MINISTRY OF HEALTH
REPUBLIC OF GHANA

HEALTH COMMODITY SUPPLY CHAIN MASTER PLAN

September 2012

Foreword

The Government of Ghana continues to systematically review and improve the suitability of its approaches towards the provision of health care for all people in Ghana in furtherance of its vision of a better Ghana. The past few years have seen economic change in Ghana which is impacting on disease characteristics, cost of care, increasing public and Partner expectations and potential changes in Partner contribution to financing of programs and activities. The Ministry of Health (MOH) partnerships, strategies for financing, organisation and delivery of the services have to be optimised to meet the MOH objectives now and for the future. Strategies are being reviewed, and provided where none existed to assure better organisational arrangements and allocation of resources for improved expenditure control, greater operational productivity and transparency, and increased system sustainability. The Government continues to be mindful of local and international expectations for access, equity and quality of service delivery and it seeks to put in place measures to enlighten and empower clients to expect the best service and for service providers to provide the best care for any health need. The MOH is mindful of the upward pressures on health related expenditure and is thus making the necessary changes to operations for an agile, technically sound, robust and sustainable health system.

Since the mid-2000s, the MOH and its agencies particularly the Ghana Health Service (GHS) have worked to improve the supply chain with guiding plans and Standard Operating Procedures (SOPs) to improve selected functions of health commodity supply chain management. It has utilized resources to improve infrastructure, and capacity of Human Resource for supply chain management. Although some gains have been made, recent sector review reports such as the Annual independent reviews, Audit report of the Global fund grants to the Republic of Ghana, and the Joint assessment of national strategy on HIV/AIDS has revealed systemic weaknesses that needed to be remedied if substantive improvement in health outcomes is to be achieved.

Despite the incremental improvements to the system, the MOH recognising the recommendations of the various assessments took the decision in mid-2011 to overhaul the supply chain system with the development of the first ever master plan for supply chain management of health commodities. This master plan will provide a series of strategic interventions and activities for a supply chain that fully supports the MOHs' objectives for a stronger national health system for all. It will ensure that good quality health commodities are available, accessible and affordable to all people living in Ghana and anchored by a sustainable, reliable, responsive, efficient, and well-coordinated supply chain.

The process to realise this master plan has been consultative and involved multiple stakeholders throughout all levels of the health sector. It has recommended structural changes and alignments rather than incremental or evolutionary change. The MOH expects all service providers, system managers and policy makers to take note of the strategies and activities in the master plan and apply them for the system to overcome the challenges that have beset it in the past years, and improve its capacity for total service delivery to clients.

ALBAN SUMANA KINGSFORD BAGBIN (MP)
HON. MINISTER OF HEALTH, GHANA.

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Acronyms

ARV	antiretroviral (medicines)
CHAG	Christian Health Association of Ghana
CHIM	Centre for Health Information Management
CHPS	Community- Based Health Planning Services
CMS	Central Medical Stores
EML	essential medicines list
EPI	Expanded Programme on Immunization
FDB	Food and Drugs Board of Ghana
FHD	Family Health Department
FP	family planning
GHS	Ghana Health Service
GMP	good management practice
GOG	Government of Ghana
HMIS	Health Management Information System
HR	human resources
ICC	Interagency Coordinating Committee
ICT	information and communication technology
IMT	interim management team
IP	Implementation Plan
IT	information technology
LMIS	Logistics Management Information System
MOFEP	Ministry of Finance & Economic Planning
MOH	Ministry of Health
MOU	memorandum of understanding
NACP	National AIDS Control Programme
NCDP	Non-communicable Disease Programme
NHCSA	National Health Commodity Supply Agency
NHIA	National Health Insurance Authority
NHIS	National Health Insurance Scheme
NMCP	National Malaria Control Programme
NTP	National Tuberculosis Programme
OCP	Office of the Chief Pharmacist
P&S	Procurement and Supply Directorate, MOH
PBF	performance-based financing
PPA	Public Procurement Authority
RHA	Regional Health Administration
RHD	Regional Health Directorate
RMS	Regional Medical Store
SCCC	Supply Chain Coordinating Committee
SCMP	Supply Chain Master Plan
SCMU	Supply Chain Management Unit
SCMA	Supply Chain Management Agency
SOP	standard operating procedure

SSDM	Stores, Supplies and Drug Management
STGs	standard treatment guidelines
TB	tuberculosis
TH	teaching hospital
TOR	terms of reference
TOT	training of trainers
TWG	technical working group
USG	United States Government

Executive Summary

Background

The Ministry of Health (MOH) of Ghana seeks to improve the health status of all people living in Ghana through the provision of universal access to affordable, quality health services and the development of guiding policies and effective systems. Health services and the people they serve depend on getting the right medicines and medical supplies in good condition when they are needed. In most developing countries, a visit to a health facility is not viewed as acceptable unless one or more prescriptions have been received.

The supply chain that supports these facilities and providers has, as one of its primary goals, the goal of "commodity security - when people are able to choose, obtain and use high quality medicines and medical supplies whenever they want and need them". Supply chain activities include a range of key functions, such as product selection, quantification, procurement, warehousing, transport, and quality assurance, to mention a few. Managing a high functioning supply chain also requires strong information systems to facilitate and coordinate these interrelated functions as well as efficient procurement procedures and controls. Supply chain management is the active management of commodity-related tasks, within and across organizations and health system levels, to ensure that health commodities are available to support the broader health sector objectives of the Ministry of Health.

In recent years, a number of internal and external assessments have evaluated Ghana's health sector supply chain, including a strategic review supported by USAID in May 2011. While each of these assessments found notable strengths, they also indicated that there is room for improvement in a number of areas. Supply chain weaknesses, especially at the level of the Central Medical Stores, have become more significant recently which has led to a decline in the system's performance. Some of the contributors to this decline have included broader health sector changes, including unintended consequences from decentralization within the health sector, local efforts to increase the involvement of the private pharmaceutical sector, and persistent underfunding due to internal system payment problems. In 2012, across the country, problems exist with commodity quality, pricing, and availability. In large part due to the high cost of drugs and medical supplies, the financial sustainability of the National Health Insurance Authority is also an increasing threat.

Recognizing these challenges, in late 2011, the Ministry of Health and several of its Agencies, made the decision to address the supply chain situation through the development of a Supply Chain Master Plan (SCMP). The Master Plan intends to provide a set of guiding policies and interventions, along with corresponding implementation activities, to address the systemic challenges that have been identified. Through this plan, the aim of the Ministry of Health is to transform the current system into one that can ensure ready access to quality, affordable health commodities at all public sector health facilities in Ghana.

The MOH and its agencies formed a Technical Working Group for the SCMP in late 2011 to guide the development of a Five-Year Plan for improving the health sector's supply chain [1]. The TWG was tasked with monitoring the development of the SCMP through its timely completion and engaging necessary stakeholders at appropriate steps along the way so that plan was accepted and supported. To complete its tasks, the TWG met regularly to review progress and identify and execute key steps to ensure the plan's successful completion. The TWG was chaired by the Procurement and Supply Directorate of the MOH, with secretarial support being provided by the USAID | DELIVER PROJECT. Technical assistance was also provided by the USAID |

[1] Including a number of key components: vision, strategies, implementation plan (including cost estimates), information systems guide, monitoring and evaluation plan, and risk management plan

DELIVER PROJECT with financial support from the U.S. Agency for International Development.

The technical working group consisted of health professionals from the Ministry of Health (MOH), the Ghana Health Service, the National Health Insurance Authority, the Regional Health Directorates, the private sector, and the donor community. Through their dedication, the Supply Chain Master Plan and all its corresponding components were developed.

Highlights of the Supply Chain Master Plan

One of the first activities held by the TWG was a Strategic Workshop in February 2012. This workshop defined the vision, principles, and strategic interventions required to form a comprehensive improvement plan (Master Plan) for the public sector's supply chain. Participants worked in seven thematic areas to develop and agree on important problems and challenges, to set out desired objectives and best practices, and to identify strategic interventions for implementation in order to achieve these objectives (See Annex 1: Master Plan - Key Activities and Timeline). The thematic areas included—

1. Organization (institutional capacity and roles) and coordination; human resources and supervision
2. Financing, resource mobilization, and commodity pricing
3. Procurement
4. Policy, legal, and regulatory environment
5. Distribution - storage, inventory management, transport, and waste management
6. Information systems and processes
7. Quantification and product selection

In total, the Supply Chain Master Plan includes 47 strategic interventions in its strategic section and corresponding implementation plan (IP). However, the following are highlights from the Ministry of Health's strategy for improving the supply chain:

I. A new agency of the Ministry of Health is to be established in order to bring together various important supply chain functions, provide a direct supervisory and organizational relationship between the central and middle levels of the supply chain, strengthen information systems, and advance data visibility, emphasize transparency, accountability, efficiency, and cost-effectiveness, and increase the value of the supply chain for end-users. This new agency is to be called the National Health Commodity Supply Agency (NHCSA).

II. The NHCSA shall manage a specific set of commodities – under the framework of a "Focused Public Sector Model." The three main categories of commodities are: programme commodities such as vaccines, antiretroviral, and tuberculosis (TB) medicines; family planning (FP) and malaria commodities; special and critical commodities such as cancer medicines and commodities with huge supply risks; and commodities for which the Focused Public Sector Model can provide significant "value added" benefit to the supply chain. At most, the MOH and stakeholders will determine biannually the products that fit the criteria for the focus public sector list of health commodities that will be procured and managed by the new agency.

III. Pricing, reimbursement, and mark-up policies and guidelines need to be rationalized and more carefully managed and/or controlled, and mark-ups at all levels should be directly related to the actual cost of providing the commodity.

IV. The financial sustainability of NHIA and the viability of revolving funds at all levels must be ensured and supported by formal and continuous coordination between MOH, GHS, NHIA, partners, and other stakeholders.

V. The utilization of framework contracts and other procurement methods will be increased as soon as possible, assuming a review of the current laws and regulations clarifies that their use is allowed.

VI. Direct delivery of health commodities on a national scale will be implemented efficiently and cost-effectively (scheduled and reliable movement of commodities through the public sector supply chain – from the entry point [airport or port] or manufacturer to the facilities).

VII. Selection and implementation of a comprehensive information system that supports information needs at all levels as well as data visibility for users of the supply chain.

VIII. A monitoring and evaluation (M&E) system will be put in place to provide information for needed oversight, risk management, and continuous operational guidance to assure all stakeholders about adequate implementation of the different aspects of the Master Plan.

IX. The MOH shall appoint/select an interim management team (IMT) to guide the implementation of the SCMP until the new Agency can be formalized and begin operations.

It is important to note that there are various other explicit interventions included in the SCMP and the corresponding implementation plan (see Section III below for the interventions and Annex 4 for the Implementation Plan).

Additional interventions which are to be implemented by the National Health Commodity Supply Agency, are provided below.

Identified Challenges	Additional Interventions for Implementation by the new NHCSA
Organization and Coordination	
• Overlapping and duplicative roles and tasks. • Some supply chain tasks not being performed.	• The NHCSA is to be established as a **new** agency of the Ministry of Health in order to facilitate and improve effectiveness and accountability. • NHCSA will be responsible for all major supply chain tasks, shall have direct supervisory responsibility for CMS and the ten existing RMS', and shall organize and coordinate pertinent partners and representatives from all levels of the supply chain.
Financing	
• Outstanding debts between levels of the system and partners within the system. • Pricing and reimbursement guidelines do not directly relate to the actual costs incurred.	• Outstanding debts will be settled/negotiated / written off and future payment deadlines and mechanisms will be established and enforced. • Pricing and reimbursement policies and guidelines will be rationalized, and these policies will directly relate to the actual cost of the services being provided. The MOH shall lead the effort to develop new policies. • The financial sustainability of the NHIA, and the viability of revolving funds at all levels, will be supported by formal and continuous coordination between MOH, GHS, NHIA, partners and other stakeholders. • As an agency of the MOH, NHCSA shall develop an annual budget.

Identified Challenges	Additional Interventions for Implementation by the new NHCSA
Procurement	
• Inefficient and fragmented procurement processes.	• NHCSA will review all procurement laws to clarify what procurement methodologies are allowed and will develop and utilize centralized framework contracts and other mechanisms for procurement. • If necessary, the MOH shall initiate dialogue with the Public Procurement Authority (PPA) to propose revisions to the existing procurement guidelines for the MOH and its agencies to address or modify: (a) the specific rules and guidelines for procurements by each level of the health system, (b) which levels are authorized to procure which commodities, (c) which levels are allowed to procure certain commodities only under special conditions, and (d) emphasis on quality assurance and cost containment. • The MOH and its agencies shall identify and implement information systems to ensure that procurement processes and results are visible to appropriate stakeholders.
Policy, Legal and Regulatory Environment	
• Inadequate regulatory capacity and minimal self-regulation capacity of the private sector.	• The health commodity quality assurance programme of the MOH, FDB and other agencies will be strengthened. The MOH will need to determine which agency is to lead the implementation of this intervention before the SCMP's implementation plan is finalized. • The FDB will develop and implement guidelines with the NHCSA for sanctioning procurers within the system and/or vendors selling to the system who are found to be out of compliance. • Incentives and sanctions shall be developed by the Private Health Sector Alliance and others, with NHCSA support as needed, which shall then be enforced by the FDB and the Alliance, to improve "self-regulation" of quality by manufacturers, importers, and distributors.
Distribution (Storage and Transport)	
• Delivery of supplies is limited. • Information systems and capacity are lacking. • Storage conditions and management procedures at all levels are highly variable and not up to modern standards.	• NHCSA shall develop and support the implementation of systems/tools for facilities in order to support effective inventory management. • NHCSA will review and revise storage policies and other logistics parameters for each level of the system, and actively support upgrading of facility stores. • The NHCSA shall review, and if necessary revise, established max/min levels, reorder intervals, other logistics parameters at each level of the system.
Information systems	
• Modern information systems are limited. • Data collection and sharing is limited as is data visibility.	• Integrated LMIS design shall be completed and implemented. • NHCSA will define data requirements for each user group, as well as data sharing policies, procedures, processes, and service levels. • NHCSA shall be responsible for reviewing the scope, project plans, requirements, designs and capabilities of any current automation projects in relation to logistics management to determine whether they are appropriate to meet future needs. • The MOH shall establish a Logistics Coordinating Committee at the national level which NHCSA will lead after it is formed

Identified Challenges	Additional Interventions for Implementation by the new NHCSA
	and staffed. NHCSA will guide the establishment of Logistics Coordinating Committees at the regional level.
Quantification and Product Selection	
• Various organizations are involved in quantifications. • National guidelines are not available.	• Quantifications will be coordinated by NHCSA. Quantifications and updated supply plans shall be used to inform actual procurements, especially for procurements performed by NHCSA and others at the national and/or regional levels. • National guidelines for quantification will be developed and disseminated by NHCSA. • Results from quantification activities will be shared with all relevant stakeholders through direct communications, information systems, and coordination committees at the national and regional levels.

Implementation Plan

In June 2012, the TWG and other MOH and MOH Agency representatives participated in an Implementation Plan Workshop, during which they developed a five-and-a-half-year implementation plan for the SCMP. A number of the highlights of the interventions from the implementation plan are provided above, and the detailed plan is included in Annex 4. The detailed plan also includes responsibilities, activities and sub-activities, milestones, and cost estimates.

It is also important to note that due to the upcoming national election in December 2012 and the normal Government of Ghana processes for creating and approving a new agency within Ministry, the MOH does not anticipate that the new NHCSA will be formalized until the third or fourth quarter of 2013. As a result, Implementation Plan activities are organized into two parts: the transition period (present through December 2013) and the formal implementation period (starting with the new budget year in January 2014).

It should also be noted that, if the Master Plan and its corresponding Implementation Plan are to be a practical and meaningful guide to the transition to a new and improved health commodity supply system under the new agency, the MOH and its agencies need to make additional decisions about the scope, structure, and functional responsibilities of the proposed agency. There are also significant leadership issues for the transition period leading up to formal creation of the new agency as well as for the post-agency period.

Implementation Plan Costing

Using the detailed Implementation Plan as a guide, cost estimates for the Supply Chain Master Plan were completed. These cost estimates were developed using three cost categories: (1) recurrent costs (2) capital costs, and (3) activity costs, and the sum of these costs constitutes the "best guess" of the financial commitments associated with the establishment and operation of the proposed National Health Commodity Supply Agency and the related activities required to strengthen the public sector's supply chain. The figures produced during this exercise are valuable as a contribution to resource mobilization and budgeting exercises, but should not be viewed as "precise".

Recurrent costs: Recurrent cost estimates include salaries for the interim management team (IMT); and procurement, storage, distribution, and management personnel at the NHCSA, the CMS, and the 10 RMSs (see Table 2 below). Once the Agency is established, costs for the IMT will end and salary costs for NHCSA will begin. These cost estimates also include utility costs

and costs for the transport of commodities. Some recurrent costs of the new system reflect continued operations from the existing system.

Capital costs: The capital cost category includes: estimates of the start-up costs for the new Agency, an integrated LMIS, related IT infrastructure, and associated expenses including office vehicles (but not office equipment and furniture).

In regard to LMIS and IT, the logistics management information system and related IT infrastructure cost estimates presented in this plan are at the low end of the range provided within IBM's April 2012 report. This assumption reflects the Technical Working Group's August 2012 proposal to pursue a relatively decentralized approach; however, these costs may vary significantly (upward) based on significant changes in scope and/or design of the LMIS. It should therefore be noted that in their May 2012 report entitled Supply Chain System IT Roadmap[2], the IBM team proposed a more robust solution than that recommended by the TWG. The IBM team proposed the middle of their three options, calling it the "hybrid ERP solution", or Option 2. This option is briefly described in the text box in section VII under the subsection capital costs.

Activity costs: Activity costs were calculated based on estimates of level of effort and resources required to implement each activity in the IP (see Table 4 below); therefore, an increase in the actual level of effort and/or related resources will result in higher costs for that activity. Technical assistance (TA) to support the IMT and/or NHCSA is included in this category of costs.

Activities have been estimated for two periods of time: the transition period preceding the establishment and effective operational start of the NHCSA (July 2012–December 2013) and the remaining period of the SCMP Implementation Plan (IP) (January 2014–December 2017).

Cost estimates for transition activities were developed based on inputs received from the TWG and other MOH and MOH Agency representatives during a costing workshop held in July 2012. It is assumed that the IMT will implement transition activities up to the effective operational start of the NHCSA, presumably Quarter 1 of 2014. Expense categories for activity costs were defined as items such as workshops; trainings; meetings; monitoring visits; level of effort for IMT TA provider; level of effort for consultants; and printing.

Salaries for the IMT include level of effort for one technical assistance provider (included in the activity costs) and annual salaries for two MOH staff (included under operational expenses).

For a more comprehensive view of the cost estimates developed for the five-and-a-half-year life of the implementation plan, see Section VII below and Annex 6. Highlights within these costs estimates include:

- Infrastructure costs for office and warehousing space;
- LMIS and related IT requirements;
- Staffing for logistics operations; and
- Distribution requirements at the central and regional levels (among many others).

Summary of Cost Estimates: The summary table below summarizes the three cost categories described above. A detailed cost breakdown of the activity costs can be found in Annex 4. Throughout the life of the Master Plan (2012-2017), the operations of the NHCSA (estimated recurrent expenses of $21,901,438; capital investment estimates of $5,528,520; and activity cost estimates of $28,411,443) add to a **total implementation cost of $55,841,401.** It is anticipated

[2] Supply Chain System IT Roadmap, 9 May 2012, IBM Global Business Services - Corporate Services Corps, pages 27, 34, and 35.

that these costs will be "offset" by savings from streamlined and harmonious operations, responsive staff, increased volume of throughputs in the system leading to better commodity security, fewer stockouts, improved clinical outcomes, increased opportunity and ability to meet the Millennium Development Goals, and improvement of NHIA's financial statements.

In addition, if pricing is fully addressed by the MOH and its agencies, reductions in NHIA reimbursement costs for medicines and medical supplies, which have seen exponential increases from NHIA's early years (7.6m cedis in 2005 or approximately $9.5m) to 2009 (308.15m cedis or approximately U.S.$205.43)[3], will complement the investments in the SCMP over the five years. , The potential savings to NHIA could be considerable.

Summary of Costs for Implementing Five Year Master Plan (in USD)

Category of Costs	Implementation Plan Year						
	2012	2013	2014	2015	2016	2017	Total
Recurring	0	37,160	4,802,239	5,220,034	5,674,176	6,167,829	**21,901,438**
Capital	0	1,728,520	3,800,000	0	0	0	**5,528,520**
Activity	595,824	1,117,951	6,719,255	6,712,405	6,719,255	6,546,753	**28,411,443**
Total	**595,824**	**2,883,631**	**15,321,494**	**11,932,439**	**12,395,447**	**12,716,599**	**55,841,401**

Monitoring and Evaluation Plan

Milestones from the Implementation Plan were utilized to create a Monitoring and Evaluation (M&E) Plan for the first two years of SCMP implementation (see Annex 5), at which time the National Health Commodity Supply Agency is expected to revisit and update the M&E plan to tailor it to the situation in Ghana at the time the Agency becomes operational.

All interventions, activities (with the rationale behind the activity), tools and costs are explained within this SCMP and its Annexes. The SCMP represents a partnership between the Government of Ghana and non-governmental partners and intends to provide a clear road map for improving the functionality of the public health supply chain as well as the improving the overall health of all Ghanaians.

[3] 2009 NHIA annual report and reference exchange rates from www.xe.com.

1.0 Background

The Ministry of Health (MOH) seeks to improve the health status of all people living in Ghana through developing guiding policies and providing universal access to affordable, quality health services. Health services and the people they serve depend on getting the right medicines and supplies in good condition when they are needed. Supply chain management is the active management of commodity-related tasks, within and across organizations and health system levels, to ensure that commodity availability supports broad health sector objectives. Supply chain activities encompass a range of functions, including quantification, procurement, warehousing, and transport, to mention only a few. A reliable supply chain also requires state-of-the-art information systems to facilitate and coordinate these interrelated functions.

A number of studies and assessments have examined Ghana's health sector supply chain. Despite significant strengths, major challenges to availability, quality, affordability, and rational use remain. The supply chain suffers from serious deficiencies related to integration, not just across commodity groups, but also in relation to functions, levels, and MOH agencies. There is a lack of data visibility, trust, and coordination and, in some areas, a misalignment of incentives and objectives. Existing systems tend to be insular, roles and responsibilities lack clarity, and there are too many no-value-added processes, as well as too many actors managing similar tasks. In part due to these ongoing challenges, the MOH recently made a broad commitment to improving the commodity security situation in the country, and in particular, to upgrading the supply chain so that it fully serves the needs of public sector facilities and their clients.

To address many of the challenges mentioned, a strategic review supported by USAID was conducted in May 2011. This review was intended primarily to support the Government of Ghana (GOG) in developing its strategic vision for the public sector healthcare supply chain. It also informed and guided future activities of the USAID | DELIVER PROJECT and other USAID | Ghana implementing partners, and provided recommendations for other USG agencies and development partners. The strategic review outlined the next steps:

1. Given that numerous assessments have already been carried out resulting in many recommendations but little concrete action, political commitment to the importance of reform is an essential first step. The highest levels of political leadership need to commit publicly to reform and establish a timetable of actions to be taken.
2. The MOH and its agencies would form a special working group (or leverage an existing Technical Working Group) immediately for public sector supply chain reform. This group would have a deadline to convene a meeting of major stakeholders, prepare and present strategic options (which can be based on this review or other recent assessments) to these stakeholders, and obtain consensus on preferred solutions.
3. Preferred technical solutions agreed on by major stakeholders, including roles and responsibilities for all major actors—Central Medical Stores (CMS), Stores, Supplies and Drug Management (SSDM), Procurement Unit, Office of the Chief Pharmacist (OCP), Regional Health Directorates (RHD), programs (NTP, NMCP, NACP, FHP, EPI, NCD), private sector, Food and Drugs Board of Ghana (FDB), and the National Health Insurance Authority (NHIA)—would be presented to the Minister of Health for approval.
4. A strategic plan—in effect a Master Plan for the Healthcare Supply Chain—would be developed for the public sector healthcare supply chain with clearly defined

objectives, timelines, and responsibilities. This strategy would be endorsed by high-level political leadership.

5. A technical working group would monitor implementation and report to partners routinely on progress.

Following these recommendations, a technical working group (TWG) was formed to guide the development of the Supply Chain Master Plan (SCMP); members of the TWG include staff and representatives of the MOH, GHS, the NHIA, and the private sector, as follows:

- Samuel Boateng—Procurement and Supply Directorate, MOH (Chair)
- Sam Buabasah—NHIA
- Martha Gyansa—Lutterodt—Office of the Chief Pharmacist
- Kwasi Addai-Donkoh—Stores, Supplies, and Drugs Management (SSDM), GHS
- Emmanuel Barnes—Volta Region—Regional Health Directorate/Ghana Health Service
- Solomon Obiri—Eastern Region—RHD/Ghana Health Service
- Edith Andrews-Annan—World Health Organization
- Louis Nortey—Private Health Sector Alliance
- Mimi Darko—Food and Drugs Board
- Ebow Dadzie—Expanded Program on Immunization
- Egbert Bruce—USAID | DELIVER PROJECT

One of the first activities planned by the TWG was a Strategic Workshop to define the vision, key principles, and strategic interventions needed to form a comprehensive improvement plan (Master Plan) for the supply chain. Participants worked in seven thematic areas to develop and agree on important problems and challenges, to set out objectives and best practices, and to propose strategic interventions for implementation to achieve the objectives and best practices (See Annex 1: Supply Chain Master Plan - Key Activities and Timeline). The thematic areas included—

- organization (institutional capacity and roles) and coordination, human resources, and supervision;
- financing, resource mobilization, and commodity pricing;
- procurement;
- distribution—storage, inventory management, transport, and waste management;
- information systems and processes (including Logistics Management Information System [LMIS]);
- quantification and product selection; and
- policy, legal, and regulatory environment.

The SCMP will provide the framework for efficient and continuous supply to public and private facilities to provide quality health care. The MOH acknowledges that there is a thriving private pharmaceutical sector in Ghana, and that local companies will continue to sell a range of essential medicines and health products to health facilities in the country. The supply chain of the public sector will provide a specific set of medicines, which may, in most instances, be procured through local manufacturers, importers, and agents.

2.0 Vision, Mission and Principles for the Supply Chain

Participants in the Strategic Workshop developed the following vision, mission and principles for guiding improvements to the public sector's supply chain.

2.1. Vision Statement

"To ensure that good **quality** health commodities are **available**, **accessible**, and **affordable** to all people living in Ghana and anchored by a sustainable, reliable, responsive, efficient, and well-coordinated supply chain".

2.2. Mission

"Provide a series of strategic interventions and activities for a supply chain that fully supports the Ministry of Health's objectives for a stronger national health system for all".

2.3. Principles

Efficiency and Sustainability
The supply chain should be efficient and as business-focused as possible across all levels, maximizing economies of scale and sustainability and minimizing waste.

Accountability
The supply chain should be accountable for results and held to defined measures of performance.

Transparency/Visibility of Data and Information
The supply chain should be based on transparency, in terms of roles and responsibilities, procedures, and data, throughout all levels.

Human Resources
The supply chain needs to have an adequate number of appropriately skilled human resources (qualifications, experience, and attitude) to attain its vision and objectives.

Client-Oriented
The system should earn and maintain the trust of the end users through reliability and responsiveness.

Environmentally Friendly
The supply chain should be environmentally friendly by emphasizing safe waste disposal.

Non-Discriminatory
The supply chain should not discriminate among end users (clients).

National Health Objectives
The supply chain should support the achievement of national health objectives.

Laws and Policies
The supply chain should operate in accordance with existing laws and policies.

Technology
The supply chain should use available technology, including information systems, to be efficient and facilitate the visibility of data up and down the supply chain. The supply chain should emphasize and use data for decision-making.

Coordination
The supply chain should coordinate inputs of all stakeholders.

3.0 Thematic Areas: Problems and Challenges, Objectives, and Strategic Interventions

Throughout the Master Plan development process, the governmental and partner representatives worked in the thematic areas noted above to establish their priorities for supply chain improvements for the coming five year period. The process included agreement on the current problems and challenges, the establishment of objectives and best practices for improvement, a review of possible interventions, and the selection and refinement of a series of strategic interventions for building and operating a supply chain that fully supports the MOH's objectives for a strong and reliable national health system.

This process was completed primarily in February 2012 during a participatory strategic workshop involving a range of health sector stakeholders. The purpose of these interventions is to direct the development of a public sector supply chain which has clear roles and responsibilities, streamlined processes, visibility of logistics information up and down the supply chain, the agility to respond to changes in supply and/or demand, trust and collaboration between supply chain partners, and alignment of objectives and actions. The problems and challenges, objectives and best practices, and proposed interventions for each of the seven thematic areas are presented below.

3.1 Organization (Institutional Capacity and Roles) and Coordination, Human Resources, and Supervision

Currently, there are multiple organizations involved in supply chain activities, with overlapping and duplicative offices, activities, and tasks. At the same time, a number of important supply chain tasks are not being assumed by any of these entities. The role of Central Medical Stores (CMS) is not clearly defined, and the CMS and the ten Regional Medical Stores (RMSs) have no formal supervisory or organizational relationship. In response to these and the following **organizational, role, and human resource challenges**:

a. Over the last decade, the supply chain that supports public health facilities has been altered significantly due to decentralization, the creation of the Ghana Health Services, and the Procurement Act of 2003, yet roles and responsibilities for supply chain functions across the MOH and its agencies have not been adequately evaluated, updated or refined to reflect these changes. There is duplication across agencies, little clarity on authority, limited formal coordination among the entities working on supply chain activities, and an apparent lack of trust across the key agencies.

b. The roles of the Central Medical Stores (CMS) are not clearly defined; in part due to the changes noted above, and the CMS and the ten Regional Medical Stores have no formal supervisory or organizational relationship.

c. Key supply chain functions and tasks are currently not being done by any of the entities involved in commodity management activities.

d. In recent years, organizational commitment to ensuring a high performing supply chain has been lacking, as several system strengthening recommendations and initiatives have collapsed before reaching implementation.

e. Performance monitoring of the supply chain is weak and fragmented due to limited data collection and consolidation (information systems), and to a lack of accountability and responsibility among/across agencies.

f. While human resource needs are recognized by some of the various supply chain entities, skills and numbers of supply chain-related personnel are still limited due to unclear roles and a lack of investment. There is limited supply chain capacity at most

levels, and no pre-service training in professional and technical supply chain schools related to logistics.

g. Regular supportive supervision related to the management of commodities is rarely carried out.

h. The private sector is the primary supplier of most health commodities for public sector facilities, but as a group, it is also highly fragmented, inefficient, and profit motivated.

The following **Objectives and Related Best Practices** were established:

a. The health commodity supply chain is to be managed by one organization / entity, facilitating effectiveness and accountability.

b. The sharing of data, regular communications, and formal coordination shall routinely occur among and between supply chain 'players', including facilities, higher levels of the supply chain (CMS and RMS'), and managerial entities (MOH and its agencies).

c. Commodity management roles and responsibilities will be carefully defined, presented clearly, and accepted.

d. The public sector supply chain shall add value in support of health commodity availability at all facilities.

e. Products to be managed by the public sector's supply chain shall be carefully defined, regularly communicated, and accepted by all supply chain entities.

f. The supply chain shall have adequate human capacity, both in terms of quantity and quality, and skills shall adequately reflect job requirements.

g. Regular supportive supervision by knowledgeable staff shall be a key 'maintenance' tool for data reliability and accuracy.

h. The monitoring process and key indicators for supply chain performance shall be carefully defined, with roles and responsibilities for the MOH and its agencies also carefully defined. Clients and supporting partners should also be involved in the monitoring process.

To respond to the challenges and to address the objectives and best practices noted above, the participants of the strategic workshop proposed the following **interventions**:

a. A new 'Supply Chain Management Unit' (SCMU) should be established in order to bring together various important supply chain functions, provide a direct supervisory and organizational relationship between the central and mid-levels of the supply chain, strengthen information systems and build data visibility, and emphasize accountability, efficiency and cost-effectiveness, and increase the value of the supply chain for end-users.

b. The SCMU shall manage a limited set of commodities – called the "Focused Public Sector Model", including:

- programme commodities, e.g. ARV medicines
- special and critical commodities, e.g. cancer medicines
- other commodities for which the SCMU can provide significant value-added. This group is expected to include commodities that are utilized in large volumes and where 'bulk' procurement can provide lower prices.

c. The SCMU should be established as a **new** agency of the Ministry of Health in order to facilitate and improve effectiveness and accountability.[4]

d. A list of health commodities that are to be managed by the new SCMU shall be developed and disseminated. This list is to be used as a communication and role clarification tool and shall be updated regularly.

