

Project Report

The Development of a Tool to Help Plan and Cost Community Health Services



Project Report

**The Development of a Tool to
Help Plan and Cost
Community Health Services**

A Review of Project Achievements

Acknowledgements

This report was prepared by Management Sciences for Health (MSH) to accompany the deliverables relating to its project on developing a tool for costing comprehensive community health services under its contract with UNICEF/New York.

Primary collaboration was provided by UNICEF personnel in New York, Sierra Leone, and Malawi. In particular, we wish to thank Jerome Pfaffmann, Dr. Mark Young, Kyaw Aung, Indrani Chakma, Dr. Nuzhat Rafique, and Dr. Kebir Hassen for their support and technical contributions in shaping this project and the country analyses.

In Malawi, we wish to thank Humphreys Nsona and Newton Temani from MOH's Integrated Management of Childhood Illness (IMCI) Unit who were instrumental in supporting this project and the in-country piloting. Special thanks are due to Emmanuel Chimbanga (ICMI) for his efforts in assisting with field data collection. We would also like to thank the staff from Ntcheu District Hospital, Kasinje Health Center, and Nsipe Health Center in Ntcheu District and the staff from Dedza District Hospital, Kanyama Health Center, and Golomoti Health Center in Dedza, among many others, for their valuable contributions.

In Sierra Leone, we wish to thank the following people from the Ministry of Health and Sanitation (MOHS) who were instrumental in supporting this project and the in-country piloting. From the Freetown MOHS office: Dr. Joseph Kandeh, Foday Sawi Lahai, Anitta Kamara, Elizabeth Musa, Mara Kardas-Nelson, Richard Musa, and Albert Vandy. From Bombali District: Dr. Brima Osaio Kamara and Bundu Conteh. From Kono District: Dr. Manso S. Dumbuya, Moses P. Kortu, and Alieu Banguro. We also wish to thank World Hope International (WHI) and the International Rescue Committee (IRC), in particular Brima Bangura and Momoh Koyanday from WHI and John Kpaleyeyea and Sahr Fillie from the IRC.

We also would like to thank the members of the MSH project support team for their valuable feedback and suggestions on the pilot design. The Malawi piloting team was comprised of William Newbrander, Sara Wilhelmsen, and Sarah Davey. The Sierra Leone team was comprised of Colin Gilmartin, Christopher Villatoro, and Kemi Tesfazghi. The overall project was directed by David Collins and supported by Kevin Gunter. Special thanks are extended to Zina Jarrah, an independent consultant, for the development of the Community Health Planning and Costing Tool and for her guidance on its use.

Table of Contents

Acknowledgements.....	iii
Executive Summary.....	v
Acronym List	vi
Background: Importance of Costing Community Health Services	1
Project Overview.....	1
Development of Methodology and Tool.....	Error! Bookmark not defined.
Pilot Testing in Malawi and Sierra Leone.....	4
Malawi Pilot	4
Sierra Leone Pilot	5
Project Deliverables	7
Country Reports	7
Community Health Planning and Costing Tool	Error! Bookmark not defined.
Tool User Guide	Error! Bookmark not defined.
Video – Guided Tour	7
Webinar.....	8
Literature Review.....	Error! Bookmark not defined.
Training Workshop on the CHS Planning and Costing Tool	Error! Bookmark not defined.
Moving Forward.....	8

Executive Summary

There is growing evidence on the benefits of community health services (CHS) and the importance of community health workers (CHWs) in achieving access to universal health coverage. However, there is little information on the costs and required financing for effective, integrated CHW programs. It has become clear that there is a need for a methodology and tool to facilitate the planning and costing of comprehensive packages of community health services to ensure they are impactful, adequately financed, and sustained.

The United Nations Children's Fund (UNICEF) engaged Management Sciences for Health (MSH) to develop a methodology and tool for planning and costing comprehensive CHS programs. MSH piloted this methodology and tool in Malawi and Sierra Leone, countries which were selected given the important role that CHWs play within each of the country's health system. The purpose of this piloting was to test the methodology and tool in real situations with the understanding that the results could be beneficial in improving and expanding CHS. The results of this study are intended to support Ministries of Health and partners in countries in the development of comprehensive community health strategies. The lessons learned from the piloting have been incorporated in the final version of the Community Health Planning and Costing Tool and guidelines, which are available from UNICEF and MSH.

