi	8	**24**
		Nanumba North	8	
		Savelugu	8	
Pricing policy	Central	Ajumako EE	8	**17**
		Gomoa West	7	
	Upper West	Lawra	2	
Poor monitoring by DHA	Upper East	Bawku West	2+	**16+**
		Kassena Nankana West	14	
No formal notification by RHA to DHAs	Central	Mfantseman	5	**15**
		Ajumako EE	4½	
		Gomoa West	5½	
RHA decision making process	Central	Mfantseman,	5	**15**
		Gomoa West	5	
		Ajumako EE	5	
Poor inventory management	Northern	Chereponi	3	**12½**
		Nanumba North	3+	
	Upper East	Kassena Nankana West	3½	
	Upper West	Lawra	3	
RHA delay in notification to DHAs	Northern	Chereponi	1½	**9½**
		Nanumba North	1½	
		Savelugu/Nanton	2	
	Upper West	Wa West	2¼	
		Lawra	2¼	

Table 5 (continued)

Factors	Region	Districts	Time delay (mths)	Total time (mths)
Weak management and low priority at s/district level	Upper East	Kassena Nankana West	9+	**9+**
RHA awaiting arrival of Amoxicillin Suspension supplies	Northern	Savelugu	5½	**5½**
RHA waiting for consignment of Zinc Tablets to send notification to DHAs	Upper East	Bawku West	2	**4**
		Kassena Nankana West	2	
Low priority given to C-IMCI and poor inventory management by DHA	Upper East	Kassena Nankana West	3½	**3½**
Discrepancy in shipment from UNICEF to RMS	Upper West	Wa West	1	**2**
		Lawra	1	

RHAs having to delay notification of distribution of the Amoxicillin Suspension while awaiting the arrival of Zinc Tablets, and vice versa. Samples of both were required for the refresher training. However, in most instances this was not a critical bottleneck factor since many DHAs were still not ready to conduct refresher training even when the supplies were received and held them for some months after pickup from the RMS.

Quality Assurance

UNICEF purchases products only from WHO prequalified suppliers and quality requirements are met prior to shipment of the medicines. Within the GHS, all pharmaceuticals procured off-shore are subjected to quality assurance testing by the FDB irrespective of country of origin before release from the CMS. However, donor agency items are not included in this testing. In addition, most of the UNICEF C-IMCI consignments are not warehoused at the CMS on their way to the regions. There is no random sample testing of C-IMCI or routine GHS pharmaceutical supplies further down the supply chain, that is, at the regional, district or sub-district levels. This is cause for concern as the storage conditions are far from optimal at the district and sub-district levels.

There is no system to track expiry dates so as to minimize the risk of expired drugs being mistakenly supplied to patients. Further, the open back vehicles used by all but the Upper East Region to transport the medicines have a negative impact on the quality of the pharmaceuticals.

WHO GDP stipulate the importance of guarding the quality of the products by employing proper standards in the handling of medicines at all stages as they are moved through the supply chain. In general, there is minimal compliance with these requirements. The issues surrounding non-compliance have already been discussed in previous sections.

C-IMCI Programme Management

As noted from Table 5, a number of the factors contributing to bottlenecks in the flow of supplies arose from ineffective management of programme implementation and scale up. These included breakdown in communication about the pricing policy, failure to identify capacity gaps and or to strengthen these gaps, and absence of anyone on the ground totally dedicated to ensuring that programme challenges were addressed expeditiously. No effort has been made to institutionalize C-IMCI roles and responsibilities into the GHS, including the revision of job descriptions and the inclusion of C-IMCI related performance indicators as part of staff performance evaluation. Consequently, C-IMCI falls low on the scale of priorities for GHS staff who have to deal with other more pressing matters on a daily basis.

The RHAs were unable to provide written selection criteria for CBAs, who appear to be chosen by the community for the most part without much input from the GHS. The Home Management of Malaria, ARI and Diarrhoea Implementation Guidelines address the need to monitor the performance of CBAs and to remove those who are inactive. However, this is not being put into practice. There is also no formal exit strategy for CBAs.

Many of the CBAs and their supervisors pointed to the need for an incentive programme for the CBAs. Some are allowed to keep 10% of the money collected from clients but this is deemed to be small and not consistently applied throughout the regions or the districts within a particular region. There is much disparity in the prices being charged across the regions and even within regions. The difficulty being experienced by CBAs in collecting money that is required to be submitted to the CBA Supervisor translates into CBAs avoiding their supervisors and therefore not getting resupplied with medicines. This is exacerbated by sub-districts failing to pick up C-IMCI supplies from the DMS and supplying the CBAs with GHS stock for which they must charge clients full cost to reimburse the health facility. Ongoing problems with CBAs' lack of clarity on how to deal with clients who have NHIS coverage contributes to many of these patients opting to go to the health centre for free service rather than seeking treatment from the CBAs who they have to pay. More than one health worker, including a DDHS, questioned whether the C-IMCI was relevant due to the introduction of the NHIS.

A number of CBAs do not have the requisite supporting equipment and logistics to carry out their functions properly. CHNs complained about inadequate transportation to facilitate effective supervision of the CBAs. There were a number of CHNs supervising CBAs who had not received any C-IMCI training.

While, for the most part, CBAs maintained records of client treatment, the maintenance of tally cards for stock was the exception rather than the rule. The Northern Region had identified and trained Zonal Coordinators to provide support for the CBAs at the community level with record keeping and reporting as the level of illiteracy was found to be quite high in this region. It was felt by some of the respondents in the other regions that Zonal Coordinators might prove useful in providing additional required support for the CBAs. Currently, this was left to the CBA Supervisors who assist with bringing records up to date during their supervisory visits and have to lend assistance with preparation of reports at the end of each month. There were reports of inconsistent reporting by CBAs and by the sub-districts to the districts. Evidence of this was seen when the C-IMCI district reports were reviewed.

Sustainability

One of the goals of including the integrated CCM in the Child Health Policy 2007-2015 was to ensure sustainability of these activities. However, the ongoing challenge with inadequate funding within the GHS brings into question the ability of the GHS to sustain the C-IMCI without UNICEF or other donor agency support. It is apparent that the funding issue will not

be resolved in the near future as the indebtedness to the RMS is deemed to be irreconcilable in many instances. The collection of a token fee by the CBAs from clients was reported to be an attempt to build up funds to sustain procurement of supplies when UNICEF supplies are no longer available. However, there was little evidence that the money being collected and remitted by the CBAs was being segregated for this purpose.

The effectiveness of any supply system is highly dependent on the availability of sufficient funds to make timely payments and therefore ensure a continuous flow of supplies. For the GHS, this is proving to be a major impediment to the scaling up of the RMS and the sub-districts to ensure compliance with the June 2010 Standard Operating Procedures for Logistics Management of Health Commodities. In light of this, the four regions will continue to require significant donor agency support going forward.