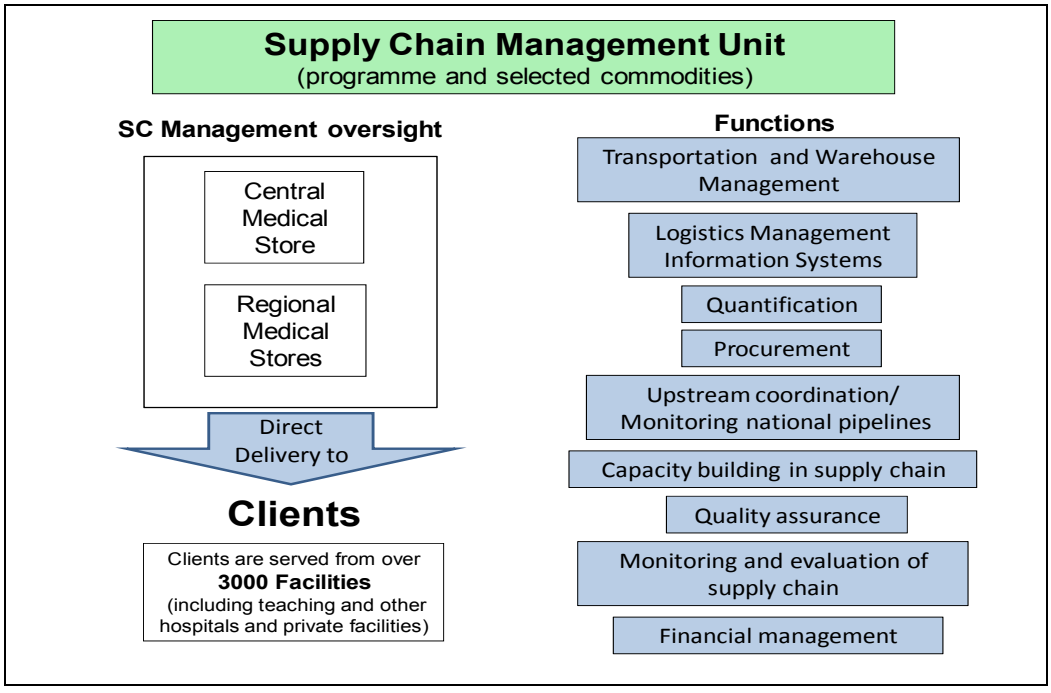
e. Supply chain roles and responsibilities will be clearly defined, especially regarding desired / expected 'service levels' and priorities for ensuring that the proposed SCMU adds value, and then develop and implement a plan of action. This assessment shall include whether the public sector should have a role in covering availability gaps for certain commodities, if and when the private sector is not reliable, in order to ensure that commodities are always available.

f. Information systems and improved data visibility are a priority for the MOH and its agencies, including the SCMU.

g. The roles and composition of current Interagency Coordinating Committees and other coordination mechanisms will be reviewed, to ensure that supply chain and health commodity issues are incorporated and that they are addressed in an integrated manner (not programme specific).

h. Human resource, training, and pre-service education requirements will be addressed to support improvements in the supply chain, addressing skills, tools, and supportive supervision needs.

The figure below outlines the management oversight relationships, as well as the key functions of the proposed SCMU.



[4] This structure was preferred by the participants of the strategic workshop to leaving the SCMU's roles under the MOH or to placing it under the Ghana Health Services. At the Stakeholders Meeting on 15 February 2012, concerns were expressed regarding the "new agency" option, although these concerns seemed to dissipate over time.

3.2 Financing, Resource Mobilization, and Commodity Pricing

The supply chain is marked by payment delays and long-standing indebtedness: from the NHIA to facilities, from facilities to the RMS, from the RMS to CMS, these debts and delays have a significant negative impact on future procurements. There is little direct relationship between the markups and reimbursement prices for the actual cost of commodities. Prices for consumers and insurers are up to three times higher than the international reference prices. The financial sustainability of the National Health Insurance Scheme is critical to commodity availability and affordability in the health sector, yet medicine and supply costs have steadily risen from 15% to 54% of NHIA's claims expenditures over the last five years.

In addition, the additional **financing**, **resource**, and **pricing challenges** below were included:

- The financial sustainability of the National Health Insurance Authority (NHIA) is critical to commodity availability and affordability in the health sector. Health commodity costs have risen to more than 54% (2011) of NHIA's total claims expenditures, up from roughly 15% (2007).
- CMS does not have sufficient resources to ensure commodity availability for all essential health commodities, due in part to cash flow delays and long-standing debts. Payment delays and debts exist between NHIA and facilities, between facilities and the RMSs, and between the RMSs and CMS. These cash problems inhibit the ability of facilities (CMS, the ten RMSs and HF) to initiate future procurements.
- Prices for consumers and insurers are far from optimal. A recent study suggested that prices are approximately three times international reference prices.
- Markups are generally higher than policies allow and are highly variable by location. In addition, policies do not require relating markups to the actual cost of the services being provided.
- There appears to be little relationship between NHIA reimbursement prices for commodities and what facilities actually pay for these commodities. This is due in part to a lack of aggregated pricing data and poor sharing of pricing information and other commodity information among key stakeholders.
- Decentralization, while useful in many instances, has had a negative impact on supply chain effectiveness, and on the procurement of health commodities, making the overall process both inefficient and cost-ineffective.
- Some managers within the supply chain do not prioritize programme commodities (ARVs, contraceptives, immunizations, and others) since doing so does not contribute to locally generated revenues.
- NHIA is currently piloting capitation, which, if implemented nationwide, will shift the burden of high health commodity prices from NHIA to facilities and the supply chain. Changes in funding levels and mechanisms (reimbursement) are likely to affect facility-level revolving drug funds dramatically.

The following **Objectives and Related Best Practices** were established:

- The primary resource goal of the supply chain, and for entities working in the supply chain, is to ensure that the right products are available at all health facilities (full supply of quality products with minimal waste).
- The MOH, GHS, and other partners and stakeholders will work together to ensure the financial sustainability of NHIA and the viability of revolving funds at all levels.

- Product pricing and markups at CMS, RMS, and facilities will be rationalized in support of improved affordability and sustainability.
- Adequate funds will be available from all sources (government, partners, and donors) for health commodities and supply chain capacity and infrastructure strengthening, including information technology (IT) and other systems, and funds are to be used effectively in procurement and distribution activities to ensure value-for-money.
- Payment mechanisms will be in place and tracked to allow revolving funds to work as designed (funds are quickly available for the purchase of new commodities).
- When policies, procedures, processes, and service levels are developed for financing and/or pricing interventions, all key entities (players) will be involved to coordinate and enforce implementation.

To address the challenges and meet the objectives and best practices mentioned above, participants in the Strategic Workshop proposed the following **interventions**:

a. All outstanding debts related to health commodities will be settled/negotiated/written off, and future payment deadlines and mechanisms will be established and enforced. The MOH and NHIA will need to develop a specific plan for this intervention so the activities can be included in the SCMP implementation plan.
b. Pricing and markup policies and guidelines will be rationalized, and these policies will directly relate to the actual cost of the services being provided. The MOH shall lead this effort and will need to develop a specific plan for this intervention with NHIA so the activities can be included in the SCMP implementation plan.
c. Reimbursement policies and guidelines will be rationalized and should relate more directly to the actual cost of the services being provided. NHIA will lead this effort.
d. The financial sustainability of NHIA, and the viability of revolving funds at all levels, will be ensured, and supported by formal and continuous coordination among MOH, GHS, NHIA, partners, and other stakeholders.
e. Roles and responsibilities will be defined for the appropriate management of drug revolving funds at facilities and within the supply chain.
f. Policies and procedures related to the appropriate management of drug revolving funds at facilities and within the supply chain will be strictly monitored and supervised.
g. The Five-Year Supply Chain Master Plan will include cost estimates for human resource needs, infrastructure, and operational support, which will then be used to solicit financial support.

3.3 Procurement

The thriving private pharmaceutical sector plays a key role in supplying commodities to public sector facilities, while the CMS currently has a secondary role. However, the private sector is highly fragmented, with a large number of relatively small manufacturers, importers, and distributors competing for sales. This has led to inefficient processes, high prices, and unintended risks for commodity availability and commodity quality. Clients and facilities are not receiving the benefits of negotiated framework contracting or other procurement mechanisms, which might improve quality and lower prices. Procurement transparency is also a notable concern. Some additional **procurement problems and challenges** include the following:

- Procurement delays and difficulties with procurement have damaged Ghana's status with the Global Fund, causing ratings of Ghana's grants to slip from "A" to "B" and then from "B" to "C." These delays are due to highly bureaucratic procedures, political interference, and delayed release of funds, among others.
- There is unnecessary duplication of supply chain roles across the MOH and its agencies—i.e., GHS has a procurement and supply unit with practically the same mandates as the MOH's Procurement and Supply Directorate (P&S).
- In the current procurement environment, clients and facilities are not receiving the benefits of negotiated framework contracting or other procurement mechanisms, which have the potential for improving quality assurance and lowering prices. The risks for clients and insurers include non-assured quality and unnecessarily high prices for health commodities.
- Procurement transparency is a notable issue. In addition, as information systems are limited, there are few data on procurement performance, so it is difficult to accurately diagnose the problems and issues.
- At lower levels (regions, districts, hospitals), procurement by tender is common, with bidders coming from the local private sector. Information systems are not in place to allow for monitoring and evaluating the extent to which procurements follow established norms and procedures, especially regarding quality, or for collecting pricing data.
- The role of procuring commodities used in public health facilities is splintered across many entities (MOH, CMS, RMS, GHS, Regional and District Administrations, teaching hospitals, and almost all health facilities), making coordination and control challenging and fragmentation significant.

The following **Objectives and Related Best Practices** were established:

- Health commodities will be procured consistently and will meet recognized standards for quality, and quality standards will be upheld at all levels in all transactions.
- The number of entities involved in public sector procurement will be minimized.
- Optimal wholesale prices from procurement processes will be obtained.
- Sufficient quantities of commodities to meet client demand will be procured.
- Procurements will be done efficiently and quickly while adhering to applicable procurement laws, mandates, and regulations.
- Procurements will be made under international/national tender and other procurement methods as permitted by government procurement rules.
- Government procurement rules allow procurement procedures that provide government with the best possible value for money.
- Customs levies and import taxes for all imported commodities, including donations and supplies funded by development funds, if required, will be covered by the MOH, which will make adequate budgetary provisions for these costs, or they will be included in commodity sales prices.
- Adequate funds will be made available from all sources and used effectively in procurement.

To address the challenges and meet the objectives and best practices mentioned above, participants in the Strategic Workshop proposed the following **interventions**:

a. The SCMU will develop and use centralized framework contracts and other procurement mechanisms that offer better prices, assure quality, and provide flexibility for responding to fluctuations in demand for commodities that are determined to be part of its ongoing mandate.
b. If a review of the current laws and regulations is insufficient to clarify what is allowed/not allowed regarding procurement methods, the MOH will initiate dialogue with the Public Procurement Authority (PPA) to propose revisions to the existing procurement guidelines for the MOH and its agencies to address or modify—
    - the specific rules and guidelines for procurement at each level of the health system;
    - which levels are authorized to procure which commodities;
    - which levels are allowed to procure certain commodities only under special conditions; and
    - quality assurance and cost containment, in addition to acknowledgement of the value-added and/or convenience of the services being provided by a vendor (e.g., direct delivery).
c. The MOH and its agencies will identify and implement information systems to ensure that procurement processes and results are visible to appropriate stakeholders. The MOH will need to determine which agency will lead implementation of this intervention.
d. National-level procurement plans will be developed, implemented, and monitored, based on improved and more comprehensive commodity forecasts.
e. Procurement of selected health commodities for use by public sector facilities will be more restricted
f. Information systems and processes will be implemented to ensure procurement processes and results are visible to appropriate stakeholders.

3.4 Distribution—Storage, Inventory Management, Transport, and Waste Management

Delivery within the public sector supply chain is limited (lower levels generally collect). From a service point of view, therefore, the public sector's supply chain is not competitive with that of the private sector, as most private vendors deliver directly to facilities. Modern information systems and capacity are lacking at CMS and the RMS, and storage conditions and stores management procedures at facilities and other warehouses are highly variable and not up to modern standards. Distribution decisions are being made by various supply chain entities, in various locations, depending on the commodity or programme. In addition, the following **distribution system problems and challenges** have been identified:

- Delivery within the public sector supply chain is limited (lower levels generally collect), due to low prioritization of this supply chain function, lack of clarity regarding responsibilities, and transport capacity limitations.
- Facilities, programmes, the 10 RMSs, and CMS all make distribution related decisions, depending on the commodity or programme involved. Coordination of these decisions is minimal.
- Most private sector vendors deliver as part of the services they provide; so public sector services are not competitive from a service-level perspective.

- The MOH has defined distribution policies and procedures (for direct delivery from each RMS to the facilities) but has not implemented them adequately. Only two regions are currently managing any type of delivery service.
- Modern information management capacity is lacking at CMS and the 10 RMSs. Logistics data are not adequate in scope or readily available. Efforts to date have been limited and under-resourced.
- Storage conditions and stores management procedures throughout the supply chain and at lower levels (facilities) are highly variable and not up to modern standards. Inventory management is generally weak.
- The availability and quality of essential medicines in public sector facilities is highly dependent on the individual capacity and integrity of private sector suppliers.

The following **Objectives and Related Best Practices** were established:

- The distribution system will reflect the MOH's vision for the supply chain, providing efficient and reliable commodity support to public sector health facilities for a defined set of health commodities.
- All stakeholders will know and understand which commodities are to be supported by the public sector's supply chain.
- The distribution system will be predictable, reliable, and responsive, with quantity decisions made from user data (need-based ordering and procurement).
- The physical capacity of the Central Medical Stores and the 10 RMS will match with commodity groups they are expected to support.
- Transport requirements will be part of the regular annual plan and budget cycle.
- Health commodities will be moved successfully from manufacturer to service delivery points (facilities) as quickly as possible.
- The quality and safety of health commodities will be ensured while in stores and during transportation.
- Adequate and competent human resources will be available to support storage and transport needs.
- Waste and disposal issues will be addressed carefully to protect public safety and support organizational effectiveness.
- The costing of the storage and transport services provided by the SCMU and others involved in supply chain activities will be completed annually to justify their markups.

To address the challenges and meet the objectives and best practices mentioned above, participants in the Strategic Workshop proposed the following **interventions:**

a. The service levels for the new SCMU (goals, objectives, targets) will be clearly defined, as will the requirements and expectations for information systems, warehouse management, and transport systems. The logistics capacity requirements to fulfill the goals and objectives set out in the Master Plan will be assessed.
b. The SCMU will develop and support the implementation of systems/tools for facilities (including teaching hospitals) that will support efficient inventory management. Facilities must also provide appropriate storage space, conditions, and equipment to ensure commodity safety and quality and to address waste and disposal needs.

c. The SCMU will undertake direct delivery on a national scale efficiently and cost-effectively (reliable movement of commodities in the public sector supply chain: from CMS to RMS and from RMS to facilities).
d. The SCMU will consider and evaluate outsourcing (and/or vendor-managed inventory systems) as short-term or long-term interventions for various components of the supply chain.
e. The SCMU will review, and if necessary revise, established max-min levels, reorder intervals, and other logistics parameters at each level of the system.
f. The MOH and its agencies, together with the SCMU, will develop policies and procedures for an annual costing exercise of supply chain services, as well as a costing strategy for aligning service levels with markup(s). In addition, as an agency of the MOH, the SCMU will need to develop an annual budget.
g. Modern information systems will be identified and implemented to ensure that commodity procurement information is accessible (data visibility) and easily usable by decision makers and appropriate stakeholders.

3.5 Information Systems and Processes (including Logistics Management Information Systems)

Modern automated information systems for the management of health commodities are limited throughout the supply chain. Data collection and sharing are poor, and data visibility for managers is lacking. National-level logistics data are unavailable, and data reporting is inhibited by organizational boundaries. Though Logistics Management Information System (LMIS) designs exist for selected public sector commodities, they are not integrated and do not function adequately. The following **information system and process problems and challenges** were identified:

- Modern automated information systems for the management of health commodities are limited throughout the supply chain, especially in relation to the levels of efficiency and effectiveness expected in Ghana. Data collection and sharing are poor, and data visibility for managers is lacking.
- Multiple organizations are involved in supply chain activities, and sharing of data and information is weak (due to a lack of good data systems and coordination). Data reporting is inhibited by organizational boundaries.
- National-level data for decision making are largely unavailable due to poor systems and a lack of incentives for reporting (especially with regard to private sector purchases).
- LMIS designs exist for some public sector commodities, but they are not integrated and do not function adequately. Programme commodities are managed vertically, separately, and in varying ways by the programme departments of the GHS.
- Inventory data for the CMS and the 10 RMSs are not connected in real time, so transfers and active stock management are not common.
- Facility reporting and ordering are not integrated or coordinated. Distribution decisions are made by various supply chain entities, depending on the commodity or programme.
- CMS and implementing programmes do not routinely receive information on procurements and shipment tracking for programme commodities. No systems are in place to track and monitor shipments by the MOH and its partners.

The following **Objectives and Related Best Practices** were established:

- Ensure that relevant data for decision making and performance monitoring are collected and reported on an established schedule. These data will be widely available to and used by all levels (design and implementation of an integrated LMIS, which includes facilities, RMS, CMS, GHS central, GHS programmes, and MOH). The LMIS planning process should take into account existing IT infrastructure.
- Automation for support of the supply chain and supply chain decisions will be prioritized, and an IT implementation plan will be developed to define desired service levels and clarify goals, objectives, targets, etc.
- Roles and responsibilities for LMIS management will be clearly defined across all levels and should, ideally, converge under one entity.
- LMIS data needs and decisions made will be defined for each level and stakeholder in the system. Analysis in this area will address whether the national level requires commodity data on all medicines and supplies used at the facility level.
- The information systems will support full supply in all health facilities.
- Key performance indicators will be defined to support supply chain monitoring and performance measurement.
- Where supply chain responsibilities exist within different organizations, information-sharing policies, procedures, and processes will be fully defined and implemented.
- Resupply decisions will be based on actual logistics data from facilities, where appropriate.
- Adequate and competent human resources will be available at all levels to support the implementation and long-term management of IT solutions. Data collection, reporting, and ordering tasks will be acknowledged by managing entities and clearly assigned to staff with appropriate skills.
- LMIS processes and needs will be clearly distinguished from, yet coordinated with, the Ministry's HMIS and its requirements and processes.
- At the facility level, data collection tasks will be minimized as much as possible, especially for health providers.
- Regular supportive supervision by knowledgeable staff is a key maintenance tool for data reliability and accuracy.

Participants in the Strategic Workshop proposed the following **interventions**:

a. A comprehensive plan of action for supporting information requirements and for ensuring data visibility for users of the supply chain will be developed, either as part of the SCMP or in conjunction with it. For each user group, the SCMU will define data requirements, information-sharing policies, procedures, processes, and service levels.
b. Following the analysis of data needs and user requirements, an integrated LMIS design will be completed. This design will emphasize simplicity and coordinate commodity management reporting for all supply chain levels as well as programmes. It should be noted that the integrated LMIS will need to be fully coordinated with the HMIS of the Center for Health Information Management, but it will be a distinct and separate information system focused on health commodities.
c. The SCMU will be responsible for reviewing the scope, project plans, requirements, designs, and capabilities of any current automation projects in relation to logistics management to ensure that they are appropriate to meet future needs

d. The MOH will establish a logistics coordinating committee at the national level, which the SCMU will lead after it is formed and staffed. The SCMU will then work to establish logistics coordinating committees at the regional level. These committees will meet regularly to review and analyze national and regional level data, address challenges and issues, and ensure transparency with stakeholders.
e. Facility-level (stores) procedures and systems/tools for commodity management will be implemented, with emphasis on consistent and reliable reporting, ordering, and inventory management. These systems will be automated if resources permit. During the assessment phase, roles and responsibilities for commodity management tasks and authority at the facility level will be reviewed with a focus on efficiency and effectiveness.
f. Key performance indicators and information requirements will be defined for monitoring IT interventions.
g. The SCMU will define the data requirements for each user group, as well as appropriate information-sharing policies, procedures, processes, and service levels.

3.6 Quantification and Product Selection

A number of different entities are involved in health commodity quantification, making coordination very challenging. Overall national guidelines describing when, how, and by whom quantifications are conducted are not available. High-quality, national-level data on consumption, stock on hand, and services are also not available. In addition, supply plans resulting from quantifications are not currently being used to inform actual procurements. In addition, the following **quantification and product selection problems and challenge** were included:

- National guidelines describing when, how, and by whom quantifications shall be conducted are not available A number of different entities are involved in health commodity quantification, including the Procurement & Supply Directorate of the MOH, the CMS, the 10 RMSs, various programmes (National Malaria Control Programme, National AIDS Control Programme, etc.) of the GHS, and facilities, making coordination very challenging.
- High-quality, national- and/or regional-level data—on consumption, stock on hand, and services—are not available to support quantifications.
- Capacity (human resources, tools, and skills) within the MOH and GHS is inadequate for conducting national and/or regional quantifications.
- Supply plans resulting from quantification efforts are not currently being used to inform actual procurements.

The following **Objectives and Related Best Practices** were established:

- Quantifications will be based on consumption[5] or services data and stock on hand supported by automated information systems.
- Procurement will adhere to supply plans, where they are available.
- Guidelines will clarify how, when, and by whom quantifications are conducted, for programme products and other health products the SCMU is to manage, and for all other essential commodities as well.

[5] Or a reasonable proxy for consumption data for that level of the supply chain.

- Quantification activities will be coordinated and results shared with relevant stakeholders.
- Products included in quantifications will adhere to the National Essential Medicines List (EML) and other policy guidelines.
- Adequate and skilled staff, using appropriate tools, will regularly conduct, guide, coordinate, and/or review quantifications.

In response to the challenges mentioned above and to meet the objectives and best practices, participants in the Strategic Workshop proposed the following **interventions**:

a. The quantification of commodity requirements will be based on the National EML, Standard Treatment Guidelines (STGs), and other policy guidelines.
b. The SCMU will draft and disseminate guidelines that clarify how, when, how often, and by whom quantifications will be conducted.
c. Quantifications and updated supply plans will be used to inform actual procurements, especially for procurements performed by the SCMU and others at the national and/or regional levels.
d. Staff who conduct quantifications will have adequate capacity and appropriate tools.
e. Results from quantification activities will be shared with all relevant stakeholders through direct communications, information systems, and coordination committees at the national and regional levels.
f. The annual schedule for review of the National EML and STGs will be followed to ensure its relevance and usefulness.

3.7 Policy, Legal, and Regulatory Environment

The private sector has inadequate drug regulatory capacity and minimal self-regulation capacity, which contributes to product quality risks. The wide array of entry mechanisms for health commodities presents a significant challenge to commodity quality assurance. Various policies are not being implemented effectively, due in part to the lack of clarity over roles. The following **problems and challenges** were identified:

- The Procurement Act of 2003 has enabled many entities across all levels of the health system to conduct procurement. However, inadequate adherence to policies and procedures established to guide the procurement process, as well as lack of recognition and specification of unique qualities of health commodity procurement, has contributed to high prices for consumers and insurers and to recurrent difficulties with medicine quality.
- The large number of suppliers/manufacturers/distributors selling health commodities to public sector facilities and other MOH and GHS entities has also had a negative impact on product quality, as regulator capacity has not been equal to the task.
- The FDB currently has insufficient drug regulatory capacity, and there is limited self-regulation within the private sector.
- There is some misunderstanding of what is allowed/not allowed under the Procurement Act of 2003.
- Formal communications between key agencies (MOH, GHS, Ministry of Finance & Economic Planning [MOFEP], and NHIA) regarding supply chain and health commodity issues are limited and have had a negative impact on the ability of the MOH and its agencies to ensure adherence to various policies.

- A number of MOH policies are not being implemented effectively (non-adherence, avoidance, lack of supervision, etc.). For example, the certificate of non-availability process (when CMS/RMS do not have the desired product so that private sector procurement can be conducted) is commonly ignored.
- There appears to be significant non-adherence to the Essential Medicines List and guidelines in both procurement and prescribing practices.

The following **Objectives and Related Best Practices** were established:

- Quality health commodities will be found throughout the supply chain and in facilities, regardless of the source of procurement.
- Regulation in the pharmaceutical supply sector will fully support the availability of quality health commodities.
- Existing laws and policies will support the creation of a well-functioning supply chain. Governance (roles and responsibilities) and mandates of all health sector organizations supporting or benefiting from the supply chain will be clear and based on defined and agreed-upon supply chain service levels.

In response to the challenges identified above and to meet the objectives and best practices, participants in the Strategic Workshop proposed the following **interventions**:

a. The health commodity quality assurance programme of the MOH, FDB and other agencies will be strengthened, so that the programme is comprehensive and includes quality standards, regulations, and indicators to assist in quality assessment, inspection, testing, and tracking. The MOH will need to determine which agency will lead implementation of this intervention before the SCMP's implementation plan is finalized.
b. The existing legal framework (Procurement Act of 2003, Food and Drugs Law of 1992, and related Acts and Laws) will be used strategically to support the objectives and strategies outlined in the SCMP, especially in regard to achieving best value during SCMU health commodity procurements.
c. With MOH and SCMU support as needed, the FDB will develop and implement guidelines for sanctioning procurers within the system and for vendors selling to the system who are found to be out of compliance.
d. With SCMU support as needed, the Private Health Sector Alliance and others will develop incentives and sanctions, which the FDB and the Alliance will enforce, to improve self-regulation of quality by manufacturers, importers, and distributors.
e. All suppliers and health commodities will be approved and monitored by the FDB (manufacturers for GMP compliance and wholesalers for adherence to good warehousing and distribution practices). The FDB will have the capacity to test medicines and monitor procurer and vendor performance at all levels, and will be allowed to have and use sanctions when rules are not followed appropriately during procurements or in the provision of third-party warehousing/distribution services.
f. The use of regulatory mechanisms will be explored to manage prices for health commodities.
g. SCMU and P&S/MOH will review, and advocate for necessary revisions to, the Health Sector information and communication technology (ICT) policy, so that it supports the objectives and strategies for information systems outlined in the SCMP.

4.0 Organizational Roles [Primary Responsibility for the Implementation of the SCMP's Strategic Interventions]

Section Overview: During the February 2012 Strategic Workshop, participants, following the identification of the strategic interventions for the supply chain for five years, focused on implementation roles and responsibilities.[6] This section of the Master Plan outlines roles and responsibilities of the MOH agency (or other government agency) that has primary responsibility for implementing each of the proposed strategic interventions.

As noted earlier, the most important MOH agency for implementing the SCMP will be the proposed National Health Commodity Supply Agency. Figure 1 outlines the management and oversight relationships of this new agency, as well as the key supply chain functions (responsibility centers) the new agency will be expected to manage.

Since the initial Strategic Workshop in February, however, the MOH has recognized that forming the proposed National Health Commodity Supply Agency will take a number of months. The first key step, drafting a Cabinet Memorandum, was completed in August/ September, and the Council of Chief Directors, the Council of Ministers, and other key government officials will review the memorandum in the coming months. There will be additional procedural issues once the Cabinet approves the new agency.

Transition Period: Due to this organizational delay, the Implementation Plan uses a two-part plan of action; the first part is a transition period overseen by a revised Technical Working Group and an interim management team (IMT), and the second follows formalization and startup of the new agency and it will be overseen by the confirmed management, board of directors of the agency. The revised terms of reference (TOR) for the TWG and the IMT during the transition period are included respectively under Annex 2 and 3 of this document. Throughout this section on organizational roles, therefore, a subsection on agency responsibilities during the transition period is included for each MOH agency or mechanism where it is applicable.

4.1 Proposed Areas of Responsibility for the New National Health Commodity Supply Agency

Currently, a number of organizations are involved in supply chain activities, with overlapping and duplicative offices, activities, and tasks. At the same time, none of these entities is responsible for a number of vital supply chain tasks.

In response to these and numerous other challenges, the MOH, through a series of meetings and consultations hosted by the TWG, proposed the following key strategies:

a. A new SCMU (the National Health Commodity Supply Agency [NHCSA]) will be established to bring together various important supply chain functions; provide a direct supervisory and organizational relationship between the central and second level of the health commodity supply chain; strengthen information systems and build data visibility; enhance accountability, efficiency, and cost-effectiveness; and increase the reliability of the supply chain for end users (public sector facilities, teaching hospitals (THs), private sector facilities, etc.).
b. The MOH will establish the NHCSA to facilitate and improve effectiveness and accountability.
c. The NHCSA will manage a limited set of commodities, called the Focused Public Sector Model, including—

[6] Many of these roles and responsibilities were refined further in subsequent meetings and consultations held by the SCMP TWG between February and September 2012.

- programme commodities—e.g., antiretroviral medicines (ARV);
- special and critical commodities—e.g. cancer medicines; and
- other commodities for which they can provide significant value-added. This group of commodities is expected to include items that health facilities use in large volumes and for which bulk procurement can provide significantly lower prices.

d. The list of commodities the NHCSA will manage will be updated annually and communicated appropriately.

e. The new agency is expected to source and put into operation a comprehensive automated commodity management information system to support its ongoing operations, including procurement, and provide stakeholders access to essential information about health commodities.

f. As a starting point, the new agency will formally manage a distribution network that includes a central store and 10 second-level stores (currently the CMS and the 10 RMSs). With a view toward efficiency, however, the NHCSA will reevaluate this network in the future.

g. The NHCSA will provide direct delivery for all health commodities procured by, or donated to, the public sector system.

The new Agency is also expected to have the following roles and responsibilities:

- Operational responsibility for the CMS, the 10 second-level stores (currently managed as RMSs under GHS), and all staff working in these warehouses. The NHCSA will charge various users for the services it provides (procurement, warehousing, transport, etc.).
- Operational responsibility for managing health commodity delivery services from the central and regional levels to the facilities for all commodities procured by, or donated to, the public sector. The NHCSA will manage these services in whatever way it believes is most efficient (e.g., via internal mechanisms, contractual relationships with the Regional Health Administrations [RHAs], outsourcing, etc.).
- Development/operation of a comprehensive, automated LMIS that provides data visibility to all supply chain clients. The initial focus of the information system improvement programme will be the operational needs of the new agency.
- Coordination of quantification activities for the medicines and medical supplies used by GHS programmes (HIV/AIDS, family planning, tuberculosis [TB], malaria control, etc.).[7] Results from quantification activities will be shared with all relevant stakeholders through direct communications, information systems, and coordination committees at the national and regional levels.
- Coordination of quantification activities for all other medicines and medical supplies used by public sector facilities.[8]
- Quantifications and supply plans will be used to inform actual procurements, especially for procurements by the NHCSA or others at the national and/or regional levels.
- Provision of state-of-the-art procurement services for all commodities that the NHCSA will manage under its mandate.

[7] Quantifications will be based on the National Essential Medicines List, STGs, and other policy guidelines.
[8] Programme items are viewed as first priority, with NHCSA support for other items being a lesser priority.

- Development of revised guidelines for all procurements done in-country on behalf of any public sector facility.
- Development, implementation, and monitoring of national-level procurement plans based on more effective and comprehensive commodity forecasts.
- Active monitoring of upstream pipeline (procurements and donations) for all commodities that NHCSA will manage under its mandate.
- Active monitoring of upstream pipeline (procurements and donations) for all public sector commodities (excluding those procured by facilities through local manufacturers).[9]
- Technical and supervisory support for ensuring supply chain capacity at the facility level (training, orientation, LMIS, stores management, pre-service education, etc.) will be provided, in conjunction with GHS and the THs.
- Management of the new agency will ensure that staff who conduct any of the functions or tasks of the NHCSA will have appropriate capacity and appropriate tools.
- Completion of a design process for an integrated logistics (commodity) management information system, including established max-min levels, reorder intervals, and other logistics parameters for connecting the levels of the system in terms of information and resupply processes.
- The NHSCA will support facility-level systems/tools/procedures for commodity management (in stores), with emphasis on consistent and standardized reporting, ordering, and inventory management procedures. These systems will be automated as resources permit. During the assessment phase, roles and responsibilities for commodity management tasks and authority at the facility level will be reviewed with emphasis on efficiency and effectiveness (with GHS).
- Management of coordination mechanisms at the national and regional levels to support high performance of the new agency.
- Development of memoranda of understanding (MOUs), or similar tools, to support communication of roles and responsibilities, performance requirements, expectations, etc., between and among MOH agencies and other supply chain–related government agencies.
- The NHCSA and the FDB will develop and publish protocols regarding medicine and medical supply quality assurance processes and defining how cooperation in facilities and through all levels will be managed. The FDB will support the NHCSA to assure product quality and will train facilities and others on quality regulations and practices.
- Operation of monitoring and evaluation team for performance monitoring of supply chain functions both in the agency and at the facility level.
- The new agency will regularly consider mechanisms and tools that can improve the efficiency and cost-effectiveness of its services, including, e.g., outsourcing, vendor managed inventory agreements, and performance-based contracting.
- Finance team to manage agency's accounts, particularly receivables.
- Resource mobilization for all supply chain support activities.

[9] The NHCSA may also need to monitor the procurements of all public sector entities over time to anticipate storage requirements at the central and regional levels correctly.

- Provision of direct coordination with the three teaching hospitals (THs) to provide a high level of support and to facilitate ordering/receiving.

Table 1 below lays out the minimum Staffing Requirements, in total number of full time equivalent (FTE) staff, for each area of responsibility.

