

Liberia Community Health Road Map

July 1, 2014 – June 30, 2017

MINISTRY OF HEALTH and SOCIAL WELFARE



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We are confident that the partnership that created this National Community Health Road Map will continue through the realization of the objectives and activities listed herein, as we work together to improve the national community health system in Liberia.

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List of Acronyms

ACT	Artemisinin-Based Combination Therapy
AFP	Acute Flaccid Paralysis
ANC	Antenatal Care
ARI	Acute Respiratory Infection
AWD	Acute Watery Diarrhea
BCC	Behavior Change Communication
BPHS	Basic Package of Health Services
CBO	Community-Based Organization
CDD	Community Directed Distributor
CHC	Community Health Committee
C-HMIS	Community Health Management Information System
CHDC	Community Health Development Committee
CHS	Community Health Services
CHSD	Community Health Services Department
CHSS	Community Health Services Supervisor
CHSWT	County Health and Social Welfare Team
CHT	County Health Team
CHTWG	Community Health Technical Working Group
CHV	Community Health Volunteer
CLTS	Community-Led Total Sanitation
CM	Certified Midwife
DHIS	District Health Information System
DHO	District Health Officer
DHT	District Health Team
DOTS	Directly Observed Treatment, Short Course
EHD	Environment Health Department
EHT	Environmental Health Technician
ENA	Essential Nutrition Actions
EPHS	Essential Package of Health Services
EPI	Expanded Program on Immunization
FP	Family Planning
gCHV	General Community Health Volunteer
GOL	Government of Liberia
HBMNC	Home-Based Maternal Newborn Care
HC	Health Center
HF	Health Facility
HHP	Household Health Promoters
HIV	Human Immunodeficiency Virus
HMIS	Health Management Information System

HP	Health Promotion
iCCM	Integrated Community Case Management
IEC	Information, Education and Communication
IPT-SP	Intermittent Presumptive Therapy – Sulfadoxine-Pyrimethamine
ITN	Insecticide-Treated Net
KMC	Kangaroo Mother Care
LDHS	Liberia Demographic and Health Survey
LMIS	Logistics Management Information System
LN	Licensed Nurse
LPN	Licensed Practical Nurse
MDG	Millennium Development Goal
M&E	Monitoring and Evaluation
MOE	Ministry of Education
MOHSW	Ministry of Health and Social Welfare
MUAC	Mid-Upper Arm Circumference
NCD	Non-Communicable Disease
NCHCC	National Community Health Coordinating Committee
NCHSSP	National Community Health Services Strategy and Plan
NGO	Non-Governmental Organization
NHPD	National Health Promotion Division
NIDS	National Immunization Days
NLTCP	National Leprosy and Tuberculosis Control Program
NMCP	National Malaria Control Program
NTD	Neglected Tropical Disease
OIC	Officer-in-Charge
ORS	Oral Rehydration Solution
PA	Physician's Assistant
PBF	Performance-Based Financing
PHC	Primary Health Care
RN	Registered Nurse
SCMU	Supply Chain Management Unit
SOP	Standard Operating Procedures
STI	Sexually Transmitted Infection
TB	Tuberculosis
TOR	Terms of Reference
TOT	Training of Trainers
TTM	Trained Traditional Midwife
WASH	Water and Sanitation for Health

Executive Summary

The Basic Package of Health Services (BPHS)¹ established the framework to begin improving basic health services provision in a post-conflict setting. Building upon successful implementation and strong health sector development, the Essential Package of Health Services (EPHS)² now includes scaled-up and additional services for all levels of the health care delivery system to provide more comprehensive services to the Liberian people.

Consistent with the National Health Policy³, the EPHS will maintain three levels of care: primary, which includes community, secondary and tertiary. At the community level, a standardized set of curative, preventive, promotive and social welfare services will be provided for communities more than one hour walk (5km and above) from the nearest health facility by community health volunteers (CHVs).

The Community Health Services Division (CHSD) of the Ministry of Health and Social Welfare (MOHSW) has been reorganized to increase and improve access to quality basic health services at the community level. In order to provide these services, the division coordinates and collaborates with County Health and Social Welfare Teams (CHSWTs) as well as other programs, partners and communities to scale up community health activities in the counties. The division has developed a number of key documents, including the Revised National Community Health Services Policy⁴, and the Revised National Community Health Services Strategy and Plan⁵. This Community Health Road Map builds on lessons learned from Liberia's CHV program, and describes in detail key program features necessary for a national CHV platform that successfully bridges the gap between rural communities and the primary health care system.

The Ministry of Health and Social Welfare in collaboration with partners has developed this Community Health Road Map to strengthen the existing CHV program and to improve it so that it becomes a world-class national community health worker platform. The foundation of community-based interventions are the general Community Health Volunteers (gCHVs), a lower-level cadre of health professionals who are being trained to deliver preventive, curative, promotive and social welfare services at the household level. By bringing basic health services to Liberian communities with limited access to primary healthcare, this government-instituted program of community-based service providers are strengthening Liberia's overall health system and will contribute significantly to putting Liberia on track to reach the Millennium Development Goals (MDGs) by 2015.

Input from multiple departments of the Ministry of Health, NGOs, academia, global funding agencies, and the private sector have helped to create this Community Health Road Map. These stakeholders will also be involved as implementation goes forward.

This Community Health Road Map document provides guidance to the Ministry of Health and Social Welfare to coordinate and activate the existing community health structures and support systems at all levels, as well as accelerate the implementation of a standardized package of community health services. Planned for a period of three years (2014-2017), it also suggests targets and timelines for the achievement of the proposed activities.

Vision

A coordinated national community health care system at the center of which is a trained, active and motivated cadre of Community Health Volunteers contributing to improve the health and social welfare status of people in Liberia.

Introduction and Rationale

As countries around the globe strive to meet the health-related Millennium Development Goals (MDGs) to improve maternal newborn and child health, improve access to care for infectious diseases, and reduce morbidity and mortality, increased focus is being given to the effectiveness of community-based interventions as a platform to extend health care delivery on an equitable basis and improve health outcomes. One of the most critical components of community-based interventions are Community Health Volunteers (CHVs) – lower level cadres of health professionals who can be trained quickly to deliver preventive, diagnostic, curative, and social welfare services at the household level within each community.

As of 2012, approximately 28% of the estimated 4 million people that live in Liberia lack access to healthcare, defined as living more than 5km from a health facility⁶. Access to health services is limited by a variety of factors such as limited availability of skilled health professionals, long distances to health facilities, and poverty, to name a few. A community health system serves to mitigate these challenges by delivering basic primary health care directly to the household level, in particular for vulnerable populations, and by establishing a continuum of care for a variety of conditions. Strengthening and extending the reach of the national community health services program will help to ensure that every person in Liberia is covered with access to basic health care that has the potential to save lives and dramatically improve national health indicators.

Women and children bear the highest burden of ill health in Liberia. The maternal mortality rate in 2007 per the Liberia Demographic and Health Survey (LDHS) was estimated at approximately 994/100,000 live births. The results of the same 2007 LDHS indicate that the under-five mortality rate was at 110/1000 live births, and the neonatal mortality rate at 38/1000 live births⁷. With less than two years remaining to the deadline of 2015 to achieve the MDGs to improve maternal health and reduce under-five mortality, it is unlikely that these targets will be achieved if concerted, coordinated and consolidated actions are not made in this direction.

Multiple factors contribute to maternal, newborn, and under-five morbidity and mortality. Key are the delays in providing health care, starting with delays in making the decision to seek health care, and including the significant delays for much of Liberia's population given their location in reaching a health facility, and in receiving quality and affordable care at the health facility. These are caused by a multitude of health and non-health factors. Some of the health factors include: inadequate number of skilled human resources for health, especially skilled birth attendants, limited emergency obstetrics and

newborn care services and referral mechanisms coupled with insufficient essential drugs, equipment and supplies. The major non-health factors include the lack of decision-making power by women in some communities, particularly in the rural setting, lack of clearly defined community referral and health financing mechanisms, poverty, economic difficulties, negative socio-cultural values, practices and beliefs, inadequate public transport and poor infrastructure and road networks.

Recruited and trained CHVs from local communities provide a basic package of health services at the household level that is necessary for extending the reach of the national primary care system and stimulating demand for health services. As members of both the health system and the community, CHVs are uniquely positioned to deliver preventive and curative care in the community while also working closely with other frontline health workers.

The national Community Health Services (CHS) program will make a formidable impact on strengthening the health status of the rural population. The Liberian Government is confident that this coordinated community health care system will serve as the backbone of a functioning primary health care system that significantly improves the quality of life throughout the country.

The Community Health Road Map first introduces a primary objective, with sub-objectives designed to assist the government and implementing partners in reaching these goals. A brief narrative under each sub-objective first describes the baseline situation currently in Liberia, and then outlines the key activities necessary to accomplish the sub-objective. These activities are aligned with key indicators and specific targets to measure progress and success. At the end of the Road Map is an attached Operational Plan, which specifically assigns a timeline to each activity, all to be achieved within a three-year period, from July 1, 2014 to June 30, 2017.

Objectives

GENERAL OBJECTIVE

The overall goal is to improve the health and social welfare status of the population of Liberia on an equitable basis at the community level, with the vision of having a healthy population with social protection for all.