3.3 LESSONS LEARNT

As noted earlier, some of the contributing factors to the supply chain bottlenecks were related to the implementation of the C-IMCI programme and the subsequent scale up to include the treatment by CBAs of ARI and inclusion of Zinc Tablets for the treatment of diarrhoea. Consequently, 'a lessons learnt' approach will have to be taken by UNICEF and GHS prior to embarking on programmes of a similar nature or future scale-ups of the C-IMCI programme. Lessons learnt include:

- Implementation plans should include feasible timeframes for activities, one of the feasibility determining factors being the availability of required funds and manpower.

- Feasible timeframes for the required activities should be utilized to work backwards to determine the procurement schedule for supplies. This approach will minimize time lags between demand for supplies and supplies availability and vice versa.

- Implementation plans need to have clear designation of roles and responsibilities between UNICEF and the GHS, ensuring that the GHS has the capacity to fulfill the roles and responsibilities ascribed to it.

- Implementation planning should include a capacity analysis to identify capacity gaps, both in relation to infrastructure and manpower in terms of quantity and quality. This will ensure the provision of required technical support to the GHS for capacity strengthening and interim coverage of manpower gaps to ensure that planned activities are completed in a timely manner.

- New programmes need to be integrated into the existing GHS systems as much as possible to reduce the additional effort required of already stretched managerial, administrative and clinical GHS personnel.

- It is necessary to determine best practices relevant to the programme outcomes, identify constraints to their implementation and seek to address these as part of the implementation plan. It is more cost effective to identify these up front than having to make programme adjustments after the fact.

- The existence of Standard Operating Procedures (SOPs) relevant to programme activities should be identified and ensure that reference is made to these as the standards to guide such activities. Where no relevant SOPs exist, or gaps are identified in existing SOPs, written SOPs to fill these deficiencies should be drafted and circulated to all relevant personnel. These should include clear guidelines for CBAs and CHOs/CHNs regarding reorder procedures.

- Implementation plans should include strategies to ensure sustainability of programme outcomes subsequent to withdrawal of donor agency support.

- An implementation task force, comprised of relevant GHS personnel from all levels and UNICEF representatives, should have been established to guide the implementation process and to make timely decisions on policy and procedural issues not previously anticipated. The life of the task force would come to an end only when the programme has become institutionalized.

- During the implementation phase of all new programmes, a focal person at the district level must be identified to champion and coordinate the implementation efforts on a full time basis (may have to be treated as a project person) until programme operations become institutionalized and integrated into the health system. This includes redrafting of job descriptions and performance indicators to ensure in-service staff see the requisite functions for the programme as part of their ongoing responsibility rather than an add-on component and therefore optional.

3.4 RECOMMENDATIONS

Detailed recommendations and costed Action Plans are outlined in the regional reports that comprise volumes 2 - 5 of this assessment report. Consequently, this section will be limited to discussion of some key recommendations.

- Conduct C-IMCI Workshops to address programme challenges, provide clarification of programme management and get renewed commitment of DDHS and Sub-District Leaders for the programme. An outcome of this Workshop should be the establishment of a C-IMCI Task Force.

- Establish a C-IMCI task force comprised of relevant GHS personnel from all levels and UNICEF representatives to make timely decisions on policy and procedural issues not previously anticipated. The life of the task force to come to an end only when the programme has become institutionalized.

- Redrafting of job descriptions and performance indicators to ensure in-service staff see the requisite functions for the C-IMCI programme as part of their ongoing responsibility rather than an add-on component.

- Establish qualification and experience requirements for the position of Sub-District Leader, evaluate incumbent Sub-District Leaders against these requirements and strengthen management capacity where deficiencies are identified or replace incumbents with new recruits, where strengthening is not possible for whatever reason.

- Supplies management training to be conducted for all supplies personnel and supervisory/monitoring personnel at all levels of the GHS supply system, with emphasis on inventory management and good distribution practices, including the tracking of expiry dates.

- Integration of the C-IMCI supply system into the GHS routine supply system will result in less effort having to be exerted on the part of district and sub-district personnel to remember to order and pickup supplies for the C-IMCI. Notification by

the RHA and the DHAs to the sub-districts would be negated in this transition to a pull system rather than a push system. The monthly use of the RRIRV by the sub-districts will provide a monitoring mechanism for the DHAs. However, the DHAs will need to give support to the sub-districts in the automation and completion of the RRIRV.

- Integration of the C-IMCI supply system should extend to these supplies being included in the RMS' scheduled delivery system, where this exists and when this is implemented. This will ensure that the sub-districts can order their supplies directly from the RMS and not have to be dependent on the DMS to order on their behalf. The District Health Management Team would be required to give the requisite oversight and support to the sub-districts. In addition, there is need for appropriate vehicles to make the scheduled delivery system a reality or to make the existing system more efficient.

- Review existing Standard Operating Procedures (SOPs) relevant to programme activities to identify gaps in guiding supplies management down to the community level. Revise SOPs to address deficiencies. These should include clear guidelines for CBAs and CHOs/CHNs regarding reorder procedures.

- Ensure the revised SOPS are circulated to all relevant personnel and monitor to ensure that practices are in compliance with the stated SOPs.

- UNICEF to continue to procure ORS and other supplies for the C-IMCI programme and give support to the GHS in crafting strategizes to address funds constraints thereby ensuring sustainability of the programme going forward.

For the most part, the foregoing recommendations are confined to addressing the factors identified as contributing to the bottlenecks in supply flow. Additional recommendations to address wider supplies management deficiencies, quality assurance, C-IMCI programme management and funding are contained in the regional reports.

Activities related to the foregoing recommendations have been prioritized for purposes of matching same to an available budget of USD300,000 – 500,000. These priority activities and their estimated costs are outlined in Table 6. The resources per region are outlined in the regional Action Plans.

Table 6: Priority Activities

Desired Outcomes	Activities	Description	Timeframe	Responsible Entities	Estimated Cost per Region (US$)	Total Estimated Costs (US$)
Outcome A1: Timely decision making on policy and procedural issues not previously anticipated.	**Activity A1.1** Establish C-IMCI task force	Comprised of relevant GHS personnel from region, district & sub-district levels and a UNICEF representative. Quarterly meetings to address C-IMCI policy and procedural issues.	0-6 months	RHMT for all 4 regions/UNICEF	$960 (4 meetings annually)	**$3,840**
Outcome A2: Renewed commitment of DDHS and Sub-District Leaders to the C-IMCI programme.	**Activity A2.1** One-day seminar to re-promote the benefits of the C-IMCI programme.	All DDHS and Sub-District Leaders.	0-3 months	Regional C-IMCI Coordinator/ UNICEF for all 4 regions	Northern: $3,170 Central $3,213 Upper East $ 1,250 Upper West $2,420	**$10,053**
	Activity A2.2 Revision of Job Descriptions and development of C-IMCI Performance Indicators for staff evaluation.	Institutionalizing C-IMCI roles and responsibilities of focal persons and other persons involved in handling supplies so no longer seen as an add-on role that may be deemed as optional..	0-6 months	RHMT/DHMT/Task Force for all 4 regions	Technical assistance National consultant for 1 week OR include in TOR of international consultant at A3.1 **$2,900 (national)** **$3,795 (international)**	**$11,600 (national)** **$15,180 (international)**
Outcome A3: Integration of C-IMCI supply system into GHS routine supply system. **See also Outcome A4**	**Activity A3.1** Develop Work Plan	Identify steps required for integration and assign roles and responsibilities	0-6 months	RHMT/Task Force/Consultant	Technical assistance Maximum 6weeks. (includes airfare, fees, local travel & subsistence – all 4 regions)	**$34,143** **Subtotal $63,216**