- Warehousing and Distribution:
  - Operational responsibility for the CMS
  - Operational responsibility for warehousing and distribution at the level of the 10 RMSs, likely through contractual relationship with RHAs
  - Distribution of programme commodities, special and critical commodities, and other commodities for which the new agency can provide significant value-added. (Note: This third group is expected to include commodities that are used in large volumes and where bulk procurement can provide lower prices.)
- Inventory Control Management:
  - Direct coordination with three THs to provide high level of support and to facilitate ordering/receiving
- LMIS:
  - Development/operation of comprehensive, automated LMIS;
- Quantification and Procurement:
  - Coordination of quantification activities for programme drugs and medical supplies
  - Possible coordination of quantification and procurement activities for all other drugs and medical supplies (national level)
  - Provision of procurement services for programme commodities, special and critical commodities, and other commodities for which the NHCSA can provide significant value-added
  - Monitoring of upstream pipeline (procurements) for all commodities (except those procured through local manufacturers)
- Supply Chain Performance Monitoring and Quality Assurance:
  - Technical and supervisory support for supply chain capacity at the facility level (training, orientation, LMIS, stores management, etc.)
  - Quality assurance
  - Monitoring and evaluation team for performance monitoring of supply chain functions
- Financing and Resource Mobilization
  - Finance team to manage NHCAS's accounts, particularly receivables
  - Resource mobilization for all supply chain support activities
- Teaching Hospitals
  - Direct coordination with three teaching hospitals – to provide high level of support and to facilitate ordering/receiving.

Table 1. Minimum Staffing Requirements in Total Number of Full Time Equivalent (FTE) for Each Area of Responsibility

Level of Effort, by Type of Employee (in FTE)	Managerial	Technical/ Professional	Admin. Support/ Clerks	Laborer/ Driver/ Other support	Total
Warehouse—central level (CMS)	5	5	5	35 (mostly laborers)	50
Warehouses—2nd level (10 RMS)	10	30	0	100 (laborers)	140
Transport (delivery from CMS to RMS & RMS level to facilities)	2	5	0	40 (drivers)	47
Automated LMIS	(included above)	15	2	0	17
Quantification activities	(included above)	3	0	0	3
Procurement services	1	8	1	0	10
Upstream pipeline monitoring	0	1	0	0	1
Technical & supervisory support for supply chain capacity at facility level	1	40	1	10	52
Quality assurance	1	(shared)	0	0	1
Supply chain monitoring and evaluation	1	3	0	0	4
Finance & accounting	1	4	1	0	6
Resource mobilization	0	1	0	0	1
Teaching hospitals	(included above)	3	0	0	3
Totals	**22**	**118**	**10**	**185**	**335**

Transition Period: As noted earlier, it is anticipated that the NHCSA will not be formalized until late 2013. Therefore, this plan outlines a transition period overseen by a newly - mandated TWG and an interim management team (IMT), followed by a second implementation period after formalization and startup of the new Agency (see also Annex 3). Within this plan, the first period's planning horizon will take place through December 2013, with the second period starting with the new budget and work plan cycle beginning January 2014.

The TWG and the IMT collectively will be responsible for providing oversight and guidance to various implementation activities. Some of these activities are noted below:

a. Support the MOH, as requested, with the actions needed to formalize the proposed NHCSA.
b. Develop and implement an advocacy plan for the NHCSA. Initiate resource mobilization activities for government and donor support of the NHCSA and supply chain improvement efforts.
c. Provide oversight to all studies and analyses included in Year 1 of the implementation plan, and where required, make decisions related to these activities to keep them moving forward. Key studies and analyses include the following:
    - Review debts and credit management and provide recommendations for settling outstanding debts related to health commodities (MOH and NHIA, CMS, RMSs, THs).
    - Review current reimbursement policies and guidelines, determine to what extent the guidelines are being followed, assess strengths and weaknesses, and define areas for change/improvement;
    - Complete/support a pricing study that collects actual pricing data from a sample of facilities, RMS, and other procurement agents within the health sector (for comparison to pricing/markup policies and NHIA reimbursement prices).
    - Conduct network optimization study to determine most efficient network options for distribution. Optimization will address warehouse locations, delivery routes and vehicle requirements, etc. (Note: If MOH formally decides to stay with current distribution network [1 central and 10 regional warehouses], the TWG and IMT should change the scope of this study to focus on transportation optimization [routing] within each region.)
    - Perform a procurement capacity assessment of the MOH, GHS, RMS, and CMS, and then develop procurement capacity requirements as part of an overall staffing plan.
d. Support MOH, as requested, including preparing an annual work plan and budget for 2013 and 2014.
e. Develop repayment strategy/policy options and prepare a proposal for MOH leadership/Government of Ghana (with assistance of consultants).
f. Develop debt payment and adherence policies (credit management) for ensuring that all procurers of drugs and commodities within the public sector pay for their purchases within a fixed period (credit rules and/or limits).
g. Develop performance indicators for managing adherence to pricing/markup policies for drugs and commodities procured for public sector facilities.
h. Develop draft transition plan for staffing the NHCSA and present draft plan to MOH (consistent with government budget and work plan cycle).
i. Propose revisions/amendments/MOH internal rules to existing procurement guidelines to PPA, on behalf of MOH and its agencies (including NHCSA).
j. Work with MOH and key stakeholders to determine specific roles and responsibilities of CMS during the transition period, including the list of commodities the CMS will handle during this period, and disseminate to stakeholders to improve understanding and coordination.
k. Work with CMS management to develop and implement a strategy for increasing internal capacity for managing all supply chain functions under CMS authority during the transition.

l. Support MOH to consider/explore options for operating/maintaining a second level of the distribution network, including management contracts, RMS sharing arrangements, MOUs, outsourcing, and vendor-managed inventory systems, among others. Assist MOH to select and initiate implementation of a warehouse network plan.

m. Develop transport proposal/plan for consideration by MOH, GHS, and other stakeholders following review/evaluation of options and information from studies. As part of transport proposal/plan, consider hard-to-reach locations and determine whether they warrant variations from the standards of the system design (e.g., less-frequent deliveries and higher inventory levels, etc.).

n. Plan and complete a comprehensive design phase for an integrated LMIS for the new agency as well as for other commodities. This process should also include inventory management needs for NHCSA warehouses and MOH/GHS health facilities.

o. Set up, support, and assist an IT Committee, which will identify an IT solution(s) for an integrated LMIS (by competitive bid or other method).

p. Develop/select and support the implementation of systems/tools for NHCSA warehouses to ensure effective inventory management practices for all health commodities. In parallel, develop/select and support implementation of systems/tools for MOH/GHS health facilities that promote standardization and effective interfacing.

q. After decisions are reached on system design issues, develop guidelines and standard operating procedures (SOPs) for supply chain tasks/activities at various levels in the MOH and GHS. All guidelines and SOPs will be reviewed by MOH and other stakeholders.

r. Draft mission, roles, responsibilities, and performance indicators (expectations) for NHCSA procurement team and present to MOH for review and approval.

s. Support MOH, as requested, in recruitment and selection of Board members and key staff for NHCSA.

t. Assess options for incorporating performance-based financing (PBF)/contracting for NHCSA, including for Board/management team, within levels of the supply chain, and across various supply chain functions.

u. Assist the IMT with drafting and dissemination of guidelines that clarify how, when, how often, and by whom quantifications will be conducted.

v. Increase use of framework contracts and other value-added procurement methods as soon as possible, assuming a review of the current laws and regulations is sufficient to clarify that their use is allowed. This will be the role of the P&S Directorate until NHCSA takes over procurement of the commodities under its mandate.

w. Support MOH review of the priority risks identified by the IBM consultants (April 2012) and align these risks with at least one of the intervention areas of the Implementation Plan to harmonize implementation. Ensure that the risks and mitigation strategies are reviewed regularly.

x. Establish and hold regular supply chain coordination meetings at the national level based on SCMP progress and challenges.

4.2 Roles and Responsibilities for Other MOH Agencies and/or Mechanisms

A number of other MOH agencies and other government agencies also have supply chain-related roles, especially during the transition period, but also after the new Agency is established and operational. A summary of these roles and responsibilities is provided below:

i. Technical Working Group—Supply Chain Master Plan
ii. Office of the Chief Pharmacist
iii. Ministry of Health Procurement & Supply (P&S) Directorate
iv. Ministry of Health Human Resources Department
v. Food and Drugs Board
vi. Ghana Health Service Stores, Supplies and Drug Management Directorate
vii. National Health Insurance Authority
viii. Public Procurement Authority
ix. Coordination Mechanisms

4.2.1 Technical Working Group—Supply Chain Master Plan

The MOH formed the TWG for the SCMP in late 2011 to guide the development of a Five-Year Plan for improving the health sector's supply chain, including a number of key components: vision, strategies, implementation plan (including cost estimates), information systems guide, monitoring and evaluation plan, and risk management plan. The TWG was tasked with monitoring the development of the SCMP through the Plan's timely completion and engaging relevant stakeholders at appropriate steps along the way so the plan is accepted and supported. To complete its tasks, the TWG met regularly to review progress and identify and execute key steps to ensure the plan's successful completion. The TWG was chaired by the P&S Directorate of the MOH, with technical assistance and secretarial support being provided by the USAID | DELIVER PROJECT.

During the February 2012 strategic workshop, the following interventions were assigned to the TWG. It is important to note that a number of these interventions are shared with the P&S Directorate of the MOH and the future NHCSA due to timing.

a. The service levels for the new NHCSA (goals, objectives, targets) will be carefully defined to ensure that the NHCSA will add value. The TWG also needs to define in detail the requirements and expectations for information systems, the warehouse network, and transport responsibilities and systems. In addition, it will need to assess logistics capacity requirements to fulfill the principles and objectives set out in the Master Plan. This assessment will include whether the public sector should have a role in covering commodity availability gaps for selected non-focus commodities - if and when the private sector is not reliable - to ensure that commodities are always available at MOH facilities at all levels.
b. The Five-Year Supply Chain Master Plan will include cost estimates for human resource needs, infrastructure, and operational support that can be used for soliciting financial support.
c. Human resource, training, and pre-service education requirements will be addressed to support improvements in the supply chain, determining skills, tools, and supportive supervision needs.
d. Information-sharing policies, procedures, and processes will be defined and implemented.
e. A comprehensive plan of action for supporting information requirements and for ensuring data visibility for users of the supply chain will be developed, either as part of the SCMP, or in conjunction with it. This includes defining data needs and information flows for each level of the supply chain.
f. Before completing the plan of action for information systems, the MOH and its agencies will review the scope, project plans, requirements, designs, and capabilities of any current automation projects to determine whether they are consistent with future needs.

Transition Period: The TWG's primary objective during this period is to ensure that there is ongoing progress on implementation of the Master Plan, in conjunction with the interim management team and any consultants supporting the process. Key areas of focus include providing guidance and oversight to the IMT and to any consultants used to support studies, assessments, or other activities within the Implementation Plan (IP); providing feedback on draft reports and documents; ensuring that stakeholders are involved in key decisions related to the NHCSA and its activities; and developing/ providing recommendations to the MOH for action and/or decision-making, as appropriate. The TWG will also ensure that regular activity meetings (IMT and consultants) and review meetings (MOH and other stakeholders) are held.

4.2.2 Office of the Chief Pharmacist

The Office of the Chief Pharmacist (OCP) of the MOH is responsible for ensuring that pharmaceutical standards are developed, maintained, and adhered to through policy development, monitoring, research, and implementation. These responsibilities include updating and maintaining the national medicines policy, STGs for the range of health conditions covered by public sector facilities, and the National Essential Medicines List. The OCP is also responsible for ensuring rational use of medicines at all levels of the health system and monitoring medicine prices in public sector health facilities.

The following interventions were assigned to the OCP during the Strategic Workshop:

a. Policies and procedures related to the appropriate management of medicine/medical supply revolving funds at facilities and within the supply chain will be strictly monitored and supervised.
b. Pricing and markup policies and guidelines will be rationalized, and these policies will directly relate to the actual cost of the services being provided. The MOH (OCP) will lead this effort.
c. The schedule for the annual review of the National Essential Medicines List, as set out in current policies, will be followed to ensure its relevance and usefulness.
d. A list of health commodities to be managed by the new NHCSA will be developed and disseminated. This list will be used as a communication and role definition tool and will be updated regularly.
e. Quantifications will be based on the National Essential Medicines List and STGs and other policy guidelines. The OCP will ensure that these lists provide the basis for quantification efforts.

Transition Period: The OCP of the MOH should be an active participant in most of the policy, system design, and setup matters related to the NHCSA and the new and improved supply chain. As a representative on the TWG, the OCP should be continuously informed regarding the SCMP activities being planned and implemented at any time. The OCP representative should volunteer the OCP's participation on issues related to their mandates and responsibilities.

4.2.3 Ministry of Health Procurement and Supply Directorate

The P&S Directorate, part of the MOH structure under the Chief Director, currently has overall responsibility for medicine and other health commodities procurement and supply, as well as for capital equipment and other items. The P&S Directorate has been responsible for procurement processes and managing contract packages and procurement portfolios. Historically, the CMS has been managed as a department of the P&S Directorate.

The following interventions were assigned to the P&S Directorate of the MOH during the strategic workshop. A number of these interventions are shared with the TWG and the IMT during the transition period and with the new NHCSA during its first year of operation.

a. Use of framework contracts and other procurement methods will be increased as soon as possible, assuming a review of the current laws and regulations clarifies that their use is permitted. This is a role of the P&S Directorate until the NHCSA takes over MOH procurements for the medicines and medical supplies defined by its annual commodity list.
b. If a review of the current laws and regulations is insufficient to clarify what is allowed/not allowed regarding procurement methods, the MOH will initiate dialogue with the PPA to propose revisions to the existing procurement guidelines for the MOH and its agencies to address or modify—
    - the specific rules and guidelines for procurement at each level of the health system;
    - which levels are authorized to procure which commodities;
    - which levels are allowed to procure certain commodities only under special conditions; and
    - emphasis on product quality (quality assurance) and cost containment, in addition to recognition of the value-added and/or convenience of the additional services being provided by a vendor (e.g., direct delivery).
c. The MOH recognizes the need to lower medicine and medical supply purchase prices and will adopt strategies to address this problem. Ultimately, this may require that the procurement of health commodities for use in public sector facilities is more restricted, in terms of who can purchase and/or what can be purchased.
d. The service levels for the new NHCSA (goals, objectives, targets) will be carefully defined to ensure that the Agency will add value. The MOH will also need to define their requirements and expectations for information systems, the distribution network, and direct delivery (transport systems). Logistics capacity requirements will also need to be assessed to fulfill the principles and objectives set out in the Master Plan. This assessment will include whether the public sector should have a role in covering commodity availability gaps for selected non-focus commodities - if and when the private sector proves not to be reliable - to ensure that commodities are always available. (TWG under guidance of MOH)
e. Policies and procedures will be developed for an annual costing exercise of supply chain services, and a costing strategy will be developed to align service levels with markups/service fees.
f. All outstanding debts related to health commodities will be settled/ negotiated/written off, and future payment deadlines and mechanisms will be established and enforced.
g. Information-sharing policies, procedures, and processes will be defined and implemented. (MOH will serve as the lead until NHCSA can take over this role.)
h. Logistics coordinating committees will be established at the national and regional levels. These committees will meet regularly to review and analyze national and regional-level data, provide feedback on challenges and issues, and ensure transparency among stakeholders.
i. Following the analysis of data needs and user requirements, an integrated LMIS design will be completed, the design of which will emphasize simplicity and

coordination of commodity management and programme reporting at all levels. This responsibility may be shifted to the IMT and/or the IT Committee.

j. Key performance indicators and information requirements will be defined for monitoring IT interventions.

k. The health commodity quality assurance programme of the MOH, FDB, and other agencies will be strengthened so the programme is comprehensive and includes quality standards, regulations, and indicators to assist in quality assessment, inspection, testing, and tracking.

l. Strategic use of the existing legal framework (Procurement Act of 2003, Food and Drugs Law of 1992, and related acts and laws) will be improved to support the objectives and strategies outlined in the SCMP, especially in regard to achieving best value during health commodity procurements. The research in these areas may be delegated to the IMT.

m. The Health Sector ICT policy will be reviewed, and necessary revisions will be drafted and promoted so the policy supports the objectives and strategies for information systems outlined in the SCMP.

n. The financial sustainability of NHIA and the viability of revolving funds at all levels will be ensured and supported by formal and continuous coordination among MOH, GHS, NHIA, partners, and other stakeholders. (NHIA will lead this intervention.)

o. The use of regulatory mechanisms and guidelines will be explored for managing the purchase prices for health commodities. (MOH as the lead with NHIA support.)

p. Roles and responsibilities for the appropriate management of medicine and medical supply revolving funds at all facilities, including THs, and within the supply chain, will be revisited and updated/defined.

Transition Period: P&S Directorate leadership during this period will be critical. Both the IMT and the TWG will need its active support, particularly in terms of engagement with the Minister of Health and the Chief Director. The new agency will also need assistance from the P&S Directorate on budgeting and work planning for both 2013 and 2014. In addition, the P&S Directorate will need to be an active participant in the TWG as the TWG monitors SCMP implementation progress and the completion of key milestones. ***Without the P&S Directorate acting as a primary champion for the SCMP and its implementation, the process is unlikely to succeed.***

4.2.4 Ministry of Health Human Resources Department

Human resource, training, and pre-service education requirements will be addressed to support improvements in the supply chain that address skills, tools, and supportive supervision needs. This intervention was assigned to the Human Resources Department of the MOH during the strategic workshop.

Transition Period: It is expected that the TWG and the IMT will address skills, tools, and supportive supervision issues in the short term, while the new Agency will work with the Ministry's Human Resources (HR) Department and the Ghana Health Service in the long term to address supply chain needs and capacity building.

4.2.5 Food and Drugs Board

The FDB, established by the Food and Drugs Law 1992, formally began activities in 1997. The FDB is responsible for ensuring the overall quality in medicines and medical supplies in Ghana; all food, medicines, cosmetics, chemical substances, and medical devices must be registered with the FDB. The FDB operates the National Pharmacovigilance Center, which

monitors adverse drug effects. In addition, the FDB updates and maintains operational guidelines for medicines regulation, including safety monitoring, stability testing, labeling requirements, importation, bioequivalence studies, advertisements, clinical trials, good storage practices, and safe disposal.

The following interventions were assigned to the FDB during the Strategic Workshop:

a. The health commodity quality assurance programme of the MOH, FDB and other agencies will be strengthened so that it is comprehensive and includes quality standards, regulations, and indicators to assist in quality assessment, inspection, testing, and tracking.
b. The FDB will approve and monitor all suppliers and health commodities (manufacturers for good manufacturing practice [GMP] compliance, and wholesalers for adherence to good warehousing and distribution practices) without exception. The FDB must have the capacity to test medicines and monitor procurer and vendor performance at all levels, and will be allowed to maintain and enforce sanctions when rules and/or guidelines are not used appropriately during procurements.
c. Guidelines will be developed and implemented for sanctioning procurers within the system and for vendors selling to the system who are found to be out of compliance.
d. Incentives and sanctions will be developed that support self-regulation of quality by manufacturers, importers, and distributors.

Transition Period: As the majority of these areas of assignment are independent of the new agency, it is anticipated that the FDB will address these important issues as soon as possible, in coordination with the MOH and its agencies.

4.2.6 Ghana Health Service Stores, Supplies and Drug Management

The GHS is a public sector agency of the MOH, established in 1996 to implement national health policies and serve as the operational agency for health services of the Government of Ghana. GHS is managed by a Governing Council and is responsible for providing and managing comprehensive and accessible health services with special emphasis on primary health care at the regional, district, and sub-district levels in accordance with approved national policies. GHS provides guidance and supervision to most of the public sector's health facilities; oversees the management and administration of health resources; and manages mechanisms for disease surveillance, prevention, and control. Programme offices, such as the National Malaria Control Programme, the National AIDS Control Programme, and the National Tuberculosis Control Programme, are under GHS authority. GHS does not include the THs or private or mission facilities.

The following interventions were assigned to the GHS during the Strategic Workshop.

a. Facility-level (stores) procedures and systems/tools for commodity management will be implemented, with emphasis on consistent, standardized, and reliable reporting; ordering; and inventory management. These systems will be automated if resources permit, and GHS will have a primary role in realizing these resources. During the first year of implementation, roles and responsibilities for commodity management tasks and authority at the facility level will be reviewed in line with the SCMP with an eye toward efficiency, effectiveness, and areas of expertise.
b. Systems/tools for facilities (including THs) will be developed/selected and implemented to support efficient inventory management. Facilities will also have appropriate storage space as well as conditions and equipment for ensuring commodity safety and quality and for addressing waste disposal needs. When

operational, NHCSA will serve as the lead in these areas, with GHS providing active support.

Transition Period: Once the NHCSA becomes operational and its new systems are in place, GHS's roles in commodity management will diminish dramatically, with NHCSA serving as a service provider to GHS and GHS becoming a client of NHCSA. However, during the transition period, and for at least the agency's first year of operation, most of the supply chain activities in which GHS currently participates will continue. GHS will also need to be an active participant in systems design activities, from the distribution network and direct delivery to information systems and inventory management. GHS will have several representatives on the TWG who will be expected to actively assist in refining the strategies provided within this plan.

4.2.7 National Health Insurance Authority

The NHIA, established under the National Health Insurance Act of 2003, is managed by a Governing Council. NHIA's primary objective is to secure the implementation of a national health insurance policy that ensures access to basic health care services for all residents. The NHIA manages the NHIS, which reimburses health facilities for providing an established list of services and products (medicines and medical supplies) to patients. The financial sustainability of NHIA is critical to the country's ability to ensure the availability and affordability of health care within the public sector.

The following interventions were assigned to the NHIA during the Strategic Workshop.

a. The financial sustainability of NHIA and the viability of revolving funds at all levels will be assured, supported by formal and continuous coordination among MOH, GHS, NHIA, partners, and other stakeholders. While this suggests that NHIA may take unilateral action if needed to ensure its sustainability, transparency and coordination must be maintained.
b. Reimbursement policies and guidelines will be rationalized, and if possible, these policies will directly relate to the actual cost of the service or commodity provided. NHIA will lead this effort.
c. The use of regulatory mechanisms will be explored to manage the prices of health commodities more effectively. The MOH will serve as the lead, with active support from NHIA.

Transition Period: The issue of commodity prices is a high priority for NHIA and must be addressed in the short term. As commodity pricing is a supply chain (procurement) and reimbursement (payment) challenge, the MOH and NHIA need to work together to develop strategies, policies, and/or guidelines to address this concern. During this period, the TWG and the IMG have many tasks and activities to address; it is therefore incumbent on NHIA to provide leadership on this issue, using the TWG as a sounding board when needed.

4.2.8 Public Procurement Authority

The PPA of Ghana is responsible for harmonizing the process of procurement throughout the public service to: (1) ensure the efficient use of public funds; (2) attain best value for money in the procurement of goods; and (3) ensure that public procurement is carried out in a fair, transparent, and non-discriminatory manner while also promoting a competitive local industry. Not specific to the MOH, the PPA's mandate is government-wide; PPA is responsible for developing public procurement policy, including rules and regulations; monitoring all public procurements; and ensuring adherence to established rules and regulations.

The following interventions were assigned to the PPA during the Strategic Workshop:

a. Procurement policies and guidelines will place significant emphasis on product quality (quality assurance) and cost containment, in addition to recognizing the value-added and/or convenience of the additional services being provided by a vendor (e.g., direct delivery). Note: As the PPA serves all government ministries and agencies, the P&S Directorate of the MOH is expected to take the lead on enhancements in this area. The Ministry will need to find approaches to address its concerns regarding commodity prices while complying with the rules set by the PPA.
b. Regulators must be able to check routinely on the actual use of procurement rules and guidelines by all entities purchasing health commodities, and will be allowed to maintain and apply sanctions when rules are not used appropriately during a medicine or medical supply procurement.

Transition Period: Due to the short-term importance of prices, the MOH and NHIA must be the leaders in addressing this problem. PPA can serve as a sounding board for ideas and proposals until there is a successful resolution.

4.2.9 Coordination Mechanisms

Several Inter-Agency Coordinating Committees have been established by the Minister of Health to coordinate activities and resources around specific thematic areas. Examples include Contraceptive Security, Water and Sanitation, and the Expanded Programme of Immunization.

The following intervention was assigned to those responsible for the Inter-Agency Coordinating Committee(s) during the Strategic Workshop:

a. The roles and composition of existing Inter-Agency Coordinating Committees and other coordination mechanisms will be reviewed to ensure that supply chain and health commodity issues are incorporated and addressed in an integrated manner, rather than in programme-specific conversations.

Transition Period: Until NHCSA is formalized and operational, the TWG will serve as the primary coordination for supply chain related issues at the national level. The SCMP calls for formal Coordinating Committees at both the national and regional levels; however, these groups probably will not be formalized until the NHCSA is operational.

For further detail on current and future roles and responsibilities of existing Agencies, directorates, units, offices, and programmes at the national, regional and district levels, see Annex 7.

5.0 Implementation Plan

During the June 2012 Implementation Plan Workshop, the participants developed a five-and-a-half-year implementation plan for the SCMP (see Annex 2). This section of the Master Plan provides highlights from the implementation plan, with emphasis on the major activities and the milestones set for them.

It is also important to note that due to the upcoming national election in December 2012 and the Government of Ghana processes for creating and approving a new agency within Ministry, the MOH does not anticipate that the new NHCSA will be formalized until the third or fourth quarter of 2013. As a result, Implementation Plan activities are organized into two parts: the transition period (present through December 2013) and the formal implementation period (starting with the new budget year in January 2014).

Status of the SCMP (September 2012): The goal of the Ministry's TWG and other stakeholders has been to complete the writing phase of the SCMP quickly so that consensus on the way forward is achieved and structural and operational changes can be initiated. However, if the Master Plan and its corresponding Implementation Plan are to be a practical and meaningful guide to the transition to a new and improved health commodity supply system under the new agency, the MOH and its agencies need to make additional decisions about the scope, structure, and functional responsibilities of the proposed agency. There are also significant leadership issues for the transition period leading up to formal creation of the new agency as well as for the post-agency period.

5.1 Organization (Institutional Capacity and Roles) and Coordination; Human Resources and Supervision

To fully implement the SCMP, the MOH intends to create a new agency which is to be called the National Health Commodity Supply Agency (NHCSA). As noted above, the Ministry does not expect to have this new agency in place before the third quarter of 2013.

When it is established, the new agency will to be responsible for implementing and coordinating the majority of SCMP activities. To ensure that the NHCSA has a strong foundation, and that implementation of SCMP activities begins as soon as possible, the Chief Director is also to appoint an IMT, all of whose members will be prepared to put forth significant effort to build the foundations of this agency and to manage forward progress for many of the supply chain strategies outlined in this document. In the same period, the Minister of Health will guide the Cabinet Memo process for creation of the new agency.

Following its appointment, the IMT will provide oversight and support to numerous IP activities. Highlights for 2012 include:

- Ensure that job descriptions for individual IMT members are finalized.
- Draft a SCMP implementing agency Charter (as NHCSA is a new agency).
- Develop budget and work plan for IMT and SCMP activities for 2013, and develop and implement advocacy plan for new agency (for financial support of donors).
- Complete draft of transition plan for staffing new agency (start-up and long-term needs) ensuring that each mandated role is staffed appropriately.
- Develop Terms of Reference for activities that are to be provided by technical assistance, as outlined in the SCMP, and provide oversight to these tasks, in conjunction with the TWG.
- Complete development/negotiation on list of commodities new agency will handle (short- and longer-term).

- Advise MOH on appropriate location(s) for various activities of new agency.
- Ensure completion of key reviews and studies as described in the Implementation Plan (IP) (e.g. markup policies and related guidelines; drug and medical supply pricing and reimbursement; procurement rules; RMS capacity; network optimization).
- Ensure resolution, by TWG and/or MOH, of key questions that remain within SCMP (most are which are related to key reviews/studies noted above).
- With MOH support, create an IT Committee to organize and begin the review/selection process for an integrated, technology-based information system to manage health commodity data.

Additional activities for 2013 include:

- Continue dialogue with partners and stakeholders to define and clarify roles and responsibilities of the new agency, including transition plans and schedules.
- With TWG, set short- and mid-term priorities for strengthening the supply chain, and develop draft budget and work plan for IMT and SCMP activities for 2014, including plans for resource mobilization.
- With TWG, ensure that results and recommendations of reviews and studies are presented to the MOH and its agencies for review and action.
- Support implementation of activities that result from decisions made by the MOH as a result of reviews/studies completed by MOH, TWG, IMT, and/or consultants (e.g., distribution network, transport services, information systems, etc.).
- Develop and initiate implementation of a short-term strategy for increasing the capacity of existing supply chain personnel.
- Support MOH in selection of candidates for the Board of Directors and management team for the new agency.
- At the appropriate time, develop and obtain approval for Terms of Reference for Supply Chain Coordinating Committee (SCCC), including membership list.
- Assist with planning and implementation of assessment of debt situation within the supply chain, and ensure that MOH completes such a study.
- Define monitoring and supervision/oversight mechanisms for the new agency, including possible performance-based compensation options.
- Develop draft repayment strategy/policy options for MOH and support implementation of new policies and procedures.
- Draft mechanisms for managing adherence to new pricing and/or procurement procedures, especially at the facility level.
- Draft a plan of action for revising procurement rules within the MOH and develop monitoring procedures (with TWG and GHS).
- Support and advocate for ongoing efforts of IT Committee on review/selection process for an integrated, technology-based information system for the management of health commodity data.
- Define the mission, roles, responsibilities, and performance indicators (expectations) for new agency's procurement team, and advocate for financial and other support.
- Support the selection of tools for managing the new agency's warehouses and for managing commodities at MOH/GHS health facilities.

- Support MOH decisions regarding distribution network and transport services, in conjunction with RHAs, MOH, and GHS, leading to implementation of specific strategies.
- Support development of SOPs and training materials for new LMIS, distribution mechanisms, and other supply chain policies and procedures, including supportive supervision.
- Complete system design process for LMIS, in conjunction with activities of IT Committee.
- Develop and support advocacy plan for resourcing new information system, once requirements, design, and selection processes are complete.
- Help improve clarity regarding roles and responsibilities related to managing the quality of medicines and medical devices and advocate/request for resources to perform these roles and responsibilities.
- Ensure that the list of commodities the new agency will handle (short- and longer-term) is updated annually, preferably before completion of work plan and budget for 2014.
- Draft new guidelines for managing the quantification of all essential health commodities, including how, when, how often, and by whom various quantification tasks will be performed.
- Monitor identified risks within SCMP on quarterly basis to ensure that key issues are addressed.

It is anticipated that, when the new agency is created and the Board of Directors and the management team are selected and put in place, the TWG and the IMT for the SCMP will be disbanded. The MOH will need to ensure, however, that an appropriate transition period is provided, especially if members of the new agency's management team and the IMT do not overlap. At this point, the new agency is expected to continue the implementation activities as defined in the SCMP and continued during the transition period. The goal of these years (2014–2017) will be to complete the installation of new systems and procedures to support a new and improved supply chain.

5.2 Financing, Resource Mobilization, and Commodity Pricing

The new agency has a number of significant challenges in this intervention area, as prices for medicine and medical supply items have been one of the primary reasons behind the desire to improve the health commodity supply chain. NHIA has a keen interest in significantly reducing purchase prices at the facility level, as recent data suggest that over 50% of its reimbursement payments are attributable to medicines and other health commodities. The new agency will need additional resources not currently available to build responsive and more reliable systems, improve supply chain services for clients and facilities, and enhance overall supply chain performance.

Key interventions and activities during the 2012–2013 transition period, and after the formalization of the new agency, include:

- Finalize cost estimates for implementing the SCMP over the life of the plan (five+ years) and using these figures to advocate for operational and investment resources (government and donors).
- Settle outstanding debts within the health system related to health commodities, and implement a specific plan of action to avoid a repeat of these payment problems.

- MOH, NHCSA, and NHIA collaborate to significantly reduce the total cost of all drugs and medical supplies purchased for public sector use.
- Develop and enforce new pricing and/or markup policies
- Develop and implement, over time, a strategy for full cost recovery for the new NHCSA, including the regular use of fee-setting tools
- Consider performance-based compensation and/or performance incentives for the new agency's management.

5.3 Procurement

The procurement of medicines and medical supplies is another area of significant concern, as medicines and medical supplies are currently being purchased at all levels of the supply chain and by almost all facilities within the public sector system. While benefiting the facilities in terms of service (direct delivery by suppliers), this practice has had important adverse consequences as well, particularly in terms of high average prices, and poor quality for medicines and medical supplies, and payment delays and non-payment for commodities received from the public sector supply chain commodity providers (namely, the 10 RMS and the CMS).

In recent years, these debts have grown in size to the point where cash flow problems at the central and regional levels have inhibited the ability of public sector procurers to maintain revolving funds and replenish commodity inventories. While these outcomes from the Procurement Act of 2003 are likely unintentional, procurement fragmentation has had negative consequences on supply chain performance.

The MOH, GHS, NHCSA (the new agency) and NHIA need to find solutions to these pricing and payment challenges. Key interventions and activities include:

- Develop and implement strategies, policies, procedures, and/or rules to address the fragmented procurement situation within the public health sector.
- Define procurement roles and responsibilities going forward to create more efficient and effective procurement mechanisms and increase procurement performance (responsiveness, cost-effectiveness, use of more effective procurement mechanisms, etc.).
- Strengthen and maintain procurement capacity, wherever it exists.
- Ensure that financial resources are available to allow the supply chain to complete its procurement activities on schedule.

5.4 Distribution—Storage, Transport, Inventory Management, and Waste Management

Some of the strategic directions included within this Master Plan are, at this time, broad in nature. For the new agency to complete its intended mandates, the MOH and the new agency will need to adopt more specific strategies for distribution (warehousing and transport). Similarly, key decisions about information systems are required so the new agency can improve inventory management at mid- (second) level warehouses and in public sector facilities.