STRATEGIC OBJECTIVES

1. To build the capacity of communities to contribute to the reduction of maternal, newborn and child morbidity and mortality and to address issues of public health and social welfare concern
 - 1.1. To create an enabling environment for implementation of the CHS policy and to strengthen governance structures at all levels for effective delivery of community health and social welfare services
 - 1.2. To outline and implement an appropriate catchment area population for each CHV, Peer Supervisor, and Community Health Services Supervisor (CHSS)
 - 1.3. To establish a community database that registers all CHVs and community-based structures

2. To ensure quality service delivery of a standardized package of community health and social welfare services
 - 2.1. To provide a standardized national package of health and social welfare services delivered at the community level
 - 2.2. To standardize an incentive package for CHVs, including monetary and non-monetary incentives
 - 2.3. To improve the quality of supportive supervision for CHVs
 - 2.4. To integrate community health services into the overall Essential Package of Health Services (EPHS) Accreditation Survey

3. To strengthen support systems for implementation of community health and social welfare
 - 3.1. To strengthen and scale-up bi-directional referral systems
 - 3.2. To integrate community level commodity logistics into the existing supply chain management system
 - 3.3. To operationalize a community-based information system
 - 3.4. To activate community-based surveillance systems

4. To strengthen pre-service and in-service training for health workers (professional and CHVs)
 - 4.1. To harmonize existing CHV curricula into a standardized national package
 - 4.2. To improve the coordination of the national CHV training program
 - 4.3. To strengthen the community health services training program for professional health workers, with a specific focus on in service training

Expected Outcomes

The purpose for strengthening the national community health program is to positively impact health indicators at the community level. The following are outcome indicators that are expected to improve with the increased coverage of a well-functioning CHV program nationally, based upon the objectives prioritized within this Road Map:

- Improved coverage of maternal death reporting by CHVs
- Improved coverage of neonatal deaths reporting by CHVs
- Increased % of health facilities reporting functional health committees
- Increased % of households in the community with sustained access to adequate, clean and safe water
- Increased % of households with access to improved sanitation
- Increased % of deliveries conducted at health facilities with skilled birth attendant
- Increased % of children less than 12m with Penta 1 who have received Penta 3.
- Increased % of children under-5 with diarrhea who received oral rehydration solution (ORS) administered by General Community Health Volunteers (gCHVs)
- Increased % of children under-5 with confirmed malaria treated with artemisinin-based combination therapy (ACT) administered by gCHVs

- Increased % of children under-5 with pneumonia treated with antibiotics administered by gCHVs
- Increased % of children exclusively breastfed in the first six months

Road Map to Achieve the Strategic Objectives

STRATEGIC OBJECTIVE 1. TO BUILD THE CAPACITY OF COMMUNITIES TO CONTRIBUTE TO THE REDUCTION OF MATERNAL, NEWBORN AND CHILD MORBIDITY AND MORTALITY AND TO ADDRESS ISSUES OF PUBLIC HEALTH AND SOCIAL WELFARE CONCERN

The 2008 National Community Health Services Strategy and Plan⁸, updated in 2011⁴ to reflect the goals outlined in the EPHS², sets in place structures at every level for the implementation and governance of community health services. To achieve the broader objective of building the capacity of the community to contribute to the reduction of maternal, newborn and child morbidity and mortality, it is necessary to look at the environment in which the Community Health Services (CHS) policy is being implemented and which structures are needed for this successful implementation, including defining catchment areas of CHVs and establishing a database for community-based structures.

Currently the Community Health Services Division (CHSD) at the MOHSW is directly responsible for the community health program nationally. A national CHS policy is in place and as of 2013 there are 8,052 CHVs around the country working at the community level to increase access to health and social welfare services for communities more than an hour away (5 km walk) from a health facility. In addition, there are 2,396 Community Health Committees (CHC) and 2,022 Community Health Development Committees (CHDC) providing community supervision of CHVs and empowering community responsibility, ownership and participation in health and social welfare⁹. Although in need of strengthening, it is worth recognizing that these community health structures are in place; this must be recognized as a great achievement given that five years ago none of these structures were in place.

The 2012 capacity building assessment completed by the MOHSW and RBHS highlights some of the central level challenges¹⁰. It was found that the CHSD had revised its policy and strategy and is using a two-year operational plan. However, no formal targets had been set. The roll-out of community health modules have been slow and heavily dependent on partner support. CHSD identified the following challenges during the assessment: limited resources, limited experience of staff, no job security or advancement opportunities, small office space, issues of slow integration from vertical programs and an inadequate budget.

Community participation through the CHCs and the CHDCs, including community involvement at the catchment area health facility, is key to the success of EPHS and to creating an integrated community-based primary health care system. However, in the 2013 Community Mapping Report on community health program implementations across Liberia, it was found that only 54% of communities had established CHCs and only 48%

of communities had an established CHDC. Furthermore, few local leaders were involved in community health services, leading to less community awareness and support of the policy⁹.

This is worrisome as it is precisely these structures that select the CHVs for each community, and ensure community governance and ownership of the program. The 2011 CHS policy and strategy only briefly mentions the selection of CHVs, who are selected by a vote from their respective communities^{4,5}. While this is important, it is critical to establish a more rigorous recruitment process to ensure that CHVs are capable of performing their duties. Updating the selection process to include a test assessing their abilities and an evaluation by the CHSS within a probation period after the training will assure that CHVs have the knowledge and skills needed to provide a comprehensive package of community services.

Finally, there is a need to address the variance between population densities throughout the fifteen counties. In densely populated counties such as Nimba and Lofa there may be many CHVs operating in one area. However, in other counties such as Grand Gedeh where most towns are sparsely populated and often located at a great distance from one another, CHVs may find it harder to reach a catchment population of 250-500 people as dictated by the current policy, within a walking distance of one hour. To address this situation, and define appropriate catchment areas for each CHV, CHVs will be trained on how to conduct social mapping of their respective communities. The mapping will also serve to identify areas that need additional gCHVs. In addition, establishing a database for community-based structures will make tracking the location of CHVs easier, and will also yield important demographic information that can strengthen selection and supervision of these community structures.

Thus, to reach the broader objective of building the capacity of communities to contribute to the reduction of maternal, newborn and child morbidity and mortality and to address issues of public health and social welfare concern, both an enabling environment that addresses human resource weaknesses and the organization of the broader community health governance structure must be created, as well as improving the community governance structures that have already been adopted, but in many instances not implemented.

1.1 To create an enabling environment for implementation of the CHS policy, and to strengthen governance structures at all levels for effective delivery of community health and social welfare services

Baseline:

1. A National Community Health and Social Welfare Policy and Strategic Plan has been published, but not widely disseminated throughout all 15 counties
2. Governance structures at all levels have been put in place and mapping has been done to identify current CHCs (in 54% of communities, approximately 2,396), CHDCs (in 48% of communities, approximately 2,022), and CHVs, supporting partners, and additional training needs
3. Many local leaders have not been involved in community health activities
4. Most CHSW Boards are not functional

5. 8,052 CHVs have been identified and are working at the community level to increase access to health and social welfare services for communities living an hour or more away from a health facility
6. Community health program coordination throughout all levels, however, is weak
7. Many community health positions at all levels, specifically at the facility level (CHSS), have not been clearly defined or filled

Activities:

1. Disseminate all relevant Community Health documents, including the National Community Health and Social Welfare Policy and Community Health Road Map to all levels of the health system and community structures
2. Assess the current management capacity at central level (CHSD and NHPD) as well as at county/district/HF levels
3. Review existing job descriptions related to community health and define roles and responsibilities for staff at all levels, and community structures (including CHCs and CHDCs)
4. Build capacity on program management, including M&E and supportive supervision, for government health staff at all levels
5. Fill and support community health staff positions at all levels, including CHSS in all health facilities to the extent possible, starting with coverage at the district level
6. Strengthen coordination between the CHSD, NHPD and other programs at the MOHSW, through regular meetings and email updates
7. Review and update guidelines for the community health portion for the CHSW Boards
8. Conduct advocacy meetings with local leaders (political and non-political) on the ownership of community structures
9. Assist CHSWTs, DHOs, and care providers to undertake in collaboration with CHVs a comprehensive community diagnosis of health and nutrition status, as well as various socio-economic and environmental determinants of health
10. Assist CHSWTs to reactivate/establish community health structures (CHC/CHDC) where they do not exist
11. Train community health structures on roles and responsibilities and conduct a policy orientation
12. Revise policy for selecting CHVs (including Peer Supervisors) and train all community structures on the policy
13. Include all targets from the Community Health Road Map in each county's CHSWT annual plan

Indicators:

1. Proportion of counties with relevant Community Health documents
2. Proportion of community health-related staff at each level with updated and finalized job descriptions
3. Proportion of community health-related personnel at each level trained on program management, supportive supervision, and M&E skills
4. Proportion of community health-related planned positions filled, with special emphasis on functional CHSS
5. Percentage of quarterly meetings held, organized by CHSD
6. Percentage of CHSW Boards established in all 15 counties
7. Percentage of districts where required advocacy training meetings on Community Health conducted

8. Percentage of communities for which comprehensive community diagnosis has been undertaken
9. Percentage of community structures established at each level
10. Percentage of community structures holding regular meetings with documented action agendas
11. Updated CHV selection policy completed and disseminated

Targets:

1. 100% of counties with the relevant Community Health documents
2. 100% of personnel with updated and finalized job descriptions
3. 90% of relevant personnel at each level trained on program management, supportive supervision, and M&E skills
4. 90% of community health planned positions in the organization chart filled, including 90% of CHSS positions filled
5. 100% of quarterly meetings held
6. 100% of CHSW Boards in 100% of counties established and functional
7. 85% of districts receive required advocacy training meetings on Community Health
8. 80% of communities where comprehensive community diagnosis has been completed
9. 80% of communities have a functional CHC and CHDC, defined by each group fulfilling their established roles and responsibilities outlined in the national CHS policy
10. 85% of community health structures holding meetings and submitting documentation to their respective CHSWT
11. Updated CHV selection policy disseminated to 100% of CHCs and CHDCs

Timeline: See attached Gantt chart for specific indicator timelines

Who is Responsible: MOHSW (CHSD, NHPD) and CHSWTs

Who will be involved? NGO and International Partners, and Stakeholders

Source of Resources: GOL, UN Agencies, USAID, Other Donors, NGOs

1.2 To outline and implement an appropriate catchment area population for each CHV, Peer Supervisor, and CHSS

Baseline:

Current policy on catchment ratios

- 1 gCHV to 250-500 population
- 2 Trained Traditional Midwives (TTMs) to 250-500 population
- 1 Community-Directed Distributor (CDD) to 100 population
- 1 Household Health Promoter (HHP) to 10 houses
- 1 CHV Peer Supervisor to 5-10 CHVs
- 1 CHSS per health facility

Activities:

1. Broadly disseminate the updated definition of catchment area population for CHVs depending on density of population, as detailed below:

Recommended Catchment Ratio: A community should be defined by the ease of access for a CHV to reach each household within one hour's walk. The ratio of people within a community to each gCHV should depend on the density of the population, as long as the catchment is within one hour walk (5 km), **therefore may be less than 250 people per 1 gCHV**

As noted in the problem statement for General Objective 1, if a catchment based on the number of people is instituted, there are CHVs serving very remote populations that will not be able to cover that number of people without severe logistical challenges. Therefore, it is recommended that each CHV's catchment area (specifically those of the gCHV and the TTM) should be no more or less than the population they can reach within a one-hour walk. An organizational chart with the revised catchment area population flow is located in Appendix I.

2. Implement model of CHS based on updated catchment areas for CHVs and supportive supervision structures
3. Train CHVs on how to conduct community mapping of their communities to collect household population data
 - a. During the community mapping exercise, each CHV will also collect household population data in a ledger to inform where vulnerable populations such as children under five and pregnant women live, etc., serving as a population registry
 - b. The mapping will also serve to identify areas that need additional CHVs, and will also assist in redefining existing catchment areas

Indicators:

1. Percentage of CHVs and supportive supervision positions (CHSS and Peer Supervisors) established for appropriate-sized catchment area populations in line with the revised policy
2. Proportion of Peer Supervisors with the correct ratio of CHVs
3. Proportion of CHVs trained and equipped to do community mapping of their respective catchment area population

Targets:

1. 100% of CHVs with appropriate-sized catchment area populations in line with the revised policy
2. 90% of Peer Supervisors with correct ratio of CHVs
3. 100% of CHVs trained and equipped to do community mapping of their catchment areas

Timeline: See attached Gantt chart for specific indicator timelines

Who is Responsible: CHSD and Partners

Who will be involved? CHSD, NGO and International Partners, and Stakeholders

Source of Resources: GOL, UN Agencies, Donors, NGOs

1.3 To establish a community database that registers all CHVs and community-based structures

Baseline:

1. CHV assessment and mapping results available
2. CHV database not developed at the CHSD central level
3. CHSWT data not developed or validated
4. Limited capacity to manage the database

Activities:

1. CHV database structure to be developed at central level
2. Scale CHV database to county and district levels
3. Train relevant staff on management of database
4. Regularly track staff usage of the community database, and offer refresher trainings as needed
5. Maintain and update the community database each month

Indicators:

1. Community database completed
2. Community database installed at all levels
3. Percentage of staff trained on database management
4. Percentage of staff correctly using the community database
5. Community database fully updated on schedule each month

Targets:

1. Community database completed and deployable
2. Community database established at all required levels
3. 100% of relevant staff trained on the use and maintenance of the community database
4. 85% of staff correctly using the community database
5. Community database regularly updated each month with current information

Timeline: See attached Gantt chart for specific indicator timelines

Who is Responsible: MOHSW (CHS, HP, EHD, HR, CHSWT) and partners

Who will be involved? CHSD, NGO and International Partners, and Stakeholders

Source of Resources: GOL, UN Agencies, Donors, NGOs

STRATEGIC OBJECTIVE 2. TO ENSURE QUALITY SERVICE DELIVERY OF A STANDARDIZED PACKAGE OF COMMUNITY HEALTH AND SOCIAL WELFARE SERVICES

As of 2011 the Community Health Services Division at the MOHSW has revised the National Community Health Policy and strategy documents, and has introduced in general terms the standardized roles for various CHVs in delivering curative, preventive, promotive and social welfare services to their community^{4,5}. For example, the specific role of CHVs in delivering iCCM for diarrhea, malaria and ARI in their communities has

been further developed through the Ministry and piloted with in-country partners. Standardized modules for training CHVs in both iCCM and Essential Nutrition Actions (ENA) have been rolled out at a limited level in most counties. Many CHVs are not fully trained in all three diseases and poor supply chain and supportive supervision structures negatively affect the quality of health services that should be available in the community.

In terms of the package of health services provided, currently vertical programs at the MOHSW and partner NGOs have not standardized the provision of services into a single comprehensive package. Therefore there exist cadres of CHVs that provide more extensive care for a number of different diseases and conditions, and others that provide prevention and treatment services for one specific disease only. Thus, a standard package of services must be centrally defined, and coordinated nationally by the Community Health Services Department at the MOHSW, with priority being on maternal newborn and child health interventions. Implementation of the comprehensive package by CHVs will depend upon the geographical situation of their catchment communities, and the timeline for implementation throughout the country.

Key to quality care provided by CHVs is the supervisory role of the Community Health Services Supervisor (CHSS). Presently a very limited number of CHSSs are assigned to MOHSW health facilities, though the national policy states there should be one at each primary health care facility. The CHSS role is to monitor and supervise all community health related activities in the community, to mentor all CHVs within their catchment area, and to collect and report key health data collected by the CHVs. The CHSS plays a key role in the identification, training and mentoring of CHVs within their respective catchment areas, as well as of Peer Supervisors, who are CHVs that have been given additional supervisory tasks such as data collection from other CHVs to whom they have been assigned. The assignation of Peer Supervisors is a critical piece of the Community Health policy that has yet to be actualized and requires both financial and human capital to implement.

Currently, the policy states that CHSS positions will be held by certified midwives (CMs), licensed practical nurses (LPNs), physician assistants (PAs), registered nurses (RNs) or Environmental Health Technicians (EHTs); in practice, the few positions that have been filled are assigned to EHTs in addition to their other responsibilities. In many cases the EHTs are ill-equipped and not trained to effectively supervise CHVs in many of their tasks, such as iCCM and family health services. A more effective recruitment process that assesses the capacity, competency and commitment of each applicant is needed to properly fill the role of a CHSS at each health facility. When CHSS positions are not filled by qualified candidates at health facility level, CHV supervision is incomplete and CHVs are not supported. Officers-in-Charge (OICs), vaccinators and CMs have been identified but rarely have the time or resources to fulfill this duty in addition to their other clinical and/or administrative responsibilities which, according to the National Policy, is virtually 100% in the field with CHVs and not in health facilities. Currently CHSSs operate with limited guidance, without operational manuals, and without tools including forms, supplies and the necessary equipment such as motorbikes, to do regular field supervision. The importance of a competent and motivated supervisor that regularly supports each CHV, and mentors them in their lifesaving role, cannot be overstated in the delivery of quality community health services. This current gap must be addressed through the development and roll-out of required training, tools and supervision manuals.

Additionally, a major gap in the current policy is the lack of standardized incentives for CHVs. Implementation of incentives nationally has been uneven, and always on the initiative of vertical programs and NGOs. Currently the majority of NGOs and vertical programs are incentivizing the respective CHV cadres that they work with, with incentives varying from performance-based monetary incentives, to transportation reimbursements, to non-monetary incentives such as lappa (traditional West African fabric) and food stock.

It has been widely recognized that both performance-based financial and non-financial incentives are required to motivate CHVs to do their work both effectively and efficiently. As published in a 2010 World Health Organization Bulletin on *Examining health-care volunteerism in a food- and financially-insecure world*, it was noted, “Essential health services cannot be provided by people working on a voluntary basis if they are to be sustainable. While volunteers can make a valuable contribution on a short-term or part-time basis, trained health workers...should receive adequate wages and/or other appropriate and commensurate incentives¹¹.” Designing and implementing a nationwide monetary incentive program, both performance-based and not, and standardizing the use of non-monetary incentives, is absolutely necessary for the continued motivation and performance of the CHV cadres.

Finally, a clear set of performance expectations and indicators must be standardized for each cadre of CHVs. Strong supportive supervision, mentorship, community and professional support, respect and recognition for their work through certificates or in community forums, are all examples of non-monetary incentives. Opportunities for career advancement should also be considered as critical for CHV motivation. At the same time, performance-based incentives will motivate CHVs to offer quality services and improve health indicators in their respective communities, and improve CHV retention throughout the country.

The following priorities under the overarching strategic objective of improving quality service delivery address each of these major gaps and issues, and sets forth activities and policy outcomes to strengthen the performance of CHVs throughout Liberia as a whole.