This report provides an overview of the project objectives and all key deliverables produced and activities conducted.

Acronym List

CHAI	Clinton Health Access Initiative
CHW	Community Health Worker
CHS	Community Health Service
HSA	Health Surveillance Assistant
iCCM	Integrated Community Case Management
IRC	International Rescue Committee
JSI	John Snow Inc.
LiST	Lives Saved Tool
MOH	Ministry of Health
MOHS	Ministry of Health and Sanitation
MSH	Management Sciences for Health
UNICEF	United Nations Children’s Fund
USAID	United States Agency for International Development
USD	United States Dollar
WHI	World Hope International

Background: Importance of Costing Community

Health Services

There is growing evidence on the benefits of community health services (CHS) as a key strategy to promote healthy behaviour and improve access to high-impact maternal, newborn, and child health interventions from pregnancy to adolescence. Much less is known, however, of the costs and financing needs for effective, comprehensive CHS and, without this information, programs are often under-funded and financially unsustainable. Additionally, opportunities to include CHS financing in insurance packages or in new global funding mechanisms (such as the Global Fund to Fight AIDS, Tuberculosis, and Malaria and the Global Financing Facility) are frequently missed.

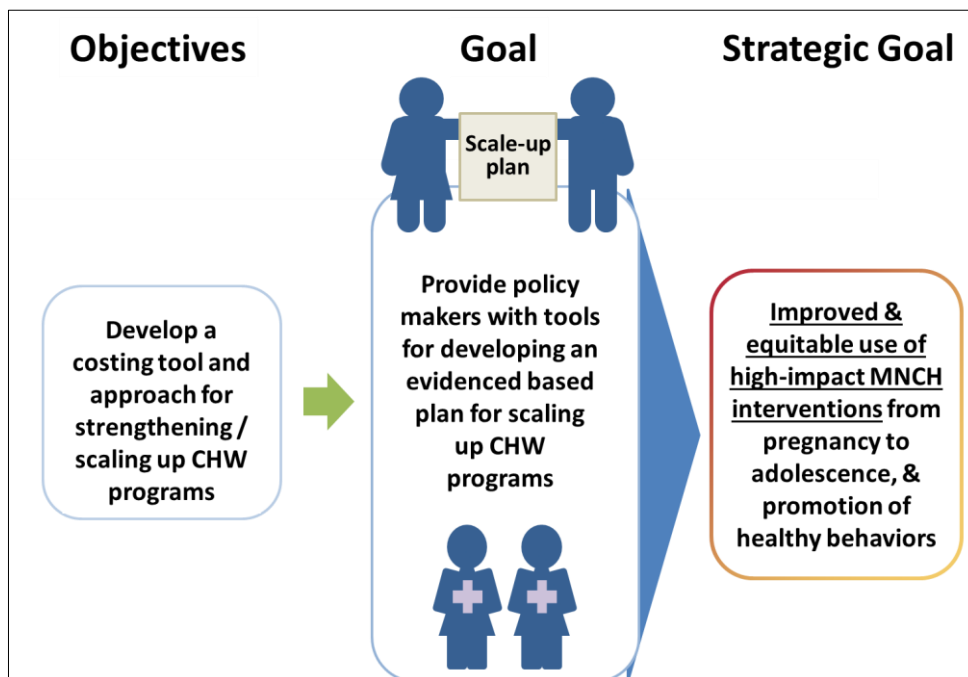
Adequate financing can only be achieved if costs are known. While certain elements of CHS (e.g. malaria case management and prevention, family planning, reproductive health, and integrated community case management [iCCM]) have been costed individually, there is little or no information on the cost of comprehensive CHS. Effective CHS depend on a sound overall health platform which ensures that all key elements (e.g. training, equipment, medicines and supplies, management and supervision, transport, financing, information systems, quality control, demand generation, governance, etc.) function well. These resources must be combined efficiently to maximize outputs and outcomes while ensuring high-quality service provision. Demand generation is particularly important as health services are not cost-effective unless they are well-utilized. Equally important is the use of financial and non-financial incentives for CHWs to ensure they are motivated and well-performing as programs with high rates of CHW attrition are generally neither cost-effective nor sustainable.