Currently, the distribution network consists of the CMS, managed by the MOH and located in Tema, and 10 RMS, operated by the GHS under the RHAs in each region. Administratively, there is no formal relationship between the CMS and the 10 RMS, which limits coordination of information systems, transport, and data visibility, among other areas.

With regard to the transport (delivery) of commodities from the RMS to facilities, the system is haphazard, as only one RMS provides direct delivery of commodities, while others require the facilities to collect the products they purchase from CMS or the RHAs/RMS. This is one reason why facilities have been buying more and more commodities from private sector suppliers, as these suppliers deliver directly (and fairly quickly). In general, the lack of supply chain predictability that comes from the rather adhoc procurements from the vibrant private sector negatively affects the outcome—commodity availability at service delivery points.

As noted above, for the new agency to manage a specific set of products and develop new systems for supporting all products successfully, the MOH needs to provide more specific mandates to the new agency and GHS on the following issues:

Distribution network—What distribution network will the new agency control and manage to ensure completion of its commodity availability responsibilities? How broad will the new agency's mandate be in terms of supply chain operations? Will the network be optimized, or will the new agency be expected to use the existing network regardless of efficiency?

Commitment to direct delivery—The new agency needs to offer direct delivery to facilities to be competitive with private sector suppliers and to improve commodity availability; how will transport be managed, especially from the second level (RMS) to facilities? Will it be managed as one system, or as 11 (CMS and 10 RMSs)? How will cost-effectiveness be achieved?

One system or parallel systems—For both elements (warehousing and transport), the broad question is whether the MOH is committed to building a single coordinated supply chain or it is comfortable with multiple entities managing a number of parallel systems with improvements from the SCMP coming on the margin. In relation to the distribution system, this question is not yet resolved.

Other areas of intervention related to distribution include:

- NHCSA will use best practices and a unified, automated tool for inventory management and reporting at its warehouses.
- NHCSA will identify systems/tools for MOH/GHS health facilities to support effective and consistent inventory management practices for all health commodities (ideally as a part of the overall LMIS/IT strategy).
- NHCSA will lead/support development of standards for facility stores, by facility type, including minimum physical capacity in terms of size, and MOH will develop a plan for upgrading all facility stores to meet new capacity standards.
- The new agency will define indicators for monitoring the performance of the warehouses within the SCMU network, and will monitor these indicators regularly.
- The new agency and others will develop/update waste disposal policies and procedures (SOPs), including reverse logistics strategies, and establish/revise waste disposal infrastructure.
- Once the network and responsibility issues are resolved, NHCSA will conduct network optimization to determine optimal delivery routes based on warehouse and facility locations, roads, commodity volumes, etc.
- NHCSA will complete a system design process to determine best practices for the products/programmes that will be included in the SCMU-managed supply chain and to finalize system details.
- Efficient and effective transport strategies will be finalized and implemented.

5.5 Information Systems and Processes (Including Logistics Management Information Systems)

The current environment for automation within the supply chain might be best described as haphazard. Locally developed and managed systems do exist in CMS, selected regional warehouses, and a few facilities, but these tools are not linked and were not designed as part of an integrated commodity management system. In recent years, the MOH has not prioritized automation to support the supply chain, and the resulting efforts have been local and small in scale. Additionally, the MOH and GHS have not emphasized the collection of national-level health commodity information. Data visibility for policy and operational leaders regarding commodity information has also not been a priority.

As part of this strategic plan, the NHCSA has been mandated to design and implement an integrated LMIS to collect and use commodity-related data. The MOH has also expressed its desire to implement an integrated, modern technology-based information system for managing supply chain data. These interrelated processes will require considerable time, attention, leadership, and, ultimately, resources, if they are to be accomplished.

Key interventions related to LMIS and information systems include:

- Complete an information requirements and data flows analysis for each user group and across user groups and clearly define objectives as well as expectations regarding information-sharing policies, procedures, processes, and service and performance levels.
- Complete the system design phase for the primary logistics functions, including LMIS, distribution (warehousing and transport), inventory management, pipeline monitoring, and resupply schedules, ensuring that roles and responsibilities and information requirements are clearly defined, and leading to the detailed design of an integrated LMIS.
- Create and maintain an IT Committee/Subcommittee to oversee the review/selection process for a technology-based, integrated information system for managing and accessing supply chain data. Their tasks will include:
  - Review the scope, project plans, requirements, designs, and capabilities of any/all current automation projects/automated systems (e.g. – mSupply software) in relation to supply chain information management to determine whether they are appropriate for future integrated system needs.
  - Identify an IT solution for implementing the integrated LMIS (by competitive bid or other method).
  - Purchase and install hardware to support the IT solution (within the SCMU warehouse network and for facilities).
  - Develop a training/implementation plan based on the availability of human and other resources for training and onsite supervision.
  - Create a unit within NHCSA to support the new system.

5.6 Policy, Legal, and Regulatory Environment

The MOH and its agencies seek to reduce the occurrence of poor-quality medicines and health commodities within the public sector. This is an important objective within the public sector and one of the primary mandates of the FDB. However, the current systems, mechanisms, and inspection resources do not seem to be adequate to ensure that inferior medicines and medical devices and supplies do not enter the public sector system.

The MOH, with the support of the FDB and the NHCSA, need to address the following:

- Define roles and relationships between/among the new agency and other MOH agencies and regulatory authorities regarding quality assurance responsibilities for medicines and medical devices (e.g., FDB, Ghana Standards Authority, etc.).
- Review existing indicators as well as data requirements to assist in quality assessment, inspections, testing, and tracking within the drug and health commodity quality assurance programme.
- Implement updated/revised policies and procedures for quality assurance and conduct inspections, testing of products, etc.
- Strengthen FDB and NHCSA and support them to enforce guidelines for sanctioning procurers within the system and/or vendors selling to the system who are found to be out of compliance with MOH and FDB regulations (inspections), and for testing drugs and other commodities.
- Support development of incentives and sanctions to improve manufacturers', importers', and distributors' self-regulation of medicine and health commodity quality.

5.7 Quantification and Product Selection

Similar to information systems, the current situation for quantification is somewhat random; if oversight and action are provided to quantification, it is most often by one of the various programme departments of the GHS, with varying degrees of effectiveness and little coordination or information sharing. The reality for product selection is even more haphazard, particularly at the lowest level of the public sector, as 1,000+ facilities are procuring with little regard to the guidelines for selecting medicines and medical supplies.

For the new NHCSA, full agreement on the list of products that it will manage will be critical to helping others understand its defined roles in commodity availability. Similarly, the MOH and the new agency need to ensure that, going forward, all levels (GHS, RMS, and facilities) have a clearly defined scope of commodities they can procure and use. Both product lists will be reviewed at least annually.

Regarding quantification, the new agency will lead the forecasting process for all of the products it is expected to manage. It will also be expected to develop and implement a consistent process for quantification of all other commodities, together with other members of the national quantification team.

Key interventions for upgrading and managing commodity quantification include:

- Obtain any existing quantification guidelines (MOH, GHS, consultants), and then draft revised guidelines that describe how, when, how often, and by whom quantifications and forecast reviews will be conducted. Current forecasting tools will be reviewed and revised if appropriate.
- Training of SCMU and other staff on quantification process, tools, and methodologies will be organized and held regularly.
- An annual quantification exercise will be conducted for all health commodities: NHCSA or others specifically designated will produce annual commodity forecasts and supply plans, review procurement plans regularly, and update and revise as needed.
- These agencies will also conduct formal quarterly reviews/updates of forecasts and supply plans with other concerned parties (including the THs) to determine and update procurement responsibilities for all commodities.

- Quantification results, regardless of the source, will be shared with all relevant stakeholders for advocacy and resource mobilization.

5.8 Capacity Building

As the new NHCSA addresses new systems and procedures for distribution, LMIS, forecasting, etc., employees of the new agency, as well as those in the MOH and GHS, at the RMS level, and in facilities will need to learn how the new system will be organized and function and how to manage their responsibilities within these new systems. Plans will need to be developed for orientation and in-service and pre-service training programmes, as well as for supportive supervision and on-the-job training.

Key interventions in capacity building include:

- Employees of the new agency will need to be trained in the new policies and procedures as new NHCSA systems are being implemented.
- Staff who will be involved with computer-based LMIS will need to be trained via in-service programmes, although pre-service training may provide information to non-users regarding the design of the new systems and the computerized system.
- NHCSA will develop training curriculum and materials for trainers—training of trainers (TOT)—and trainees (all levels staff) based on the revised Supply Chain Manual SOPs.
- Develop a training plan based on human and financial resources available. The training plan will need to address concerns regarding regional- and district-level capacity to serve as trainers in supply chain and logistics.
- Develop a supportive supervision plan based on available human and financial resources.
- MOH, GHS, and partners will conduct ongoing supportive supervision at all levels to ensure that staff are able to complete required supply chain activities.
- Identify training institutions and schools for course work for pre-service training, and agree on plans and content for new curricula development. Pre-service courses will be designed to support the new system.

6.0 Implementation Monitoring and Risk Management

The monitoring section of the SCMP has two components, the monitoring and evaluation (M&E) plan and the risk management plan. The M&E plan in Annex 5 presents the milestones for the initial year and half of the implementation plan before the establishment of the NHCSA. In addition to the milestones, the M&E plan should include key performance indicators to measure the performance of the system as well as that of the new Agency. The indicators for the latter will need to be developed once the agency is established.

The risk management plan, developed by a group of IBM consultants in April 2012, describes a number of risks categorized under 5 themes (IT system, governance, measurements, law and politics, and costs and budget) and their possible impact on seven different business areas, including organization, financing, resource mobilization and commodity pricing, procurement, distribution, information communication technology, and legal and regulatory environment. The risk analysis methodology, risk triggers and mitigation plans are detailed in the "Risk Management and Mitigation Strategy" prepared by the IBM consultants.

The consultants recommend that risk reviews take place at regular intervals, at least at each major milestone or change in implementation. As such, the M&E plan should be reviewed simultaneously with the risk management plan for the ongoing management of risks to reach the milestones.

The M&E and the risk management plans are integral parts of management and should serve as tools for the new agency's management team. The risk management plan should prioritize risks (from high to low) and should be referred to frequently throughout the SCMP implementation period to ensure that all risks are addressed as quickly as possible. Once risks are prioritized, the focus should be on implementing the activities related to the identified risks. Activities related to risks with high factor (high impact and high probability) will need to be tracked closely in order to ensure the execution of mitigation actions - with the goal of reducing or averting the adverse impact of the possible risk.

Suggested interventions related to the draft risk management plan include:

- Review the list of priority risks identified by the IBM consultants and align these with the intervention areas within the SCMP to harmonize implementation. The MOH shall agree with the identified risks and mitigation strategies and support the new agency's management in addressing them continuously over time.
- A quarterly review of the risk management plan shall be completed for the first year or two and then biannually thereafter. The NHCSA will adopt and/or propose other risk mitigation strategies to address newly identified risks due to changes in the environment or implementation strategies.
- Risk management will be included in the new agency's regular quality assurance activities.

7.0 Implementation Plan Costing

This section of the Master Plan presents the cost estimates developed for the five-and-a-half-year life of the implementation plan for the SCMP. Included in these estimates are:

- Infrastructure costs for office and warehousing space;
- LMIS and related IT requirements;
- Staffing for logistics operations; and
- Distribution requirements at central and regional levels.

These expenses have been organized into three cost categories: (1) recurrent costs, (2) capital costs, and (3) activity costs. The sum of these costs constitutes an estimate of the required financial commitment associated with the establishment and operation of the NHCSA and a strengthened CMS - RMS network.

All costs are presented in U.S. dollars. A factor for annual inflation of 8.7% (World Bank) was utilized. Because sufficient data for costing the implementation plan was not always available, a number of assumptions were made to assist in bridging the information gap. If any of these assumptions change, the calculations for the costing should be updated.

7.1 Recurrent Costs

Recurrent cost estimates include salaries for the IMT; and procurement, storage, distribution, and management personnel at the NHCSA, the CMS, and the 10 RMSs (see Table 2 below). Once the Agency is established, costs for the IMT will end and salary costs for NHCSA will begin. These cost estimates also include utility costs and costs for the transport of commodities. Some recurrent costs of the new system reflect continued operations from the existing system.

Staffing levels are based on experience with the supply chain strategic planning process in other developing countries. Salary figures were obtained from the CMS by IBM during the work they conducted in April 2012. Utility costs are also based on actual expenses from the CMS (also collected by the IBM consultants).

Transportation cost estimates are based on the assumptions and calculations used to determine transport costs for the HIV/AIDS Commodity Security Strategy produced in October 2011.[10] For this purpose, these costs were used to calculate a cost per product for the HIV/AIDS, Family Planning, TB, and Malaria products. While some essential medicines and basic medical supplies are also expected to be part of the commodity management scope of NHCSA (and therefore will incur transport costs), total quantities to be handled could not be estimated reliably. However, these commodities can expect to incur an average transport cost per drug value ratio of 0.35% per U.S. dollar or about $113 per cubic meter of commodities handled. This figure includes fuel, maintenance, insurance, per diems, and vehicle depreciation. The assumption is that NHCSA will manage distribution from all 10 RMSs, and will directly bear the operating costs for commodity transport as well as the transport costs associated with monitoring and supervision. It should be noted that a more optimal network structure would likely incur lower storage and transport costs.

Cost estimates for office and warehouse space were not included, as it is assumed that the new agency will not need to rent or purchase currently provided warehouse and office space. It is also assumed that NHCSA will be housed in existing, government-owned facilities and therefore will not pay rent.

[10] USAID | DELIVER PROJECT.

Table 2. Recurrent Costs (in USD) from 2013-2017

Category	2013	2014	2015	2016*	2017*	Grand Total
Two IMT staff members	37,160					**37,160**
NHCSA		1,774,321	1,928,687	2,096,483	2,278,877	**8,078,368**
CMS		948,247	1,030,744	1,120,419	1,217,895	**4,317,305**
RMS		2,079,671	2,260,602	2,457,274	2,671,057	**9,468,605**
Grand Total	**37,160**	**4,802,239**	**5,220,034**	**5,674,176**	**6,167,829**	**21,901,438**

*An inflation rate of 8.7% was applied to Years 2016 and 2017

7.2 Capital Costs

The capital cost category includes:

- Estimates of the start-up costs for the new Agency,
- An integrated LMIS,
- Related IT infrastructure, and
- Associated expenses including office vehicles but not office equipment and furniture (assumption is that the office equipment and furniture will be available from the MOH) – see Table 3 below).

Note: The individual estimates were developed using existing costing data available from Ghana, complemented by other available data. Also, these figures also do not include any costs that might be associated with required infrastructure improvements at CMS and the 10 RMSs, such as new buildings or the purchase of warehouse equipment.

The LMIS and related IT infrastructure cost estimates presented in this plan are at the low end of the range provided within IBM's April 2012 report. This assumption reflects the Technical Working Group's August 2012 proposal to pursue a relatively decentralized approach; however, these costs may vary significantly (upward) based on significant changes in scope and/or design of the LMIS[11].

It should be noted that in their May 2012 report entitled Supply Chain System IT Roadmap[12], the IBM team proposed a more robust solution than that recommended by the TWG. The IBM team proposed option 2 or the "hybrid Enterprise Resource Planning solution", an ERP at the central and middle levels and existing systems at facilities. This option is briefly described in the text box below.

[11] Information technology can also help the MOH to reduce costs in the long-term, improve accountability and transparency, enhance access to information, and strengthen performance reporting and monitoring.
[12] Supply Chain System IT Roadmap, 9 May 2012, IBM Global Business Services - Corporate Services Corps, pages 27, 34, and 35.

Hybrid Enterprise Resource Planning (ERP) Solution - This option involves selecting a robust ERP system and implementing it across central level and middle level agencies. For facilities with existing SCM systems or stock management systems, which contain the data required by the NHCSA, custom adaptors can be built to collate their data centrally. This means that existing systems, which are functioning within their respective health facilities, would not need to be removed. Facilities with no existing systems, or existing systems which are inadequate, will have a standardized ERP client implemented.

Although each of the three options offers the NHCSA the appropriate data visibility, option 2 is the recommended solution. This option is proposed for the following reasons:

- Centralized ERP system has the greatest potential for expandability.
- A custom off-the-shelf (COTS) ERP will be a proven supply chain solution, with other successful implementations worldwide
- Integrating with existing health systems within facilities ensures existing investments aren't wasted.
- Reduces complexity of the solution by ensuring that the software would not need to be customized for larger health facilities.
- Increased visibility of data at all levels of the supply chain[13].

Option 2 is marked as delivering high value, while also incurring a high implementation cost. The benefits of having a single ERP solution at the top levels of the supply chain will be realized, and facilities would use a mix of ERP software and existing SCM software. Although there will be development costs associated with deploying custom adaptors for facility systems, the costs are expected to be offset because new systems will not need to be introduced at these facilities, which will reduce hardware, software, training and maintenance costs.

Table 3. Details of the Capital Cost Estimates (in USD)

IT and Transportation		2013	2014
IT	ERP, SCM modules: ~$250K-$1.3Million		250,000
	ERP, Financial modules: ~250K-$1.2Million		250,000
	Database (Oracle used for this example): ~$200K-$800K		200,000
	Projected Implementation (of both modules)*: $2Million-$5Million (varies widely and is simply a general rule of thumb)		2,000,000
	Enterprise Service Bus (ESB): ~$200K		200,000
	Hardware Costs (servers, storage and switches): ~$900K-$1.5Million		900,000
Transportation	Purchase of four 3-ton delivery vehicles per RMS (US$ 33,838 * 4 * 10)	1,353,520	
	Purchase of three articulated vehicles for CMS-RMS deliveries (USD 125,000 * 3)	375,000	
Total of Capital Costs		**1,728,520**	**3,800,000**
Grand Total of Capital Costs		**5,528,520**	

[13] An important benefit of any successful automation project.

In addressing transport costs, the transport cost per product (commodity) value calculated for the HIV/AIDS Commodity Security Strategy was applied to product values of HIV/AIDS, FP, TB and malaria products. While essential medicines are also expected to be part of the product management scope of NHCSA (and would therefore incur transport costs), total quantities to be handled could not reliably be estimated. However, these commodities can expect to incur an average transport cost per value ratio of 0.35% per $ or about $113 per cubic meter of commodities handled. This includes fuel, maintenance, insurance, per diems, and vehicle depreciation. The assumption is that NHCSA will manage distribution from all 10 RMSs to the facilities and will directly bear operating costs for transport, as well as transport costs associated with monitoring and supervision. A more optimal network structure would likely incur lower transport and storage costs.

It should be noted that these costs are "high level" cost estimates; the new Agency should plan to develop a more detailed cost before implementing activities associated with the capital costs.

7.3 Activity Costs

Activity costs were calculated based on estimates of level of effort and resources required to implement each activity in the implementation plan (IP) (see Table 4 below); therefore, an increase in the actual level of effort and/or related resources will result in higher costs for that activity. Technical assistance (TA) to support the IMT and/or NHCSA is included in this category of costs.

Activities were estimated for two periods of time: the transition period preceding the establishment and effective operational start of the NHCSA (July 2012–December 2013) and the remaining period of the SCMP Implementation Plan (January 2014–December 2017).

Cost estimates for transition activities were developed based on inputs received from the TWG and other MOH and MOH Agency representatives during a costing workshop held in late July 2012. It is assumed that the IMT will implement transition activities up to the effective operational start of the NHCSA, presumably Quarter 1 of CY2014. Expense categories for activities were defined as—

1. Workshops;
2. Trainings;
3. Meetings;
4. Monitoring visits;
5. Level of Effort for IMT TA Provider;
6. Level of Effort for Consultants; and
7. Printing.

Salaries for the IMT include level of effort for one technical assistance provider (included in the activity costs) and annual salaries for two MOH staff (included under operational expenses).

Table 4. Activity Costs by Category (in USD)

Activity Category	2012	2013	2014	2015	2016	2017	Grand Total
Workshop	154,318	216,434					**370,751**
Training		232,933	6,201,365	6,195,215	6,201,365	6,046,943	**24,877,820**
Meeting	31,167	45,745	7,670	7,670	7,670	7,670	**107,592**
Monitoring	28,900	138,300	317,200	317,200	317,200	302,200	**1,421,000**
IMT TA	32,200	85,750	1,050	350	1,050	350	**120,750**
Consultant	27,300	95,200					**122,500**
Printing	321,940	303,590	191,970	191,970	191,970	189,590	**1,391,030**
Total	**595,824**	**1,117,951**	**6,719,255**	**6,712,405**	**6,719,255**	**6,546,753**	**28,411,443**

7.4 Summary of Cost Estimates

Table 5 below summarizes the cost categories described in the previous sections. A detailed cost breakdown of the activity costs can be found in Annexes 4 and 6.

Throughout the life of the Master Plan (2012-2017), the operations of the NHCSA (estimated recurrent expenses of $21,901,438; capital investment estimates of $5,528,520; and activity cost estimates of $28,411,443) add to a total implementation cost of $55,841,401. It is anticipated that these costs will be offset by savings from streamlined and harmonious operations, responsive staff, increased volume of throughputs in the system leading to better commodity security, fewer stockouts, improved clinical outcomes, increased opportunity and ability to meet the Millennium Development Goals, and improvement of NHIA's financial statements.

The reductions in NHIA reimbursement costs for medicines and medical supplies, which have seen exponential increases from NHIA's early years (7.6m cedis or approximately $9.5m in 2005) to 308.15m cedis or approximately U.S.$205.43 in 2009)[14], will complement the investments in the SCMP over five years, as over half of NHIA's current reimbursement costs are attributed to medicines and medical consumables.

Table 5. Summary of Costs for Implementing Five Year Master Plan (in USD)

Category of Costs	Implementation Plan Year						
	2012	2013	2014	2015	2016	2017	Total
Recurring	0	37,160	4,802,239	5,220,034	5,674,176	6,167,829	**21,901,438**
Capital	0	1,728,520	3,800,000	0	0	0	**5,528,520**
Activity	595,824	1,117,951	6,719,255	6,712,405	6,719,255	6,546,753	**28,411,443**
Total	**595,824**	**2,883,631**	**15,321,494**	**11,932,439**	**12,395,447**	**12,716,599**	**55,841,401**

[14] 2009 NHIA annual report and reference exchange rates from www.xe.com.

ANNEX 1. Master Plan - Key Activities and Timeline

Master Plan Development Workshop (TWG and selected MOH and GHS participants; Partners; 7 – 9 February 2012)

The Strategic Workshop for the SCMP had the following objectives:

- Agree on working vision statement and key principles for the 5 year Supply Chain Master Plan.
- Develop consensus on strategic interventions that become the basis for the 5-year SCMP for ensuring product availability and quality in health facilities.
- If required, where consensus is not obtained, provide specific strategic intervention options to necessary decision-makers.
- Provide rationale for and describe assumptions and risks (and mitigation) of each strategic intervention.
- Determine who is responsible for undertaking each strategic intervention and the overall Master Plan.

In terms of process, the participants worked through a number of activities in order to determine a vision and set of guiding principles for the Supply Chain, and to agree on the group's perspectives on the key problems and challenges, the objectives for the supply chain, and the proposed interventions for addressing the problems and challenges. The primary goal was to define a clear framework for the achievement of their stated objectives for the Supply Chain. On the third day, the participants discussed, at length, possible organizational structures for managing the supply chain, before agreeing on specific proposals.

Preparation of a Briefing Note for the new Minister of Health

The Government of Ghana appointed a new Minister of Health shortly before the visit of the consultants for the assignment to facilitate the development of the SCMP. The new Minister, the Honorable Alban S. K. Bagbin, officially began his new role on Tuesday, February 7, 2012.

In order to help him prepare for the Stakeholder Briefing planned for February 15, 2012, the USAID | DELIVER PROJECT local office and the consultants were asked by the chair of the TWG to prepare a short 'briefing' paper for the Minister. This document was prepared and provided to the Ministry on Monday, February 13, 2012.

Stakeholder Briefing – 15 February 2012

The primary objective of the Stakeholder Briefing was to present an overview of the findings, conclusions and strategic interventions from the Strategic Workshop with key stakeholders. Approximately 60 persons attended the Briefing, and there was considerable discussion following both the presentation of the problems and challenges, and again following the presentation of the strategic interventions. Both the new Minister and the Chief Director attended the briefing, with the Chief Director serving as the chair of the meeting. The Minister also spoke, and both offered strong support for the proposals and for the goal of improving the supply chain.

Overall, while there were some dissenting views regarding the formation of a new agency, most were very positive about the proposals and strongly supportive of making improvements to the supply chain. The Ministry has planned a series of advocacy activities in order to gain consensus on these proposals.

Implementation Plan Development Workshop

This meeting was held with the TWG and selected MOH and GHS participants on 20 – 21 June 2012.

Costing the Implementation Plan

This work was performed in July and August 2012, including a workshop with the TWG and other MOH representatives on 30 July and 1 August 2012.

ANNEX 2. Terms of Reference for Technical Working Group

OVERSIGHT OF IMPLEMENTATION OF SUPPLY CHAIN MASTER PLAN DURING TRANSITION PERIOD UNTIL NEW AGENCY IS OPERATIONAL

1.0 Background

Achieving access to health commodities is defined by the concept of commodity security (CS), which exists when clients can obtain and use essential health commodities when and where they need them. In Ghana, several independent reviews of the health sector highlighted commodity security challenges due in part to an ineffective public sector supply chain, especially at the level of the Central Medical Stores. Broader health sector changes, including unintended consequences from decentralization within the health sector and local efforts to increase the involvement of the private pharmaceutical sector, coupled with persistent underfunding due to internal system payment problems, have been main contributors to the decline in supply chain performance. Across the country, problems exist with commodity quality, prices, and availability, and the financial sustainability of the National Health Insurance Scheme due to the high cost of drugs and medical supplies, is an increasing threat. The aim of the Ministry of Health is to transform the current system into one that can ensure ready access to quality, affordable health commodities at health facilities within the public sector in Ghana.

During the early months of 2012, the Ministry of Health and its agencies, with support from the U.S. Agency for International Development, and technical assistance from the USAID | DELIVER PROJECT, have developed a five year Supply Chain Master Plan (SCMP), including a detailed Implementation Plan (IP). As the plan nears completion, the Technical Working Group, which was appointed by the Ministry to oversee the development of the Master Plan, has largely completed the mandate given to it in late 2011, "The purpose of this technical activity is to develop a 5 year Supply Chain Master Plan to support the National Healthcare System, and will include the design of a master plan as well as a costed implementation plan for a sustainable Supply Chain, detailing recommendations, costs, risks, and a mitigation plan."

As one of the key recommendations of the SCMP, the Ministry has proposed to create a new Agency (National Health Commodity Supply Agency), within the Ministry of Health, to manage and operate the upgraded supply chain. However, government processes for approval of a new Agency and possible delays due to the upcoming national election in December make it unlikely that the new Agency will be formalized before the 2nd half of 2013. The Ministry has therefore decided to develop a new Terms of Reference for the Technical Working Group in order to provide oversight to the implementation of the Supply Chain Master Plan during the transition period (until the new Agency is formalized and operational).

2.0 Vision Statement and Supply Chain Principles from the Supply Chain Master Plan

Vision Statement:

"To ensure that quality health commodities are available, accessible, and affordable to all, supported by a sustainable, reliable, responsive, efficient and well-coordinated supply chain."

Supply Chain Principles:

- Efficiency and Sustainability: The supply chain should be efficient and as business focused as possible across all levels, maximizing economies of scale and sustainability, and minimizing waste.
- Accountability: The supply chain should be accountable for results and held to defined measures of performance.
- Transparency / Visibility of Data and Information: The supply chain should be based on transparency in terms of roles and responsibilities, procedures, and data, throughout all levels.
- Human Resources: The supply chain needs to have an adequate number of appropriately skilled human resources (qualifications, experience, and attitude) in order to attain its vision and objectives.
- Client-oriented: The system should earn and maintain the trust of the end users through reliability and responsiveness.
- Environmentally friendly: The supply chain should be environmentally friendly by emphasizing safe waste disposal.
- Non-discriminatory: The supply chain should be non-discriminatory to any end user (client).
- National Health Objectives: The supply chain should support the achievement of national health objectives.
- Laws and Policies: The supply chain should operate in accordance with existing laws and policies.
- Technology: The supply chain should use available technology, including information systems, to be efficient and facilitate the visibility of data up and down the supply chain. The supply chain will emphasize and use data for decision-making.
- Coordination: The supply chain will coordinate inputs of all stakeholders.

3.0 Objectives Related to this Terms of Reference

The objective for the **Supply Chain Master Plan** during the rest of 2012 and throughout 2013 is to move from the planning phase to implementation. The strategies and implementation activities within the Master Plan seek to improve each of the components of the supply chain by addressing identified weaknesses and gaps.

For the **Technical Working Group**, their primary objective is to ensure that there will be ongoing progress on the implementation of the Master Plan, in conjunction with the interim management team and any consultants supporting the process. Key areas of focus will include: providing guidance and oversight to the interim management team (IMT) and to any consultants used to support studies, assessments or other activities within the IP, providing feedback on draft reports and documents, and developing and providing recommendations to the Ministry of Health (and its Agencies) for action and/or decision-making, where appropriate.

4.0 Membership:

Following approval of this TOR by the Ministry of Health, invitation letters will be provided to each of the organizations below so that they can select their representatives to the TWG, as defined in this TOR. Organizations may choose to stay with the representatives that

served on this TWG during the Master Plan development process, or may choose to propose new representatives.

Members of the Technical Working Group will be organizational, and are listed below in alphabetical order:

- Central Medical Stores (one representative)
- Development partners (one representative)
- Food and Drugs Board (one representative)
- Ghana Health Service – Stores, Supplies, and Drugs Management Office (two representatives)
- Ghana Health Service – Regional Procurement Officer (one representative)
- Ghana Health Service – Regional Medical Stores Manager (one representative)
- Regional Health Administrations / Regional Medical Stores (one representative each)
- Ghana Health Service – Programmes (HIV/AIDS, Malaria, TB, FP, EPI) (two representatives)
- MOH – Procurement and Supplies Directorate (one representative; Director who also serves as chairperson of the TWG)
- MOH – Policy, Planning, Monitoring, and Evaluation (one representative)
- MOH – Office of the Chief Pharmacist (one representative)
- National Health Insurance Authority (two representatives)
- Private Sector Health Alliance (one representative)
- Teaching Hospitals (one representative) from Pharmacy / Stores Team and/or Department
- Legal Officer with health background (one representative)
- USAID | DELIVER PROJECT (one representative; serves as secretary to the TWG)

Changes in membership, either additions or deletions, can be proposed by consensus of the TWG to the Director of the Procurement and Supplies Directorate, MOH. S/he shall bring the proposal to the Chief Director for a decision within one month of the request. The Technical Working Group will be briefed about the final decision at their next scheduled meeting.

5.0 Procedures

The Technical Working Group will meet monthly (or every two weeks) on the **2nd (and 4th) Wednesday** of each month, beginning at 10:00am and continuing for no more than 2 hours, in the conference room of the Ministry of Health (or other venue agreed to by the TWG).

It is the responsibility of the members to regularly attend each meeting and actively review and comment on any information provided in relation to each meeting's agenda.

Any member can suggest an 'off-schedule' meeting if they believe one is needed. In this case, the Chair will arrange a meeting at the earliest opportunity as appropriate. Ad-hoc meetings will be called at least three business days in advance, unless overriding concerns require an earlier meeting (at the discretion of the Chair).

A quorum is not required for decision-making. All members are expected to be present or appropriately represented at the meetings. Absent/unrepresented member(s) agree to abide by the decisions made by those members present.

The Technical Working Group and its meetings will be chaired by the Chair, or his/her designee. Decision-making within the TWG will be by consensus. In case of irreconcilable differences, the Chair shall bring the issue to the leadership of the MOH for a decision.

The secretariat will be discharged by staff of the USAID | DELIVER PROJECT. The Secretary, in consultation with the Chair, shall be responsible for:

- Ensuring that the agenda for each meeting is prepared in advance.
- Distributing agenda, minutes and other related documents that include the appropriate data and informational inputs so that decisions can be reached.
- Circulating reports and other SCMP related documents, as requested by the TWG or its Chair.
- Keeping the TWG's email list and other similar information required for quality communications.
- Other information dissemination / communications, as requested by the TWG or its Chair.

6.0 Reporting Relationships and Anticipated Timeframe:

As soon as one or more members of the interim management team (IMT) are appointed, the TWG shall provide oversight to his/her activities in relation to the implementation of SCMP activities. To support this oversight role, the IMT shall provide a regular, monthly report to the TWG, which, following review, shall be shared with the Chief Director and the Minister of Health of the MOH. The Technical Working Group shall also ensure that the Joint MOH / Donor Partners Group receives SCMP updates regularly and/or upon request.

The TWG, under this TOR, shall continue until formally disbanded by the Ministry of Health. The need for both the TWG and the IMT is expected to continue until (1) the new Agency is formalized by the Government of Ghana, (2) the Board and management team of the new Agency are selected / appointed, and (3) the Board and management team begin their work on behalf of the new Agency. The period of oversight for the TWG under this TOR is expected to be 12 to 16 months, commencing on the date on which this TOR is approved/authorized.