2.1 To provide a standardized national package of health and social welfare services delivered at the community level

The trained and supported CHVs can provide a comprehensive package of preventive, promotive, curative and social welfare services at the household level. Within the time frame of this Road Map, emphasis will be on maternal newborn and child health packages with inroads made into other areas such as prevention of non-communicable diseases (NCDs), HIV and Tuberculosis. The following is the list of recommended services that CHVs could be trained to provide at the community level, incorporating current services, as well as additional modules that should be developed and implemented throughout the national program, and will be implemented depending on the geographical situation of the catchment communities and timeline of implementation.

1. Disease prevention, surveillance, control and referral to reduce morbidity, disability and mortality

- Information, Education and Communication (IEC) and Behavior Change and Communication (BCC) for community health promotion and disease prevention
- Communicable disease detection, control and referral: HIV/AIDS, STI, TB, leprosy, diarrheal diseases, malaria, pneumonia, diseases of epidemic potentials
- Non-communicable disease prevention: health promotion on NCDs, NTDs
- Disease surveillance: AFP, Yellow Fever, Lassa Fever, cholera and AWD, rabies
- Deworming and similar mass drug distribution campaigns
- Emergency preparedness/first aid
- Community level detection of eye disease and referral
- Community death recording

2. Family health services to expand FP, maternal, newborn, child and adolescent health services

- Maternal and Child Health
 - FP promotion, counseling, distribution and dispensing of family planning commodities (pills, injectables, condoms)
 - Increasing Immunization coverage through awareness on Expanded Program on Immunization (EPI) activities and drop out tracing
 - Support and mobilize community for vitamin A administration campaigns for children 6 months and above; under-5 semiannual vitamin A administration and de-worming
 - Newborn and maternal birth and death recording
- Antenatal
 - Distribution of deworming tabs, misoprostol
 - CHV distribution of Insecticide-Treated Nets (ITNs)
 - Birth planning
- Postnatal
 - Monitoring of routine preventive misoprostol immediately post-partum
 - Family planning
 - Vitamin A administration
 - Immediate and subsequent post-partum home visits
- Neonatal
 - Promotion of essential care of the newborn and essential nutrition actions (exclusive breastfeeding)
 - Cord care, including chlorhexidine application
 - Support for Kangaroo Mother Care (KMC) application
 - Education on neonatal danger signs
- Adolescent reproductive health
 - Adolescent friendly family planning awareness, counseling and commodities distribution (same commodities as above)
- Essential Nutrition Actions (ENA)
 - Mid-upper arm circumference (MUAC) screening and growth monitoring, education and addressing nutritional deficiencies
 - Promotion of the seven ENA that include: optimal nutrition for women, exclusive breastfeeding up to 6 months for infants, optimal

complementary feeding starting at 6 months with continued breastfeeding to 2 years of age and beyond, nutritional care for the sick and malnourished

- Community-based bi-directional referrals, particularly for newborns, as well as maternal and child danger signs, severe malnutrition, severe dehydration, malaria, acute respiratory infections (ARIs), and other emergency cases.

3. Integrated Community Case Management (iCCM) for malaria, ARI and diarrhea with bi-directional referral system

- Diarrhea: ORS and zinc
- Pneumonia: cotrimoxazole; pediatric paracetamol
- Malaria: malaria confirmed case management with ACT for children under-5 and pre-referral rectal artemether for severe cases¹²; pediatric paracetamol

4. Health and hygiene promotion, and environmental sanitation

- Health promotion: creating awareness, demonstrating desired behaviors, awareness on personal hygiene, including hand washing and oral hygiene
- IEC community campaigns for:
 - Water, hygiene and sanitation (WASH), including:
 - Waste management, Community-Led Total Sanitation (CLTS), excreta/solid waste disposal
 - Water supply and safety, including protection of wells
 - Food safety
 - Vector control and occupational health and safety
 - Healthy home environment and environmental sanitation
- Support school health training and club actions

5. Detect, refer, and follow up for community social welfare issues including sexual and gender-based violence (SGBV); abused/vulnerable children and youth; mental health and disability issues

- Identification and referral of mentally ill persons, and follow up
- Identification and referral of SGBV cases, and follow up
- Identification and referral of patients with epilepsy, and follow up
- Reporting abuse of children, women, elderly and disabled
- Conduct sensitization campaigns to create awareness on homelessness, abandonment, neglect, discrimination and abuse of vulnerable people
- Conduct sensitization campaigns on preventing and reporting SGBV
- Identify and refer substance abusers to health facilities for care
- Advocacy and care of persons with disabilities
- Identification and referral to social workers of patients with stigmatized illnesses for counseling and psychosocial support

Activities:

1. Harmonize the roles, responsibilities and services to be provided under each of the above areas of service between all counties through the development of standard guidelines
2. Define service delivery and outcome indicators and targets for the services to be provided, to be integrated into the national HMIS from the community level

3. Print and distribute national curriculums, guidelines and tools to CHSWTs, DHTs and health facilities
4. Incorporate services package into county-specific and community-based health plans
5. CHSWTs ensure the selection of Community Health Structures and volunteers meet the standardized guidelines outlined in the CHSD National Policy and strategy (Numbers are based on Community Health mapping tools and standard guidelines)
6. Percentage of CHVs delivering various services of the standardized package of community health services, monitored by the outcome indicators above (e.g. number of referrals, % of defaulters traced for Penta 3 or ANC 4 or IPT2)
7. Review and update all materials

Indicators:

1. Percentage of standardized community health and social welfare services for which roles and responsibilities of Community Health affiliated personnel and CHVs developed
2. Percentage of CHSWTs, DHTs and health facilities that have received national Community Health curriculum, guidelines, and tools
3. Percentage of counties that incorporate the national Community Health standardized package of health service delivery into their county health plans
4. Percentage of CHVs and community structures established based on national guidelines
5. Percentage of CHVs delivering standard package of community health services as per their roles and responsibilities

Targets:

1. 100% of standardized community health and social welfare services roles and responsibilities of Community Health affiliated personnel and CHVs developed
2. 100% of national Community Health curriculum, guidelines, and tools distributed to CHT, DHT and health facilities
3. 100% of counties that have incorporated the standardized package into their county health plans
4. 90% of CHVs and community structures established based on national guidelines. (Includes numbers and selection criteria)
5. 90% of CHVs delivering standard package of community health services per their roles and responsibilities

Timeline: See attached Gantt chart for specific indicator timelines

Who is Responsible: CHSD and Partners

Who will be involved? CHSD, NGO and International Partners, and Stakeholders

Source of Resources: GOL, UN Agencies, Donors, NGOs

2.2 To standardize an incentive package for CHVs, including monetary and non-monetary incentives

Baseline:

1. No guideline on standardized monetary incentives for CHVs
2. No standardized structure for performance-based incentives at community level
3. There is a non-monetary incentive policy in place, however it is not consistently followed nationally by either partners or vertical programs within the MOHSW

Activities:

1. Standardize a non-monetary package of incentives

- 1.1. Engage stakeholders to develop standardized non-monetary package of incentives (i.e. MOHSW, Health Facility staff, CHSS, Community leaders, CHVs)
- 1.2. Disseminate standard guidelines for non-monetary incentives to all stakeholders
- 1.3. Develop performance criteria for awarding non-monetary incentives, as applicable

Examples of non-monetary incentives:

- a. **Community Entry**
 - i. Trained CHV is introduced to the community by the MOHSW with clear guidelines to services
 - ii. CHV is recognized for their role in the community by uniform and denotation of their household (with either a signboard or a special CHV flag)
- b. **Community Support**
 - i. Community members work on CHV farm
 - ii. Community Caregivers offer in-kind incentives
 - iii. Enhanced status in the community: Community recognizes CHV as part of the leadership team in the community
- c. **Supportive Supervision**
 - i. Regular supportive supervision by CHSS
 - ii. Regular restock of essential supplies for service (including the list below)
- d. **Recognition of CHVs**
 - i. Regular recognition/praise based on performance criteria, given by the CHSS and Peer Supervisor
 - ii. Certificates for completion of trainings, and for exemplary service based on set criteria, presented in public community forums
 - iii. Radio announcements and recorded messages of appreciation naming exemplary CHVs and recognizing their service
 - iv. Visit by CHSWT representative and other dignitaries
- e. **Personal Growth and Development Opportunities**
 - i. Job advancement opportunities (e.g. Clinic Registrar)
 - ii. Advanced training opportunities (e.g. Peer Supervisor)
 - iii. Participation in EPI, ITN distribution campaigns
 - iv. Refresher training
 - v. Scholarships for further study
- f. **Peer Support and CHV Networks**
 - i. Link to livelihood and micro- finance programs