Desired Outcomes	Activities	Description	Timeframe	Responsible Entities	Estimated Cost per Region (US$)	Total Estimated Costs (US$)
Outcome A3: Integration of C-IMCI supply system into GHS routine supply system (continued) **See also Outcome A4**	**Activity A3.2** Sensitization meetings	In preparation for implementation of Work Plan	0-6 months	RHMT/DHMT	Meetings Northern: $9,250 Central: $7,880 Upper East: $4,222 Upper West: $4,222	**$25,574**
	Activity A3.3 Revise procedures, documentation, storage, etc. to facilitate integration	Make changes to all procedures etc. that make C-IMCI a parallel system to GHS system; monitoring and support from Regional C-IMCI coordinator and DDHS/District focal person	0-6 months	RHMT/DHMT	Monitoring Northern: $1,670 Central: $1,460 Upper East: $1,148 Upper West: $1,148	**$5,426**
	Activity A3.4 Disband UNICEF Stores concept and integrate into RMS; transfer UNICEF Store Keeper to RMS proper.	Aim is to disintegrate the parallel system approach	0-6 months	RHMT/UNICEF	Include in Work Plan at A3.1.	**$0**
Outcome A4: Use of RRIRV for reordering C-IMCI supplies by health facilities from RMS.	To be included in activities under Outcome A3.					
	Activity A4.1 DHMT to automate 6-monthly consumption calculations and preparation of RRIRV	DHMT to prepare spreadsheet templates of RRIRV and consumption worksheet input data received from sub-districts so as to automate both activities and lend support to the sub-districts.	0-6 months	DHMT	IT support presumed to be available to the DHMT from either the RHA or within the DHA to develop the templates OR can use template provided by consultant during TOT. Assume availability of computers at DHMT and MS-Excel software.	**$0** **Cumulative Subtotal $94,216**

Desired Outcomes	Activities	Description	Timeframe	Responsible Entities	Estimated Cost per Region (US$)	Total Estimated Costs (US$)
Outcome A4: **Use of RRIRV for reordering C-IMCI supplies by health facilities from RMS (continued)** .	**Activity A4.2** Sub-district facilities to provide data in a timely manner to the DHMT	Monthly submission of last month's consumption and usable stock on hand data for RRIRV. Semi-annual submission of total dispensed for past 6 months data.	To begin 0-6 months	Sub-District Leaders	Accurate stock records. Designated person at DHA to provide this support function.	**$0**
Outcome A5: **Maximum utilization of CBAs for treatment of non-complicated malaria, ARI and diarrhoea in under 5 infants.**	**Activity A5.1** Re-sensitize district and sub-districts, in particular CBA supervisors and sub-district leaders, while at the same time standardizing pricing policy.	Importance of assuring CBAs that failure to collect from clients not a determinant in obtaining new supplies needs to be re-emphasized.	0-3 months	Regional C-IMCI Coordinator/DHMT	Stationery & Printing Include in sensitization meeting at A3.2 Flier to be disseminated. (1,000x4)	**$1,296**
	Activity A5.2 Review pricing policy	Assess impact of existing pricing policy following implementation of Activity A5.1. If still having negative impact on CBAs then review pricing policy. HCB guidelines require that mandatory products are provided at no cost to clients and revenue generation is limited to optional products only.	3-6 months	C-IMCI Task Force/RHMT/ DHMT	Meeting Quarterly task force meeting. No additional cost as already accrued amount for meetings.	**$0**
	Activity A5.3 Sensitization and dissemination of revised pricing policy.	Sensitization meeting with district and sub-district personnel and disseminate flier with new policy information.	3-6 months	C-IMCI Task Force/ Regional C-IMCI Coordinator/DHMT	Meeting Part of routine activities so no cost attributed Stationery & Printing 1,000 fliers x 4	**$0** **$1,296** **Cumulative Subtotal $96,808**

Desired Outcomes	Activities	Description	Timeframe	Responsible Entities	Estimated Cost per Region (US$)	Total Estimated Costs (US$)
Outcome A5: Maximum utilization of CBAs for treatment of non-complicated malaria, ARI and diarrhoea in under 5 infants (continued).	**Activity A5.4** Craft strategy to standardize treatment of NHIS covered patients by CBAs.	C-IMCI Task Force to make this a priority agenda item for early resolution.	0-6 months	C-IMCI Task Force/ RHMT/DHMT/ SHMT	Meeting Cost covered under quarterly C-IMCI Task Force meetings.	**$0**
	Activity A5.5 Sensitization and dissemination of policy relating to NHIS covered patients and CCM.	Sensitization meeting with district and sub-district personnel and disseminate flier with new policy information.	3-6 months	C-IMCI Task Force/ Regional C-IMCI Coordinator/DHMT	Combine with meeting and flier at Activity A5.1 to save time and cost.	**$0**
Outcome A6: Motivated and active CBAs.	**Activity A6.1** Develop Incentive Program for CBAs	Reference can be made to 'Mechanisms for Rewarding CBAs' section 4.8.1 of Home Management of Malaria, ARI and Diarrhoea Implementation Guidelines.	0-6 months	C-IMCI Task Force/DHMTs	Meeting Determine funds availability and develop incentive program to match funds during quarterly task force meetings.	**$0**
	Activity A6.2 Procure items for incentive program and coordinate quarterly or annual incentive events	Items and arrangements in accordance with incentive programme designed during Activity A6.1.	3-12 months	RHMT/DHMT/ Donor Agency	$1,332 per sub-district per annum	**Based on budget and availability of funding from donor agencies.**** **Cumulative Subtotal $96,808**

Desired Outcomes	Activities	Description	Timeframe	Responsible Entities	Estimated Cost per Region (US$)	Total Estimated Costs (US$)
Outcome A6: Motivated and active CBAs (continued).	**Activity A6.3** Determine level of CBA Register, Storage Boxes etc. needed by CBAs and acquire same.	Some CBAs have not been supplied with the requisite support items to deliver service and maintain records.	0-3 months	C-IMCI Task Force/ Regional C-IMCI Coordinator/ CBA Supervisors	Feedback from CBA Supervisors. Assume these items are still available from UNICEF so no cost attributed.	**$0**
	Activity A6.4 Equip all sub-district/CHPS staff to serve CBAs when visit facility	When CBAs visit the facility to pick up supplies they should not have to leave without supplies due to absence of the single focal person.	0-3 months	Sub-District Leader	No cost	**$0**
	Activity A6.5 Identify CBA Supervisors who have not received C-IMCI training.	Conduct a survey of all CBA Supervisors to determine training gaps.	0-3 months	C-IMCI Task Force/ Regional C-IMCI Coordinator/DHMT/ UNICEF	Survey can be conducted during routine C-IMCI monitoring visits and information fed back to Task Force.	**$0**
	Activity A6.6 Conduct C-IMCI training of CBA Supervisors	Coordinate training programme in accordance with C-IMCI training manual and CHO/CHPS training manuals.	3-6 months	Regional C-IMCI Coordinator/DHMT	<u>Training</u> Cost for 3-day training per CBA Supervisor (refreshment & transportation). Assuming 50 persons. <u>Materials</u> Manuals should be available free of cost	**$3,150** **$0**
	Activity A6.7 Assess level of need for Zonal Coordinators	Based on level of illiteracy among CBAs. Get feedback from CBA Supervisors.	0-6 months	Regional C-IMCI Coordinator/ CBA Supervisors	Information gathering activity. No cost.	**$0** **<u>Cumulative Subtotal</u> $99,958**