7.0 Key Activities/Tasks

7.1. SCMP Implementation

The primary role of the SCMP Technical Working Group is to act as a Steering Committee for oversight of the implementation of the Supply Chain Master Plan. In this regard, they are responsible for setting and monitoring deadlines.

7.2. SCMP Monitoring Activities and Review Meetings

Once members of the IMT are selected / assigned, the TWG and IMT shall agree on an IMT work plan which is based primarily on the Implementation Plan of the SCMP. This work plan shall be reviewed monthly and updated quarterly (based on progress and set-backs).

The TWG shall take a lead role in negotiating responsibility and implementation schedules for activities which are primarily the responsibility of other agencies of the MOH (e.g. – NHIA, GHS, FDB, auditors, etc.).

The TWG shall receive and review monthly progress reports/updates from the IMT and/or consultants supporting specific interventions/activities within the IP.

The TWG shall provide monthly updates to the leadership of the MOH (and Joint MOH / Donor Partners Group) regarding progress, concerns and obstacles related to the Master Plan's implementation, in conjunction with the IMT.

The TWG shall receive Semi-annual, Annual and other Agency Review reports from the SCMP's Interim Management Team, based on the Ministry of Health's work plan and budget cycle and the MOH's calendar

7.3. Technical Policies, Strategies, Guidelines, Studies, Assessments and Plans of Action

The TWG shall review and provide feedback to the IMT and/or consultants on relevant technical policies, strategies, guidelines, studies, assessments, and plans of action, as appropriate. The TWG may also be involved in logistics-related issues outside the Supply Chain Master Plan, as deemed necessary.

Regarding the studies, assessments, reviews, etc. specifically mentioned in the Implementation Plan of the SCMP, the TWG shall be responsible for monitoring schedules (start dates, milestones, and end dates) as well as technical quality and value-added. A number of these studies are needed as inputs to supply chain related decisions by the Ministry; the TWG and the IMT shall be responsible for ensuring that reports are finalized, highlights and recommendations summarized, proposals are presented to the MOH, and that MOH decisions are made in a timely manner.

TWG members shall provide the MOH/IMT with information and data from their areas of expertise and organizations where this information/data will assist with decision-making on policies, regulations, procedures, etc., and is related to health commodities and/or the supply chain (e.g. - customs procedures, procurement regulations, reimbursement, administrative procedures for information collection and process, etc…).

7.4. Coordination among Partners

The TWG shall assist the IMT in fostering coordination and supply chain harmonization among MOH agencies and stakeholders and between the MOH and donors/supporting partners.

7.5. Resource Mobilization

The Technical Working Group shall assist the MOH and Regions with resource mobilization related to the implementation of the Supply Chain Master Plan, in coordination with the MOH and its agencies.

The TWG shall help the MOH and IMT to mobilize resources by providing value-added information and assistance on SCMP implementation resource needs and gaps, forecasting, commodity needs and projected financing shortfalls to donors and other potential funding sources.

The TWG shall provide advice to MOH/Regions for resource allocation/ budgeting for commodity procurement and SCMP implementation activities, in coordination with the IMT.

7.6. Technical Support and Expertise

The TWG shall assist the Interim Management Team for the SCMP in assessing and defining the skills and/or expertise required for 'high profile' technical support activities

(studies, assessments, reviews, etc.) outlined by the Implementation Plan of the Supply Chain Master Plan.

Technical support, if sought from within Ghana but outside the MOH and its agencies, shall be recruited by the TWG / IMT through open competition.

7.7. Stakeholder Support

The TWG shall ensure that briefings on the progress of the implementation are provided to stakeholders / development partners on a regular basis. The MOH, Joint MOH / Donor Group, TWG, and IMT shall work together to decide on the timing / schedule of these updates.

The TWG shall support the IMT with the preparation of an annual report of stakeholders' support (development partners) for the SCMP and/or the health commodity supply chain in Ghana. This report shall also identify gaps and offer recommendations for addressing these gaps going forward.

7.8. Interim Management Team Composition

The TWG shall provide recruitment support to the MOH and/or IMT Team Leader for IMT staff, if needed.

The TWG shall also monitor the performance of the IMT and its members, in an organized fashion, and shall report to the leadership of the Ministry on IMT performance, at least on a quarterly basis.

8.0 Deliverables

Phase 1: September - December 2012

- IMT work plan (implementation plan) and budget developed and approved by the MOH for 2013.
- Monthly reports provided to leadership of MOH on progress and milestones of SCMP implementation.
- Reports provided to the Joint MOH / Donor Partners Group upon request.

Phase 2: January – December 2013

- IMT work plan (implementation plan) and budget developed and approved by the MOH for 2014.
- Monthly reports provided to leadership of MOH on progress and milestones of SCMP implementation.
- Reports provided to the Joint MOH / Donor Partners Group upon request.
- Semi-annual, Annual and other Agency Review reports, in conformity with the MOH calendar, provided to leadership of the MOH about the performance of the National Health Commodity Supply Agency.

ANNEX 3. Terms of Reference for the Interim Management Team (IMT)

1.0 Background

Achieving access to health commodities is defined by the concept of commodity security (CS), which exists when clients can obtain and use essential health commodities when and where they need them. In Ghana, several independent reviews of the health sector highlighted commodity security challenges due in part to an ineffective public sector supply chain.. Broader health sector changes, including unintended consequences from decentralization within the health sector and local efforts to increase the involvement of the private pharmaceutical sector, coupled with persistent underfunding due to internal system payment problems, have been contributors to the decline in supply chain performance. Across the country, problems exist with commodity quality, prices, and availability;. These factors together threaten the sustainability of the National Health Insurance Scheme (NHIS The aim of the Ministry of Health is to transform the current system into one that can ensure that good quality health commodities are available, accessible, and affordable to all people living in Ghana and anchored by a sustainable, reliable, responsive, efficient and well-coordinated supply chain

In 2012, the Ministry of Health and its agencies through the Technical Working Group (TWG) which was formed with support from the U.S. Agency for International Development (USAID) and other partners (DFID, WHO etc.), and with technical assistance from the USAID | DELIVER PROJECT have developed a five year Supply Chain Master Plan (SCMP), including a detailed and costed Implementation Plan (IP), recommendations, risk mitigation, and communication plan. This Technical Working Group, which was appointed by the Ministry to oversee the development of the Master Plan, will complete its tenure with the handing over of the supply chain Master plan for Health Commodities.

A key recommendation of the SCMP is a proposal for the Ministry to create a new Agency (National Health Commodity Supply Agency), under the Ministry of Health, to manage and operate the upgraded supply chain. However, government processes for approval of a new Agency, and possible delays due to the upcoming national election in December make it unlikely that the new Agency will be formalized before the 2nd half of 2013. The Ministry has therefore decided to develop Terms of Reference for an Interim Management Team that will be charged with the responsibility of managing the transition period (until the new Agency is formalized and operational) with a New mandated Technical Working Group serving as an oversight body.

2.0 Vision Statement and Supply Chain Principles from the Supply Chain Master Plan

Vision Statement:

> *"To ensure that good quality health commodities are available, accessible, and affordable to all people living in Ghana and anchored by a sustainable, reliable, responsive, efficient and well-coordinated supply chain".*

Mission Statement:

Provide a series of strategic interventions and activities for a supply chain that fully supports the Ministry of Health's objectives for a stronger national health system for all.

Supply Chain Principles:

- Efficiency and Sustainability: The supply chain should be efficient and as business focused as possible across all levels, maximizing economies of scale and sustainability, and minimizing waste.
- Accountability: The supply chain should be accountable for results and held to defined measures of performance.
- Transparency / Visibility of Data and Information: The supply chain should be based on transparency in terms of roles and responsibilities, procedures, and data, throughout all levels.
- Human Resources: The supply chain needs to have an adequate number of appropriately skilled human resources (qualifications, experience, and attitude) in order to attain its vision and objectives.
- Client-oriented: The system should earn and maintain the trust of the end users through reliability and responsiveness.
- Environmentally friendly: The supply chain should be environmentally friendly by emphasizing safe waste disposal.
- Non-discriminatory: The supply chain should be non-discriminatory to any end user (client).
- National Health Objectives: The supply chain should support the achievement of national health objectives.
- Laws and Policies: The supply chain should operate in accordance with existing laws and policies.
- Technology: The supply chain should use available technology, including information systems, to be efficient and facilitate the visibility of data up and down the supply chain. The supply chain will emphasize and use data for decision-making.
- Coordination: The supply chain will coordinate inputs of all stakeholders.

3.0 Objectives related to this Terms of Reference

The objective for the **Supply Chain Master Plan** during the rest of 2012 and throughout 2013 is to move from the planning phase to implementation. The strategies and implementation activities within the Master Plan seek to improve each of the components of the health commodities supply chain by addressing identified weaknesses and gaps.

The IMT comprising of two full time staff from MOH and its agencies and a Consultant, has the primary objective to ensure that there will be ongoing progress on the implementation of the Master Plan, in conjunction with the Technical Working Group which shall have oversight responsibility over the IMTs plans, strategies, reports and recommendations.

4.0 Procedures

The IMT shall be responsible for starting up and coordinating the implementation and monitoring of the SCMP implementation plan. The team shall be housed at the current location of the Central Medical Store, in Tema and provided with the needed logistics to facilitate its work.

The IMT shall essentially work to carry out all the implementation activities in the Implementation plan of the SCMP in conjunction with the TWG for at most the next 18

months (up to end of Q1, 2014) to position the NHCSA for total execution of the SCMP with adequate resources and tools.

5.0 Reporting Relationships and Anticipated Timeframe

The work of the IMT shall be supervised by the TWG. The TWG will thus exercise oversight responsibility over the IMT in relation to the implementation of the SCMP activities. The IMT shall provide a regular, comprehensive monthly report to the TWG, which, following review, shall be shared with the Chief Director of the MOH and the Minister of Health.

As soon as one or more members of the interim management team (IMT) are appointed, the TWG shall provide oversight to his/her activities in relation to the implementation of SCMP activities. The Technical Working Group shall also ensure that the Joint MOH / Donor Partners Group receive SCMP updates regularly and/or upon request.

The IMT, under this TOR, shall continue until December 2013 and may be extended to the end of the first quarter of 2014, by which time it is expected that (1) the new Agency is formalized by the Government of Ghana, (2) the Board and management team of the new Agency are selected / appointed, and (3) the Board and management team begin their work on behalf of the new Agency. The period of management for the IMT under this TOR commences on the date on which this TOR is approved/authorized.

6.0 Key Activities/Tasks

6.1 SCMP Implementation:

The primary role of the SCMP Interim Management Team is to effect implementation of the Supply Chain Master Plan activities. The IMT's activities are subject to review and concurrence by the TWG. In this regard, the IMT with supervision from the TWG is responsible for carrying out the following specific implementation activities among others as stated in the Implementation Plan of the SCMP:

- Write SCMU Charter
- Develop and implement advocacy plan for new SCMU / Agency and plans for improving supply chain for MOH/GHS facilities.
- Review and clarify the residual roles of the existing supply chain entities in relation to the NHCSA
- Clarify the reporting relationships and channels with all units of the supply chain and with its beneficiaries
- The consultant on the IMT manages the NHCSA planning/ startup operations, develops the roles and responsibilities of the 2 other members and communicates this clearly through the TWG to the MOH and other stakeholders
- Develop short and medium term priorities for strengthening the supply chain using the SCMP and IP as guides.
- Complete development of list of commodities that will be handled by SCMU. The list should be updated with regional level stakeholders, and communicated at least annually to all clients
- Develop terms of reference / job descriptions and responsibilities for SCMU managers/key staff for review and confirmation by the TWG.

- Finalize proposal to MOH for staffing cadres of new SCMU/Agency, including transition of CMS/RMS managers and other staff to SCMU, with complete documentation of all findings and recommendations.
- Define roles and relationships between / among SCMU and other MOH agencies and regulatory authorities regarding quality assurance for health products (e.g., FDB, Ghana Standards Authority, etc.).
- Develop training and TOT curriculum and materials based on how the computerized system is to be used, by type of facility.
- Develop health commodity quantification plans

6.2 SCMP Monitoring Activities and Review Meetings:

- The TWG and IMT shall agree on an IMT work plan which is based primarily on the Implementation Plan of the SCMP. This work plan shall be reviewed monthly and updated quarterly (based on progress and set-backs).
- IMT develops 2013 work plan and budget and submits to TWG for review and onward submission to MOH according to the MOH budget cycle.
- IMT develops performance measuring tools and targets for NHCSA. This plan must address a change management program for staff at CMS, RMSs and for the key supply chain staff at THs and regional hospitals.
- The IMT if needed shall engage consultants under specific TORs to execute tasks and provide timely reports about these to the TWG. This shall be in addition to monthly progress and update reports about implementation of the SCMP to its oversight body, the TWG, and shall in conjunction with the TWG, provide monthly updates to the leadership of the MOH (and Joint MOH / Donor Partners Group) regarding progress, concerns and obstacles related to the Master Plan's implementation.
- The IMT shall submit quarterly, Semi-annual, Annual and other Agency Review reports from the SCMP's implementation to the TWG, based on the Ministry of Health's work plan and budget cycle and the MOH's calendar.

6.3 Technical Policies, Strategies, Guidelines, Studies, Assessments and Plans of Action:

- The IMT may recruit and assign consultants to execute select tasks based on clear TORs to help achieve their deliverables.
- The IMT will prepare and share with the TWG quarterly work plans for discussion and concurrence before implementation.
- The IMT and/or its assigned consultants shall provide information and reports and expect review and feedback from the TWG on relevant technical policies, strategies, guidelines, studies, assessments, and plans of action, as appropriate.
- The IMT shall work with the TWG for the timely review and completion of reports, assessments, and proposals in the IP of the SCMP for presentation to the MOH for use.
- The IMT through the TWG shall have oversight on all studies and analysis in the first year of the SCMP implementation plan.

6.4 Coordination and resource mobilization:

- The IMT, with assistance from the TWG shall be responsible for fostering coordination and supply chain harmonization among MOH and its agencies, stakeholders, and between the MOH and donors/supporting partners.
- The IMT will initiate resource mobilization activities for the SCMP from Government and it must facilitate donor and other funding source support for the NHCSA by providing value-added inform and assistance on SCMP resource needs and commodity forecast gaps
- Develop draft TORs for supply chain coordinating committee at national level and submit draft list of membership to TWG for review and submission to MOH.

6.5 Interim Management Team Composition:

- The membership of the IMT shall be composed of two (2) staff from MOH and its agencies and one (1) consultant.
- The TWG shall provide recruitment support to the MOH and/or IMT Team Leader for IMT staff.

7.0 Key Deliverables (add on from the IP – 2012 to Q2, 2014)

October - December 2012

- SCMU Charter developed
- Draft transition plan for SCMU developed and presented to MOH
- Change management proposals developed
- Focused commodity list for NHCSA developed with stakeholders
- Advocacy plan for the SCMP reviewed and updated for completion
- Residual roles and responsibilities of supply chain entities available
- Work plan and budget for 2013 developed

January – December 2013

- Proposal on staffing of the SCMU throughout levels, and job descriptions and responsibilities for all staff developed.
- Prescribed reports to TWG according to M&E framework and MOH calendar
- Performance measurement tools and program are available
- LMIS assessment and re-development exercise framework available for implementation
- Protocols for storage and inventory management developed
- Protocols and SOPs for quantification developed
- Training and supportive supervision process indicators developed
- Capacity building strategy and implementation plan finalized
- Roles and relationships between / among SCMU and other MOH agencies and regulatory authorities regarding quality assurance for health products (e.g., FDB, Ghana Standards Authority, etc.) developed.
- Any other item that may be required by the TWG and/ or by the MOH

ANNEX 4. Implementation Plan with Detailed Activity Cost

Supply Chain Master Plan, Draft Implementation Plan, by Quarter (2012 - 2017), Revised 8 November 2012

No.	Intervention Area 1: Formally organize Supply Chain Management Unit (SCMU)/Agency Activity 1: Formally establish Supply Chain Management Unit (SCMU) as an Agency of the MOH.	Person/Unit Responsible	2012		2013				2014				2015				2016				2017				Milestones	Resources	Costs
	Principle: SCMU needs to be formalized, with its structure and primary roles and responsibilities well-communicated and actively and continuously supported by MOH and its agencies.																										
	Assumptions about the proposed timeline: Short-term priority so that new agency is created as soon as possible.																										
	Sub-Activities		Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4			
1.1.1	MOH takes steps required to establish SCMU as new unit of MOH, including a formal name and a designated office for this new agency.	Chief Director																							New name selected and an office established	. 7 participants . 2 day non-res meeting . 1 TA (IMT) cost	$ 1,330.00
1.1.2	Set up the Interim Management Team (TA / TWG and lead counterpart)	Chief Director																							IMT members appointed	Covered under Recurrent Costs	
1.1.3	Present SCMU concept and plan of action (Cabinet Memo) to the Cabinet, leading to approval by Cabinet of new SCMU Agency.	Minister of Health																							SCM Agency approved by Cabinet	. 1 consultant to develop the cabinet memo . 10 days	$ 3,500.00
1.1.4	Write SCMU Charter.	MOH, with support from IMT																							SCMU Charter drafted	. 7 participants . 5 days residential workshop . 1 IMT TA cost	$ 5,635.00
1.1.5	Define monitoring and supervision/oversight mechanisms for SCMU / Agency.	MOH, with support from IMT.																							SCMU monitoring and supervision plan established	. 9 participants . 5 day residential meeting . 1 IMT TA for 5 days	$ 6,745.00
1.1.6	Allocation of funds for the new SCMU for Fiscal Year 2013.	Minister of Health / Chief Director																							SCMU budget for FY2013 presented and approved	Covered under Recurrent Costs	
1.1.7	Develop and implement advocacy plan for new SCMU / Agency and plans for improving supply chain for MOH/GHS facilities.	MOH, with support from IMT; consultants																							Public and interested stakeholders informed of proposed supply chain improvements	. 1 day meeting . 100 participants . 1 IMT TA for 1 day . 1 consultant for 10 days to develop advocacy plan . 30 participants . 1 day non-res meeting . 1 facilitator . 1 IMT TA for one day . Printing of 10,000 fliers . 12,000 marketing materials (T-shirts and Caps)	$ 233,178.00
1.1.8	Establish SCMU as a new agency (SCMA).	Minister of Health																							SCMA established as a new Agency	. 10 participants . 5 day res. Workshop . 1 consultant . 30 participants . 3 day residential workshop . 1 consultant	$ 18,978.00

No.	Intervention 2: Build a Responsive, Capable Supply Chain Management Unit (SCMU)/Agency Activity 1: Assign Interim Management Team for SCMU to support set-up of SCMU (Option 1). Activity 1: MOH to appoint technical assistance (TA) to support the TWG during establishment of the SCMU (Option 2).																								Milestones	Resources	Costs
	Principle: MOH to assign management team (TA) to lead SCMU planning / set-up process - as a temporary assignment. MOH (and others; e.g. - GHS, NHIA) assign key personnel to lead SCMU planning / set-up process. Mandate of TWG reviewed to support set-up of SCMU.																										
	Assumptions about proposed timeline: Assumes that one or more staff/managers are assigned in July 2012. Assumes TA can be assigned in July 2012 and mandate of TWG is revised to support implementation until SCMU Board is in place. Inside the TWG, there would be one member of the TWG designated as the lead counterpart for the TA. The lead counterpart would assist during the developmental stage of the SCMU and would not be eligible for subsequent appointment in the SCMA.																										
	Risks: TWG fails to become a champion (Solutions include: clarify roles of each member of TWG, motivation)																										
		Person/Unit	**2012**		**2013**				**2014**				**2015**				**2016**				**2017**						
	Sub-Activities	**Responsible**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**			
2.1.1	MOH makes decision to appoint TA for SCMU planning and start-up, and determines terms of reference (TOR), scope and limitations of temporary roles / positions.	Minister of Health/ Chief Director																							MOH agrees on TA and moves forward to engage TA. MOH agrees to renew the terms of reference of TWG to include set-up phase for SCMU (next 12 - 18 months).	. 1 Consultant . 5 days	$ 1,750.00
2.1.2	MOH engage TA to assist TWG to establish the SCMU / Agency.	Minister of Health/ Chief Director																								Covered under Recurrent Costs	
2.1.3	MOH mobilizes resources for performance of functions of TA.	Minister of Health/ Chief Director																								Covered under Recurrent Costs	
2.1.4	Terms of reference for TA negotiated.	Minister of Health/ Chief Director																								Covered under Recurrent Costs	
2.1.4.1	Review and clarify the roles of the existing supply chain entities in relation to the SCMU.	IMG																								. 2 day residential workshop . 50 participants . 1 consultant	$ 14,075.00
2.1.4.2	Clarify reporting relationships with all other units for supply chain (SC).	IMG																								Covered under Recurrent Costs	
2.1.4.3	MOH approves Terms of Reference / job descriptions of staff/ tenure of office of the CEO developed byTA for SCMU & for key positions within SCMU, , and define support roles of key	IMG																								Covered under Recurrent Costs	
2.1.4.4	TA begins to manage SCMU planning / start-up processes; roles and responsibilities of interim management team clearly communicated with MOH agencies and stakeholders.	IMG																							TA begins duties.	Covered under Recurrent Costs	
2.1.4.5	TA develops 2013 annual work plan and budget to TWG for review and presentation to MOH according to MOH budget cycle.	IMG																							2013 annual work plan and budget developed and submitted to TWG	. 1 IMT TA . 5 days	$ 1,750.00
2.1.4.6	Initiate resource mobilization activities for government and donor support of SCMU and new supply chain.	IMG																							Resource mobilization efforts initiated.	Covered under Recurrent Costs	
2.1.4.7	Complete development of list of commodities that will be handled by SCMU. The list should be updated and communicated at least annually by SCMU (see also Sub-Activity 2.3.5).	IMG																							SCMU commodity list for Year 1 finalized and accepted.	. 1 IMT TA . 5 days	$ 1,750.00
2.1.4.8	Develop draft transition plan for staffing for SCMU once it becomes a new agency. Present draft plan to MOH.	IMG																							Staffing plan developed.	Covered under Recurrent Costs	
2.1.4.9	Advise MOH on appropriate location of the SCMU.	IMG																								Covered under Recurrent Costs	

2.1.4.10	Develop Terms of Reference / job descriptions for SCMU managers/key staff, and define partner roles.	IMG																								TOR and job descriptions of TA developed / adopted	Covered under Recurrent Costs	
2.1.4.11	Development performance measurement tools and targets for SCMU / Agency. This plan shall also address a "change management" program for current CMS staff.	IMG																								Performance tools and targets developed; Change management program developed / implemented for transitioning CMS employees	Covered under Recurrent Costs	
2.1.4.12	Finalize proposal to MOH for staffing cadres of new SCMU/Agency, including transition of CMS/RMS managers and other staff to SCMU, with complete documentation of all findings and recommendations.	IMG																								Staffing proposal completed and presented to MOH	. 1 Consultant . 1 day IMT TA . 10 days . 1 day non-res meeting . 25 participants	$ 5,562.50
2.1.5	Provide oversight to all studies and analyses included in the early stages of Year 1 of the SCMU's Implementation Plan, and where required, make decisions related to these activities in order to keep them moving forward.	MOH/IMG																								TWG provides oversight and support to SCMU interim management until SCMU Agency formalized	Covered under Recurrent Costs	
2.1.6	Disband services of IMG when agency is established and management team and Board are established.	Ministry of Health																								SCMU Board provides active oversight of SCMU	. 30 participants . 1 day non-res . 5 drivers	$ 2,151.00
	Activity 2: SCMU begins formal operations as new entity, and coordination mechanism(s) at national and regional levels planned/initiated.																												
	Principle: SCMU becomes official and initiates control of its managerial responsibilities.																												
	Assumptions about proposed timeline: Assumes SCMU is formalized by GoG/MOH by Quarter 2, 2013 [April-June 2013] at the latest.																												
		Person/Unit	**2012**		**2013**				**2014**				**2015**				**2016**				**2017**								
	Sub-Activities	**Responsible**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**					
2.2.1	Formalize the establishment of SCMU/Agency.	MOH																								New Agency formally established	Covered under Recurrent Costs	
2.2.2	Appointment of SCMU Board with clear TOR defined by the Act.	MOH																								Board members selected	Covered under Recurrent Costs	
2.2.3	Recruitment of SCMU management team.	MOH																								Management team selected/appointed	. 3 day non-residential meeting . 6 participants . 1 IMT TA	$ 1,855.00
2.2.4	Prepare and submit annual work plan and budget for 2014 (and each year thereafter) - see also Sub-Activities 2.1.5 and 2.2.3.	MOH/ Management team of SCMA thereafter																								Work plan and budget for SCMU approved for FY2014, etc.	Covered under Recurrent Costs	
2.2.5	Organize / reorganize / hire staff to ensure that each of their areas of responsibility [focused public sector model] are supported technically. For all products under their authority, these functional areas include transportation & warehousing; building and managing an integrated LMIS; quantification; procurement; coordination and pipeline monitoring; capacity building in commodity management (all levels); quality assurance for drugs and other commodities; financial management for the SCMU, and M&E for their supply chain.	Management team of SCMA																								SCMU management organizes staff to manage all key functions and areas of responsibility	. 1 IMT TA . 5 days	$ 3,500.00
2.2.6	Set short-term and mid-term priorities for strengthening the Supply Chain, using the SC Master Plan and the Implementation Plan as guides for FY2014 work planning.	Management team of SCMA																								New SCMU management team (with Board) sets implementation priorities and develops FY2014 work plan and budget	. 1 IMT TA . 5 days	$ 1,750.00

2.2.7	Develop guidelines and standard operating procedures (SOPs) for supply chain tasks/activities at various levels in the MOH and GHS. All guidelines and SOPs are reviewed regularly and shared appropriately.	Management team of SCMA																							SOPs developed and disseminated	. 1 IMT TA . 5 days	$ 1,750.00
2.2.8	SCMU enters into performance agreement with key stakeholders.	SCMU Board / Stakeholders																							Performance agreement(s) developed	. 1 IMT TA . 2 days	$ 700.00
2.2.9	Update the list of commodities that will be handled by the SCMU at least annually and disseminate (see also Sub-Activity 2.1.6).	Management team of SCMA, with other MOH agencies																							SCMU/SCMA Commodity List reviewed annually	Covered under Recurrent Costs	
2.2.10	Develop and implement a strategy for increasing internal capacity for managing all SC functions under their authority.	Management team of SCMA, with MOH / stakeholder budget support																							SCMU develops capacity-building strategy and implements as feasible	Covered under Recurrent Costs	
2.2.11	Monitor performance of SCMA management team and implementation of new supply chain.	SCMU Board																							SCMU performance regularly monitored	Covered under Recurrent Costs	
2.2.12	Provide oversight of SCMA Board and supply chain performance.	MOH																							MOH oversight provided	Covered under Recurrent Costs	
	Activity 3: Establish Supply Chain Coordinating Committee (SCCC) at National Level to support SCMU Master Plan Implementation																														
	Principle: SCMU ongoing operations will need involvement of MOH and other keystakeholders.																														
	Assumptions about the proposed timeline: SC Coordinating Committee to begin functioning as TWG/"Set-up" Committee/IMG phases out.																														
		Person/Unit	**2012**		**2013**				**2014**				**2015**				**2016**				**2017**										
	Sub-Activities	**Responsible**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**							
2.3.1	Identification of key stakeholders for membership	MOH																							Stakeholder review completed	Covered under Recurrent Costs	
2.3.2	Develop draft Terms of Reference for SC Coordinating Committee at National Level, including membership.	TA																							TOR and membership proposed	. 5 days . 1 IMT TA	$ 1,750.00
2.3.3	Share TOR with appropriate MOH agencies and stakeholders for review / feedback.	MOH/Chief Director																							TOR shared and finalized	. 1 day non-res meeting . 50 participants . 1 IMT TA	$ 3,866.00
2.3.4	Establish and hold quarterly supply chain coordinating committee meetings at national level. Update/modify TOR as needed.	Chief Director/ Committee Chair																							SCCC meetings held regularly to address SC coordination issues across MOH agencies, and minutes prepared & distributed	. 1 day non-res meeting . 35 participants . 1 IMT TA	$ 5,652.00

	Activity 4: Establish Supply Chain Coordinating Committees at the Regional Level to support SCMU Operations																													
	Principle: SCMU ongoing operations will need involvement of MOH and other key agencies.																													
	Assumptions about the proposed timeline: SC Coordinating Committee to be established as SCMU begins active operations in each region.																													
		Person/Unit	**2012**		**2013**				**2014**				**2015**				**2016**				**2017**									
	Sub-Activities	**Responsible**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**							
2.4.1	Identification of key stakeholders	Regional Directors; Mgmt. of SCMA																							Stakeholder review completed	Covered under Recurrent Costs				
2.4.2	Develop draft Terms of Reference for SC Coordinating Committee at regional Level, including membership	TA																							TOR and membership proposed - for each regional SCCC	Covered under Recurrent Costs				
2.4.3	Share TOR with appropriate MOH agencies, RHAs and key stakeholders for review / feedback	Regional Directors / RHAs																							TOR shared and finalized	. 1 day . 15 participants . 1 IMT TA	**$ 809**			
2.4.4	Establish and hold quarterly supply chain coordinating committee meetings at regional level. Update/modify TOR as needed.	Regional Directors / SCCC Chair																							SCCC meetings held regularly to address regional SC coordination issues, and minutes prepared & distributed	Covered under Recurrent Costs				
No.	**Intervention Area 3: Capacity-building in supply chain management**																								**Milestones**	**Resources**	**Costs**			
	Activity 1: In-service training and supervision strategies for new SCMU related policies and procedures																													
	Principle: Current employees need to be trained in the new policies and procedures after new SCMU and new SC systems begin to be implemented.																													
	Assumptions about the proposed timeline: Timing of the trainings will depend on when and where the new systems are being rolled out. Goal would be to schedule training so that staff finish training within a month of when they are to start implementing the new procedures.																													
		Person/Unit	**2012**		**2013**				**2014**				**2015**				**2016**				**2017**									
	Sub-Activities	**Responsible**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**							
3.1.1	Develop training curriculum and materials for Trainers (TOT) and trainees (all levels staff) based on the supply chain SOP Manual.	IMT and consultants																							Training curriculum and materials completed and printed	. 20 day Cons . 5 days IMT TA . 1 Day Non Res meeting . 25 TWG . 1 IMT TA	$ 10,725.00			
3.1.2	Develop training plan for building and maintaining capacity related to new SCMU related policies and procedures. Training plan needs to address concerns regarding regional and district level capacity to serve as trainers in supply chain and logistics.	IMT and consultants																							Training plan available and approved by all MOH agencies	5 Day IMT TA	$ 1,750.00			
3.1.3	Conduct TOTs, followed by roll-out of training to current staff, in coordination with all service providers.	IMT and Consultants																							All current staff trained in new system(s)	. 10 day Res training . 50 ppts . 2 Consultants . print 50 manuals . 20 days IMT TA . 1125 days res. Training . 9000 participants . 9000 manuals . 50 Trainers	$ 5,477,520.00			
3.1.4	Develop supportive supervision plan to support development and maintenance of capacity related to new SCMU related policies and procedures.	IMT and consultants																							Supportive supervision plan available and approved by all MOH agencies	Covered under Recurrent Costs				
3.1.5	Develop training and supportive supervision process indicators for supply chain training program / plan (training impact).	IMT and consultants																							Training and supportive supervision indicators developed and monitored	Covered under Recurrent Costs				

3.1.6	Conduct ongoing supportive supervision at all levels by MOH, GHS, and partners to ensure that current staff are able to complete required SC activities.	SCMA and service providers																									All current staff receive on-site supervision (one or more visits) for new system(s)	. 20 people . 225 days of monitoring visits	$ 843,750.00
	Activity 2: In-service training strategy for new Information systems (automated LMIS) related policies and procedures																												
	Principle: Staff who will be involved with computer-based LMIS will be trained via IST rather than PST, although PST should provide information about the computerized system.																												
	Assumptions about the proposed timeline: The timing of trainings for the automated system will depend on when the system is being rolled out and in which locations; goal would be to have staff finish training no more than a month before they are to start implementing the new procedures/computerized system.																												
		Person/Unit	**2012**		**2013**				**2014**				**2015**				**2016**				**2017**									
	Sub-Activities	**Responsible**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**						
3.2.1	Develop training and TOT curriculum and materials based on how the computerized system is to be used, by type of facility.	IMT and consultants																									Training curriculum and TOT materials completed and printed	. 20 day Cons . 5 days IMT TA	$ 8,750.00
3.2.2	Develop training plan based on human and financial resources available.	IMT and consultants																									Training plan approved by all MOH agencies	. 5 days consultant	$ 1,750.00
3.2.3	Conduct TOTs, followed by roll-out of training to staff of selected facilities, in collaboration with service providers.	IMT and consultants																									All current staff trained in new system(s) during roll-out	. 10 day Res training . 30 ppts . 2 Consultants . print 30 manuals . 10 days IMT TA . 3000 participants . 30 trainers . 375 days res. Training . 3000 manuals	$ 8,927,150.00
3.2.4	Develop supportive supervision plan based on human and financial resources available.	IMT and consultants																									Supportive supervision plan developed	Covered under Recurrent Costs	
3.2.5	Continue ongoing supportive supervision at all levels by MOH, GHS, and partners to ensure that current staff are able to complete required SC activities.	IMT and consultants																									Ongoing supportive supervision of new system(s) conducted	. 20 people . 750 days of monitoring visits	$ 281,250.00
	Activity 3: Pre-service training strategy																												
	Principle: Update/revise the PST curricula based on the design/implementation of the new system.																												
	Assumptions about the proposed timeline: If general SCM courses are used to start (timing will depend on when the new system is being implemented); the system-specific sessions/course(s) should begin in the year before the students will graduate into the new system. If general SCM courses are not used, then follow the Sub-Activities and timeline proposed for the implementation of general SCM courses.																												
		Person/Unit	**2012**		**2013**				**2014**				**2015**				**2016**				**2017**									
	Sub-Activities	**Responsible**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**						
3.3.1	Identify training institutions and schools for coursework and agree on plans for new curricula.	SCMU; MOH; GHS, Teaching Hospitals and selected training institutions																									Colleges selected and plan of action for new courses agreed	Covered under Recurrent Costs	
3.3.2	Update course objectives and training curricula to incorporate new supply chain modules (based on new supply chain design).	SCMU; MOH; GHS, Teaching Hospitals and selected training institutions																									Course objectives updated	. 2 day res. Workshop . 50 ppts . 15 day of consultants . 5 days IMT TA	$ 20,000.00
3.3.3	Update course materials based on revised objectives and SCMU course design	SCMU; MOH; GHS, Teaching Hospitals and selected training institutions																									Course materials updated	Covered under Recurrent Costs	