- g. **Provision of Equipment**
 - i. Vest
 - ii. T-shirt
 - iii. Rain gear
 - iv. ID cards
 - v. Backpack
 - vi. Signboards/flag at CHV houses
 - vii. Bicycles (for Peer Supervisors)
- 2. **Standardize a monetary package of incentives (not performance-based)**
 - 2.1. Study current practices of monetary incentives by NGOs
 - 2.2. Engage stakeholders to develop standardized monetary package of incentives (i.e. MOHSW, Health Facility staff, CHSS, Community leaders, CHVs)
 - 2.3. Disseminate standard guidelines for monetary incentives to all stakeholders
- Examples**
 - a. **Reimbursements** for travel, meals, training and eventually other items, such as housing
 - b. **Standardized payment mechanisms of salaries** to CHVs
 - viii. Pay only peer supervisors
 - ix. Pay other CHVs
 - x. Sales of medicines and other commodities
- 3. **Standardize performance-based monetary incentives**
 - 3.1. Engage PBF Technical Assistant or similar position to assist with the analysis and design of a performance-based monetary incentive plan for the nationwide CHV program
 - 3.2. Information sharing and advocacy with key stakeholders
 - 3.3. Determine the institutional and operational arrangements for the community performance-based monetary incentives plan
 - 3.4. Determine the package to be implemented through community performance-based monetary incentive plan, and convene experts to select priority health indicators
 - 3.5. Identify the human resources, logistics, training needs, and cost attached to operationalize the community performance-based monetary incentives scheme
 - 3.6. Develop initial action plan for community performance-based monetary incentives roll out
 - 3.7. Develop tools for standardized implementation of community performance-based monetary incentives, including a training curriculum with objectives, modules and themes, session plans, reference materials
 - 3.8. Conduct training of trainers and implementers in selected counties
 - 3.9. Pilot the community performance-based monetary incentives plan in selected counties
 - 3.10. Conduct an analysis and dissemination of the lessons learnt from the pilot, and adjust tools as needed to scale up the community performance-based monetary incentives scheme to all CHVs working in all 15 counties

Indicators:

- 1. Develop a standardized packages of incentives for:
 - a. Well defined standardized processes and procedures developed for non-monetary incentives
 - b. Well-defined standardized package of re-imbursments indicating who pays it and who receives it

- c. Well-defined standardized package of salaries indicating who pays it and who receives it
 - d. Well defined standardized package of performance-based monetary incentives
2. Proportion of CHVs that receive those standardized packages of incentives

Targets:

- 1. Improvement of selected community health indicators by 50%
- 2. 90% of CHVs receiving a standardized package of incentives

Timeline: See attached Gantt chart for specific indicator timelines

Who is Responsible: MOHSW (CHSD and Performance-Based Financing (PBF) Units), vertical programs including NMCP, NLTCP, Family Health, Nutrition, etc.

Who will be involved? NGO and International Partners and Stakeholders

Source of Resources: GOL, Development Partners, International Organizations

2.3 To improve the quality of supportive supervision structures for CHVs

Supervision and effective supervision tools are essential for the successful implementation and quality of community-based health care services. Effective supervision is needed at all levels: national, county, district, health facility and community. Especially at the facility and community levels, CHVs must be supported and mentored by a qualified supervisor who has regular contact with the CHV – and the supervisor must in turn be supported by the community health structures at all levels. The person fulfilling the role of the CHSS must hold no other appointment at the health facility, and will serve as the CHSS for 100% of their time. This will contribute to the overall goal to strengthen formative and supportive supervision, maintaining the integrity and quality of community health services. Information on what is required at each level of the health system (national, county, district, facility, and community levels) is included in Appendix II. An additional chart depicting the timing of supervisory visits at the community level is included in Appendix III.

Baseline:

- 1. Limited number of CHSS positions filled at health facilities
- 2. No operational manuals, guidelines or tools for supportive supervision exist
- 3. CHSS positions are often filled by unqualified staff, or EHTs, that are assigned CHSS duties in addition to their everyday responsibilities
- 4. EHTs as CHSS are unequipped to provide supportive supervision for the comprehensive package of services that a CHV should provide, without training and support from the health system and other staff at the health facility
- 5. Peer Supervisors have not been identified and therefore are not in place

Activities:

- 1. Develop and disseminate final terms of reference for all levels of supervisors at the national, county, district and health facility levels

2. Outline guidelines for Peer Supervisor and CHSS supervision visits, with required forms to collect data, visit households, and audit quality of CHV care
3. Create appropriate tools that will equip them to supervise the standardized package of health and social welfare services, as defined under Objective 2.1
4. Develop operational manuals to accompany the tools for both Peer Supervisors and CHSS
5. Field test the revised supervision materials in several counties to verify efficacy and viability of the tools
6. Once tools have been piloted, finalize the tools based on feedback, and present to internal MOHSW stakeholders and the Community Health Technical Working Group (CHTWG) for approval
7. Conduct Central level TOT for representatives from each CHSWT with updated and finalized supervision tools and operational manuals
8. Nationally monitor roll-out of training at the county level
9. Create a central database to register each CHSS at each facility, and ensure that the positions are occupied by qualified (in line with the policy) personnel
10. Review and update all materials

Indicators:

1. Terms of reference for all levels of supervisors at the national, county, district and health facility level completed
2. Percentage of Peer Supervisors and CHSS trained on supervision tools
3. Percentage of health facilities implementing the required supervision structure
4. Percentage of MOHSW facilities that have an equipped and active CHSS supporting the standardized package of health and social welfare services defined under Objective 2.1
5. Percentage of MOHSW facilities that have equipped and active Peer Supervisors supporting the standardized package of health and social welfare services defined under Objective 2.1

Targets:

1. 100% of terms of reference for all levels of supervisors at the national, county, district and health facility levels completed and disseminated
2. 90% of Peer Supervisors and CHSS are trained on all supervision tools and are using tools for conducting supervision
3. Minimum of 1 health professional per primary care facility serving as a qualified, trained and active CHSS, training and supervising CHVs
4. 90% of CHVs receive supportive supervision and feedback monthly from trained CHSS using improved tools
5. 90% of CHVs receive supportive supervision and feedback monthly from trained Peer Supervisors using improved tools

Timeline: See attached Gantt chart for specific indicator timelines

Who is Responsible: CHSD, CHT, DHT, CHSS, Peer Supervisors, Partners

Who will be involved? CHSD, NGO and International Partners, CHDC, CHC, CBOs and other stakeholders

Source of Resources: GOL, UN Agencies, Donors, NGOs and other partners

2.4 To integrate community health services into the overall EPHS Accreditation Survey

In 2008, the MOHSW developed accreditation standards for all public health care facilities in an effort to improve the quality and accessibility of services throughout Liberia. In 2011 the MOHSW Quality Assurance standards were integrated with the accreditation process that has been key to the improved implementation of EPHS especially at facilities that are now annually ranked and accredited. What is now required is to integrate the annual measurement of the performance of all community health services at the community level into the quality assurance and accreditation process, to improve provision of equitable access to essential health care services not just at the health facility but at the community level. A small sample (i.e. two per facility) of randomly selected communities will be visited each year by the accreditation team.

The integration of community level health services delivery performance indicators for all levels of Community Health workers (CHSS, CHCs, Peer Supervisors, gCHVs, TTMs, HHPs), standardized into the annual accreditation process, is key to improving EPHS community services. It will help all communities, facilities, CHSWTs, partners and the MOHSW identify gaps and improve the provision of health and social welfare services at all levels.

Integrating the accreditation process at the community level is also an important component of the effective provision of CHS performance bonuses. A set of targeted indicators will be set to guide the process.

Baseline:

1. Accreditation for community health activities has not been established
2. There are no accreditation tools available for community level accreditation. However, there are CHS supervision tools that will be built upon to establish the community health activity accreditation

Activities:

1. Create an appropriate community level accreditation quality assurance tool using existing supervision indicators and the facility accreditation tool to guide the process indicators to be based on realistic concrete targets for community activities and will measure performance of all levels of community health staff and volunteers as well as ITN use, WASH and other key CH indicators
2. Submit community level accreditation tools for review by the CHTWG
3. Develop operational manuals to accompany the tools
4. Pilot the revised supervision materials in several counties to verify efficacy and viability of the tools
5. Conduct central level TOT on the tools
6. Print tools and distribute to each CHSWT for each health facility
7. Review and update all materials

Indicators:

1. Community level accreditation tools completed
2. Operational manual for community level accreditation tools completed
3. Pilot completed in three counties
4. Training completed
5. Revised community level accreditation tools completed

6. Percentage of health facilities for which a successful community accreditation was completed
7. Percentage of communities meeting minimum accreditation targets to be defined in the accreditation process

Targets:

1. 100% of community level accreditation tools completed
2. Operational manual for community level accreditation tools completed
3. Results received from all three counties where pilot takes place
4. Central level TOT completed with Master Trainers from all counties
5. 100% of districts have received community level accreditation tools
6. 90% of health facilities with a successful community accreditation completed
7. 75% of communities meet the minimum standard (one star) for community-based accreditation

Timeline: See attached Gantt chart for specific indicator timelines

Who is Responsible: CHSD, Partners

Who will be involved? CHSD, NGO and International Partners, CHDCs and CHCs, CHSSs and other stakeholders

Source of Resources: GOL, UN Agencies, Donors, NGOs and other partners

STRATEGIC OBJECTIVE 3. TO STRENGTHEN SUPPORT SYSTEMS FOR IMPLEMENTATION OF COMMUNITY HEALTH AND SOCIAL WELFARE

The 2011 integrated Community Case Management (iCCM) assessment report demonstrated the delivery of community-based health interventions is not possible without the establishment of support systems at community level¹³. This is consistent with the WHO building block (BB) framework on which the MOHSW's National Health Policy and Plan (2011-2021) is based. For the delivery of quality health services at community level (BB1), systems for human resource management (BB2), systems for information (BB3), for supply chain management (BB4), for financial management (BB5), and for governance and leadership (BB6) are required¹⁴.