Desired Outcomes	Activities	Description	Timeframe	Responsible Entities	Estimated Cost per Region (US$)	Total Estimated Costs (US$)
Outcome A6: Motivated and active CBAs (continued).	**Activity A6.8** Conduct recruitment drive to identify eligible Zonal Coordinators.	Assumes that assessment of need indicates that Zonal Coordinators are required and the number required. Eligibility criteria should also be available.	0-6 months	Regional C-IMCI Coordinator / Sub-district Leader and C-IMCI focal persons at district and sub-district level.	Stationery & Printing Zonal Coordinator Application Form (200 x 3 regions)	**$216**
	Activity A6.9 Train Zonal Coordinators in C-IMCI.	Zonal Coordinators provide support to illiterate CBAs in record keeping and reporting. Do not replace CBA Supervisors.	0-6 months	DHMT/ Regional C-IMCI Coordinator	Training Assume 20% of CBAs illiterate and 1 Zonal Coordinator per 5 CBAs = 100 ZCs (4 training sessions of 25 persons for 3 regions).	**$6,360**
Outcome A7: Standardize distribution of health commodities from district to CBAs and record keeping at all levels.	**Activity A7.1** Review existing SOPs, determine gaps and additional Job Aids required and develop same.	Review of Home Management of Malaria, ARI and Diarrhoea SOPs to enhance supplies management component based on deficiencies arising from assessment.	0-6 months	UNICEF	Technical assistance One consultant for 3 weeks (maximum) **(if included in TA at A3.1 then no airfare)**	**$23,470 (with airfare)** **$15,470 (without airfare)**
	Activity A7.2 Publication of SOPs	Printing and editing of SOPs in preparation for dissemination.	0-6 months	RHMT/Consultant	Copies for each region Northern: $2,413 (250) Central: $2,123 (220) Upper East: $1,786 (185) Upper West: $1,786 (185)	**$8,108**
	Activity A7.3 Sensitization and Dissemination	Regional C-IMCI Coordinator to arrange meetings for sensitization and dissemination of revised SOPs.	0-6 months	Regional C-IMCI Coordinator/DHMT	Meetings Northern: $6,095 Central: $5,392 Upper East: $4,222 Upper West: $4,222	**$19,931** **Cumulative Subtotal $158,043**

Desired Outcomes	Activities	Description	Timeframe	Responsible Entities	Estimated Cost per Region (US$)	Total Estimated Costs (US$)
Outcome A8: Capacity strengthening of supplies personnel & supervisory/ monitoring personnel at all levels	**Activity A8.1** Conduct training of trainer supplies management workshop in the Central Region.	Identify 6 key persons at regional level who have capability to train others.	0-6 months	UNICEF	Technical Assistance Assume can use same consultant at Activity A3.1 and or A5.1 to conduct 2-day training workshop. (4 days including time to prepare training materials)	**$2,320**
	Activity A8.2 Roll out training to district level of supply system	2-day training of District Store Keepers and District C-IMCI focal persons in all 4 regions.	0-6 months	Trainers from TOT workshop	Training Materials, venue, refreshments for two training sessions (North & Central) & 1 session each for UER & UWR. Northern: $3,270 Central: $3,230 Upper East: $1,108 Upper West: $1,108	**$8,716**
	Activity A8.3 Roll out training to sub-district level of supply system.	2-day training of sub-district supplies personnel (1) and Sub-District Leaders for all regions.	0-6 months	RHMT Trainers & capable district persons identified from training sessions	Training Northern: $16,350 Central:. $14,715 Upper East: $13,080 Upper West: $24,525	**$68,670**
	Activity A8.4 Implement automated expiry date tracking system at regional and district levels.	Input inventory items on MS-Excel spreadsheet and sort according to expiry date.	0-6 months	RMS, DHMT	Presume that computers, MS software and MS Excel expertise already available at the regional level.	**$0** **Cumulative Subtotal $237,749**

Desired Outcomes	Activities	Description	Timeframe	Responsible Entities	Estimated Cost per Region (US$)	Total Estimated Costs (US$)
Outcome A8: Capacity strengthening of supplies personnel & supervisory/ monitoring personnel at all levels (continued).	**Activity A8.5** Quarterly monitoring of inventory management practices at all levels.	TOT persons to conduct quarterly monitoring of DMS and district level persons to monitor sub-district facilities.CBA Supervisors to monitor CBAs.	3-6 months	TOT trained personnel/ District Store Keepers/ CHNs & CHOs	Monitoring Transportation; Monitoring checklists Northern: $23,216 Central: $11,457 Upper East: $8,272 Upper West: $8,272 CBA supervisors during routine monthly visits to CBAs. No cost.	**$51,217**
	Activity A8.6 Supplies Management training of newly graduated CHNs	Newly graduated CHNs to be trained as part of regional orientation before field assignment	6-12 months	Trainers from TOT	Training Material, venue, refreshments etc. 2 facilitators. Assumes 50 CHNs for 2-day workshop (2 sessions of 25 CHNs) for Northern & Central regions and 1 session of 25 CHNs each for UER and UWR. Northern: $4,580 Central: $4,580 Upper East: $2,290 Upper West: $2,290	**$13,740**
	Activity A8.7 1-day refresher training of all CBA Supervisors in logistics management.	Emphasis on supplies record keeping, storage conditions, tracking expiry dates and reorder procedures. More detailed than currently exists in training manuals for C-IMCI and CHO/CHPS.	0-6 months	Trainers from TOT/ DHMT persons trained in supplies management	Training Northern: $7,420 Central: $6,360 Upper East: $2,332 Upper West: $4,593	**$20,705** **Cumulative Subtotal $323,411**