Project Overview

Recognizing the need to assist countries in the development and scale-up of effective CHS, the United Nations Children's Fund (UNICEF) commissioned Management Sciences for Health (MSH) to develop a methodology and tool to help countries plan, cost and finance integrated packages of community health services (see Figure 1)..

MSH designed and subsequently piloted this methodology and tool in Malawi and Sierra Leone, countries which were selected given the important role that CHWs play within each of the country's health system. The purpose of this piloting was to test the methodology and tool in real situations with the understanding that the results could also be beneficial in improving and expanding CHS in those countries, as well as understanding the cost implications of the proposed policy changes by Ministries of Health.

Figure 1. Project Overview



Literature Review and Tool Analysis

In preparation for the development of the tool a literature review was conducted to look at experiences and methodologies related to measuring the costing and impact and bottlenecks relating to comprehensive community health services.

Only one study was found on the costing of comprehensive community health services and this was conducted by McCord et alⁱ. This was, however, a theoretical modeling exercise based on work done by the One Million Health Worker Campaign (Columbia University) to estimate the costs of implementing expanded CHW services globally. A model developed by the University was used.

No studies were found that measured the impact of comprehensive community health services.

Several studies were found that applied bottleneck approaches in the provision of community health services but they only covered one type of intervention (e.g., iCCM, family planning) - none of them were related to comprehensive services.

Development of Methodology and Tool

A prototype version of the CHS Planning and Costing Tool was developed by MSH in the United States and subsequently piloted in Malawi and Sierra Leone. Modifications to the tool were made during and after each country pilot and upon receipt of feedback from UNICEF personnel. The tool was designed to be open-source and user-friendly with the goal of helping program planners and

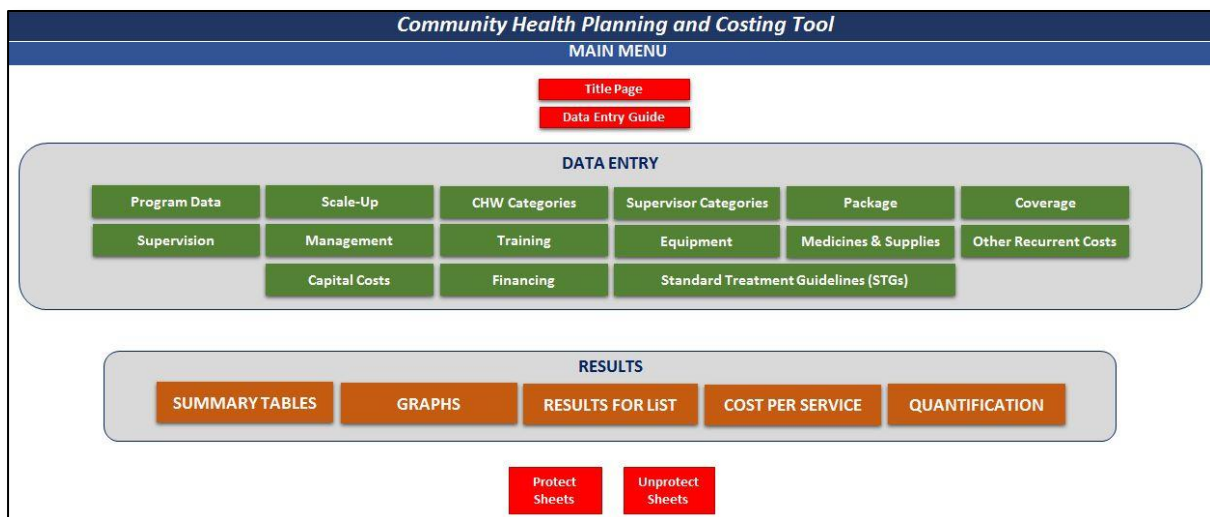
ⁱ McCord, Gordon C.; Liu, Anne; Singh, Prabhjot. Deployment of community health workers across rural sub-Saharan Africa: financial considerations and operational assumptions. *Bull World Health Organ* 2012;91:244–253B. doi:10.2471/BLT.12.109660

managers to plan and assess the costs and financing of the introduction, maintenance, or scale-up of comprehensive CHS programs at the national or sub-national levels.

