A photograph of a woman with dark skin, wearing a pink long-sleeved shirt and a headscarf with vertical stripes in shades of orange, purple, and pink. She is holding a young child with dark skin who is smiling broadly. The background is a blurred outdoor setting with greenery and a building.

Community Health Planning and Costing Tool (Version 2.0) Handbook

To help managers develop effective, sustainable, and comprehensive community health services

April 2020

Community Health Planning and Costing Tool (Version 2.0) Handbook: To help managers develop effective, sustainable, and comprehensive community health services.

© United Nations Children’s Fund (UNICEF), New York, 2020.

Child and Community Health Unit, Health Section, Program Division

UNICEF, 3 UN Plaza, New York, NY 10017

The Community Health Planning and Costing Tool is a UNICEF tool developed by Management Sciences for Health (MSH), under contract 43188968 funded by UNICEF, New York.

All trademarks and service marks, including Microsoft, MS, the XL design (the Microsoft Excel logo), and the logos of Microsoft Corporation, are the exclusive property of Microsoft Corporation. Use of the Community Health Planning and Costing Tool requires a license of appropriate spreadsheet software, such as Microsoft Excel available by license from Microsoft Corporation. The Community Health Planning and Costing Tool is not a product of, or endorsed by, Microsoft Corporation.

The designations in this tool do not imply an opinion on legal status of any country or territory, or of its authorities, or the delimitation of frontiers.

This is a working document. It has been prepared to facilitate the exchange of knowledge and to stimulate discussion. The findings, interpretations and conclusions expressed in this paper are those of the authors and do not necessarily reflect the policies or views of UNICEF or of the United Nations.

The text has been edited by MSH, and UNICEF accepts no responsibility for errors. The designations in this publication do not imply an opinion on legal status of any country or territory, or of its authorities, or the delimitation of frontiers.

Table of Contents

Acronyms.....	ii
Acknowledgments	iii
Community Health Planning and Costing Tool.....	I
Overview of Handbook.....	3
Organizing and Conducting a Planning and Costing Exercise.....	6
Step 1. Define the Objectives and Scope	6
Step 2. Determine Data Collection Needs.....	7
Step 3. Plan for Data Collection	10
Step 4. Collect the Data	14
Step 5. Produce the Cost Results.....	16
Preparing a National Costing Model.....	20
Financing Analysis.....	21
Bottleneck Analysis	22
LiST Analysis	23
Developing an Investment Case.....	25
Annex 1. Sample Terms of Reference.....	27
Annex 2. Complementary Resources.....	31
WHO Guideline on Health Policy and System Support to Optimize CHW Programs	31
Community Health Worker Assessment and Improvement Matrix (CHW AIM)	31
UNICEF Health Systems Strengthening Approach	32
EQUIST	34
Annex 3. Expert Panel	35
Annex 4. Central Checklist.....	37
Annex 5. Region / District Questionnaire.....	40
Annex 6. Health Centre Questionnaire.....	43
Annex 7. CHW Questionnaire	46
Annex 8. Publications and Reports.....	48
Annex 9. Bibliography.....	50

Acronyms

AIM	assessment and improvement matrix
CHW	community health worker
CHS	community health services
CHW	community health worker
DHIS	District Health Information System
HMIS	health management information system
iCCM	integrated community case management
IMCI	integrated management of childhood illness
LiST	Lives Saved Tool
MNCH	maternal, new-born, and child health
MOH	Ministry of Health
MSH	Management Sciences for Health
NGO	nongovernmental organisation
PHC	primary health care
SARA	Service Availability and Readiness Assessment
SPA	Service Provision Assessments
STG	standard treatment guideline
TB	tuberculosis
UNICEF	United Nations Children’s Fund
USAID	US Agency for International Development
VfM	value for money
WHO	World Health Organisation

Acknowledgments

This handbook has been prepared by Management Sciences for Health (MSH) in collaboration with the United Nations Children’s Fund (UNICEF). The development of this handbook was led by David Collins, Colin Gilmartin, and Sarah Birse of MSH with review and input from Lakshmi Narasimhan Balaji, Hannah Sarah Dini, Ulla Griffiths, Jiawen Elyssa Liu, and Jérôme Pfaffmann Zambruni of UNICEF.

The corresponding Community Health Planning and Costing Tool (versions 1.0 and 2.0) was developed by David Collins and Zina Jarrah.

MSH and UNICEF are grateful to all the individuals and organisations that supported the initial field testing and subsequent use of the tool and approach. These include current and former MSH personnel Sara Birse, Yohana Dukhan, Colin Gilmartin, Zina Jarrah, Bill Newbrander, Christopher Villatoro, Sara Wilhelmsen and independent consultants Fadima Yaya Bocoum, Alfred Driwale, and Kemi Tesfazghi.