Desired Outcomes	Activities	Description	Timeframe	Responsible Entities	Resources	Total Estimated Costs (US$)
Outcome A9: Consistent availability of supplies to the CBAs	**Activity A9.1** UNICEF procurement of ORS	Procurement of ORS as an interim measure to allow GHS to address its funds constraints	0-6 months	UNICEF	Funds & quantification	**Not a cost to the region. Amount to be bought to be determined by amount remaining in budget.****
	Activity A9.2 Conduct reconciliation exercise	The aim is to determine final amounts owing to RMS by DHAs and sub-district facilities.	0-6 months	RHMT/DHMTs	Invoices and Stores Issue and Receipt Vouchers.	**$0**
	Activity A9.3 Strengthen accounting systems at RHA and DHAs	Monthly issue of statements to clients by RMS; monthly feedback from clients regarding disputed transactions.	0-6 months	RHMT/DHMTs/ SCMCT	Assumes computers and software already available to automate the accounting system.	**$0**
	Activity A9.4 Make representation to the Ministry of Health	Seek deduction of reconciled amounts owing to RMS from DHAs' budgets to be sent directly to RDHS.	3-9 months	RDHS	Reconciled debt for each DHA.	**$0**
Outcome A10: Effective quality assurance system for medicines.	**Activity A10.1** Inclusion of C-IMCI medicines in Food & Drug Board (FDB) random sample testing system.	Discussions to be held with FDB to work out a program of random sample testing of UNICEF sourced medicines for C-IMCI.	0-6 months	UNICEF Accra	FDB agreement. Do not anticipate a cost as these are provided free for the benefit of Ghanaian children.	**$0**
	Activity A10.2 Develop SOPs to facilitate effective reverse logistics management.	Reverse logistics include recall, redistribution and sales returns. Emphasis to be placed on recall and redistribution.	3-9 months	SCMCT/UNICEF	Technical assistance Can be included in TOR for consultancy at A7.1.	**$0** **Cumulative Subtotal $323,411**

Desired Outcomes	Activities	Description	Timeframe	Responsible Entities	Resources	Total Estimated Costs (US$)
Outcome A10: Effective quality assurance system for medicines (continued).	**Activity A10.3** Implementation of mechanisms to ensure compliance with reverse logistics SOPs.	Supply Chain Monitors to provide support with implementation in accordance with SCMCT guidelines.	3-9 months	SCMCT/Supply Chain Monitors	No cost	**$0** **Cumulative Subtotal $323,411**

****Balance of $176,589 (i.e. $500,000 – $323,411) available for activities 6.2 and 9.1**

Appendix 1:

Catalogue of Policies, Legislation, Guidelines, Standards and Protocols for Health Commodity Management

Policies & Legislation

Anti-Malaria Drug Policy for Ghana (Revised) 2009, Ministry of Health

Food and Drugs (Amendment) Act, Act 523, 1996

Ghana National Drug Policy, 2nd edition, July 2004. MOH, GNDP

Ministry of Health, Health Matrix Network: Legal and Policy Framework for Health Information and Health Data Reporting (Draft), March 2008, MOH

National Health Insurance Act 2003, Act 650

National Health Policy: Creating Wealth through Health, September 2007. MOH, Ghana.

National Malaria Policy

P.N.D.C.L 3058 Food and Drugs Act, 1992

Public Procurement Act, 2003, Act 663

Quality Assurance Policy and Strategies, 2002.

Referral Policies and Guidelines, 2006

Regulations, Public Procurement Act, 2003 (Act 663)

The Pharmacy Act 1994 (Act 489)

Under 5 Child Health Policy: 2007-2015, MOH, Ghana

Standard Operating Procedures & Guidelines

Ghana Essential Medicines List, 6th edition, 2010. MOH, GNDP

Guidelines for Case Management of Malaria in Ghana (Revised) 2009. MOH, Republic of Ghana

Guidelines for CHPS Implementation

Guidelines for Donations of Drugs, Medical Supplies and Health Care Equipment in Ghana.

Guidelines for Good Storage Practices for Drugs, Cosmetics, Medical Devices and Household Chemical Substances, FDB, Ghana

Guidelines for Malaria in Pregnancy, MOH, Republic of Ghana

Guidelines for Safe Disposal of Defective and Expired Drugs, Cosmetics, Household Chemical Substances and Medical Devices, FDB, Ghana

HealthCare Quality Assurance Manual for Sub-districts, July 2004

HealthCare Quality Assurance Facilitators Guide for Sub-districts, 2006

Health Sector Four Year Medium Term Development Plan 2010-2013

Home Management of Malaria, ARI, and Diarrhoea in Ghana: Implementation Guidelines, September 2010, Global Fund

Logistics Management of Public Sector Health Commodities in Ghana: Standard Operating Procedures Manual: Regional Medical Stores to Service Delivery Points, GHS, June 2010.

President's Malaria Initiative: Malaria Operational Plan FY 2011 (Year 4), Ghana

Procurement Procedures Manual: Standard Operating Procedures for Procurement in the Public Health Sector, 2nd edition, July 2004. MOH, Republic of Ghana.

Quality Assurance Health Care Manual, 2001

Standard Tender Documents: Procurement of Health Sector Goods (Pharmaceuticals, Vaccines and Condoms), March 2004. Public Procurement Board, Accra, Ghana

Standard Treatment Guidelines 2010

Strategic Plan for Malaria Control in Ghana 2008-2015. MOH, Republic of Ghana

The Ghana Health Sector 2010 Programme of Work

The Medium to Long Term Strategy for CMS (2004-2009)

Under 5 Child Health Strategy: 2007-2015, MOH, Republic of Ghana

Training Material

Community-Based Health Planning and Services (CHPS), Community Health Officer Training Manual, Volume 1. MOH/GHS National Health Learning Materials Centre, 2009.

Community-Based Health Planning and Services (CHPS), Community Health Officer Training Manual, Volume 2. MOH/GHS National Health Learning Materials Centre, 2009.

Drugs and Therapeutic Committees Training Manual (draft)

Home Management of Malaria, ARI and Diarrhoea in Ghana: A Manual for Community Based Agents (CBAs), MOH, March 2009.

Home Management of Malaria, ARI, and Diarrhoea in Ghana: Participants' Training Manual, June 2010, MOH, Republic of Ghana

Home Management of Malaria, ARI, and Diarrhoea in Ghana: Facilitator's Guide, June 2010, MOH, Republic of Ghana

Integrated Management of Childhood Illness, Case Management Guidelines 2005 (7 Modules). MOH (Republic of Ghana), WHO & UNICEF

Malaria in Pregnancy: Training Manual for Health Providers. MOH, Republic of Ghana

Malaria in Pregnancy: Training Manual for Health Providers, Facilitator's Answer Booklet. MOH, Republic of Ghana

Quality Assurance Training Curriculum and Facilitators Guide (revised), 2005

Rational Drug Use Training Manual

Training for Newborn Care for Community Based Agents (Draft)