3.3.4	Train instructors on updated course materials	SCMU; MOH; GHS, Teaching Hospitals and selected training institutions																								Staff at colleges trained and provided with course materials	. 5 day res. Training . 2 facilitators . 30 ppts per session	$ 37,670.00
3.3.5	Implement revised/updated system-specific course sessions	SCMU; MOH; GHS, Teaching Hospitals and selected training																								Course provided as part of regular curriculum in selected colleges	Print 1,500 copies for reference	$ 15,000.00

No.	**Intervention Area 4: Financing, Resource Mobilization, and Commodity Pricing**																								**Milestones**		
	Activity 1: Finalize cost estimates for implementation of SC Master Plan over five year period																										
	Principle: SCMU will need adequate financial resources, especially during "set-up" phase, for capacity-building, regular operations and capital/systems investment.																										
	Assumptions about the proposed timeline: Timeline emphasizes short and medium term, but resource mobilization will be required throughout the five years of the Master Plan.																										
		Person/Unit	**2012**		**2013**				**2014**				**2015**				**2016**				**2017**						
	Sub-Activities	**Responsible**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**			
4.1.1	SC Master Plan cost estimates finalized	Chief Director/ Chair - TWG and consultants																							Budget submitted / requests made to donors	. TWG 25 participants . 4 days residential workshop . 2 consultants . 1 IMT TA for 4 days	$ 15,500.00
4.1.2	SC Master Plan cost estimates used to support advocacy efforts in 2012 and assist FY2013 budget efforts for SCMU.	Minister of Health/ Chief Director/ Chair - TWG																							Budget line for SCMP captured in 2013 budget. Donor support solicited.	. 1 day meeting . 25 participants . 1 IMT TA . 1 day meeting . 40 participants (TWG, donors, etc..) . 1 IMT TA	$ 5,575.00
4.1.3	Operational and annual capital requirements estimated on an annual basis, in line with the government's budget cycle. These cost estimates will also be used for resource mobilization annually.	Management team of SCMU																							Budget submitted / requests made to donors	. IMT (2 MOH, 1 TA) . 3 days residential workshop . 3 others participants . Plus 12 additional days for the TA (IMT) to do the activities 4.2.1-4.2.4)	$ 7,344.00

	Activity 2: Advocate for government and donor support of new SCMU																										
	Principle: SCMU will need adequate financial resources to cover operations and build new systems, especially during "set-up" phase.																										
	Assumptions about the proposed timeline: Budgeting and advocacy efforts are expected to take place annually.																										
		Person/Unit	**2012**		**2013**				**2014**				**2015**				**2016**				**2017**						
	Sub-Activities	**Responsible**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**			
4.2.1	Ensure that budget submission is completed for government budget cycle for 2013.	TWG Chair / Chief Director / GHS, SSDM, Minister of Health																							Budget submitted / requests made to donors	Covered under Recurrent Costs	
4.2.2	Initiate formal advocacy efforts with Health Sector partners for 2013.	TWG Chair / Chief Director /GHS, SSDM, Minister of Health																							Supply Chain support requests made to donors	Covered under Recurrent Costs	
4.2.3	Develop annual budget requirements and advocate for financial support for operations and for capital investments/systems support.	SCMU Management & Board, Chief Director, Minister of Health																							Budget submitted / requests made to donors on annual basis	Covered under Recurrent Costs	
4.2.4	Develop strategies and activities to emphasize resource mobilization as part of revenue generation / budget balancing strategies.	SCMU Management / Board with MOH support																							SCMU plans and executes resource mobilization strategy annually.	Covered under Recurrent Costs	

	Activity 3: Settlement of outstanding debts related to health commodities (MOH and NHIA)																													
	Principle: MOH needs to resolve current debt situation related to drugs and medical supplies so that SCMU can fulfill its commodity availability mandates successfully (especially procurement).																													
	Assumptions about the proposed timeline: MOH needs to set a deadline for dealing with this difficult but important issue.																													
		Person/Unit	**2012**		**2013**				**2014**				**2015**				**2016**				**2017**									
	Sub-Activities	**Responsible**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**							
4.3.1	Clarify what the actual commodity-related debts are (as of a certain point in time), so that all parties can be "on the same page" regarding the debts existing between the different levels of the supply chain.	Outside entity / external auditor / consultant would be preferred with MOH oversight (Chief Director)																							Detailed accounting report which details debtors and creditors as of a certain date.	. 2 external auditors . 2 weeks each	$ 14,000.00
4.3.2	Develop re-payment strategy/policy options, and prepare a proposal for MOH leadership / Government of Ghana (with assistance of consultants).	Consultants / MOH oversight (Chief Director)																							Proposal for resolving the situation to deal with debts quickly.	. 1 day meeting . 50 participants (NHIA, regional, TH, etc..)	$ 3,750.00
4.3.3	MOH (and others) make decision of re-payment strategy, ideally in conjunction with budget cycle.	Minister of Health																							Strategy for re-payment chosen by MOH leadership	Covered under Recurrent Costs	
4.3.4	Implement re-payment strategy as quickly as possible, ideally in conjunction with budget cycle.	Chief Director MOH																							Resolution of debt crisis related to drugs and health commodities	Covered under Recurrent Costs	
4.3.5	Develop debt payment and adherence policies (credit management) for ensuring that all procurers of drugs and commodities within the public sector make payment for their purchases within a fixed period of time (limited credit).	Minister of Health via Administrative Order / Directive, Chief Director, SCMU																							Recurrence of debt situation avoided in future	Covered under Recurrent Costs	
	Activity 4: SCMU provides active support to NHIA's need for significant reductions of drug and medical supply prices																													
	Principle: Continuing on current path could lead to insolvency for NHIA, or to unilateral price cuts in reimbursement levels by NHIA																													
	Assumptions about the proposed timeline: Country needs to reduce prices in the short-term to avoid a crisis at NHIA.																													
		Person/Unit	**2012**		**2013**				**2014**				**2015**				**2016**				**2017**									
	Sub-Activities	**Responsible**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**							
4.4.1	Complete an assessment/review of current pricing and mark-up policies and any related guidelines.	Chief Director MOH and Chief Executive Officer NHIA																							Summary report detailing current pricing/mark-up policies and guidelines completed	. 10 participants . 3 days res. workshop	$ 3,490.00
4.4.2	Complete / support a pricing study which collects actual pricing data from a sample of facilities, RMS' and other procurement agents within the health sector (for comparison to pricing/mark-up policies and NHIA reimbursement prices).	Consultants perform study; MOH, NHIA receive report																							Pricing study completed at facilities, RMS', and other procurement locations in public sector	. IMT (3) . 3 others . 5 days each group	$ 10,450.00
4.4.3	Update pricing/mark-up policies and guidelines as appropriate.	Chief Director MOH, SCMU, and NHIA																							New policies and guidelines developed	. IMT (3) .IMT (TA) . 3 others	$ 5,080.00
4.4.4	Stakeholder engagement and endorsement of proposed policies and guidelines.	Chief Director MOH, GHS, NHIA																							Stakeholder inputs provided and incorporated into new policies and guidelines	. 40 participants including IMT . 2 day non-residential meetings . 50 printing	$ 4,450.00

4.4.5	Implement new pricing / mark-up policies, in conjunction with MOH, NHIA, and RHAs.	National SCCC, NHIA, GHS, PPME, and SCMU																								New policies and guidelines implemented with emphasis on oversight and enforcement to reduce costs for NHIA	. Printing and distribution of 4500 documents of the new policy for the facilities	$ 45,000.00
	Activity 5: Maintain/Ensure adherence to new pricing/mark-up policies and guidelines																											
	Principle: MOH, GHS, and NHIA need to develop mechanisms to ensure that adherence to pricing and mark-up policies is improved (from current situation).																											
	Assumptions about the proposed timeline: Short-term improvements are required but also need to ensure/build sustainability.																											
		Person/Unit	**2012**		**2013**				**2014**				**2015**				**2016**				**2017**							
	Sub-Activities	**Responsible**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**				
4.5.1	Develop performance indicators for managing adherence to pricing/mark-up policies for drugs and commodities procured for public sector facilities.	MOH (PPME), GHS (PPME), SCMU, and NHIA; National SCCC																							Performance indicators for managing adherence developed as part of the guidelines	Covered under Recurrent Costs	
4.5.2	Develop specific incentives and sanctions for improving adherence to pricing/mark-up policies and guidelines.	MOH (PPME), GHS(PPME), SCMU, and NHIA; National SCCC																							Specific incentives and sanctions for improving adherence developed as part of the guidelines	Covered under Recurrent Costs	
4.5.3	Build / improve capacity for monitoring adherence to the new policies and guidelines.	MOH, GHS, SCMU, and NHIA																							Monitoring program developed and implemented	. 30 participants (25 regionals, THs, CHAG, etc…) . 2 days training . 2 facilitators	$ 8,245.00
4.5.4	Monitor adherence to new policies and guidelines	MOH (PPME), GHS(PPME), SCMU, and NHIA; National SCCC																							Adherence to new guidelines ensured. Schedule for monitoring adherence developed and available to all stakeholders	Covered under Recurrent Costs	

	Activity 6: Review/revise reimbursement policies and guidelines (NHIA)																												
	Principle: As national insurer, NHIA can take unilateral action regarding reimbursement levels; however, the MOH and GHS should be active in this review in order to formulate a collaborative solution.																												
	Assumptions about the proposed timeline: Short-term improvements are required but there is need to institutionalize this (sustainability).																												
		Person/Unit	**2012**		**2013**				**2014**				**2015**				**2016**				**2017**									
	Sub-Activities	**Responsible**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**						
4.6.1	Review current reimbursement policies and guidelines; determine to what extent the guidelines are being followed (or not); assess strengths and weaknesses and define areas for change/improvement.	NHIA as lead, in collaboration with MOH, GHS & SCMU.																							Current reimbursement policies and guidelines reviewed	. 10 participants . 3 days residential workshop	$ 3,490.00
4.6.2	Incorporate findings from pricing study into assessment of reimbursement policies and guidelines (see Activity 4 above).	Consultants																							Findings from pricing and reimbursement studies integrated	. 1 IMT TA cost . 3 day	$ 1,050.00
4.6.3	Identify options for revising / strengthening reimbursement policies in relation to long-term sustainability goals of NHIA.	NHIA as lead, in collaboration with MOH, GHS & SCMU.																							Options for new reimbursement policies and guidelines developed	. 10 participants . 2 days residential workshop	$ 2,460.00
4.6.4	Conduct stakeholder engagement on proposed reimbursement policies.	NHIA																							Draft guidelines reviewed with stakeholders	. 40 participants . 50 copies	$ 3,100.00
4.6.5	Finalize reimbursement policies / guidelines.	NHIA as lead, in collaboration with MOH, GHS & SCMU.																							Reimbursement policies / guidelines finalized.	. 4500 (printing/distribution) copies of the final reports will be launched at the health summit	$ 45,000.00
4.6.6	Create vetting committees in facilities to check NHIA claims - to reduce errors.	NHIA and facilities																							Facilities review claims before they are submitted	Covered under Recurrent Costs	
4.6.7	Develop specific guidelines on credit for facilities and others within the supply chain.	NHIA, MOH																							The credit of each facility is monitored to ensure that all facilities are in compliance with new guidelines	Covered under Recurrent Costs	
4.6.8	Implement new reimbursement policies and guidelines as part of multi-year implementation strategy.	NHIA as lead, in coordination with MOH, GHS & SCMU.																							Reimbursement policies and guidelines revised and implemented	Covered under Recurrent Costs	

	Activity 7: Develop, and implement over time, a mid-term strategy for full cost recovery (self-sustainability) for the new SCMU Agency, including use of "fee-setting" costing tool.																													
	Principle: In Ghana generally health-related entities are expected to be self-sustaining.																													
	Assumptions about the proposed timeline: Mid-term is defined as "within the life of the Master Plan", or five years.																													
		Person/Unit	**2012**		**2013**				**2014**				**2015**				**2016**				**2017**									
	Sub-Activities	**Responsible**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**						
4.7.1	Develop a detailed financial plan which includes estimates of revenues and expenses over the life of the SC Master Plan (see also Activity 2).	SCMU Board and management team																							Annual financial plan and budget developed	. IMT (3) . 2 other financial peoples (PPME) . 3 day residential workshop	$ 2,795.00			
4.7.2	Update financial plan every six months to reflect current situation and for any changes in mandate or scope.	SCMU Board and management team																							Regular six month reviews	Covered under Recurrent Costs				
4.7.3	Complete "fee setting" costing tool (project initiated by IBM consultants in May 2012).	SCMU Board and management team, GHS (RHAs), THs, & NHIA																							"Fee-setting" costing tool completed	. IMT (3) .IMT (TA) . 2 other financial peoples (PPME) . 2 day residential workshop	$ 1,930.00			
4.7.4	Test and revise "fee setting" costing tool as needed so that it can support setting of service fees for SCMU services (at least annually).	SCMU Board and management team																							"Fee-setting" costing tool tested and utilized to set service fees	. IMT (3) . Cost of 1 IMT TA only . 2 days of the TA	$ 700.00			
	Activity 8: Performance-based Financing (PBF) and Performance Incentives																													
	Principle: Explicit linking of rewards with organizational performance will contribute to culture of performance evaluation and accountability at central (and other) levels of the supply chain.																													
	Assumptions about the proposed timeline: Timing may depend on implementation of information systems so as to be able to track performance; PBF also requires clear definition of roles and responsibilities for the various actors (especially SCMU, RMS', RHAs).																													
		Person/Unit	**2012**		**2013**				**2014**				**2015**				**2016**				**2017**									
	Sub-Activities	**Responsible**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**						
4.8.1	Assess options for incorporating PBF within levels of the supply chain and across various SC functions.	Consultants / MOH oversight (Chief Director)																							Report of options for use of PBF in supply chain completed	. 1 consultant . 14 days	$ 4,900.00			
4.8.2	Based on assessment, design PBF scheme(s).	SCMU Board and management team; consultants																							PBF scheme(s) designed and reviewed with MOH and/or SCMU Board	. 1 consultant . 10 days . 30 participants . 1 day meeting	$ 5,555.00			
4.8.3	Implement PBF scheme(s) as pilot(s), or for organization/entity (e.g. - SCMU management team), or for operational team within organization/entity (e.g. - procurement team of SCMU) .	SCMU Board and management team																							PBF scheme(s) implemented by MOH and/or SCMU Board	Covered under Recurrent Costs				
4.8.4	Monitor, evaluate and refine PBF scheme(s).	SCMU Board and management team																							PBF scheme(s) monitored and refined by MOH and/or SCMU Board	Covered under Recurrent Costs				
4.8.5	Scale up PBF scheme(s) and continuously monitor.	SCMU Board and management team																							PBF scheme(s) scaled up	Covered under Recurrent Costs				

No.	Intervention Area 5: Procurement **Activity 1:** Develop and implement strategies for addressing "fragmented" procurement situation within the Ministry of Health which was (unintentionally) created by Procurement Act of 2003.																								Milestones	Resources	Costs
	Principle: Having procurement of drugs and commodities being managed at such a wide range of entities has had a negative impact on prices and quality.																										
	Assumptions about the proposed timeline: Addressing challenges created by widespread procurement within MOH is a significant problem that needs to be resolved in short-term.																										
		Person/Unit	**2012**		**2013**				**2014**				**2015**				**2016**				**2017**						
	Sub-Activities	**Responsible**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**			
5.1.1	Complete a review of current laws / regulations and hold discussions with Public Procurement Authority (PPA) to determine options for Ministry of Health and GHS under Procurement Act and related regulations and to clarify what is/is not allowed by the Procurement Act and any subsequent laws, regulations, and/or guidelines.	SSDM/P&S/Agencies and MOH/GHS legal dept. with oversight from Chief Director; PPA																							Review of opportunities/ limitations under current laws completed, and PPA perspectives obtained	. 3 day res. workshop . 40 ppts. . 5 day consultant time	$ 15,710.00
5.1.2	Propose revisions/amendments/MOH internal rules to existing procurement guidelines to PPA on behalf of MOH and its agencies (including SCMU Agency).	SSDM/P&S/Agencies and MOH/GHS legal departments with oversight from the Chief Director; PPA																							Complete proposal to PPA for revisions to procurement guidelines and/or develop new internal rules for MOH procurers	Covered under Recurrent Costs	
5.1.3	Develop a plan of action, with GHS, teaching hospitals and others, for reorganizing procurement policies and procedures within the MOH (assuming revisions /amendments /MOH internal rules are acceptable to PPA) and develop monitoring procedures.	MOH, GHS, SCMU, THs, other Agencies, and PPA; National SCCC																							Plan of action for implementation of new guidelines developed and addresses monitoring and compliance mechanisms and capacity	. 5 day res. Workshop for . 10 ppts. . 10 days consultant time	$ 9,085.00
5.1.4	Implement revised procurement policies / procedures / MOH internal rules. New rules / guidelines should be published and shared with all public sector procurers of medicines and medical supplies.	MOH, GHS, SCMU, THs, other Agencies and PPA; National SCCC																							New procurement policies / procedures / MOH internal rules implemented	Printing cost	$ 45,000.00
5.1.5	Implement monitoring procedures for ensuring compliance / adherence to revised procurement policies / procedures /MOH internal rules - by all MOH procurers.	MOH, GHS, SCMU, THs, other Agencies and PPA; National SCCC, SCMU																							Procurement monitoring systems developed and put in place	Covered under Recurrent Costs	

	Activity 2: SCMU builds efficient and effective procurement systems to support its commodity management mandates.																													
	Principle: Strengthen / build procurement systems within SCMU to ensure responsive, timely, and accurate procurements.																													
	Assumptions about the proposed timeline: New systems dependent on formalization of SCMU as a new Agency of the MOH.																													
		Person/Unit	**2012**		**2013**				**2014**				**2015**				**2016**				**2017**									
	Sub-Activities	**Responsible**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**							
5.2.1	Identify and implement information systems to ensure that procurement processes are efficient and effective, and results are visible to appropriate stakeholders. Information systems should also support pipeline monitoring from/with suppliers, and inform supplier performance monitoring (see also Sub-Activity 5.2.2).	Consultant to work with MOH IT, SCMU, and GHS IT; National SCCC																							Identify and implement information systems for support of procurement processes	. 2 day res. Workshop . 35 participants . 5 days IMT TA . 1 day Non Res . 50 participants . Print 50 copies . 5 days IMT TA	$ 5,175.00
5.2.2	Ensure that information systems can provide appropriate data for compiling and monitoring performance indicators for procurement activities.	Consultant to work with MOH IT, SCMU, and GHS IT; National SCCC																							Information systems identified incorporate data needed for performance monitoring	. 2 days consultants time	$ 700.00
5.2.3	Develop and implement standard operating procedures (SOPs) for procurement at all levels, including forms and quality assurance mechanisms. Involve all levels during the development process.	SCMU management team; SCMU Board; GHS; RMSs; facilities																							SOPs for procurement activities finalized, printed, and disseminated. Note: Training in use of the SOPs may also be required!	. 10 days consultants time . 3 days res Workshop . 15 participants . 3 days of IMT TA	$ 9,785.00
5.2.4	Ensure the development of performance indicators for assessing procurement processes, supplier performance, and procurement contract fulfillment and incentives and sanctions for addressing supplier performance.	SCMU management team; SCMU Board																							Performance indicators developed	. 1 day Non-res. Workshop . 50 participants . 2 day IMT TA	$ 4,125.00
5.2.5	Use results of quantification exercises for informing procurement plans by SCMU procurement team (and others).	SCMU procurement team																							Quantifications routinely inform procurements	Covered under Recurrent Costs	
5.2.6	Utilize centralized framework contracts and other procurement mechanisms.	SCMU procurement team																							Framework contracting becomes common practice for SCMU procurement team	Covered under Recurrent Costs	
5.2.7	Continuously monitor performance of procurement team within SCMU, and revise processes and procedures as required.	SCMU management team; SCMU Board																							Performance systems in place and utilized	Covered under Recurrent Costs	

	Activity 3: SCMU obtains and strengthens procurement capacity / procurement team to support its commodity management mandates.																													
	Principle: Strengthen / build procurement capacity within SCMU to ensure responsive, timely, and accurate procurements.																													
	Assumptions about the proposed timeline: New systems dependent on formalization of SCMU as a new Agency.																													
		Person/Unit	**2012**		**2013**				**2014**				**2015**				**2016**				**2017**									
	Sub-Activities	**Responsible**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**						
5.3.1	Define mission, roles, responsibilities and performance indicators (expectations) for SCMU procurement team.	SCMU Board and management team																							Mission, roles, & responsibilities defined for SCMU procurement team	10 days IMT TA	$ 3,500.00			
5.3.2	Perform a procurement capacity assessment of the SCMU, then develop procurement capacity requirements as part of overall staffing plan.	Management team of SCMU																							Procurement capacity building plan available	10 days IMT TA	$ 3,500.00			
5.3.3	Propose budget(s) for adding new capacity as needed to complete procurement responsibilities.	SCMU Board and management team; MOH support																							Capacity-building budgets submitted	3 days IMT TA	$ 1,050.00			
5.3.4	Develop procurement team's knowledge, skills, and abilities in order to ensure appropriate internal capacity to effectively manage all procurement responsibilities.	SCMU management and SCMU training unit																							Build capacity of procurement team as part of overall workforce development program	. 5 days res. training . 35 participants . 3 facilitators . 1 day IMT TA cost .1125 days res. Training . 9000 participants . 9000 manuals	$ 5,357,317.50			
5.3.5	Hire new staff as needed based on approved budgets, and orient them to SCMU and procurement team.	Management team of SCMU																							New procurement staff hired	Covered under Recurrent Costs				

No.	Intervention Area 6: Distribution, including storage, transport, inventory management, and waste management Activity 1: SCMU utilizes best practices for warehouses within distribution network and for inventory management, while emphasizing efficiency and minimizing waste.																								Milestones	Resources	Costs
	Principle: SCMU fulfills mandates while utilizing modern warehousing and inventory and waste management practices.																										
	Assumptions about the proposed timeline: Exploring outsourcing and other opportunities as mechanisms for efficiency will be revisited periodically and will only be considered after reliable data about the current distribution system is acquired.																										
		Person/Unit	2012		2013				2014				2015				2016				2017						
	Sub-Activities	**Responsible**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**			
6.1.1	MOH should set a target date for implementing a new distribution system for the new supply chain.	MOH/"Set-up" Committee																							Target date established based on required tasks and system development targets	. 25 Participants . 1 IMT TA cost . 1 day meeting	$ 1,975.00
6.1.2	Identify systems / tools for SCMU warehouses which will support effective inventory management practices for all health commodities (ideally as a part of the overall LMIS/IT strategy).	MOH/"Set-up" Committee, GHS, THs																							Tools identified for management of inventory at SCMU warehouses	. 25 Participants . 1 IMT - TA cost . 3 day residential workshop	$ 19,550.00
6.1.3	Develop / select and support the implementation of systems / tools for SCMU warehouses which will support effective inventory management practices for all health commodities.	MOH/"Set-up" Committee, GHS, THs; SCMU active after becoming official																							Use of tools rolled out with support of SCMU management and Board	. 20 RMS pax . 10 CMS and THs . IMT (3) 5 day for the IMT TA . 2 others . 2 facilitators . 5 days residential	$ 12,295.00
6.1.4	Identify systems/tools for MOH/GHS health facilities which will support effective inventory management practices for all health commodities (ideally as a part of the overall LMIS/IT strategy).	MOH/"Set-up" Committee, GHS, THs																							Tools identified for management of inventory at facilities	Covered under Recurrent Costs	
6.1.5	Develop / select and support the implementation of systems/tools for MOH/GHS health facilities which will support effective inventory management practices for all health commodities.	MOH/"Set-up" Committee, GHS, THs; SCMU active after becoming official																							Use of tools rolled out with support of SCMU	. 10 days training . 35 participants . 2 facilitators . 5 drivers .1125 days res. Training . 9000 participants . 9000 manuals	$ 5,344,580.00
6.1.6	Conduct network optimization study to determine most efficient network options for distribution. Optimization to address warehouse locations, delivery routes and vehicle requirements, etc.	"Set-up" Committee, MOH, GHS, interim management team, consultants																							Optimization report utilized to develop efficient and cost-effective transport and distribution systems	. 5 participants . 1 IMT TA . 5 days . 1 day meeting . 25 participants	$ 26,175.00
6.1.7	SCMU considers / explores options for operating/maintaining a second level of the distribution system, including management contracting, RMS "sharing" arrangements, outsourcing and/or vendor managed inventory systems, etc.	SCMU and SCMU Board																							Annual analysis using years of data to determine if current system is most efficient	. 6 Participants (including IMT) in 2 groups . 1 week travel . 1 week desk job	$ 7,500.00
6.1.8	SCMU develops warehouse network plan for consideration by MOH, GHS, THs, and other stakeholders, following review / evaluation of options and information from various studies and assessments (see above).	"Set-up" Committee, MOH, interim management team, consultants																							Warehouse network plan and performance Indicators developed and presented	. 40 participants . 1 day meeting	$ 2,950.00

6.1.9	MOH / SCMU Board selects warehouse network plan, and initiates implementation.	MOH / SCMU Board																							Decisions made on 2nd level SCMU warehousing, and implementation initiated	Covered under Recurrent Costs	
6.1.10	SCMU solicits financial support for selected warehouse network plan.	MOH / SCMU Board																							Financial support solicited; funding obtained	Covered under Recurrent Costs	
6.1.11	Define performance indicators for monitoring the performance of the warehouses which are within the SCMU network, and review annually.	SCMU and SCMU Board																							Indicators defined in year one, then revisited annually, with data collection as appropriate	Covered under Recurrent Costs	
6.1.12	Develop standards for facility stores, by facility type, including minimum physical capacity in terms of size.	FDB, Standards Board, MOH, SCMU																							Physical standards for facility stores developed for MOH (and private sector ?)	Covered under Recurrent Costs	
6.1.13	Develop plan for upgrading all facility stores to meet new capacity standards. Implement as quickly as possible (to support new SCMU delivery schedule).	MOH, GHS, SCMU																							Facility stores upgraded to meet minimum standards	Covered under Recurrent Costs	
6.1.14	Develop / update waste disposal policies and procedures SOPs), including reverse logistics strategies; establish / revise waste disposal infrastructure.	MOH, SCMU, FDB, Environmental Protection Authority, MOF / Audit Service																							Waste management protocols developed and reviewed annually	. 2 days residential workshops . 12 participants (10 MOH, 2 facilitators) . 4500 copies for the facilities	$ 48,220.00
	Activity 2: SCMU identifies and implements efficient and effective commodity distribution (transport) strategies																											
	Principle: Utilizing the most efficient transportation routes for commodity distribution helps ensure that all facilities receive commodities on a regular, predictable delivery schedule and that transport costs are minimized.																											
	Assumptions about the proposed timeline: Route decisions will need to be made after warehousing decisions are made (see Activity 1 above).																											
		Person/Unit	**2012**		**2013**				**2014**				**2015**				**2016**				**2017**							
	Sub-Activities	**Responsible**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**				
6.2.1	Conduct network optimization to determine 'optimal' delivery routes based on warehouse locations, roads, commodity volumes, etc.	"Set-up" Committee, MOH, interim management team, consultants																							Optimization report utilized to develop efficient and cost-effective transport and distribution systems	Covered under Recurrent Costs	
6.2.2	Consider/evaluate outsourcing and/or vendor managed inventory mechanisms as part of system design process for transport.	"Set-up" Committee, MOH, interim management team, consultants																							Regular review of current system with comparison to other possible systems	Covered under Recurrent Costs	
6.2.3	Consider / explore options for transport routing from the center to facility level, considering the requirements of the ten RMS', and including management contracting, RMS "sharing" arrangements, outsourcing and/or vendor managed inventory systems, etc.	"Set-up" Committee, MOH, interim management team, consultants																							Annual analysis using years of data to determine if current system is most efficient	. 1 day meeting . 40 participants	$ 2,600.00

6.2.4	As part of transport proposal / plan, consider hard-to-reach locations and determine whether they warrant variations from the standards of the system design (e.g. - less frequent deliveries and higher inventory levels, etc.).	"Set-up" Committee, MOH, interim management team, consultants																							Strategy for hard-to-reach locations included in transport / plan	Covered under Recurrent Costs	
6.2.5	Develop transport proposal / plan for consideration by MOH, GHS, and other stakeholders, following review/evaluation of options and information from various studies (see above).	"Set-up" Committee, MOH, interim management team, consultants																							Transport proposal developed and presented	. IMT (3) . 3 consultants . 3 day workshop . IMT TA for 3 days	$ 4,194.00
6.2.6	MOH / SCMU Board selects transport plan, and initiates implementation.	MOH / SCMU Board																							Decisions made on transport, and implementation initiated	Covered under Recurrent Costs	
6.2.7	Solicit financial support for selected transport plan.	MOH / SCMU Board																							Financial support solicited; funding obtained	Covered under Recurrent Costs	
6.2.8	Develop SOP manual covering delivery system design and implementation processes and procedures; might be one SOP manual for each level in the system, each appropriate to the tasks/ responsibilities at that level.	SCMU/SCMU Board																							SOP Manuals produced, and disseminated for use	. 10 Participants . 3 days workshop	$ 13,990.00
6.2.9	Define performance indicators for monitoring the performance of the distribution system, and review annually.	SCMU/SCMU Board																							Performance indicators developed, data elements defined	Covered under Recurrent Costs	

No.	**Intervention Area 7: Information systems for the supply chain**																								**Milestones**	**Resources**	**Costs**
	Activity 1: Plan and complete design phase for an integrated logistics information management system (LMIS)																										
	Principle: As part of this strategic plan, the SCMU is mandated to design and implement an integrated LMIS for the collection of commodity related data.																										
	Assumptions about the proposed timeline: MOH needs to find balance between moving forward with design of this critical element of the SCMP and the formalization of the SCMU Agency.																										
		Person/Unit	**2012**		**2013**				**2014**				**2015**				**2016**				**2017**						
	Sub-Activities	**Responsible**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**			
7.1.1	Develop comprehensive, standardized "data dictionary" for use by all entities and/or facilities interested in developing supply chain-related software as first step in building an integrated approach to automating the supply chain.	MOH/PPME, GHS, CMS, NHIA, others?																							"Data dictionary" established and utilized as control	. 1 IT consultant . 5 days . 5 day residential workshop . 5 in the IT committee	$ 5,080.00
7.1.2	Define data requirements and data flows required for effective/efficient commodity management based on supply chain design.	"Set-up" Committee; SCMU interim mgmt.; consultants																							Data requirements and data flows defined	. 1 IT consultant . 3 IMT (1 TA) . 5 days . 5 day residential workshop . 5 in the IT committee	$ 8,495.00
7.1.3	Define data requirements for each user group, and timing and degree of data access required for each user group.	"Set-up" Committee; SCMU interim mgmt.; consultants																							Data requirements for each user group defined	. 1 IT consultant . 3 days . 3 day residential workshop . 5 in the IT committee	$ 3,144.00
7.1.4	Define information sharing policies, procedures, processes and service levels for each user group (MOH, GHS, others).	"Set-up" Committee; SCMU interim mgmt.; consultants																							Information sharing policies, procedures, processes and service levels defined	. 1 IT consultant . 2 days . 2 day residential workshop . 5 in the IT committee	$ 3,368.00