Referral systems, especially for maternal and newborn health and iCCM, have already been successfully developed in Liberia. Establishing a referral system that is bi-directional and recognized by health centers as well as CHVs is critical to provide the most comprehensive care to communities and to establish the validity of the CHV system. Further training and integration into HMIS are thus needed to strengthen the already existing referral system.

While a referral system exists, a community-level commodity system does not. Often CHVs receive supplies on a random basis or as a result of working through NGO partners. A standard operating procedure for supply chain management on the community level will fill this gap to ensure CHVs have the supplies they need and to reduce harmful stock outs. If CHVs are well supplied then they can provide a comprehensive package of curative, preventive, promotive and social welfare services at the community level.

Further, while CHVs do collect community data on an ad hoc basis, this is not standardized or followed up on. A national Community Health Management Information System (C-HMIS) that collects data from the community level and is collated with health data from other levels of the health system, will allow for a comprehensive national community disease prevalence and surveillance dataset, as well as a way to track neonatal and maternal deaths in the community.

In this Community Health Road Map, plans for the establishment of solid support systems to community health service delivery are proposed under these four sub-objectives: a bi-directional referral systems, commodity logistics systems, community-based information systems, and community-based surveillance systems.

3.1. To strengthen and scale up bi-directional referral systems

Baseline:

1. Referral protocols and job aids have been developed for Maternal and Newborn Health for all levels including the community level
2. Referral guidelines have been created for iCCM
3. No tracking mechanism in place for referral cases identified under iCCM

Activities:

1. Train CHVs and their supervisors on referral protocols as part of Home-Based Maternal Newborn Care (HBMNC) and other trainings such as iCCM
2. Orientate hospital, health center, clinic staff, and community in counter referrals
3. Integrate reporting on referrals and counter referrals in the C-HMIS
4. Examine the possibility of setting up VPN cell phone referral networks at community level (with MOHSW, with cell phone companies, with NGO partners)
5. Develop protocols for a functional ambulance system utilizing vehicles and motorbikes for community evacuations coordinated at county level
6. Develop innovative mechanisms for community to facility referrals, including the following examples:
 - a. Conduct advocacy meetings for community stakeholders to involve local drivers and motorcyclists unions (commercial) into the referral process, and to participate in building maternal waiting homes
 - b. Conduct advocacy meetings for community stakeholders to establish community savings clubs
 - c. Conduct advocacy meetings for community stakeholders to ensure the establishment of “Hammock Groups” and other appropriate interventions

Indicators:

1. Percentage of CHVs trained in referral protocols
2. Percentage of health professionals trained in referral protocols
3. Percentage of CHVs reporting referred cases as well as counter referrals
4. Protocols for a functional ambulance system developed

Targets:

1. 80% of CHVs trained in referral protocols
2. 80% of health professionals trained in referral and counter referral protocols

3. 80% of CHVs reporting referred cases as well as receiving counter referrals
4. Protocols for a functional ambulance system developed and disseminated to 100% of CHSWTs

Timeline: See attached Gantt chart for specific indicator timelines

Who is Responsible: CHSD/MOHSW and CHSWTs

Who else will be involved? RBHS, CHAI, NGO and International Partners and Stakeholders

Source of Resources: GOL, RBHS, USAID, additional external donors

3.2. To integrate community level commodity logistics into the existing supply chain management system

Baseline:

1. Currently there is no structured commodity logistics system for community health commodities
2. Commodities are distributed to CHVs on an ad hoc basis

Activities:

1. Assessment of community logistic supply chain system
2. Define a standard list of community commodities
3. Develop a community-based Logistics Management Information System (LMIS) for the community supply chain system within the central LMIS
4. Develop standard operating procedures (SOP) for community supply system
 - a. Commodity quantification and forecasting
 - b. Inventory control procedures
 - c. Warehousing and storage
 - d. Transport and distribution
 - e. Organizational support
5. Train staff in SOP for community supply system
 - a. CHSWT staff
 - b. Health facility staff
 - c. CHVs
6. Review and update all materials

Indicators:

1. Standard list of community commodities defined and disseminated to all health facilities
2. Percentage of facility staff (OIC and CHSS) trained in SOP for community supply system
3. Percentage of CHVs trained in SOP for community supply system
4. Percentage of CHVs with zero stock outs for community commodities

Targets:

1. 100% of health facilities receive standard list of community commodities
2. 80% of health facility staff trained in SOP for community supply system
3. 80% of CHVs trained in SOP for community supply system
4. 75% of trained CHV reporting no stock out of community commodities

Timeline: See attached Gantt chart for specific indicator timelines

Who is Responsible: SCMU/MOHSW and CHSWTs

Who else will be involved? RBHS, CHAI, NGO and International Partners and Stakeholders

Source of Resources: GOL, RBHS/USAID

3.3. To operationalize a community-based information system

Baseline:

1. Currently there is no standardized health information system for community health activities in place
2. Initial reporting and recording tools were developed, but have not been implemented, disseminated and utilized
3. CHV ledgers have been developed and printed, but are not uniformly distributed to each CHSWT and health facility
4. Information is collected by a limited number of CHVs and limited reporting is ongoing mostly through NGO partners

Activities:

1. Finalize the design of the C-HMIS
 - a. Review existing C-HMIS recording and reporting tools including supervisory tools
 - b. Finalize C-HMIS module in DHIS2 software
 - c. Develop C-HMIS operational manual
 - d. Develop cost estimate of C-HMIS implementation
2. Develop C-HMIS training materials
 - a. Develop training curriculum for various levels (from central to CHV levels)
 - b. Develop county work plans on implementation of C-HMIS
 - c. Conduct advocacy and orientation meetings on C-HMIS for MOHSW, CHSWTs, Districts, and CHDCs
3. Implement and scale-up C-HMIS nationwide
 - a. Organize national TOT for C-HMIS
 - b. Organize county level TOT (DHOs, OICs, CHSS)
 - c. Train county M&E officers and data managers in C-HMIS module of DHIS2
 - d. Train gCHVs and TTMs at facility level in C-HMIS recording
 - e. Train Peer Supervisors in C-HMIS recording and reporting
 - f. gCHVs conduct community survey (with CHDCs) and physical mapping of catchment areas (per Objective 1.3)
 - g. Supervise the scaling up process
 - h. Organize monthly C-HMIS data review meeting at county and CHDC levels
 - i. Produce annual report of the community health program
4. Monitor and Evaluate C-HMIS implementation
 - a. Organize meetings of C-HMIS working group
 - b. Report progress regularly to CHTWG

5. Review and update gCHV and TTM ledgers, and refine C-HMIS based on the new ledgers
6. Review and update all materials

Indicators:

1. Production of final recording and reporting tools and operations manual
2. Percentage of health facilities that received recording and reporting tools, and operations manual
3. Percentage of CHVs trained in C-HMIS
4. Percentage of gCHVs and TTMs timely and accurately reporting C-HMIS data
5. New gCHV and TTM ledgers produced and disseminated to all 15 counties

Targets:

1. Recording and reporting tools and operations manual finalized
2. 100% of health facilities received recording and reporting tools, and operations manual
3. 80% of CHVs trained in community HMIS
4. 80% of gCHVs and TTMs timely and accurately reporting complete C-HMIS data
5. 100% of counties receive updated gCHV and TTM ledgers

Timeline: See attached Gantt chart for specific indicator timelines

Who is Responsible: HMIS and M&E Units/MOHSW and CHSWTs

Who else will be involved? RBHS, EQUIP, NGO and International Partners and Stakeholders

Source of Resources: GOL, RBHS/USAID

3.4. To activate community-based surveillance systems

Baseline:

1. Currently there is no structured system for community-based disease surveillance
2. Maternal and neonatal deaths are not often captured in community-based reporting
3. A standardized community-based reporting system exists, but is not functioning effectively or utilized consistently

Activities:

1. Assess current situation in community-based surveillance system
2. Define what morbidity and mortality events should be reported by the community level
3. Update reporting forms to include the standardized morbidity and mortality events, and a standardized community-based death audit form
4. Deploy training on conducting community-based maternal and newborn death audits with the C-HMIS training
5. Integrate trainings on conducting community-based maternal and newborn death audits into the overall training package for CHVs
6. Review and update all materials

Indicators:

1. Percentage of maternal and neonatal deaths reported in C-HMIS in proportion to expected deaths, per county
2. Number of cases of selected epidemic diseases or incidences of public health concern reported (according to standardized list defined under Objective 2.1)
3. Percentage of maternal and neonatal deaths reported and accompanied by completed community death audit forms

Targets:

1. Data received from each county each month, reporting cases of selected epidemic diseases or incidence of public health concern
2. 80% of expected maternal and neonatal deaths are reported
3. 60% of reported maternal and neonatal deaths reported are accompanied by completed community-based death audit forms

Timeline: See attached Gantt chart for specific indicator timelines

Who is Responsible: Disease Surveillance, HMIS, and M&E Units/MOHSW and CHSWTs

Who else will be involved? RBHS, Equip, NGO and International Partners and Stakeholders

Source of Resources: GOL, RBHS/USAID

STRATEGIC OBJECTIVE 4. TO STRENGTHEN PRE-SERVICE AND IN-SERVICE TRAINING FOR HEALTH WORKERS (PROFESSIONAL AND CHVs)

In Liberia, as in many resource-poor countries, a shortage of trained human resources has limited efforts in addressing the health needs of the population, especially at the community level. In response to the prevailing shortage, there have been various governmental and partner initiatives, primarily through providing in-service trainings, as well as strengthening pre-service education.