Training Manual for CHPS for CHOs

Appendix 2: List of Contact Persons – UNICEF and National Level

Name	Position	Organization/Location	Contact Information
UNICEF & NATIONAL LEVEL CONTACTS			
K. Addai-Donkoh	Director, SSDM	Ghana Health Service	233 21 687821 233 244 461690 kwaaddai@yahoo.co.uk
Dr. Geoffrey Acaye	Health & Nutrition Specialist	UNICEF, Tamale	233 71 22351 ext. 4008 233 540 907866 gacaye@unicef.org acayeg@yahoo.com
Naa Korkor Allotey	Programme Officer, MIP Focal Person	Ghana Health Service, NMCP	233 302 661484 233 244 462747 naa.korkorallotey@ghsmail.org korkorallotey@gmail.com korkorallotey@yahoo.com
Dr. Ahmet Asfar	Health Specialist – Supplies, Laboratory & Commodities	UNICEF, New York, USA	1 212 326 7126 aafsar@unicef.org
Egbert K. Bruce	Resident Logistics Advisor	JSI, Accra, Ghana	233 302 780732 233 244 233931 ekbruce@gmail.com
Dr. Anirban Chatterjee	Chief, Health & Nutrition	UNICEF, Accra	233 21 772524 achatterjee@unicef.org
Ms. Hamdana Chowdhury	Procurement & Supplies Manager	UNICEF, Accra	233 21 772524 ext. hchowdhury@unicef.org
Dr. George Fom Ameh	Child Development Specialist	UNICEF, Accra	233 21 772524 233 248 113969 gfomameh@unicef.org
Peter Ekow Gyimah	Head, Central Medical Stores	Ministry of Health, Ghana	233 22 204162 233 244 846919 petergyimah@gmail.com
Mrs. Martha Gyansa Lutterodt	Chief Pharmacist	Ministry of Health	233 244 328787
Mrs. Freda Maame Bartels Mensah	Director, Procurement & Supply	Ministry of Health, Ghana	233 30 266 6537 233 20 818 2285 233 242 512154 freda.mensah@moh.gov.gh mamibartmens@yahoo.com
Dr. Isabella Sagoe-Moses	Child Health Coordinator	Ghana Health Service, Accra	233 244 646065
Mr. Alhassen Yakubu	Supply Assistant	UNICEF, Tamale	233 24 4632171
Dr. Daniel Yayemain	Child Health Specialist	UNICEF, Accra	233 21 772524 ext. 1239 233 24 4606315 dyayemain@unicef.org

Appendix 3: Assessment Tools

ASSESSMENT TOOL FOR FIELD VISITS

RHD/RMS/DHD/DMS/Health Facility/CHPS

REGION:_____ DATE:_____

1. Roles and responsibilities for management of C-IMCI health commodities:

	Responsibilities	
Regional Health Directorate		
Regional Medical Stores		
	Number involved	**Responsibilities**
District Health Directorate		
District Medical Stores		
Sub-District Health Facility		
CHPS compounds		

2. Number of trained and active CBAs: District #1_____ District #2_____

3. Understanding that originally ACTs, Zinc and Amoxicillin provided by UNICEF and ORS to be provided by GHS for C-IMCI programme?

	Y/N	CHALLENGES
Regional Health Directorate		
Regional Medical Stores		

3. Understanding that originally ACTs, Zinc and Amoxicillin provided by UNICEF and ORS to be provided by GHS for C-IMCI programme? (continued)			
		Y/N	CHALLENGES
District #1:	Health Directorate		
	Medical Stores		
Sub-District Health Facility/CHPS #1A:			
Sub-District Health Facility/CHPS #1B:			
District #2:	Health Directorate		
	Medical Stores		
Sub-District Health Facility/CHPS #2A:			
Sub-District Health Facility/CHPS #2B:			

4. Persons assigned responsibility for management of health commodities for the C-IMCI:

	Activity	**Title of Responsible Individual**
Regional Level	Notification that supplies available for region (form?)	
	Transportation of supplies to region	
	Receiving & checking off supplies	
	Inventory management (storage/records)	
	Reporting stock-outs (to whom?)	
	Availability notification to lower level (form?)	
	Distribution of supplies to lower level (push/pull? transport? frequency?)	
	Quantities of supplies to be distributed (basis?)	
	Monitoring flow of supplies (part of supply chain? type?)	
	Stock count (frequency? variance?)	
	Reporting (to who? nature?)	
Remarks:		

4. Persons assigned responsibility for management of health commodities for the C-IMCI (c/td):

	Activity	**Title of Responsible Individual**
District #1	Notification that supplies available for district (form?)	
	Transportation of supplies to district	
	Receiving & checking off supplies	
	Inventory management (storage/records)	
	Reporting stock-outs (to whom?)	
	Availability notification to lower level (form?)	
	Distribution of supplies to lower level (push/pull? transport? frequency?)	
	Quantities of supplies to be distributed (basis?)	
	Monitoring flow of supplies (part of supply chain? type?)	
	Stock count (frequency? variance?)	
	Reporting (to who? nature?)	
Sub-District /CHPS #1A	Notification that supplies available for Health Facility/CHPS? (form?)	
	Transportation of supplies to facility?	
	Receiving & checking off supplies	
	Inventory management (storage/records)	
	Reporting stock-outs (to whom?)	
	Distribution of supplies to lower level (push/pull? transport? frequency?)	
	Quantities of supplies to be distributed (basis?)	
	Stock count (frequency? variance?)	
	Monitoring flow of supplies to CBAs (type?)	
	Supervising CBAs (see Supervisor Assessment Tool)	
	Reporting (to who? nature?)	

Remarks:

4. Persons assigned responsibility for management of health commodities for the C-IMCI (c'td):

	Activity	**Title of Responsible Individual**
Sub-District /CHPS #1B	Notification that supplies available for Health Facility/CHPS? (form?)	
	Transportation of supplies to facility?	
	Receiving & checking off supplies	
	Inventory management (storage/records)	
	Reporting stock-outs (to whom?)	
	Distribution of supplies to lower level (push/pull? transport? frequency?)	
	Quantities of supplies to be distributed (basis?)	
	Stock count (frequency? variance?)	
	Monitoring flow of supplies to CBAs (type?)	
	Supervising CBAs (see Supervisor Assessment Tool)	
	Reporting (to who? nature?)	
District #2	Notification that supplies available for District? (form?)	
	Transportation of supplies to district?	
	Receiving & checking off supplies	
	Inventory management (storage/records)	
	Reporting stock-outs (to whom?)	
	Availability notification to lower level (form?)	
	Distribution of supplies to lower level (push/pull? transport? frequency?)	
	Quantities of supplies to be distributed (basis?)	
	Monitoring flow of supplies to CBAs (type?)	
	Stock count (frequency? variance?)	
	Reporting (to who? nature?)	
Remarks:		

4. Persons assigned responsibility for management of health commodities for the C-IMCI (c'td):

	Activity	**Title of Responsible Individual**
Sub-District /CHPS #2A	Notification that supplies available for Health Facility/CHPS? (form?)	
	Transportation of supplies to facility?	
	Receiving & checking off supplies	
	Inventory management (storage/records)	
	Reporting stock-outs (to whom?)	
	Distribution of supplies to lower level (push/pull? transport? frequency?)	
	Quantities of supplies to be distributed (basis?)	
	Stock count (frequency? variance?)	
	Monitoring flow of supplies to CBAs (type?)	
	Supervising CBAs (see Supervisor Assessment Tool)	
	Reporting (to who? nature?)	
Sub-District /CHPS #2B	Notification that supplies available for Health Facility/CHPS? (form?)	
	Transportation of supplies to facility?	
	Receiving & checking off supplies	
	Inventory management (storage/records)	
	Reporting stock-outs (to whom?)	
	Distribution of supplies to lower level (push/pull? transport? frequency?)	
	Quantities of supplies to be distributed (basis?)	
	Stock count (frequency? variance?)	
	Monitoring flow of supplies to CBAs (type?)	
	Supervising CBAs (see Supervisor Assessment Tool)	
	Reporting (to who? nature?)	
Remarks:		