We wish to thank colleagues from UNICEF for their support and technical contributions in shaping the development of the tool and the country analyses. These include Maureen Kerubo Adudans, Kyaw Aung, Penelope Campbell, Indrani Chakma, Anne Detjen, Hannah Sarah Dini, Ulla Griffiths, Paula de Beltrán Gutierrez, Kebir Hassen, Guilhem Labadie, Assiatta Kabore, Anne Laevens, Maria Montserrat Renom Llonch, Denis Muhoza, Salvator Nibitanga, Enrique Paz, Renato Pinto, Nuzhat Rafique, Susie Villeneuve, Mark Young, and Jérôme Pfaffmann Zambruni.

We especially wish to thank Ministry of Health (MOH) personnel in Angola, Burkina Faso, Sierra Leone, South Sudan, Malawi, and Madagascar who were instrumental in guiding the development of costed community health plans and investment cases, which were supported using this tool.

Lastly, we extend our appreciation to users of the tool for their feedback and suggested improvements, which are reflected in the updated tool and in this handbook.

Community Health Planning and Costing Tool

The Community Health Planning and Costing Tool (Figure 1) is designed to cost packages of community health services (CHS) and produce results to help assess performance, plan future services, and prepare investment cases. The user-friendly, open-source, spreadsheet-based tool is designed to be used by health system managers and policy-makers. It allows users to calculate the costs of all elements of comprehensive CHS packages, including start-up, training, and community-level service delivery costs as well as support, supervision, and management costs at all levels of the health system. The tool also has a financing element that can be used to show programme financing sources and gaps in current and future funding.

Figure 1. Community Health Planning and Costing Tool



The tool is based in Microsoft Excel, allowing the user to see all calculations and results. It has the ability to include up to 100 services and the option to use a set of preloaded services that the user can modify or add to. The user can also select a blank custom option and manually enter data. 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 number of services. Other costs, such as supervision and training, are allocated using a top-down methodology. The tool uses standard treatment guidelines (STGs) for services to determine the standard resource use and costs of services.

The tool automatically produces the following key results:

- Total programme costs for baseline year and five-year projections;
- Costs per capita, per community health worker (CHW), per contact, per program, and per resource type;
- Incremental costs and financing (start-up and recurrent);
- Key drivers of costs and cost categories as a percent of total costs; and
- Five-year projections of financing (and financial gaps) with sources of funding.

The dynamic nature of the tool means that the final cost results are based on key variables, such as target populations, incidence rates, and service delivery platforms. When a user modifies such variables, changes are immediately and automatically reflected in all component costs. Dynamic costing tools are suitable for planning because the cost impact of changes related to planning assumptions can be seen immediately and fed back into the planning process.

For additional information, please visit <https://www.msh.org/resources/community-health-planning-and-costing-tool>

Overview of Handbook

This handbook, which corresponds to the Community Health Planning and Costing Tool version 2.0, describes the process for costing community health programs and packages of services and is intended to:

- **Inform** tool users how to cost community health programs and/or packages of services.
- **Guide** managers and policy makers on how to use the results to improve performance, plan future services, and prepare investment cases to mobilise adequate financial resources.

Additional details on how to use the tool and enter data can be found in the user guide, which is embedded directly in the Microsoft Excel tool file. The previous version of the tool was accompanied by a separate user guide.

CHS are the foundation of Primary Health Care (PHC) and are a key strategy for promoting healthy behaviours and improving access to high-impact maternal, new-born, and child health (MNCH) interventions from pregnancy to adolescence, especially in hard-to-reach communities. There is compelling evidence demonstrating the benefits of investing in CHWs and the delivery of integrated packages of CHS. CHWs, when adequately trained and supported, could prevent up to three million deaths globally per year¹ and provide an economic return of up to 10:1 by contributing to a healthier, more productive society; reducing the risk of costly epidemics; and yielding cost savings for families and health systems.²

CHS packages are most effective when they include a comprehensive array of services that are provided with consistent standards, incentives, training, and support. Effective CHS depend on a health care platform that ensures that all key elements are functioning well, including training, equipment, medicines and supplies, management and supervision, transport, financing, information systems, quality assurance and improvement, demand generation, and governance. These elements must be combined in the most efficient manner possible to maximise outputs and outcomes. Equally important is the use of financial and non-financial incentives for CHWs to foster retention and ensure that they are motivated and performing well.