7.1.5	Review/revise minimum and maximum levels for stores, order intervals for facilities and other SC levels, and other logistics parameters.	"Set-up" Committee; SCMU interim mgmt.; consultants																							Bi-annual review of logistics parameters completed , documented and distributed to partners	. 25 participants . 2 day workshop . 1 TA (IMT) cost	$ 20,550.00
7.1.6	Ensure that information system will collect appropriate data for compiling and monitoring performance indicators for all supply chain activities.	"Set-up" Committee; SCMU interim mgmt.; consultants																							Information systems incorporate important performance monitoring data	Covered under Recurrent Costs	
7.1.7	Select system design options for the Ghana context which reflect best practices for the products/ programs which are to be included in the SCMU-managed supply chain.	"Set-up" Committee; SCMU interim mgmt.; consultants																							System design options selected	. IMT (TA) 1 day . 2 MOH staff . 1 day meeting	$ 545.00
7.1.8	Finalize format/content of all paper forms (if any) and/or design, selection and installation of any computer-based system chosen for implementation of the system (needs to be finalized before first trainings occur).	"Set-up" Committee; SCMU interim mgmt.; consultants																							Forms produced and distributed.	. IT committee (5) . IMT (3) . IMT (TA) . 2 day workshop to finalize the forms	$ 47,668.00
7.1.9	Complete the system design phase for the primary logistics functions, including LMIS, distribution (warehousing and transport), inventory management, pipeline monitoring, and resupply schedules, ensuring that roles and responsibilities are clearly defined.	"Set-up" Committee; SCMU interim mgmt.; consultants																							System design phase completed	. 2 day workshop . 25 TWG includes IMT . IMT (TA) 2 days workshop) . 2 facilitators	$ 7,610.00
	Activity 2: Identify and implement a technology-based information management solution for managing commodity data within the supply chain.																												
	Principle: The MOH desires to implement an integrated, modern technology-based information system for managing supply chain data.																												
	Assumptions about the proposed timeline: Decision process for selection of an IT solution for the supply chain can take considerable time; however, improving information systems needs to be a top priority for the MOH and its agencies.																												
		Person/Unit	**2012**		**2013**				**2014**				**2015**				**2016**				**2017**									
	Sub-Activities	**Responsible**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**						
7.2.1	Create an IT Committee/Sub-Committee to oversee the review/selection process for a technology-based, integrated information system for managing supply chain data. Develop/finalize TOR.	"Set-up" Committee; MOH																							IT Committee/Sub-Committee formed; TOR defined	. 1 TA (IMT) . 2 days	$ 700.00
7.2.2	IT Committee shall review current Health Sector ICT policy and any related documents to determine whether it supports the objectives and strategies of the information system requirements of the new SCMU Agency. Propose changes, if necessary, and advocate for revisions to this policy as needed.	IT Committee; SCMU interim mgmt.; consultants																							Health Sector ICT policy elements related to LMIS reviewed and changes proposed, if required	. 5 participants . 3 IMT (1 TA) . 3 days	$ 3,842.00
7.2.3	Define additional information and data requirements for automating information management for commodities, emphasizing best practices, efficiency, and effectiveness.	"Set-up" Committee; IT Committee; SCMU interim mgmt.; consultants																							Additional data req'ments for automating info. management defined	Covered under Recurrent Costs	
7.2.4	Define additional data requirements for each user group, as well as information sharing policies, procedures, processes, data visibility objectives, and service levels.	"Set-up" Committee; IT Committee; SCMU interim mgmt.; consultants																							Additional data req'ments for automating needs of each user group defined	Covered under Recurrent Costs	

7.2.5	Review scope, project plans, requirements, designs and capabilities of any/all current automation projects / automated systems (e.g. - mSupply) in relation to supply chain information management to determine whether they are appropriate for future integrated system needs.	"Set-up" Committee; IT Committee; SCMU interim mgmt.; consultants																						Current automation and projects reviewed in relation to IT objectives and requirements	. 1 IT consultant . 3 IMT (1 TA) . 3 days . 3 day residential workshop . 5 in the IT committee	$ 5,241.00
7.2.6	Determine IT-related infrastructure capacity at each level of the planned network, including computers, phone lines, and internet access at each point (central, mid-level, health facilities).	GHS, SCMU interim mgmt., consultants																						Complete survey of IT-related capacity completed	. 2 days meeting . 6 participants (5 IT Committee + 1 IT consultant) . 6 participants . 6 weeks per quarter up to Q4 2013 . 2 cars	$ 113,880.00
7.2.7	Finalize data requirements package for all users, as well as information sharing policies, resource availability, performance indicators, etc.	"Set-up" Committee; IT Committee; SCMU interim mgmt.; consultants																						Req'ments for integrated LMIS completed	. 3 days workshop . 5 participants . + 1 Consultant (3 days)	$ 2,094.00
7.2.8	Identify an IT solution for implementation of the integrated LMIS (by competitive bid or other method).	SCMU Board and mgmt.; MOH procurement																						IT selection process / solution chosen	. 3 IT Consultants . 3 MOH . 10 days workshop . 20 participants . 1 day meeting . 1 Consultant to lead the process . Printing of 20 documents . 3 days workshop . 7 Consultants	$ 33,428.00
7.2.9	Customize the IT solution to reflect the LMIS and data sharing requirements determined by the IT Committee, and others.	SCMU mgmt.; selected vendor; SCCC																						Software modified to meet needs defined by IT Committee, and others	Covered under Recurrent Costs	
7.2.10	Develop a training/ implementation plan based on the availability of human and other resources for training and on-site supervision (see also Intervention Area # 3, Activity 2).	SCMU Training Unit; GHS; THs; consultants																						Training/implementation plan developed - based on availability of financial & human resources for implementation	Covered under Recurrent Costs	
7.2.11	Purchase hardware to support the IT solution (within the SCMU warehouse network and for facilities).	SCMU/MOH procure-ment; GHS; THs																						Hardware selected and procured	Covered under Recurrent Costs	
7.2.12	Install hardware to support the IT solution during roll-out of training/ implementation plan, initially emphasizing CMS/other central level units and the regional level, then moving to the facility level. Roll-out of hardware should be in parallel with the training/ implementation plan.	SCMU, GHS, THs, facilities; SCMU Training Unit																						Roll-out implemented within target period	Covered under Recurrent Costs	
7.2.13	Develop and implement an ongoing system for maintaining hardware and software.	SCMU, GHS, THs, facilities; SCMU Training Unit																						Roll-out implemented within target period	Covered under Recurrent Costs	

No.	Intervention Area 8: Policy, Legal, and Regulatory Environment																								Milestones	Resources	Costs
	Activity 1: Strengthen the health commodity quality assurance program of the MOH, FDB and related agencies.																										
	Principle: The MOH and its agencies seek to reduce the occurrence of poor quality medicines and health commodities within the public sector.																										
	Assumptions about the proposed timeline: FDB activities in this area should be able to progress quickly, whereas an increased supply chain role in QA will not take place until the new SCMU is established.																										
		Person/Unit	**2012**		**2013**				**2014**				**2015**				**2016**				**2017**						
	Sub-Activities	**Responsible**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**			
8.1.1	Define roles and relationships between / among SCMU and other MOH agencies and regulatory authorities regarding quality assurance for medicines (e.g., FDB, Ghana Standards Authority, etc.).	FDB, Ghana Standards Authority and SCMU interim management team																							Roles among MOH agencies for QA of medicines and medical supplies agreed/ accepted	. 25 participants for meeting . 2 day meetings (preparatory/final) . 1 TA . 2 workshops (3 days each) . 18 participants . 1 TA	$ 21,200.00
8.1.2	Define roles and relationships between / among SCMU and other MOH agencies and regulatory authorities regarding quality assurance for medical devices (e.g., FDB, Ghana Standards Authority, etc.).	FDB, Ghana Standards Authority and SCMU interim management team																							Roles among MOH agencies for QA of medical devices agreed/ accepted	. 25 participants for meeting . 2 day meetings (preparatory/final) . 1 TA . 2 workshops (3 days each) . 18 participants . 1 TA	$ 21,200.00
8.1.3	Review indicators and data requirements to assist in quality assessment, inspections, testing, and tracking within the drug and health commodity quality assurance program.	FDB; MOH; Ghana Standards Authority																							Quality indicators and data requirements developed / revised	. 2-day workshops . 18 participants	$ 9,342.00
8.1.4	Review and identify how the existing legal framework can be utilized to support the objectives and strategies of the SCMP, in particular "best value" and quality assurance during all commodity procurements within the public sector.	FDB, MOH, SCMU																							All public sector procurements prioritize "value" and product quality	. 25 participants . 1 facilitator . 3 days workshop residential . 1000 copies of documents will be printed	$ 38,725.00
8.1.5	Implement updated/revised policies and procedures for quality assurance; conduct inspections, testing of products, etc.	FDB and MOH																							QA policies updated, and implemented	. Quarterly monitoring . 3 teams . 5 days/team/quarter . Every 2 quarters . 50 participants . 2000 copies twice a year . 10 regions	$ 354,150.00
8.1.6	Strengthen FDB and SCMU to be able to enforce guidelines for sanctioning procurers within the system and/or vendors selling to the system who are found to be "out of compliance" with MOH and FDB regulations (inspections), and for the testing of drugs and other commodities.	MOH; FDB																							FDB and SCMU strengthened to be able to implement guidelines; capacity improved	Covered under Recurrent Costs	
8.1.7	Develop incentives and sanctions to improve "self-regulation" of drug and commodity quality by manufacturers, importers, and distributors.	Private Health Sector Alliance; FDB; MOH; Pharmaceutical Manufacturers' Association; Ministry of Trade																							Industry "self-regulation" improved, in the form of incentives and sanctions	. 2-day workshops . 18 participants . 2000 copies for the suppliers & facilities (240 procurement facilities at district level, TH, suppliers, distributers X # copies)	$ 88,184.00

No.	Intervention Area 9: Product Selection and Quantification																							Milestones	Resources	Costs
	Activity 1: Product Selection																									
	Principle: Full agreement on the list of products that are to be managed by the SCMU will be critical to ensuring understanding of its role in overall commodity availability.																									
	Assumptions about the proposed timeline: Products selected will need to be reviewed often, as clients illustrate preference through consumption, and as new, more effective medications are released.																									
		Person/Unit	**2012**		**2013**				**2014**				**2015**				**2016**				**2017**						
	Sub-Activities	**Responsible**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**			
9.1.1	Initially, and on a regular basis (at least annually), the MOH, GHS, and the SCMU must agree on which commodities the SCMU will manage (finalize the list of products from the NEML/STGs that will be managed by the SCMU supply chain).	TWG/"Set-up" Committee and National SCCC (future), NHIA																							SCMU list of commodities agreed per negotiation and based on available resources		
9.1.2	SCMU list should be reviewed, published / shared with Regions and facilities at least annually.	SCMU Board / management & NHIA																							Annual list published and disseminated		
	Activity 2: Quantification																									
	Principle: Quantifications / forecast reviews shall be led by SCMU for all products managed by the SCMU supply chain.																									
	Assumptions about the proposed timeline: Assumes that SCMU is formalized and begins to lead the coordination of the quantification process even if all parts of the system are not fully designed and/or implemented.																									
		Person/Unit	**2012**		**2013**				**2014**				**2015**				**2016**				**2017**						
	Sub-Activities	**Responsible**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**			
9.2.1	Obtain any existing quantification guidelines (MOH, GHS, consultants), and then draft revised guidelines that describe how, when, how often, and by whom quantifications and forecast reviews will be conducted. Forecasting tools in use should be reviewed and revised as well.	"Set-up" Committee; interim SCMU management team; GHS; MOH; consultants?																							Revised guidelines for quantifications and forecast reviews developed	. 18 participants . 3-day workshop . 1 TA (IMT) . 250 copies of the quantification guidelines . 1 day meeting . 10 regional participants . 15 HQ participants	$ 10,807.00
9.2.2	Training of SCMU and other staff on quantification process, tools, and methodologies.	SCMU; National SCCC; consultants																							SCMU and other staff trained in revised quantification process and tools and independently able to perform quantifications	. 1 TA (IMT) . 10 working to develop guidelines . 1 day meeting to present the draft documents to the group of 25 . 1 day meeting to present the final documents of 25 . 2 facilitators . 10 days training . 15 people residential trainings from HQ . 10 people from region . 1 TA (IMT) . 2 facilitators	$ 33,808.00
9.2.3	Collect available/most recent data in preparation for annual quantification and quarterly reviews.	SCMU, RMS, CMS, and development partners																							Commodity data collected/aggregated in preparation for each quantification/review	Covered under Recurrent Costs	

9.2.4	Conduct annual quantification exercise: produce commodity forecasts and supply plans; review procurement plans; update and revise as needed.	SCMU Quantification team with GHS programmes and others																							Commodity forecasts, supply plans, and resource gap analyses prepared annually	. 10 people from region do to quantification . 15 from HQ . 10 working days . 1 workshop annually	$ 98,325.00
9.2.5	Conduct formal quarterly review/update of forecasts and supply plans with MOH, GHS, and other concerned parties (teaching hospitals) to determine procurement responsibilities for specific commodities, and revise as needed.	SCMU and available partners																							Commodity forecasts, supply plans, and resource gap analyses updated quarterly	. 15 people from the HQ . 10 from regions . 5 day workshop	$ 109,362.50
9.2.6	Share quantification results with all relevant stakeholders for advocacy and resource mobilization.	SCMU																							Results shared with MOH agencies and stakeholders regularly.	Covered under Recurrent Costs	

Intervention Area 10: Risk Management and Mitigation

Activity 1: Develop a risk management strategy and monitor processes, challenges, and timelines for risks.

Principle: Proactively defining and anticipating risks can reduce exposure and increase stability and overall success.

Assumptions about the proposed timeline: Risk management / mitigation needs to continue as a regular activity of the SCMU's management and Board.

No.	Sub-Activities	Person/Unit Responsible	2012 Q3	2012 Q4	2013 Q1	2013 Q2	2013 Q3	2013 Q4	2014 Q1	2014 Q2	2014 Q3	2014 Q4	2015 Q1	2015 Q2	2015 Q3	2015 Q4	2016 Q1	2016 Q2	2016 Q3	2016 Q4	2017 Q1	2017 Q2	2017 Q3	2017 Q4	Milestones	Resources	Costs
10.1.1	Review list of priority risks as identified by IBM consultants and align with each intervention area to harmonize implementation(see also attached Annex on Risk Management). MOH needs to agree with the identified risks and support SCMU Management in addressing them.	TWG; TA; SCMU Board and management																							Priority risks identified and documented in Risk Management Strategy	. 2 days 1 IMT TA	$ 700.00
10.1.2	Review / revision of risk management plan should be completed quarterly (initially) and then biannually.	SCMU Board and management																							Risk Management Strategy reviewed and updated quarterly initially and then bi-annually	3 days IMT TA per quarter	$ 4,200.00
10.1.3	Adopt or propose other risk mitigation strategies to address newly identified risks (quarterly initially and then bi-annually).	SCMU Board and management																							Team considers new risks and develops risk management strategies	Covered under Recurrent Costs	
10.1.4	Monitor on-going success of mitigation strategies as part of M&E activities.	SCMU Board and management																							Deficiencies identified and addressed	Covered under Recurrent Costs	
10.1.5	Include risk management in regular quality assurance activities.	SCMU Board and management																							Risks managed through proactive planning	Covered under Recurrent Costs	

ANNEX 5. The Monitoring and Evaluation Plan

Supply Chain Master Plan, Draft M&E Plan 2013 by Quarter

Intervention Area # - Activity #	Sub-Activity #	Sub-Activities	Milestones	Person/Unit Responsible	Sub-activity Start Date	Milestone Completion Date (end of month)	Progress on Milestone (Monthly Update)	Schedule Adjustments (Provide explanatory details)	Notes / Comments / Dependencies
IA1-A1	1.1.5	Define monitoring and supervision/oversight mechanisms for SCMU / Agency.	SCMU monitoring and supervision plan established	MOH, with support from IMT.	Jan-13	Mar-13			MOH and IMT may serve as reviewers of each others drafts.
IA1-A1	1.1.7	Develop and implement advocacy plan for new SCMU / Agency and plans for improving supply chain for MOH/GHS facilities.	Public and interested stakeholders informed of proposed supply chain improvements	MOH, with support from IMT; consultants	Jan-13	Mar-13			"Communications plan" required within Cabinet Memorandum
IA10-A1	10.1.1	Review list of priority risks as identified by IBM consultants and align with each intervention area to harmonize implementation(see also Annex xx of the Supply Chain Master Plan). MOH needs to agree with the identified risks and support SCMU Management i	Priority risks identified and documented in Risk Management Strategy	TWG; TA; SCMU Board and management	Jan-13	Mar-13			This assumes that the "Set-up" Committee or designated group will review the list of priority risks.
IA10-A1	10.1.2a	Review / revision of risk management plan should be completed quarterly (initially) and then biannually.	Risk Management Strategy reviewed and updated quarterly initially and then bi-annually	SCMU Board and management	Jan-13	Mar-13			Risks will change over time, thus the SCMU's risk management strategy will need to change as well
IA10-A1	10.1.3a	Adopt or propose other risk mitigation strategies to address newly identified risks (quarterly initially and then bi-annually).	Team considers new risks and develops risk management strategies	SCMU Board and management	Jan-13	Mar-13			Risks will change over time, thus the SCMU's risk management strategy will need to change as well
IA10-A1	10.1.4a	Monitor on-going success of mitigation strategies as part of M&E activities.	Deficiencies identified and addressed	SCMU Board and management	Jan-13	Mar-13			
IA10-A1	10.1.5a	Include risk management in regular quality assurance activities.	Risks managed through proactive planning	SCMU Board and management	Jan-13	Mar-13			
IA2-A1	2.1.4.12	Finalize proposal to MOH for staffing cadres of new SCMU/Agency, including transition of CMS/RMS managers and other staff to SCMU, with complete documentation of all findings and recommendations.	Staffing proposal completed and presented to MOH	IMG	Jan-13	Mar-13			
IA2-A3	2.3.1	Identification of key stakeholders for membership	Stakeholder review completed	MOH	Jan-13	Mar-13			
IA2-A3	2.3.2	Develop draft Terms of Reference for SC Coordinating Committee at National Level, including membership.	TOR and membership proposed	TA	Jan-13	Mar-13			Assumes existing TWG (or other oversight committee) ends its duties following completion of SC Master Plan.
IA3-A3	3.3.1	Identify training institutions and schools for coursework and agree on plans for new curricula.	Colleges selected and plan of action for new courses agreed	SCMU; MOH; GHS, Teaching Hospitals and selected training institutions	Jan-13	Mar-13			In Implementation Plan workshop, participants suggested that supply chain management and logistics courses should include other health professions in addition to pharmacists and pharmacy technicians (at least for basic logistics knowledge).
IA4-A4	4.4.2	Complete / support a pricing study which collects actual pricing data from a sample of facilities, RMS' and other procurement agents within the health sector (for comparison to pricing/mark-up policies and NHIA reimbursement prices).	Pricing study completed at facilities, RMS', and other procurement locations in public sector	Consultants perform study; MOH, NHIA receive report	Jan-13	Mar-13			Outside consultants may be viewed as "more objective" for collection of pricing data
IA4-A6	4.6.2	Incorporate findings from pricing study into assessment of reimbursement policies and guidelines (see Activity 4 above).	Findings from pricing and reimbursement studies integrated	Consultants	Jan-13	Mar-13			Consultants performing costing should also perform reimbursement study to achieve cost-savings.
IA4-A7	4.7.3	Complete "fee setting" costing tool (project initiated by IBM consultants in May 2012).	"Fee-setting" costing tool completed	SCMU Board and management team, GHS (RHAs), THs, & NHIA	Jan-13	Mar-13			Technical assistance desired/outsourcing
IA6-A1	6.1.14	Develop / update waste disposal policies and procedures SOPs), including reverse logistics strategies; establish / revise waste disposal infrastructure.	Waste management protocols developed and reviewed annually	MOH, SCMU, FDB, Environmental Protection Authority, MOF / Audit Service	Jan-13	Mar-13			
IA6-A1	6.1.6	Conduct network optimization study to determine most efficient network options for distribution. Optimization to address warehouse locations, delivery routes and vehicle requirements, etc.	Optimization report utilized to develop efficient and cost-effective transport and distribution systems	"Set-up" Committee, MOH, GHS, interim management team, consultants	Jan-13	Mar-13			
IA6-A1	6.1.7	SCMU considers / explores options for operating/maintaining a second level of the distribution system, including management contracting, RMS "sharing" arrangements, outsourcing and/or vendor managed inventory systems, etc.	Annual analysis using years of data to determine if current system is most efficient	SCMU and SCMU Board	Jan-13	Mar-13			As SCMU strengthens systems, management options for supply chain functions will be more clear, allowing them to consider alternatives to government systems.
IA6-A2	6.2.1	Conduct network optimization to determine 'optimal' delivery routes based on warehouse locations, roads, commodity volumes, etc.	Optimization report utilized to develop efficient and cost-effective transport and distribution systems	"Set-up" Committee, MOH, interim management team, consultants	Jan-13	Mar-13			Optimization should be done before distribution in a region starts and again when facilities numbers or road networks within a region change substantially.

Intervention Area # - Activity #	Sub-Activity #	Sub-Activities	Milestones	Person/Unit Responsible	Sub-activity Start Date	Milestone Completion Date (end of month)	Progress on Milestone (Monthly Update)	Schedule Adjustments (Provide explanatory details)	Notes / Comments / Dependencies
IA6-A2	6.2.3	Consider / explore options for transport routing from the center to facility level, considering the requirements of the ten RMS', and including management contracting, RMS "sharing" arrangements, outsourcing and/or vendor managed inventory systems, etc.	Annual analysis using years of data to determine if current system is most efficient	"Set-up" Committee, MOH, interim management team, consultants	Jan-13	Mar-13			As SCMU strengthens systems, management options for supply chain functions will be more clear, allowing them to consider alternatives to government systems.
IA6-A2	6.2.4	As part of transport proposal / plan, consider hard-to-reach locations and determine whether they warrant variations from the standards of the system design (e.g. - less frequent deliveries and higher inventory levels, etc.).	Strategy for hard-to-reach locations included in transport / plan	"Set-up" Committee, MOH, interim management team, consultants	Jan-13	Mar-13			Not included at time of Implementation Plan development workshop
IA8-A1	8.1.3	Review indicators and data requirements to assist in quality assessment, inspections, testing, and tracking within the drug and health commodity quality assurance program.	Quality indicators and data requirements developed / revised	FDB; MOH; Ghana Standards Authority	Jan-13	Mar-13			
IA9-A1	9.1.1	Initially, and on a regular basis (at least annually), the MOH, GHS, and the SCMU must agree on which commodities the SCMU will manage (finalize the list of products from the NEML/STGs that will be managed by the SCMU supply chain).	SCMU list of commodities agreed per negotiation and based on available resources	TWG/"Set-up" Committee and National SCCC (future), NHIA	Jan-13	Mar-13			Sequence is TWG, then "Set-up" Committee, then National SCCC.
IA2-A1	2.1.4.4	TA begins to manage SCMU planning / start-up processes; roles and responsibilities of interim management team clearly communicated with MOH agencies and stakeholders.	TA begins duties.	IMG	Jan-13	Jun-13			To continue until new SCMU organizational structure is finalized and/or Board is in place.
IA2-A1	2.1.4.6	Initiate resource mobilization activities for government and donor support of SCMU and new supply chain.	Resource mobilization efforts initiated.	IMG	Jan-13	Jun-13			Following finalization of SCMP with cost estimates (USAID | DELIVER PROJECT supported)
IA2-A1	2.1.4.8	Develop draft transition plan for staffing for SCMU once it becomes a new agency. Present draft plan to MOH.	Staffing plan developed.	IMG	Jan-13	Jun-13			ST staffing plan developed to support SCMU transition and internal capacity building plan.
IA2-A1	2.1.4.9	Advise MOH on appropriate location of the SCMU.		IMG	Jan-13	Jun-13			
IA2-A1	2.1.5	Provide oversight to all studies and analyses included in the early stages of Year 1 of the SCMU's Implementation Plan, and where required, make decisions related to these activities in order to keep them moving forward.	TWG provides oversight and support to SCMU interim management until SCMU Agency formalized	MOH/IMG	Jan-13	Jun-13			The "Set-up" Committee may or may not be the current Technical Working Group.
IA3-A1	3.1.1	Develop training curriculum and materials for Trainers (TOT) and trainees (all levels staff) based on the supply chain SOP Manual.	Training curriculum and materials completed and printed	IMT and consultants	Jan-13	Jun-13			SOP Manual targeted for completion in Q2 2013. SOP for SCM should be developed before training curriculums.
IA4-A3	4.3.1	Clarify what the actual commodity-related debts are (as of a certain point in time), so that all parties can be "on the same page" regarding the debts existing between the different levels of the supply chain.	Detailed accounting report which details debtors and creditors as of a certain date.	Outside entity / external auditor / consultant would be preferred with MOH oversight (Chief Director)	Jan-13	Jun-13			June 30, 2012 or December 31, 2012 would be reasonable choices depending on how fast the MOH can initiate this study.
IA4-A6	4.6.3	Identify options for revising / strengthening reimbursement policies in relation to long-term sustainability goals of NHIA.	Options for new reimbursement policies and guidelines developed	NHIA as lead, in collaboration with MOH, GHS & SCMU.	Jan-13	Jun-13			New reimbursement prices are expected to reduce consumer prices.
IA4-A8	4.8.1	Assess options for incorporating PBF within levels of the supply chain and across various SC functions.	Report of options for use of PBF in supply chain completed	Consultants / MOH oversight (Chief Director)	Jan-13	Jun-13			Consultants can complete assessment / options phase. Reliable information systems are required for the implementation of performance based financing systems.
IA5-A1	5.1.2	Propose revisions/amendments/MOH internal rules to existing procurement guidelines to PPA on behalf of MOH and its agencies (including SCMU Agency).	Complete proposal to PPA for revisions to procurement guidelines and/or develop new internal rules for MOH procurers	SSDM/P&S/Agencies and MOH/GHS legal departments with oversight from the Chief Director; PPA	Jan-13	Jun-13			MOH may need to make case for MOH variances from provisions of Procurement Act.
IA6-A1	6.1.8	SCMU develops warehouse network plan for consideration by MOH, GHS, THs, and other stakeholders, following review / evaluation of options and information from various studies and assessments (see above).	Warehouse network plan and performance Indicators developed and presented	"Set-up" Committee, MOH, interim management team, consultants	Jan-13	Jun-13			
IA6-A2	6.2.5	Develop transport proposal / plan for consideration by MOH, GHS, and other stakeholders, following review/evaluation of options and information from various studies (see above).	Transport proposal developed and presented	"Set-up" Committee, MOH, interim management team, consultants	Jan-13	Jun-13			
IA6-A2	6.2.8	Develop SOP manual covering delivery system design and implementation processes and procedures; might be one SOP manual for each level in the system, each appropriate to the tasks/ responsibilities at that level.	SOP Manuals produced, and disseminated for use	SCMU/SCMU Board	Jan-13	Jun-13			Delivery SOPs will need to be revised if changes are made in the distribution system.

Intervention Area # - Activity #	Sub-Activity #	Sub-Activities	Milestones	Person/Unit Responsible	Sub-activity Start Date	Milestone Completion Date (end of month)	Progress on Milestone (Monthly Update)	Schedule Adjustments (Provide explanatory details)	Notes / Comments / Dependencies
IA7-A1	7.1.2	Define data requirements and data flows required for effective/efficient commodity management based on supply chain design.	Data requirements and data flows defined	"Set-up" Committee; SCMU interim mgmt.; consultants	Jan-13	Jun-13			IT Committee might manage the LMIS system design and the IT decision process (see 7.2 below). 2nd Review Group emphasized need for careful consideration of "hard-to-reach" facilities during LMIS design process.
IA7-A1	7.1.3	Define data requirements for each user group, and timing and degree of data access required for each user group.	Data requirements for each user group defined	"Set-up" Committee; SCMU interim mgmt.; consultants	Jan-13	Jun-13			
IA7-A1	7.1.4	Define information sharing policies, procedures, processes and service levels for each user group (MOH, GHS, others).	Information sharing policies, procedures, processes and service levels defined	"Set-up" Committee; SCMU interim mgmt.; consultants	Jan-13	Jun-13			
IA7-A1	7.1.5	Review/revise minimum and maximum levels for stores, order intervals for facilities and other SC levels, and other logistics parameters.	Bi-annual review of logistics parameters completed , documented and distributed to partners	"Set-up" Committee; SCMU interim mgmt.; consultants	Jan-13	Jun-13			
IA7-A2	7.2.3	Define additional information and data requirements for automating information management for commodities, emphasizing best practices, efficiency, and effectiveness.	Additional data req'ments for automating info. management defined	"Set-up" Committee; IT Committee; SCMU interim mgmt.; consultants	Jan-13	Jun-13			Part of IT Committee's TOR. Data requirements phase can be completed at one time for LMIS and automated LMIS. 2nd Review Group suggested that it is essential that lower levels are fully involved in system design and planning, especially those with direct IT experience.
IA7-A2	7.2.4	Define additional data requirements for each user group, as well as information sharing policies, procedures, processes, data visibility objectives, and service levels.	Additional data req'ments for automating needs of each user group defined	"Set-up" Committee; IT Committee; SCMU interim mgmt.; consultants	Jan-13	Jun-13			Part of IT Committee's TOR.
IA7-A2	7.2.6	Determine IT-related infrastructure capacity at each level of the planned network, including computers, phone lines, and internet access at each point (central, mid-level, health facilities).	Complete survey of IT-related capacity completed	GHS, SCMU interim mgmt., consultants	Jan-13	Jun-13			Proposed during Implementation Plan workshop; immediate step is to determine what is already known (from GHS and others).
IA8-A1	8.1.1	Define roles and relationships between / among SCMU and other MOH agencies and regulatory authorities regarding quality assurance for medicines (e.g., FDB, Ghana Standards Authority, etc.).	Roles among MOH agencies for QA of medicines and medical supplies agreed/ accepted	FDB, Ghana Standards Authority and SCMU interim management team	Jan-13	Jun-13			
IA8-A1	8.1.2	Define roles and relationships between / among SCMU and other MOH agencies and regulatory authorities regarding quality assurance for medical devices (e.g., FDB, Ghana Standards Authority, etc.).	Roles among MOH agencies for QA of medical devices agreed/ accepted	FDB, Ghana Standards Authority and SCMU interim management team	Jan-13	Jun-13			MOH needs to determine how oversight of medical devices (after they are installed in health facilities) is to be provided (proper use, maintenance & repair, etc.). Not included at time of Implementation Plan development workshop.
IA8-A1	8.1.4	Review and identify how the existing legal framework can be utilized to support the objectives and strategies of the SCMP, in particular “best value” and quality assurance during all commodity procurements within the public sector.	All public sector procurements prioritize "value" and product quality	FDB, MOH, SCMU	Jan-13	Jun-13			Which agency has responsibility and capacity for monitoring compliance with procurement rules? Need to be clear about this going forward.
IA8-A1	8.1.7	Develop incentives and sanctions to improve “self-regulation” of drug and commodity quality by manufacturers, importers, and distributors.	Industry “self-regulation” improved, in the form of incentives and sanctions	Private Health Sector Alliance; FDB; MOH; Pharmaceutical Manufacturers' Association; Ministry of Trade	Jan-13	Jun-13			MOH needs to work with Private Health Sector Alliance to move this agenda forward.
IA9-A2	9.2.1	Obtain any existing quantification guidelines (MOH, GHS, consultants), and then draft revised guidelines that describe how, when, how often, and by whom quantifications and forecast reviews will be conducted. Forecasting tools in use should be reviewed an	Revised guidelines for quantifications and forecast reviews developed	"Set-up" Committee; interim SCMU management team; GHS; MOH; consultants?	Jan-13	Jun-13			Guidelines should address roles, responsibilities, schedules, coordination mechanisms, etc. in detail
IA10-A1	10.1.2b	Review / revision of risk management plan should be completed quarterly (initially) and then biannually.	Risk Management Strategy reviewed and updated quarterly initially and then bi-annually	SCMU Board and management	Apr-13	Jun-13			Risks will change over time, thus the SCMU's risk management strategy will need to change as well
IA10-A1	10.1.3b	Adopt or propose other risk mitigation strategies to address newly identified risks (quarterly initially and then bi-annually).	Team considers new risks and develops risk management strategies	SCMU Board and management	Apr-13	Jun-13			Risks will change over time, thus the SCMU's risk management strategy will need to change as well
IA10-A1	10.1.4b	Monitor on-going success of mitigation strategies as part of M&E activities.	Deficiencies identified and addressed	SCMU Board and management	Apr-13	Jun-13			
IA10-A1	10.1.5b	Include risk management in regular quality assurance activities.	Risks managed through proactive planning	SCMU Board and management	Apr-13	Jun-13			
IA2-A1	2.1.6	Disband services of IMG when agency is established and management team and Board are established.	SCMU Board provides active oversight of SCMU	Ministry of Health	Apr-13	Jun-13			TA support desired?