5. Availability of records for C-IMCI supplies at Regional Level showing flow into Region and out to District:

2009:	Yes	No	Custodian:	Record Type:
2010:	Yes	No	Custodian:	Record Type:
2011:	Yes	No	Custodian:	Record Type:

6. Regional records appropriate and well maintained?

2009:	Yes	No	Not Seen
2010:	Yes	No	Not Seen
2011:	Yes	No	Not Seen

7. Availability of records for C-IMCI supplies at District Level showing flow into District and out to Sub-District Health Facilities/CHPS compounds:

	YEAR	Y/N	CUSTODIAN	REMARKS (condition, record type, etc.)
DISTRICT #1	2009			
	2010			
	2011			
DISTRICT #2	2009			
	2010			
	2011			

8. Availability of records for C-IMCI supplies at Sub-District Health Facility/CHPS Level showing flow into Sub-District Health Facility/CHPS and out to CBAs:

	YEAR	Y/N	CUSTODIAN	REMARKS (condition, record type, etc.)
SUB-DISTRICT /CHPS #1A	2009			
	2010			
	2011			
SUB-DISTRICT / CHPS#1B	2009			
	2010			
	2011			
SUB-DISTRICT / CHPS/#2A	2009			
	2010			
	2011			
SUB-DISTRICT / CHPS/#2B	2009			
	2010			
	2011			

Remarks:

9. Information about C-IMCI supplies over past two years:

		ACTs	ORS	Zinc	Amoxicillin
RMS	Avg. mthly issues				
	Maximum stock				
	Minimum stock				
	Reorder point				
	Avg service level				
	Stk. out frequency				
	Avg stk out days				
	Last stock out date				
	# days stocked out				
	Expiry frequency				
District #1	Avg. mthly issues				
	Maximum stock				
	Minimum stock				
	Reorder point				
	Avg service level				
	Stk. out frequency				
	Avg. stk out days				
	Last stock out date				
	# days stocked out				
	Expiry frequency				
Sub-District /CHPS #1A	Avg. mthly issues				
	Maximum stock				
	Minimum stock				
	Reorder point				
	Avg service level				
	Stk. out frequency				
	Avg. stk out days				
	Last stock out date				
	# days stocked out				
	Expiry frequency				
Sub-District /CHPS #1B	Avg. mthly issues				
	Maximum stock				
	Minimum stock				
	Reorder point				
	Avg service level				
	Stk. out frequency				
	Avg. stk out days				
	Last stock out date				
	# days stocked out				
	Expiry frequency				
Remarks:					

9. Information about C-IMCI supplies over past two years (continued):					
		ACTs	ORS	Zinc	Amoxicillin
District #2	Avg. mthly issues				
	Maximum stock				
	Minimum stock				
	Reorder point				
	Avg service level				
	Stk. out frequency				
	Avg. stk out days				
	Last stock out date				
	# days stocked out				
	Expiry frequency				
Sub-District /CHPS #2A	Avg. mthly issues				
	Maximum stock				
	Minimum stock				
	Reorder point				
	Avg service level				
	Stk. out frequency				
	Avg. stk out days				
	Last stock out date				
	# days stocked out				
	Expiry frequency				
Sub-District /CHPS #2B	Avg. mthly issues				
	Maximum stock				
	Minimum stock				
	Reorder point				
	Avg service level				
	Stk. out frequency				
	Avg. stk out days				
	Last stock out date				
	# days stocked out				
	Expiry frequency				

10. Main challenges experienced with health commodities management for C-IMCI programme:

Regional Health Directorate:

Regional Medical Stores:

District #1: Health Directorate

District #1: Medical Stores:

10. Main challenges experienced with health commodities management for C-IMCI programme (continued):

Sub-District/CHPS #1A:

Sub-District/CHPS #1B:

District #2: Health Directorate

District #2: Medical Stores:

Sub-District/CHPS #2A:

Sub-District/CHPS #2B:

11. Strategies implemented/to be implemented to address challenges with health commodities management for C-IMCI programme:

Regional Health Directorate:

Regional Medical Stores:

District #1: Health Directorate

District #1: Medical Stores:

Sub-District/CHPS #1A:

11. Strategies implemented/to be implemented to address challenges with health commodities management for C-IMCI programme (continued):

Sub-District/CHPS #1B:

District #2: Health Directorate

District #2: Medical Stores:

Sub-District/CHPS #2A:

Sub-District/CHPS #2B:

12. Logistics Management of Health Commodities SOPs June 2010 awareness & readiness:

AWARENESS		
	Y/N	READINESS STATUS
Regional Health Directorate		
RMS		
District Health Directorate #1		
Sub-district facility #1A		
Sub-district facility #1B		
District Health Directorate #2		
Sub-district facility #2A		
Sub-district facility #2B		

Additional Remarks:

ASSESSMENT TOOL FOR CBAs

Date of Interview:_____ Region:_____

Name of CBA:_____ District:_____

PROFILE

1. Community served?
2. Length of time as a CBA?
3. What type of CBA? (LCS, HEW, HDD, CBS, etc.)
4. How were you selected to be a CBA?
5. Literate? Y N Semi
6. When and where was initial training received?
7. How long was initial training?
8. Did training include logistics management component?
9. Any refresher training done?
10. Do you feel the need for refresher training? If so, in what area?
11. Areas of satisfaction?
12. Areas of dissatisfaction?

CLIENT PROFILE

1. Total number of children seen from _____ to _____: _____
    a. # treated for malaria
    b. # treated for ARI
    c. # treated for diarrhoea
    d. referred
    e. # could not treat due to unavailability of medicines
    f. # chose to get medicines elsewhere (reasons?)
2. CBA Register seen and in good order: Y N

SUPPLIES

1. C-ICMI supplies on hand at time of visit (check physical agrees with record):

Item	**Date first received**	**Last date dispensed**	**Amount used during period**	**Quantity on hand**		**Expiry date**	**Condition**
				Physical	**Record**		
AS-AQ Tablets							
Other ACTs (state)							
ORS							
Zinc Tablets							
Amoxicillin susp.							
Other (state)							

2. How are supplies restocked? (form used, delivered/picked up)

3. Frequency of restocking? Who determined this frequency?

4. Satisfied with frequency? If not, want it less frequently or more frequently? Why?

5. Last date stock received?

6. What determines amount requested?

7. For out of stock items need to know:
    a. Date became out of stock
    b. Date of last request for item
    c. Quantity in stock when request submitted
    d. Expected date of new stock arrival