The tool is used to calculate costs and financing requirements for the program baseline year, in addition to 10 projection years. All costs and financing elements are linked to the key aspects of a CHS package including start-up costs, service delivery, training, supervision, and management at all levels of the health system. The tool’s financing element can be used to show and project the financing sources of the CHS program as well as gaps in funding. The tool is based in Excel and is open access, allowing the user to see all calculations and results in the model.

The tool has the ability to include up to 100 health interventions. At the service delivery level, it is a bottom-up activity-based costing tool, in which unit costs per service are built up by type of resource (e.g. medicines) and multiplied by the total estimated numbers of services. Other costs, such as supervision and training, are allocated using a top-down methodology. The tool uses standard treatment protocols for the CHS services to determine the standard costs of treatment.

Figure 2. Main Menu of Community Health and Planning Tool



This tool automatically produces the following outputs used to measure cost efficiency and effectiveness:

- Total program costs, baseline year and ten-year cost projections;
- Costs per capita, per CHW, per contact, per program, and per resource type;
- Incremental costs and incremental financing (start-up and recurrent) as a whole and for each level (national, regional, district, facility and community) over time;
- Key drivers of costs and cost categories as a percent of total costs;
- Ten-year projections of financing with sources of funding;
- Data entry for the Lives Saved Tool (LiST) for measures of impact.

This tool can be used for the following analyses:

- Planning and budgeting a new package, additions or changes to a package or geographical expansion of a package;
- Comparing cost efficiency and effectiveness of different service delivery platforms;
- Calculating reimbursement rates for results-based financing or insurance;
- Costing “What-if” scenarios to model a package in line with financing limitations;
- Understanding what bottlenecks exist and their impact and options for removing them;
- Developing investment cases and lobby for support (funding and otherwise) from donors and partners

The tool contains two main components:

- **Costing** – start-up and recurrent costs;
- **Financing** – sources of financing linked to the costs;

Overall guidance on conducting this costing and financing analysis can be found in the Community Planning and Costing Handbook and a separate Community Health Planning and Costing Tool User Guide which focuses on the use of the tool itself (i.e. the entry and analysis of data).

Piloting the Methodology and Tool in Malawi and Sierra Leone

Following the development of the prototype model, MSH conducted country pilots of the methodology and tool in Malawi and Sierra Leone in early 2016. Each of the trips lasted for three weeks and involved a team of experienced data collectors and health care financing professionals. The studies received approval from the Government of Malawi, the Government of Rwanda, and the Government of Senegal.

Both of the country CHS programs varied considerably in terms of their maturity and other key program aspects and cost drivers related to medicines and supplies, supervision, CHW remuneration, populations covered, etc. Information was obtained through various data collection methods and was input into CHS Planning and Costing Tool.

Malawi Pilot

In February and March 2016, a team of MSH staff and consultants worked with the Ministry of Health, UNICEF/Malawi, and other stakeholders to collect data that could be used to pilot the methodology and tool. Interviews were held and data were collected at all levels of the health system, including visits to health centres in Ntcheu and Dedza districts where facility staff and community health workers were interviewed. The data were then analyzed using the tool. The piloting was extremely successful and all lessons learned were incorporated in the final version of the methodology and tool.

The exercise also provided an interesting analysis of the cost of community health services in Malawi. With its well-established community health system, Malawi was an ideal country to pilot the new methodology and tool and the Ministry of Health and UNICEF/Malawi were supporting of this exercise, knowing also that the completed models and results could be beneficial in terms of improving and expanding community health services. Nevertheless, the time and resources available for the study were too limited to produce results that are definitive or that represent the country as

a whole, some of the findings are worthy of comment. However, there were many relevant findings, which include the following:

- Utilization of Health Surveillance Assistant (HSA) services: Based on the utilization data reported in the DHIS and iCCM data from other sources it appears that HSA services were under-utilized in 2015, only using 9% of their available time in Ntcheu and 8% in Dedza. It also appears that the HSAs are only providing 14 of the package of 43 services in Ntcheu and 12 of the 43 in Dedza. However, these findings are based on the completeness and accuracy of the DHIS data, which appears questionable.
- HSA Services Provided: Most of the services provided are family planning and iCCM and these are provided in reasonable quantities, although in some cases the figures actually seem quite high.
- Projected HSA Service Provision Time: If the full package of services is provided and utilization is increased by 5% per year, it is projected that they would be occupied with these services for 77% of their time by 2025 in Ntcheu and for 69% of their time in Dedza.
- Expansion of HSA Services: Unless the identified geographic access and human resource bottlenecks are resolved, they are likely to impede the expansion of utilization of the full package of services to populations in harder-to-reach areas and to improve or maintain the quality of services. These constraints could not be quantified and solutions were not explored but this is worthy of further study.
- HSA Unit Costs: The average cost per capita in 2015 for the two districts was USD 3.88 in Ntcheu and USD 3.97 in Dedza. This is relatively low because of the under-utilization of the package of services. With the projected increases in utilization, the cost per capita would increase to USD 7.16 in Ntcheu and USD 7.25 in Dedza
- Services Costs: In 2015 the programs with the highest costs were iCCM and Reproductive Health/ Family Planning in Ntcheu and Dedza. With the projected increases in utilization, the programs with the highest costs in 2025 would be Reproductive Health / Family Planning and Immunizations in both districts, with iCCM third. In 2015 most of the costs in the two districts went on HSA salaries. With the projected increases in utilization, most of the costs would be for medicines, supplies and commodities by 2025. This assumes that there would be no need to increase the numbers of HSAs.

The results of the Malawi pilot can be found in the corresponding country report.

Sierra Leone Pilot

In February and March 2016, a team of MSH staff and consultants collaborated with the Ministry of Health and Sanitation (MOHS), UNICEF/Sierra Leone, and other stakeholders to collect data for piloting the methodology and tool. MSH staff conducted interviews and collected data at all levels of the health system, including visits to health facilities in Bombali and Kono districts where facility staff, CHW supervisors, and CHWs were interviewed. MSH staff then analyzed the data using the tool. The piloting was successful and the relevant lessons learned have been incorporated in the final version of the methodology and tool.

The exercise provided an invaluable analysis of the cost of CHS in Sierra Leone. The time and resources available for the study were limited and therefore results are not definitive and do not

represent the country as a whole. However, there were many relevant findings, which include the following:

- With the proposed introduction of the revised National CHW Strategy in 2016, there will be significant changes to the National CHW Program. These programmatic changes include increased geographic coverage of CHWs, expanded package of CHS, greater emphasis on CHW supervision and training, and increased financial incentives provided to CHWs, Peer Supervisors, and program support personnel. These changes will in turn impact the total costs of the program.
- There were significant variations in the package of CHS offered in both districts in 2015 as CHWs in Bombali District did not provide integrated community case management (iCCM) treatments and the majority of services provided were for MNCH (ANC and PNC promotional home visits) and iCCM referrals. In Kono District in 2015, the majority of services were for iCCM and MNCH. By 2025, the majority of services would be for iCCM and adult malaria case management.
- Based on utilization estimates of services, it appears that CHS were under-utilized in 2015. In Bombali District, CHWs spent an estimated five percent of their time (based on an estimated 20 working hours per week) providing nine of the 42 services included in the package of CHS in 2015. In Kono District, CHWs spent an estimated eight percent of their time providing 10 of the 42 services included in the package of CHS in 2015.
- Given the modelled increases in services for 2016-2025, it estimated that CHWs would need to spend considerably more time (beyond the number of working hours) to provide the package of services at the modelled coverage rates by 2025.
- The issue of stock-outs of medicines and commodities at both the community and health facility level represent a significant bottleneck which, unless resolved, will limit the success and impact of the proposed expansion of the National CHW program. Solutions for addressing this bottleneck should be further explored and additional quantification should be conducted in all districts implementing the National CHW program.
- The average total cost per capita in 2015 for the two districts was USD 3.92 in Bombali District and USD 2.48 in Kono District. With the projected increases in coverage and utilization, in addition to the introduction of revised National CHW Policy, the cost per capita would decrease to USD 3.81 in Bombali Districtⁱⁱ and increase to USD 4.07 in Kono District.
- In 2015, the main cost drivers of the CHW programs in Bombali and Kono Districts were program management and equipment. With the projected increases in coverage and utilization, as well as the programmatic changes resulting from the introduction of the revised National CHW Policy, the main cost drivers of the CHW programs in Bombali and Kono Districts would be for medicines, supplies, and commodities as well as for management and CHW salaries (i.e. financial incentives).
- In 2015, the majority of programs costs were for iCCM services and disease prevention and control in Bombali and Kono Districts. In 2025, with the projected increases in coverage and utilization, the majority of program costs would be for iCCM, adult malaria case management, and other services (e.g. house-to-house visits and community mapping conducted by CHWs).