Leveraging talent at the community level for the national cadre of trained and equipped Community Health Volunteers is critical to address the lack of accessible health care for the large number of districts and communities throughout Liberia that are located more than 5km from the nearest health facility. These men and women serving as CHVs can provide a basic package of curative, preventive, promotive and social welfare services at the household level in their own communities, provided first and foremost that they are adequately trained, and also properly equipped and supported.

Currently however, the trainings provided to gCHVs have been inconsistently offered and conducted. The recent CHV mapping report illustrated that only 89% of gCHVs were given a basic orientation on their responsibilities as a gCHV. In terms of technical trainings, specifically for iCCM 65% of all gCHVs received malaria case management training, 58% received diarrhea case management training, and only 30% received training on ARI case management. The lack of training means that not only are the gCHVs not receiving the most basic training that they need, but that in practice many gCHVs are not performing their tasks effectively, including case management at the community level, given that they have not been adequately trained⁹.

Training provided to CHVs to deliver various services has been limited. Nationally, strengthening training in terms of appropriate updated content and process is imperative in order to fully empower CHVs to provide much-needed health care services at the community level, thereby extending access to primary health care to those communities that currently do not have it.

To support CHVs in their work at the community level, supervision structures must be put in place, as described in detail under Strategic Objective 2, and the sensitization of other health professionals must be emphasized. As one of the central elements of a CHV's work is to refer serious cases to the health facilities, health professionals staffing each referral facility must be aware of the services being provided at the community level by the CHVs, their role in supporting the CHVs, in addition to their role in the bi-directional referral system described in more detail under Strategic Objective 3.

4.1. To harmonize existing and new CHV curricula into a standardized national package

Baseline:

1. Various modules for community-based services have been developed, but there is no comprehensive standardized pre-service training curriculum for all aspects of community-based service delivery for CHVs
2. Currently in-service training for CHVs is being done on an ad hoc and uncoordinated manner by the Government and partners, with no standardized curriculum or materials

Activities:

1. Community Health Services Division will collect all existing training modules and materials from MOHSW and NGO partners
2. Review these modules and materials and identify gaps, strengths and weaknesses in both content and process
3. Conduct a task analysis based on standards from the Community Health Services package to inform the development of a comprehensive national curriculum
4. Develop additional modules and materials needed by community level providers, according to the results of the task analysis, such as gender-based violence, mental health, HIV/AIDS as needed, in order to standardize all curricula in line with the required package of services defined in Objective 2.1
5. Print and disseminate national curricula to CHTs, DHTs, health facilities and partners
6. Conduct TOT/refresher TOT for master trainers, DHTs, and facility level staff (specifically the CHSS) as appropriate
7. Conduct in-service training for CHVs using the newly developed and standardized curricula, to be done by a qualified, trained and active CHSS at the health facility level
8. Conduct refresher trainings for CHVs on the comprehensive package of health services at least once a year, and on an as needed basis
9. Mentor and monitor trainers in training and supervising CHVs
10. Document in-service training activities and track trainings
11. Review and update all materials

Indicators:

1. Percentage of counties using the standardized curriculum for training CHVs
2. Percentage of CHV trainings conducted by a CHSS using the standardized curriculum, broken out by module and county
3. Percentage of CHVs trained in provision of community health promotion, BCC and service delivery of the standardized package of service
4. Percentage of CHVs trained with the standardized curriculum

Targets:

1. 100% of counties using the standardized curriculum for training CHVs
2. 100% of CHV pre-service training conducted by CHSS using revised curricula
3. 90% of all CHVs trained in provision of community health promotion, BCC and service delivery of the standardized package of service
4. 90% of CHVs trained using the standardized curriculum, broken down by module and county

Timeline: See attached Gantt chart for specific indicator timelines

Who is Responsible: MOHSW, MOE, Health Regulatory Boards

Who will be involved? Training Institutions, UN Agencies, Donors, Other Line Ministries, NGO and International Partners and Stakeholders

Source of Resources: GOL, UN Agencies, Donors, NGO Partners and Stakeholders

4.2 To improve the coordination of the national CHV training program

Baseline:

1. No formalized coordination mechanism or internal communication strategy for provision of training for CHVs
2. 5 master trainers per county were trained to be master trainers
3. Currently in-service training for CHVs is being done on an ad hoc and uncoordinated manner by the Government and partners, with no standardized curriculum or materials

Activities:

1. CHSD to conduct meeting to finalize the terms of reference (TOR) for the CHTWG to include coordination as its primary function
2. Conduct workshop to standardize timeframes and the process of rolling out each training module
3. Conduct working meetings with all vertical programs and NGOs to formalize a mechanism for coordinating all training for CHVs through the CHSD
4. CHSD supervises each training of trainers at the national level
5. CHSD and CHSWTs must track all trainings and ensure that CHVs receive all required training by a qualified, trained and active CHSS
6. Print and distribute national curriculum to CHSWT, DHT and health facilities
7. Conduct refresher TOT for master trainers where needed
8. Conduct in-service training using the newly developed and standardized curriculum
9. Mentor and monitor trainers in training and supervising CHVs

10. CHSD to document in-service training activities and track number of trainings nationwide
11. CHSD to hold quarterly feedback meetings with vertical programs, CHTWG, and implementing partners on progress on CHV training

Indicators:

1. Revised TOR for CHTWG available, and updated as needed
2. CHV training coordination mechanisms established and functional
3. Percentage of counties implementing the standardized training roll out process in collaboration with the CHSD
4. Percentage of NGOs and partners submitting quarterly training activity reports
5. Percentage of quarterly feedback meetings led by the CHSD

Targets:

1. Revised TOR for CHTWG, including coordination as its primary function, available and disseminated to vertical programs and implementing partners at the MOHSW level
2. 90% of counties implementing the standardized training roll out process
3. 100% of CHVs trained in the necessary package of services by a qualified, trained and active CHSS
4. 75% of NGOs and partners submitting quarterly training activity reports
5. Feedback meeting conducted 4 times a year with documentation from the meeting

Timeline: See attached Gantt chart for specific indicator timelines

Who is Responsible: MOHSW (CHSD and CHSWT)

Who will be involved? NGO and International Partners and Stakeholders

Source of Resources: GOL, Donors, NGOs, UN Agencies

4.3 To strengthen the community health services training program for professional health workers, with a specific focus on in service training

Baseline:

1. There is a newly revised, harmonized and developed pre-service education curricula for EHTs, PA, Nurses and CMs that includes two updated courses on community health and working at the community level, including how to train and supervise community-based providers
2. No formalized in-service training programs for professional health workers in community health
3. 5 persons per county were trained to be master trainers

Activities:

1. Conduct needs assessment among health care professionals for training in community health
2. Develop a standardized Working With Community Course with accompanying training methodology for in-service training of all health professional working with training and supervising community-based providers

3. CHSD to conduct TOT for master trainers from each county on the curriculum and training methodology on the Working with Community Course, so they may train health professionals at institutions and at the facilities
4. CHSD to support county level trainers in training health professionals, including the OIC and the CHSS and other relevant staff at the facility level, to train and supervise CHVs
5. Train master trainers to support the trained health professionals to conduct training for CHVs according to the revised and standardized curriculum
6. Conduct curriculum review meetings to review curricula of community health courses for EHTs, PAs, nurses and professional midwives to identify gaps, and update appropriately

Indicators:

1. Percentage of facility-based health professionals trained in the methodology of working with community-based health providers and structures
2. Percentage of pre-service training institutions using updated curricula that include the revised community health courses
3. Percentage of qualified, trained and active CHSS training and supervising CHVs
4. Community health courses in service curricula updated

Targets:

1. 80% of facility-based health professionals trained on how to train and supervise CHVs
2. 100% of graduates from health training institutions trained in community health
3. Minimum of 1 health professional per primary care facility serving as a qualified, trained and active CHSS, training and supervising CHVs
4. All community health courses in pre-service curriculum updated

Timeline: See attached Gantt chart for specific indicator timelines

Who is Responsible: MOHSW (CHSD and CHTWG)

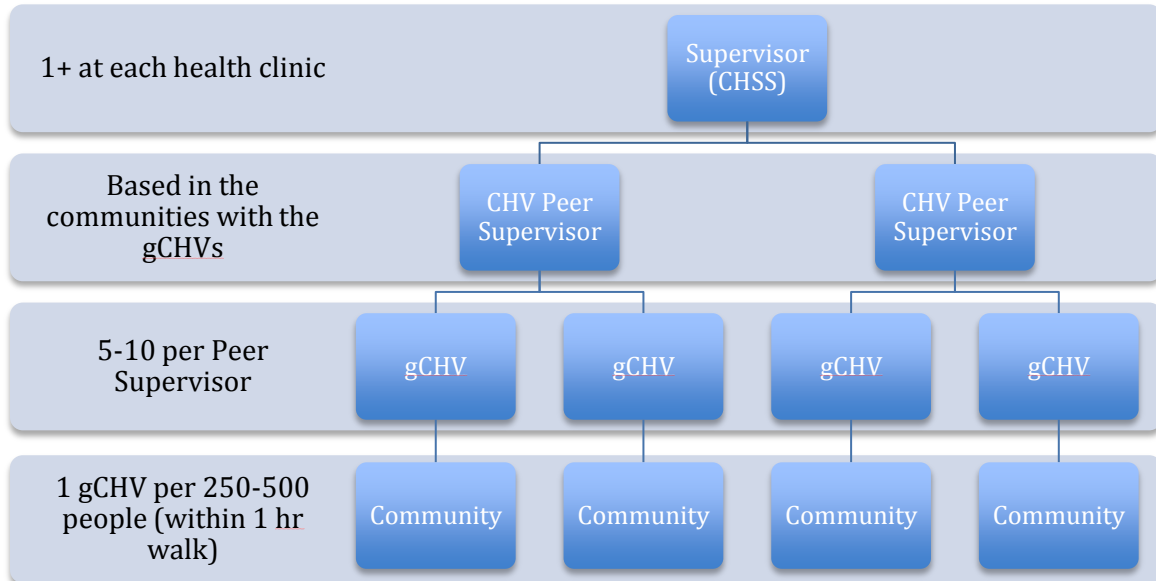
Who will be involved? NGO and International Partners and Stakeholders