8. Do you experience frequent stock outs? (verify from tally cards/bin cards)

9. What is average estimated stock out days?

10. What are the major contributing factors for stock outs?

    a. Unexpected fluctuations in # of cases
    b. Late preparation of requisition (wait till stocks are nearly depleted)
    c. Lengthy approval process
    d. Delay in supervisor visits
    e. Supply source is out of stock
    f. Delay for supervisor to receive supplies from supplier
    g. Wrong supplies sent by supplier
    h. Inadequate quantity of supplies sent by supplier
    i. Other reason (please state)

11. Are there any particular item(s) that are consistently out of stock / run low?

12. What actions are taken to ensure client gets out of stock medicines?

13. Are medicines used on a FEFO basis? Y N Not sure

14. In what and where are medicines stored? (need to observe storage)

15. Have any drugs you have received expired prior to use? If so, how are these handled?

16. Are drugs provided to clients free of cost or sold to them?

17. If at a price, what is it and how was this price determined?

18. Do any clients have problems paying the requested price?

19. How do you deal with clients covered under NHIS?

<u>RECORD KEEPING & REPORTING</u>

1. Types of records maintained (need to see samples)

    a. CBA Register Y N In accordance with training guidelines?
    b. BIN cards Y N In accordance with training guidelines?
    c. Other (state)

2. Support received in record keeping? Y N If yes, who?

3. Who checks/reviews records?

4. Are records kept up to date? (check these) Y N

5. Problems/challenges with record keeping? If yes, nature?

6. Required to prepare reports? If yes, type(s)? To who sent/given?

SUPERVISION / SUPPORT

1. Who is your direct supervisor?

2. Did you receive a follow-up visit within 6 weeks following initial training?

3. How frequently does the supervisor visit?

4. What does supervisor do during visits?

5. What support does supervisor provide?

6. Are you satisfied with level / type of support provided? What type of additional support is required, if any?

7. Do you look forward to supervisor's visits? Why?

8. Does your supervisor contact you between visits? How?

9. Do you contact your supervisor between visits? How? Reason?

10. Do you have to go and see supervisor? How far is trip? Mode of transport? Cost?

11. Any incentives? Type?

DOCUMENTATION

1. What documents/manuals do you refer to for guidance in fulfilling your CBA role?

General Comments

ASSESSMENT TOOL FOR CBA SUPERVISORS

Date of Interview:_____ Region:_____

Name of Supervisor:_____ District:_____

PROFILE

1. Supervisor's job title and work location?
2. Community served?
3. Length of time as a CBA supervisor?
4. How many CBAs supervised?
5. When and where was initial C-IMCI training received?
6. How long was initial training?
7. Did training have a logistics management component?
8. Any refresher training done?
9. Do you feel the need for refresher training? If so, in what area(s)?
10. Areas of satisfaction with supervisory role?
11. Areas of dissatisfaction with supervisory role?

SUPPLIES

1. Where do you access supplies to restock CBAs?
2. Frequency of restocking? Who determined this frequency?
3. Satisfied with frequency? If not, want it less frequently or more frequently? Why?
4. What determines amount restocked?
5. Are there any problems supplying amounts requested?
6. How do CBAs get their stocks (delivered / picked up)?

7. Are you aware of any current stock outs of C-ICMI medicines?
    a. CBA Y N If so, which item(s)?
    b. Supplier Y N If so, which item(s)?

8. For out of stock items need to know:
    a. Date became out of stock
    b. Date of last request for item
    c. Quantity in stock when request submitted
    d. Expected date of new stock arrival

9. Does the C-ICMI system experience frequent stock outs? (verify from records)

10. What is average estimated stock out days?

11. What are the major contributing factors for stock outs? (tick all relevant)

    a. Unexpected fluctuations in # of cases
    b. Late preparation of requisition by CBAs (wait till stocks are nearly depleted)
    c. Lengthy approval process
    d. Delay in supervisor visits
    e. Supply source is out of stock
    f. Delay for you to receive supplies from supply source
    g. Wrong supplies sent by supply source
    h. Inadequate quantity of supplies sent by supply source
    i. CBA actual money collected for medicines less than recorded collections
    j. Other reason (please state)

12. Are there any particular C-ICMI item(s) that are consistently out of stock / run low?

13. What actions are taken by CBAs to ensure client gets out of stock medicines?

14. Any concerns about storage conditions for C-ICMI medicines?

<u>RECORD KEEPING & REPORTING</u>

1. Satisfied with record keeping by CBAs? Y N If not, what aspect?

2. Support received by CBAs in record keeping? From who?
3. Do you check/review CBAs' records? How often? When last?

4. Are records kept up to date?

5. CBA required to prepare reports? If yes, type(s)? To who sent/given?

SUPERVISON / SUPPORT GIVEN

1. How frequently do you visit CBAs?
2. What do you do during supervisor visits?
3. What support do you provide to your CBAs?
4. Are you satisfied with level / type of support provided? Y N If not, what are constraints?
5. What type of additional support is required, if any?
6. Do you look forward to supervisor's visits? Why?
7. Do you contact CBAs between visits? How?
8. Do your CBAs contact you between visits? How? Why?
9. Do you prepare follow-up reports of CBA supervisory visits? (need copies if available?)

SUPERVISION / SUPPORT RECEIVED

1. Who is your direct supervisor?
2. How frequently does the supervisor visit?
3. What does supervisor do during visits?
4. What support does supervisor provide?
5. Are you satisfied with level / type of support provided? What type of additional support is required, if any?
6. Do you look forward to supervisor's visits? Why?
7. Does your supervisor contact you between visits? How?
8. Do you contact your supervisor between visits? How? Why?

DOCUMENTATION

1. What documents/manuals do you refer to for guidance in fulfilling your CBA supervisory role?

2. Provision of stock records / supervisory reports for CBAs for past year.

General Comments

STORAGE FACILITY CHECKLIST			
NAME & TYPE OF FACILITY	_____		
NAME & TITLE OF PERSON IN CHARGE_____			
	Y	**N**	**Comments**
WINDOWS			
Frames in good condition			
Glass unbroken & clean			
Mosquito screen unbroken			
Security mesh unbroken			
No direct sunlight on commodities			
DOORS			
Frames in good condition			
Doors in good condition			
Hinges in good condition			
Locks in good condition			
CEILING			
Flat (no sinking in the middle)			
No leaks			
ROOF			
In good condition			
FLOOR			
Clean			
Dry and not damp			
WALLS			
In good condition			
Clean, paint in good condition			
Commodities not touching walls			
SURROUNDING AREA			
In good condition			
Clear of long grass			
Clear of rubbish			
CUPBOARDS			
Locked			
Clean			
Undamaged			

	Y	N	Comments
SHELVES			
Clean, undamaged			
Flat (no sinking in the middle)			
Shelf markings are clear			
LAYOUT			
Sufficient space between aisles			
Sufficient handling space			
Separation of work and service areas from stores			
BIN cards beside relevant items			
Adequate storage to file records			
SERVICES			
Lights working (if applicable)			
Power outlets working			
Water supply good			
Kerosene supply good			
Lanterns in good condition			
Air-conditioning units working			
Thermometer available to maintain ambient temperature			
Fire fighting equipment present & working			
PESTS			
Free from vermin & winged insects			
Free from termites			