The results of the Sierra Leone pilot can be found in the corresponding country report.

ⁱⁱ The cost per capita in Bombali appears to fall because a significant amount of start-up costs were included in 2015.

Project Deliverables

MSH produced a number of project deliverables and completed several activities which are listed and described below:

1. Blank and example versions of the Community Health Planning and Costing Tool;
2. The Community Health Planning and Costing Tool User Guide;
3. The Community Health Planning and Costing Handbook;
4. A final country piloting report for Malawi;
5. A final country piloting report for Sierra Leone;
6. A video introduction to the Tool;
7. A recorded Webinar on the development and use of the tool.

1. Community Health Planning and Costing Tool

MSH finalized the CHS Planning and Costing Tool after several iterations following the pilots in both countries and upon feedback received by UNICEF. In preparation for sharing with external audiences and early adopted, MSH produced both a blank version of the tool and an example version of the tool, with sample country data included for the user's reference. The tool is accompanied by a comprehensive user guide (see below).

2. Tool User Guide

The Tool User Guide provides program planners and managers with in-depth instructions for using the Community Health Planning and Costing Tool. The guide includes detailed systematic instructions on how to enter data into the Tool with corresponding screen shots to facilitate data entry.

3. Community Health Planning and Costing Handbook

The Handbook provides an overview of the process of planning and costing community health services, including linkages with the bottleneck and impact analyses.

4. Country Reports

Following the completion of pilots in Malawi and Sierra Leone, MSH personnel produced comprehensive reports and shared them with UNICEF/NY and in-country personnel from UNICEF, the Ministry of Health, and implementing partners. The results of the pilots are intended serve to support the Ministries of Health and partners across a range of countries in the development of comprehensive community health strategies. Both country reports are available from UNICEF and MSH.

5. Video – Guided Tour

Upon finalization of the Tool and User Guide, MSH produced a short video to promote the use and functionality of the CHS Planning and Costing Tool as well as provide users with a guided tour demonstrating the data entry process and key results.

6. Webinar

On August 24, 2016, MSH and UNICEF convened a webinar presentation on the CHS Planning and Costing Tool which included wide-participation from UNICEF and MSH country offices as well as members of the Community Case Management Task Force. The objective of the webinar was to understand the methodology and use of the CHS Planning and Costing Tool and review the results from the pilots. The webinar can be viewed [here](#).

7. Technical Assistance to the MOH of Sierra Leone

In July 2016, at the request of the MOHS and UNICEF/Sierra Leone, MSH made a follow-on visit to Sierra Leone to provide technical assistance in the development of their national community health services strategy. That visit involved meetings with representatives of the MOHS, UNICEF and partners. MSH also led a training workshop on the CHS Planning and Costing Tool at the John Snow Inc. (JSI) office in Freetown, Sierra Leone. The training was structured to provide participants with an overview of key costing concepts and methodology as well as practical exercises designed to improve their familiarity with the use and functions of the tool. A total of 14 participants attended, representing the CHW Hub of the MOHS, UNICEF, World Hope International (WHI), the International Rescue Committee (IRC), the Clinton Health Access Initiative (CHAI), and JSI.

Moving Forward

Following the completion of its contract with UNICEF, MSH will continue to disseminate and present the tool at global health conferences and within technical working groups to ensure that this tool is shared with key influencers, such as policy makers, program managers, and United States Agency for International Development (USAID) Missions, and Ministry of Health officials. MSH also plans on continuing to provide technical assistance to countries considering introducing or scaling-up iCCM programs, if funding is available.

In November 2016, MSH is planning to present the results of this work at the American Society of Tropical Medicine and Hygiene Conference in Atlanta, Georgia as well as at the Global Symposium on Health Systems Research in Vancouver, British Columbia.