Source of Resources: GOL, Donors, NGOs

Conclusion

In conclusion, the MOHSW and partners are confident that the objectives outlined within this national Community Health Road Map are achievable, and will collectively establish an effective national community health volunteer program, integrated within the overall health system. As CHVs fill a missing niche in the Liberian primary health care system, working exclusively and full-time in the community at the household level and providing a comprehensive package of preventive, promotive, curative and social welfare services, the importance of strengthening and improving this program cannot be overstated. Over the next five years, the MOHSW and partners will work together to achieve the strategic objectives to, in line with the overall vision of the Road Map, achieve a coordinated national community health care system at the center of which is a trained, active and motivated cadre of Community Health Volunteers contributing to improve the health status and social welfare of people in Liberia.

Appendix I: Recommended Ratios of Supervisors to CHVs to Population (Under Objective 1.3)



Appendix II: Supportive Supervision Structures Required at All Levels of the National Health Care System

National Level

At the national level, the Community Health Services Division at the MOHSW is responsible to:

- Develop, revise, and disseminate supervisory tools.
- Orientate CHTs and partners on effective use of the tools.
- Coordinate and supervise the formation of the community health structure.
- Collect and give feedback to CHTs on community activity reports.
- Conduct a monthly technical coordination meeting.
- Conduct a quarterly Community Health Services Division coordination meeting with other programs and partners.
- Conduct intermittent joint supervision for community health services activities.
- Revise and update the selection criteria and minimum standards of performance for the CHSS position to ensure the quality and professional health capacity of each CHSS to supervise CHV's and CHC's in all aspects of their work.
- Create, with partners and the CHTWG, operations manuals, tools, and standards for supportive supervision at all levels in the community health system.

County Level

At the county level, the County Health Team is responsible to:

- Participate and monitor all training at the health facility and community levels
- Conduct quarterly joint supportive supervision at the facility and community levels with DHT and CHSS at the community level from among their catchment areas.
- Conduct a monthly health coordination meeting with partners and other programs.
- Coordinate the planning and implementation among partners to ensure adherence to MOHSW policies and to avoid duplication of activities.

District Level

At the district level, the District Health Team is responsible to:

- Conduct monthly supervision of health facility and communities with CHSS and OIC at Community level.
- Conduct a monthly health coordination meeting with health facility staff to discuss community program activities.
- Collect monthly community activities report from health facility and give feedback, instituting feedback loops that ensure that CHSS, Peer Supervisors, and CHVs are aware of health indicators and data trends as reported and identified in the HMIS.

Facility Level

At the health facility level, supervision of community health activities will be done by a designated Community Health Services Supervisor (CHSS). The CHSS may be either a trained Environmental Health Technician (EHT), or a certified midwife (CM), Physician's Assistant (PA), Registered Nurse (RN), or LPN. The CHSS must also have the professional background and capacity to supervise all CHV health activities including maternal and newborn visits, disease surveillance, iCCM and emergency first aid services. The designated Community Health Services Supervisor will function as follows:

- Spend nearly 100% of time in the communities, equipped with a dedicated motorcycle, gas, etc. to support activities in the field full time (48 hours per week).

- Prepare monthly activity schedules to ensure coverage of supervision activities, including the following:
 - The first week of the month, the CHSS will travel to all CHVs and collect the data from their ledgers, to submit in the C-HMIS system.
 - From the second to the fifth weeks of the month, the CHSS will conduct joint supervision for all CHVs on a monthly basis with Peer Supervisors. On a quarterly basis, their supervision visits will be conducted with the OIC and/or DHT. These quarterly visits will focus on problem solving.
- Work monthly with CHC/CHDC to provide support for all CHVs.
- Supervise CHV Peer Supervisors to make sure they are active in their supervision and have the capacity to perform required tasks.
- Assist in problem solving and critical decision-making.
- Monitoring supply chain to ensure that adequate supply of drugs and materials are available in the community for CHVs work.
- CHSS and OIC Participate in planning and training of CHVs.
- Give feedback from DHT to CHVs/CHV peer supervisors.
- Participate in monthly CHC meetings in their communities.
- Assist in organizing and participate in CHDCs monthly coordination meetings at health facility.
- Provide technical support in planning and implementation of community programs.

Community Levels

At the community level, the CHVs should be supervised jointly on a monthly basis by the CHSS, assisted by a **CHV Peer Supervisor**, who is responsible to:

- Re-stock CHVs supply during supervision in coordination with Community Health Services Supervisor
- Prepare monthly activity schedules to ensure coverage of supervision activities, including the following:
 - The first week of the month, the Peer Supervisor will assist as needed with the CHSS as they travel to all CHVs and collect the data from their ledgers, to submit in the C-HMIS system.
 - From the second to the fifth weeks of the month, the Peer Supervisor will conduct joint supervision for all CHVs on a monthly basis with the CHSS. On a quarterly basis, their supervision visits will be conducted with the OIC and/or DHT.
 - From the second to the fifth weeks, the Peer Supervisor will also conduct separately an audit of one household that the CHV visited in the month. This audit will be done without the CHV, and allow the Peer Supervisor to check on the quality of services provided, and review the knowledge imparted to the patient and their family.

Appendix III: Chart of Required Supervisory Visits

Below is a chart summarizing the required supervisory visits from both the CHSS and the Peer Supervisor each month, as well as the tools used, in order to fulfill their supervisory and mentorship responsibilities for all CHVs within their catchment communities.

Week	Action	Person Responsible	Required Tool
Week 1	Collect data from CHVs ledgers	Peer Supervisor/CHSS	Supervision Tool
Weeks 2-5	Visit one household with each CHV to review performance and services provided	CHSS/Peer Supervisor	Lib Supervision Checklist
Weeks 2-5	Audit the CHV performance by visiting one household without the CHV (that they visited in the last month) and interview the patients on care provided	Peer Supervisor	CHV Audit Form
Weeks 4/5	Submit evaluation and audit reports to CHT	CHSS	All forms utilized during the month

Appendix IV: Operational Plan

The following Operational Plan includes the activities, indicators and targets from the road map content above. Included within the Operational Plan are the key MOHSW stakeholders, as well as implementing partners, responsible for each activity. Finally, each activity is accompanied by a timeline as to when it should be instigated, and continued if it is an annual activity.

As noted in the text above, the entire Road Map covers a period of five years, from July 1, 2013, to June 30, 2018. For the timeline in the Operational Plan, therefore please note that Quarter 1 (Q1) begins as of July 1, 2013 – though this is prior to the official publication of the Community Health Road Map and Operational Plan, a number of the activities have been started simultaneously, and are therefore completed by the publication of the Road Map.

Appendix V: Bibliography

1. Basic Package of Health Services, Ministry of Health and Social Welfare, 2007.
2. Essential Package of Health Services, Ministry of Health and Social Welfare, June 2011.
3. National Health Policy and Plan, Ministry of Health and Social Welfare, 2007.
4. Revised National Community Health Services Policy, Ministry of Health and Social Welfare, December 2011.
5. Revised National Community Health Services Strategy and Plan 2011-2015, Ministry of Health and Social Welfare, December 2011.
6. 2013 Annual Health and Social Welfare Report, Ministry of Health and Social Welfare, 2013.
7. Liberia Institute of Statistics and Geo-Information Services (LISGIS), Ministry of Health and Social Welfare, National AIDS Control Program, and Macro International Inc. 2008. Liberia Demographic and Health Survey 2007. Monrovia, Liberia.
8. National Community Health Services Policy, Ministry of Health and Social Welfare, 2007.
9. Comprehensive Mapping of Community Health Volunteers (CHVs) and Community Health Structures in All Health Districts of Liberia, Community Health Services Division, Ministry of Health and Social Welfare, June 2013.
10. Capacity Assessment Report: Central, Bong, Lofa & Nimba – Final Draft, Ministry of Health and Social Welfare, June 2012.
11. Maes, K. Examining health-care volunteerism in a food- and financially-insecure world. *Bull World Health Organ* 2010; 88:867–869.
12. Karunajeewa HA et al., Rectal administration of artemisinin derivatives for the treatment of malaria. *JAMA*. 2007 Jun 6; 297(21): 2381-90.
13. John Snow Inc. Rebuilding Basic Health Services Project, Liberia: Internal Project Assessment Report, June 2011.
14. Monitoring the Building Blocks of Health Systems: A Handbook of Indicators and Their Measurement Strategies. World Health Organization 2010. Available at: http://www.who.int/healthinfo/systems/WHO_MBHSS_2010_full_web.pdf