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IA2-A2	2.2.1	Formalize the establishment of SCMU/Agency.	New Agency formally established	MOH	Apr-13	Jun-13			
IA2-A2	2.2.12	Provide oversight of SCMA Board and supply chain performance.	MOH oversight provided	MOH	Apr-13	Jun-13			
IA2-A2	2.2.2	Appointment of SCMU Board with clear TOR defined by the Act.	Board members selected	MOH	Apr-13	Jun-13			Timelines will change depending on how long it takes to establish the Agency.
IA3-A3	3.3.2	Update course objectives based on SCMU supply chain design	Course objectives updated	SCMU; MOH; GHS, Teaching Hospitals and selected training institutions	Apr-13	Jun-13			
IA3-A3	3.3.3	Update course materials based on revised objectives and SCMU course design	Course materials updated	SCMU; MOH; GHS, Teaching Hospitals and selected training institutions	Apr-13	Jun-13			
IA3-A3	3.3.4	Train instructors on updated course materials	Staff at colleges trained and provided with course materials	SCMU; MOH; GHS, Teaching Hospitals and selected training institutions	Apr-13	Jun-13			
IA4-A1	4.1.3	Operational and annual capital requirements estimated on an annual basis, in line with the government's budget cycle. These cost estimates will also be used for resource mobilization annually.	Budget submitted / requests made to donors	Management team of SCMU	Apr-13	Jun-13			Utilize cost estimates as a starting point (see Sub-Activity 4.1.1).
IA4-A4	4.4.3	Update pricing/mark-up policies and guidelines as appropriate.	New policies and guidelines developed	Chief Director MOH, SCMU, and NHIA	Apr-13	Jun-13			New policies to address enforcement and sanctions/ penalties (see Activity 5).
IA4-A4	4.4.4	Stakeholder engagement and endorsement of proposed policies and guidelines.	Stakeholder inputs provided and incorporated into new policies and guidelines	Chief Director MOH, GHS, NHIA	Apr-13	Jun-13			
IA4-A5	4.5.1	Develop performance indicators for managing adherence to pricing/mark-up policies for drugs and commodities procured for public sector facilities.	Performance indicators for managing adherence developed as part of the guidelines	MOH (PPME), GHS (PPME), SCMU, and NHIA; National SCCC	Apr-13	Jun-13			MOH needs to determine which MOH agency should lead this important effort
IA4-A5	4.5.2	Develop specific incentives and sanctions for improving adherence to pricing/mark-up policies and guidelines.	Specific incentives and sanctions for improving adherence developed as part of the guidelines	MOH (PPME), GHS(PPME), SCMU, and NHIA; National SCCC	Apr-13	Jun-13			MOH needs to determine which MOH agency should lead this important effort. Incentives will be more challenging than sanctions.
IA4-A6	4.6.4	Conduct stakeholder engagement on proposed reimbursement policies.	Draft guidelines reviewed with stakeholders	NHIA	Apr-13	Jun-13			
IA4-A6	4.6.5	Finalize reimbursement policies / guidelines.	Reimbursement policies / guidelines finalized.	NHIA as lead, in collaboration with MOH, GHS & SCMU.	Apr-13	Jun-13			
IA4-A6	4.6.6	Create vetting committees in facilities to check NHIA claims - to reduce errors.	Facilities review claims before they are submitted	NHIA and facilities	Apr-13	Jun-13			
IA4-A6	4.6.7	Develop specific guidelines on credit for facilities and others within the supply chain.	The credit of each facility is monitored to ensure that all facilities are in compliance with new guidelines	NHIA, MOH	Apr-13	Jun-13			Support a peer review mechanism for facilities to share best practice for capacity building.
IA4-A7	4.7.4a	Test and revise "fee setting" costing tool as needed so that it can support setting of service fees for SCMU services (at least annually).	"Fee-setting" costing tool tested and utilized to set service fees	SCMU Board and management team	Apr-13	Jun-13			
IA6-A1	6.1.11a	Define performance indicators for monitoring the performance of the warehouses which are within the SCMU network, and review annually.	Indicators defined in year one, then revisited annually, with data collection as appropriate	SCMU and SCMU Board	Apr-13	Jun-13			As SCMU matures, data requirements are expected to increase, thus indicators will need to be revisited.
IA6-A2	6.2.9a	Define performance indicators for monitoring the performance of the distribution system, and review annually.	Performance indicators developed, data elements defined	SCMU/SCMU Board	Apr-13	Jun-13			Delivery SOPs will need to be revised if there is a change in the distribution system.
IA7-A1	7.1.6	Ensure that information system will collect appropriate data for compiling and monitoring performance indicators for all supply chain activities.	Information systems incorporate important performance monitoring data	"Set-up" Committee; SCMU interim mgmt.; consultants	Apr-13	Jun-13			
IA7-A1	7.1.7	Select system design options for the Ghana context which reflect best practices for the products/ programs which are to be included in the SCMU-managed supply chain.	System design options selected	"Set-up" Committee; SCMU interim mgmt.; consultants	Apr-13	Jun-13			
IA9-A1	9.1.2	SCMU list should be reviewed, published / shared with Regions and facilities at least annually.	Annual list published and disseminated	SCMU Board / management & NHIA	Apr-13	Jun-13			Ideally, such communications will be electronic after a certain point in time.
IA7-A2	7.2.5	Review scope, project plans, requirements, designs and capabilities of any/all current automation projects / automated systems (e.g. - mSupply) in relation to supply chain information management to determine whether they are appropriate for future integra	Current automation and projects reviewed in relation to IT objectives and requirements	"Set-up" Committee; IT Committee; SCMU interim mgmt.; consultants	Jan-13	Sep-13			Part of IT Committee's TOR.
IA2-A2	2.2.3	Recruitment of SCMU management team.	Management team selected/appointed	MOH	Apr-13	Sep-13			
IA2-A2	2.2.5	Organize / reorganize / hire staff to ensure that each of their areas of responsibility [focused public sector model] are supported technically. For all products under their authority, these functional areas include transportation & warehousing; building	SCMU management organizes staff to manage all key functions and areas of responsibility	Management team of SCMA	Apr-13	Sep-13			SCMU management ensures that all mandates are staffed and actively supported.

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IA2-A2	2.2.6	Set short-term and mid-term priorities for strengthening the Supply Chain, using the SC Master Plan and the Implementation Plan as guides for FY2014 work planning.	New SCMU management team (with Board) sets implementation priorities and develops FY2014 work plan and budget	Management team of SCMA	Apr-13	Sep-13			
IA2-A3	2.3.3	Share TOR with appropriate MOH agencies and stakeholders for review / feedback.	TOR shared and finalized	MOH/Chief Director	Apr-13	Sep-13			
IA4-A2	4.2.3	Develop annual budget requirements and advocate for financial support for operations and for capital investments/systems support.	Budget submitted / requests made to donors on annual basis	SCMU Management & Board, Chief Director, Minister of Health	Apr-13	Sep-13			MOH leadership is expected to assist SCMU with fund-raising efforts throughout five years of the SCMP.
IA4-A2	4.2.4	Develop strategies and activities to emphasize resource mobilization as part of revenue generation / budget balancing strategies.	SCMU plans and executes resource mobilization strategy annually.	SCMU Management / Board with MOH support	Apr-13	Sep-13			
IA4-A3	4.3.2	Develop re-payment strategy/policy options, and prepare a proposal for MOH leadership / Government of Ghana (with assistance of consultants).	Proposal for resolving the situation to deal with debts quickly.	Consultants / MOH oversight (Chief Director)	Apr-13	Sep-13			This will require high level decision-making and political will.
IA5-A1	5.1.3	Develop a plan of action, with GHS, teaching hospitals and others, for reorganizing procurement policies and procedures within the MOH (assuming revisions /amendments /MOH internal rules are acceptable to PPA) and develop monitoring procedures.	Plan of action for implementation of new guidelines developed and addresses monitoring and compliance mechanisms and capacity	MOH, GHS, SCMU, THs, other Agencies, and PPA; National SCCC	Apr-13	Sep-13			MOH will need to ensure that the plan of action addresses monitoring and compliance mechanisms and capacity. The new rules/guidelines should provide details on procurement process documentation, compliance mechanisms, and possible sanctions for noncomplia
IA5-A2	5.2.1	Identify and implement information systems to ensure that procurement processes are efficient and effective, and results are visible to appropriate stakeholders. Information systems should also support pipeline monitoring from/with suppliers, and inform s	Identify and implement information systems for support of procurement processes	Consultant to work with MOH IT, SCMU, and GHS IT; National SCCC	Apr-13	Sep-13			System should be accessible by RMSs, P&S, PPA, SSDM, and SCMU (data visibility).
IA5-A2	5.2.3	Develop and implement standard operating procedures (SOPs) for procurement at all levels, including forms and quality assurance mechanisms. Involve all levels during the development process.	SOPs for procurement activities finalized	SCMU management team; SCMU Board; GHS; RMSs; facilities	Apr-13	Sep-13			
IA7-A1	7.1.8	Finalize format/content of all paper forms (if any) and/or design, selection and installation of any computer-based system chosen for implementation of the system (needs to be finalized before first trainings occur).	Forms produced and distributed.	"Set-up" Committee; SCMU interim mgmt.; consultants	Apr-13	Sep-13			As products are added and data needs change, forms will need to change as well
IA7-A1	7.1.9	Complete the system design phase for the primary logistics functions, including LMIS, distribution (warehousing and transport), inventory management, pipeline monitoring, and resupply schedules, ensuring that roles and responsibilities are clearly define	System design phase completed	"Set-up" Committee; SCMU interim mgmt.; consultants	Apr-13	Sep-13			During the SC Master Plan process, a number of system design issues have already been resolved.
IA7-A2	7.2.7	Finalize data requirements package for all users, as well as information sharing policies, resource availability, performance indicators, etc.	Req'ments for integrated LMIS completed	"Set-up" Committee; IT Committee; SCMU interim mgmt.; consultants	Apr-13	Sep-13			Part of IT Committee's TOR.
IA10-A1	10.1.2c	Review / revision of risk management plan should be completed quarterly (initially) and then biannually.	Risk Management Strategy reviewed and updated quarterly initially and then bi-annually	SCMU Board and management	Jul-13	Sep-13			Risks will change over time, thus the SCMU's risk management strategy will need to change as well
IA10-A1	10.1.3c	Adopt or propose other risk mitigation strategies to address newly identified risks (quarterly initially and then bi-annually).	Team considers new risks and develops risk management strategies	SCMU Board and management	Jul-13	Sep-13			Risks will change over time, thus the SCMU's risk management strategy will need to change as well
IA10-A1	10.1.4c	Monitor on-going success of mitigation strategies as part of M&E activities.	Deficiencies identified and addressed	SCMU Board and management	Jul-13	Sep-13			
IA10-A1	10.1.5c	Include risk management in regular quality assurance activities.	Risks managed through proactive planning	SCMU Board and management	Jul-13	Sep-13			
IA2-A2	2.2.4	Prepare and submit annual work plan and budget for 2014 (and each year thereafter) - see also Sub-Activities 2.1.5 and 2.2.3.	Work plan and budget for SCMU approved for FY2014, etc.	MOH/ Management team of SCMA thereafter	Jul-13	Sep-13			SCMU management team shall define performance indicators for their mandates - areas of emphasis may include product availability, efficiency, cost-effectiveness, and self-sustainability.
IA2-A2	2.2.9	Update the list of commodities that will be handled by the SCMU at least annually and disseminate (see also Sub-Activity 2.1.6).	SCMU/SCMA Commodity List reviewed annually	Management team of SCMA, with other MOH agencies	Jul-13	Sep-13			List should also be endorsed by SC Coordinating Committee.

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IA3-A1	3.1.2	Develop training plan based on human and financial resources available. Training plan needs to address concerns regarding regional and district level capacity to serve as trainers in supply chain and logistics.	Training plan approved by all MOH agencies	IMT and consultants	Jul-13	Sep-13			Training plan should include specific criteria for selection; i.e. - who needs to be trained based on their job descriptions / roles. Plan needs to be coordinated with other training programs.
IA3-A3	3.3.5	Implement revised/updated system-specific course sessions	Course provided as part of regular curriculum in selected colleges	SCMU; MOH; GHS, Teaching Hospitals and selected training institutions	Jul-13	Sep-13			
IA4-A4	4.4.5	Implement new pricing / mark-up policies, in conjunction with MOH, NHIA, and RHAs.	New policies and guidelines implemented with emphasis on oversight and enforcement to reduce costs for NHIA	National SCCC, NHIA, GHS, PPME, and SCMU	Jul-13	Sep-13			Inspection capacity should be utilized, where needed, to assist with data collection needs. (NHIA Clinical Audit Unit).
IA5-A2	5.2.5	Use results of quantification exercises for informing procurement plans by SCMU procurement team (and others).	Quantifications routinely inform procurements	SCMU procurement team	Jul-13	Sep-13			
IA5-A3	5.3.2	Perform a procurement capacity assessment of the SCMU, then develop procurement capacity requirements as part of overall staffing plan.	Procurement capacity building plan available	Management team of SCMU	Jul-13	Sep-13			
IA6-A1	6.1.5	Develop / select and support the implementation of systems/tools for MOH/GHS health facilities which will support effective inventory management practices for all health commodities.	Use of tools rolled out with support of SCMU	MOH/"Set-up" Committee, GHS, THs; SCMU active after becoming official	Jul-13	Sep-13			Would this include teaching hospitals?
IA9-A2	9.2.2	Training of SCMU and other staff on quantification process, tools, and methodologies.	SCMU and other staff trained in revised quantification process and tools and independently able to perform quantifications	SCMU; National SCCC; consultants	Jul-13	Sep-13			
IA9-A2	9.2.4	Conduct annual quantification exercise: produce commodity forecasts and supply plans; review procurement plans; update and revise as needed.	Commodity forecasts, supply plans, and resource gap analyses prepared annually	SCMU Quantification team with GHS programmes and others	Jul-13	Sep-13			Quantification and review exercises should include SC Coordinating Committee, in addition to program, SCMU and procurement staff, NHIA staff, and others related to quantification requirements and
IA8-A1	8.1.6	Strengthen FDB and SCMU to be able to enforce guidelines for sanctioning procurers within the system and/or vendors selling to the system who are found to be "out of compliance" with MOH and FDB regulations (inspections), and for the testing of drugs and for the testing of drugs and other commodities.	FDB and SCMU strengthened to be able to implement guidelines; capacity improved	MOH; FDB	Jan-13	Dec-13			
IA9-A2	9.2.3	Collect available/most recent data in preparation for annual quantification and quarterly reviews.	Commodity data collected/aggregated in preparation for each quantification/review	SCMU, RMS, CMS, and development partners	Apr-13	Dec-13			
IA2-A2	2.2.7	Develop guidelines and standard operating procedures (SOPs) for supply chain tasks/activities at various levels in the MOH and GHS. All guidelines and SOPs are reviewed regularly and shared appropriately.	SOPs developed and disseminated	Management team of SCMA	Jul-13	Dec-13			
IA2-A3	2.3.4	Establish and hold quarterly supply chain coordinating committee meetings at national level. Update/modify TOR as needed.	SCCC meetings held regularly to address SC coordination issues across MOH agencies	Chief Director/ Committee Chair	Jul-13	Dec-13			
IA3-A2	3.2.1	Develop training and TOT curriculum and materials based on how the computerized system is to be used, by type of facility.	Training curriculum and TOT materials completed and printed	IMT and consultants	Jul-13	Dec-13			All workers will not need to know how to utilize the computerized system. When does the proposed IBM/ADP ICT intervention take off? Is this proposal funded?
IA4-A3	4.3.3	MOH (and others) make decision of re-payment strategy, ideally in conjunction with budget cycle.	Strategy for re-payment chosen by MOH leadership	Minister of Health	Jul-13	Dec-13			
IA4-A3	4.3.4	Implement re-payment strategy as quickly as possible, ideally in conjunction with budget cycle.	Resolution of debt crisis related to drugs and health commodities	Chief Director MOH	Jul-13	Dec-13			
IA4-A5	4.5.3	Build / improve capacity for monitoring adherence to the new policies and guidelines.	Monitoring program developed and implemented	MOH, GHS, SCMU, and NHIA	Jul-13	Dec-13			Monitoring agency should have adequate resources to monitor adherence at facility level
IA4-A6	4.6.8	Implement new reimbursement policies and guidelines as part of multi-year implementation strategy.	Reimbursement policies and guidelines revised and implemented	NHIA as lead, in coordination with MOH, GHS & SCMU.	Jul-13	Dec-13			
IA4-A7	4.7.1	Develop a detailed financial plan which includes estimates of revenues and expenses over the life of the SC Master Plan (see also Activity 2).	Annual financial plan and budget developed	SCMU Board and management team	Jul-13	Dec-13			The cost estimates for the SCMP can be utilized as the basis for these projections.
IA4-A8	4.8.2	Based on assessment, design PBF scheme(s).	PBF scheme(s) designed and reviewed with MOH and/or SCMU Board	SCMU Board and management team; consultants	Jul-13	Dec-13			SCMU management team might work within performance based financing agreement.
IA5-A3	5.3.1	Define mission, roles, responsibilities and performance indicators (expectations) for SCMU procurement team.	Mission, roles, & responsibilities defined for SCMU procurement team	SCMU Board and management team	Jul-13	Dec-13			
IA5-A3	5.3.3	Propose budget(s) for adding new capacity as needed to complete procurement responsibilities.	Capacity-building budgets submitted	SCMU Board and management team; MOH support	Jul-13	Dec-13			

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IA6-A1	6.1.10	SCMU solicits financial support for selected warehouse network plan.	Financial support solicited; funding obtained	MOH / SCMU Board	Jul-13	Dec-13			
IA6-A1	6.1.3	Develop / select and support the implementation of systems / tools for SCMU warehouses which will support effective inventory management practices for all health commodities.	Use of tools rolled out with support of SCMU management and Board	MOH/"Set-up" Committee, GHS, THs; SCMU active after becoming official	Jul-13	Dec-13			Develop/selection phase to be completed by Q3 2013.
IA6-A1	6.1.9	MOH / SCMU Board selects warehouse network plan, and initiates implementation.	Decisions made on 2nd level SCMU warehousing, and implementation initiated	MOH / SCMU Board	Jul-13	Dec-13			
IA6-A2	6.2.6	MOH / SCMU Board selects transport plan, and initiates implementation.	Decisions made on transport, and implementation initiated	MOH / SCMU Board	Jul-13	Dec-13			
IA6-A2	6.2.7	Solicit financial support for selected transport plan.	Financial support solicited; funding obtained	MOH / SCMU Board	Jul-13	Dec-13			
IA7-A2	7.2.8	Identify an IT solution for implementation of the integrated LMIS (by competitive bid or other method).	IT selection process / solution chosen	SCMU Board and mgmt.; MOH procurement	Jul-13	Dec-13			During Implementation Plan workshop, it was suggested that software selection process / implementation needs to be completed sooner than 2014/15. Viewed as major priority by 2nd review group during Implementation Plan workshop.
IA8-A1	8.1.5	Implement updated/revised policies and procedures for quality assurance; conduct inspections, testing of products, etc.	QA policies updated, and implemented	FDB and MOH	Jul-13	Dec-13			
IA1-A1	1.1.8	Establish SCMU as a new agency (SCMA).	SCMA established as a new Agency	Minister of Health	Oct-13	Dec-13			The law making process should actively be led by the Minister of Health.
IA10-A1	10.1.2d	Review / revision of risk management plan should be completed quarterly (initially) and then biannually.	Risk Management Strategy reviewed and updated quarterly initially and then bi-annually	SCMU Board and management	Oct-13	Dec-13			Risks will change over time, thus the SCMU's risk management strategy will need to change as well
IA10-A1	10.1.3d	Adopt or propose other risk mitigation strategies to address newly identified risks (quarterly initially and then bi-annually).	Team considers new risks and develops risk management strategies	SCMU Board and management	Oct-13	Dec-13			Risks will change over time, thus the SCMU's risk management strategy will need to change as well
IA10-A1	10.1.4d	Monitor on-going success of mitigation strategies as part of M&E activities.	Deficiencies identified and addressed	SCMU Board and management	Oct-13	Dec-13			
IA10-A1	10.1.5d	Include risk management in regular quality assurance activities.	Risks managed through proactive planning	SCMU Board and management	Oct-13	Dec-13			
IA2-A2	2.2.10	Develop and implement a strategy for increasing internal capacity for managing all SC functions under their authority.	SCMU develops capacity-building strategy and implements as feasible	Management team of SCMA, with MOH / stakeholder budget support	Oct-13	Dec-13			
IA2-A2	2.2.11	Monitor performance of SCMA management team and implementation of new supply chain.	SCMU performance regularly monitored	SCMU Board	Oct-13	Dec-13			Possibly through performance-based financing agreements?
IA2-A2	2.2.8	SCMU enters into performance agreement with key stakeholders.	Performance agreement(s) developed	SCMU Board / Stakeholders	Oct-13	Dec-13			
IA2-A4	2.4.1	Identification of key stakeholders	Stakeholder review completed	Regional Directors; Mgmt. of SCMA	Oct-13	Dec-13			
IA2-A4	2.4.2	Develop draft Terms of Reference for SC Coordinating Committee at regional Level, including membership	TOR and membership proposed - for each regional SCCC	TA	Oct-13	Dec-13			
IA2-A4	2.4.3	Share TOR with appropriate MOH agencies, RHAs and key stakeholders for review / feedback	TOR shared and finalized	Regional Directors / RHAs	Oct-13	Dec-13			
IA3-A1	3.1.3	Conduct TOTs, followed by roll-out of training to current staff, in coordination with all service providers.	All current staff trained in new system(s)	IMT and Consultants	Oct-13	Dec-13			Roll-out should start at the center and in regions, then moving to SDPs, in coordination with all service providers
IA3-A1	3.1.4	Develop supportive supervision plan based on human and financial resources available.	Supportive supervision plan approved by all MOH agencies	IMT and consultants	Oct-13	Dec-13			
IA3-A1	3.1.6	Conduct ongoing supportive supervision at all levels by MOH, GHS, and partners to ensure that current staff are able to complete required SC activities.	All current staff receive on-site supervision (one or more visits) for new system(s)	SCMA and service providers	Oct-13	Dec-13			Roll-out should start at center and in regions, then moving to SDPs, in coordination with GHS and RHAs.
IA3-A2	3.2.2	Develop training plan based on human and financial resources available.	Training plan approved by all MOH agencies	IMT and consultants	Oct-13	Dec-13			
IA3-A2	3.2.3	Conduct TOTs, followed by roll-out of training to staff of selected facilities, in collaboration with service providers.	All current staff trained in new system(s) during roll-out	IMT and consultants	Oct-13	Dec-13			
IA4-A3	4.3.5	Develop debt payment and adherence policies (credit management) for ensuring that all procurers of drugs and commodities within the public sector make payment for their purchases within a fixed period of time (limited credit).	Recurrence of debt situation avoided in future	Minister of Health via Administrative Order / Directive, Chief Director, SCMU	Oct-13	Dec-13			Consider feasible and implementable sanctions.
IA4-A7	4.7.4b	Test and revise "fee setting" costing tool as needed so that it can support setting of service fees for SCMU services (at least annually).	"Fee-setting" costing tool tested and utilized to set service fees	SCMU Board and management team	Oct-13	Dec-13			

Intervention Area # - Activity #	Sub-Activity #	Sub-Activities	Milestones	Person/Unit Responsible	Sub-activity Start Date	Milestone Completion Date (end of month)	Progress on Milestone (Monthly Update)	Schedule Adjustments (Provide explanatory details)	Notes / Comments / Dependencies
IA4-A8	4.8.3	Implement PBF scheme(s) as pilot(s), or for organization/entity (e.g. - SCMU management team), or for operational team within organization/entity (e.g. - procurement team of SCMU) .	PBF scheme(s) implemented by MOH and/or SCMU Board	SCMU Board and management team	Oct-13	Dec-13			Timing can adjust based on progress of SCMU implementation.
IA4-A8	4.8.4	Monitor, evaluate and refine PBF scheme(s).	PBF scheme(s) monitored and refined by MOH and/or SCMU Board	SCMU Board and management team	Oct-13	Dec-13			
IA5-A2	5.2.2	Ensure that information systems can provide appropriate data for compiling and monitoring performance indicators for procurement activities.	Information systems identified incorporate data needed for performance monitoring	Consultant to work with MOH IT, SCMU, and GHS IT; National SCCC	Oct-13	Dec-13			
IA5-A2	5.2.4	Ensure the development of performance indicators for assessing procurement processes, supplier performance, and procurement contract fulfillment and incentives and sanctions for addressing supplier performance.	Performance indicators developed	SCMU management team; SCMU Board	Oct-13	Dec-13			
IA5-A3	5.3.4	Develop procurement team's knowledge, skills, and abilities in order to ensure appropriate internal capacity to effectively manage all procurement responsibilities.	Build capacity of procurement team as part of overall workforce development program	SCMU management and SCMU training unit	Oct-13	Dec-13			
IA6-A1	6.1.11b	Define performance indicators for monitoring the performance of the warehouses which are within the SCMU network, and review annually.	Indicators defined in year one, then revisited annually, with data collection as appropriate	SCMU and SCMU Board	Oct-13	Dec-13			As SCMU matures, data requirements are expected to increase, thus indicators will need to be revisited.
IA6-A1	6.1.12	Develop standards for facility stores, by facility type, including minimum physical capacity in terms of size.	Physical standards for facility stores developed for MOH (and private sector ?)	FDB, Standards Board, MOH, SCMU	Oct-13	Dec-13			Need to clarify whose responsibility this will be?
IA6-A2	6.2.2	Consider/evaluate outsourcing and/or vendor managed inventory mechanisms as part of system design process for transport.	Regular review of current system with comparison to other possible systems	"Set-up" Committee, MOH, interim management team, consultants	Oct-13	Dec-13			
IA6-A2	6.2.9b	Define performance indicators for monitoring the performance of the distribution system, and review annually.	Performance indicators developed, data elements defined	SCMU/SCMU Board	Oct-13	Dec-13			Delivery SOPs will need to be revised if there is a change in the distribution system.
IA9-A2	9.2.5	Conduct formal quarterly review/update of forecasts and supply plans with MOH, GHS, and other concerned parties (teaching hospitals) to determine procurement responsibilities for specific commodities, and revise as needed.	Commodity forecasts, supply plans, and resource gap analyses updated quarterly	SCMU and available partners	Oct-13	Dec-13			Quantification and review exercises should include SC Coordinating Committee, in addition to program, SCMU and procurement staff, NHIA staff, and others related to quantification requirements and
IA9-A2	9.2.6	Share quantification results with all relevant stakeholders for advocacy and resource mobilization.	Results shared with MOH agencies and stakeholders regularly.	SCMU	Oct-13	Dec-13			

ANNEX 6. Implementation Plan Budget, By Intervention Area, By Year and by Activity Cost Category by Intervention Area

Interventions	2012	2013	2014	2015	2016	2017	TOTAL	Percentage of total
Intervention Area 1: Formally organize Supply Chain Management Unit (SCMU)/Agency	250,388	18,978					**269,366**	1%
Intervention Area 2: Build a Responsive, Capable Supply Chain Management Unit (SCMU)/Agency	30,644	18,027					**48,671**	0%
Intervention Area 3: Capacity-building in supply chain management		274,315	3,888,920	3,888,920	3,888,920	3,684,240	**15,625,315**	55%
Intervention Area 4: Financing, Resource Mobilization, and Commodity Pricing	29,985	163,879					**193,864**	1%
Intervention Area 5: Procurement	15,710	114,970	1,327,760	1,327,760	1,327,760	1,351,470	**5,465,430**	19%
Intervention Area 6: Distribution, including storage, transport, inventory management, and waste management	117,410	27,369	1,328,880	1,328,880	1,328,880	1,352,610	**5,484,029**	19%
Intervention Area 7: Information systems for the supply chain	18,117	223,828	6,850		6,850		**255,645**	1%
Intervention Area 8: Policy, Legal, and Regulatory Environment	69,963	148,038	78,700	78,700	78,700	78,700	**532,801**	2%
Intervention Area 9: Product Selection and Quantification	62,908	124,348	88,145	88,145	88,145	79,733	**531,423**	2%
Intervention Area 10: Risk Management and Mitigation	700	4,200					**4,900**	0%
GRAND TOTAL	**595,824**	**1,117,951**	**6,719,255**	**6,712,405**	**6,719,255**	**6,546,753**	**28,411,443**	**100%**

Interventions	Workshop	Training	Meeting	Monitoring	IMT TA	Consultant	Printing	Total
Intervention Area 1: Formally organize Supply Chain Management Unit (SCMU)/Agency	30,808		3,700		4,900	9,800	220,158	**269,366**
Intervention Area 2: Build a Responsive, Capable Supply Chain Management Unit (SCMU)/Agency	21,658		5,050		17,500	4,200	263	**48,671**
Intervention Area 3: Capacity-building in supply chain management	12,300	14,168,380	1,625	1,125,000	35,000	24,850	258,160	**15,625,315**
Intervention Area 4: Financing, Resource Mobilization, and Commodity Pricing	29,139	8,140	15,625	9,400	14,000	25,200	92,360	**193,864**
Intervention Area 5: Procurement	36,605	5,266,845	3,250		13,650	9,450	135,630	**5,465,430**
Intervention Area 6: Distribution, including storage, transport, inventory management, and waste management	36,179	5,244,750	8,450	28,900	11,200	14,350	140,200	**5,484,029**
Intervention Area 7: Information systems for the supply chain	2,640	56,605		112,800	9,100	24,500	50,000	**255,645**
Intervention Area 8: Policy, Legal, and Regulatory Environment	122,518		35,750	144,900	7,000		222,633	**532,801**
Intervention Area 9: Product Selection and Quantification	210,807	19,530	11,773		13,650		275,663	**531,423**
Intervention Area 10: Risk Management and Mitigation					4,900			**4,900**
GRAND TOTAL	**502,654**	**24,764,250**	**85,223**	**1,421,000**	**130,900**	**112,350**	**1,395,066**	**28,411,443**

ANNEX 7. Stakeholders Current and Proposed Responsibility

Stakeholder	Current Responsibility	Proposed Responsibility
Procurement and Supply Directorate	Develops and oversees policies for the procurement of health commodities as well as procurement for the MOH and its agencies	• Part of the governing board of the NHCSA • Performance agreement with NHCSA • Procure non-health commodity capital items for MOH (Procurement Unit) • QA for procurement and supply chain management in the health sector • Procurement policy review and advocacy • Promote and support capacity building of NHCSA staff • Approve annual procurement and supply chain management plans of the NHCSA
Procurement Unit	Undertakes procurement of medicines and any other commodities on behalf of the MOH and its agencies	• Support procurement policy implementation in the health sector • Review and monitor procurement activities • Participate as appropriate in NHCSA procurement activities
Central Medical Stores	Carries out storage and distribution of health commodities for MOH and GHS	• Will be an integral part of the New Agency performing storage and distribution functions
Ghana National Drug Policy Programme	Working under the MOH, provides management support to the total (public and private) pharmaceutical sector in Ghana	• Under the OCP, will support policy development, implementation, and review for pharmaceutical sector and will concern itself with all medicine (orthodox and unorthodox) issues • Prepare and update STGs and Essential Medicines List (EML) regularly • Promote and monitor use of the EML and STGs
Office of the Chief Pharmacist	Oversees delivery of pharmaceutical services across all levels in the public sector Advises the Minister of health on policy regarding the pharmaceutical sector in the ministry	• Continue with current mandate • Take over the Ghana National Drugs Programme (GNDP) responsibilities • Part of governing board of the NHCSA

Stakeholder	Current Responsibility	Proposed Responsibility
Food and Drugs Board	Carries out quality analysis on all food and medicines, during manufacturing and importation and eventual supply (wholesale and retail) of such medicines and health commodities to the final client and after (post market surveillance and pharmacovigilance)	• Continue with current mandate • Part of the governing board of NHCSA
Stores Supplies and Drugs Management Directorate	As a division of the GHS, is responsible for coordinating, collating and monitoring procurement plans from BMCs.	• Part of governing board of NHCSA • Procurement of non-health capital commodities for the GHS • Support logistics and warehousing policy implementation in the GHS to backstop supply chain operations
National Programmes (FHD, NACP, NMCP, NTP, NCDP, EPI, etc.)	Formulates and implements the GHS's strategies to prevent, control and manage a number of specific disease or conditions of public health concern in the country	• Collaborate with NHCSA to perform quantification • Conduct supply chain management monitoring with NHCSA support • Participate in resource mobilization for programme commodities
National Health Insurance Authority	Provides health insurance coverage for registered clients and ensures they are receive needed quality health care	• Part of the governing board • Continue with current mandate
CHAG and other autonomous groupings of health providers—e.g., Catholic Drug Center, private facilities	Implement national health policies and access and use national resources to achieve national health goals Align institutional policies with national ones	• Make service delivery facilities provide NHCSA commodities • Align institutional policies with national one and supervise their implementation • Agree on MOU with NHCSA and monitor performance
Teaching Hospitals	Provides specialized care and referral facilities for all health facilities in the country Serve as centers of excellence to support training of medical and allied health staff in collaboration with Ministries of Health and Education.	• Continue current roles • Nominee from the heads of THs on the board of NHCSA • Undertake procurement of any non-focused items
Regional Health Administration	Oversees the government's overall health policy implementation at the regional levels, including commodity management and health facilities	• Represented on governing board of NHCSA through the participation of the Director General and the Director of SSDM • Administrative collaboration

Stakeholder	Current Responsibility	Proposed Responsibility
		and oversight of NHCSA facilities and operations at the regional level • Responsible for implementation of framework contract at regional level through collaboration with NHCSA • Collaborate with SSDM to monitor performance of NHCSA activities at the regional level
Regional Medical Stores	Procures, stores, and distributes health commodities to all facilities within the region	• An integral part of the NHCSA performing storage and distribution functions • Support the RHD to procure, store, and distribute non-focused commodities (medicines, health consumables, and non-medical items)
Health Facilities (regional hospitals, district hospitals, community clinics, health centre and CHPS zones)	Report, order, store, and use health commodities for clients Procure and use any item not supplied by higher-level facility	• Report, order, store, and use health commodities for clients satisfactorily • Provide feedback on NHCSA performance to higher authorities
District Health Administration	Oversees the government's and regions' overall health policy implementation at the district levels, including health commodities management and supervision of health facilities	• Supportive supervision for reporting, and performance monitoring of NHCSA