Despite the benefits of comprehensive CHS, much less is known of their costs. Having combined evidence on both the costs and benefits of CHS can help countries advocate for, mobilise, and guide resource allocation.³ Without this information, services and programmes are often underfunded and financially unsustainable, relying heavily on external financing, which can fluctuate. In addition, opportunities to leverage financing for CHS through insurance packages or via global funding mechanisms are frequently missed.

To ensure adequate financing of CHS, it is imperative that the cost and resource requirements are known. While certain elements of CHS (e.g., malaria, family planning, reproductive health, integrated community case management) have been costed individually, there is minimal information on the cost of delivering comprehensive CHS packages. Moreover, until now there have not been any tools to help plan for and cost comprehensive CHS.

To meet this need, MSH and UNICEF developed the Community Health Planning and Costing Tool. The open-source tool is intended to help more effectively plan for CHS – within a broader PHC system – and to provide the necessary cost data for preparing investment cases for advocacy and financing. Once the needs, priorities, and objectives of the community health programme have been defined at the national or sub-national (i.e., district) level, the tool can be used to model its costs and financing needs. These results are based on user-entered data inputs such as details on the package of CHS, the target numbers of beneficiaries to be reached with the relevant services, and the number of CHWs. Where there is a financing gap, the results can be used to advocate for, to mobilise, or prioritise services in the context of a limited budget.

The design and conceptualisation of the Community Health Planning and Costing Tool were based on previous experience gained through the development and use of the Integrated Community Case Management (iCCM) Costing and Financing Toolⁱ in several countries. The Community Health Planning and Costing Tool was initially developed and piloted in Malawi and Sierra Leone in 2016 and has since been revised based on feedback following its use by governments and nongovernmental organisations (NGOs) in Angola, Burkina Faso, Comoros, Liberia, Madagascar, Malawi, Mali, Mozambique, Sierra Leone, Somalia, South Sudan, Tanzania, Togo, and Zanzibar.

New features of the Community Health Planning and Costing Tool Version 2.0:

- Pre-loaded global standard treatment guidelines to reduce data collection.
- Integration of User Guide directly into the Excel Tool to help users navigate data entry.
- Ability to add different cadres of CHWs and supervisors.
- Translated into French.
- Video tutorial available in French and English.

A key feature of the tool is that it is designed to show current and project future services and costs. Cost projections are based on norms and standards for delivering high-quality CHS. For example, the unit cost of each service is based on the estimated time needed by the CHW and the required diagnostic tests, medicines, and supplies. Therefore, the resulting costs reflect the resources needed to provide the services at a reasonable level of quality, reflecting a situation in which the CHW is adequately trained and supported to provide the service and there are no stock-outs of commodities.

It is recommended that the tool be used for conducting total costing of CHS which is linked to and embedded within broader PHC planning and service provision. The analysis should include costs incurred by all providers and funders as well as governments and NGOs—so that a complete picture of CHS costs is developed. It is also recommended that the cost of donated goods and services (e.g., donated medicines and equipment) should be included, as should the time value of unpaid, volunteer CHWs, which reflects an opportunity cost.

With the aim of supporting health system managers and policy-makers, the tool estimates the cost of CHS from the provider perspective. In other words, patient out-of-pocket costs or opportunity costs of beneficiaries are not taken into account, although a study to analyse these costs is advisable to build a comprehensive picture and estimate the societal cost of CHS.

The approach for conducting the costing is described in the remainder of this handbook,ⁱⁱ which is divided into the following sections:

- Step-by-step instructions for **organising and conducting a planning and costing exercise**;
- Guidance on preparing a **national costing model**;
- Description of using the costing results for conducting a **financing analysis**;
- Description of a complementary **bottleneck analysis**;
- Description of a complementary **impact analysis using the Lives Saved Tool**;
- Guidance on how to develop an **investment case**; and

ⁱ Developed by MSH for the US Agency for International Development (USAID) under the Translating Research into Action (TRAction) Project. <http://www.msh.org/resources/integrated-community-case-management-costing-financing-tool>

ⁱⁱ The original user guide has not been updated to match version 2.0 of the tool because updated guidance is now embedded in the tool itself.

- **Annexes** containing complementary resources for community health planning and programme implementation, example terms of reference, data checklists and interview guides, links to sample investment cases and costing publications and reports, and references.

Given the growing interest and need among governments and donors to determine and improve the *value for money* (VfM) of CHS, a number of complementary resources are available for supporting VfM analyses. VfM analyses – which ideally assess programme performance in terms of economy, efficiency, equity, and effectiveness – can help to enhance the impact of programmes and mobilise financial resources for their implementation.

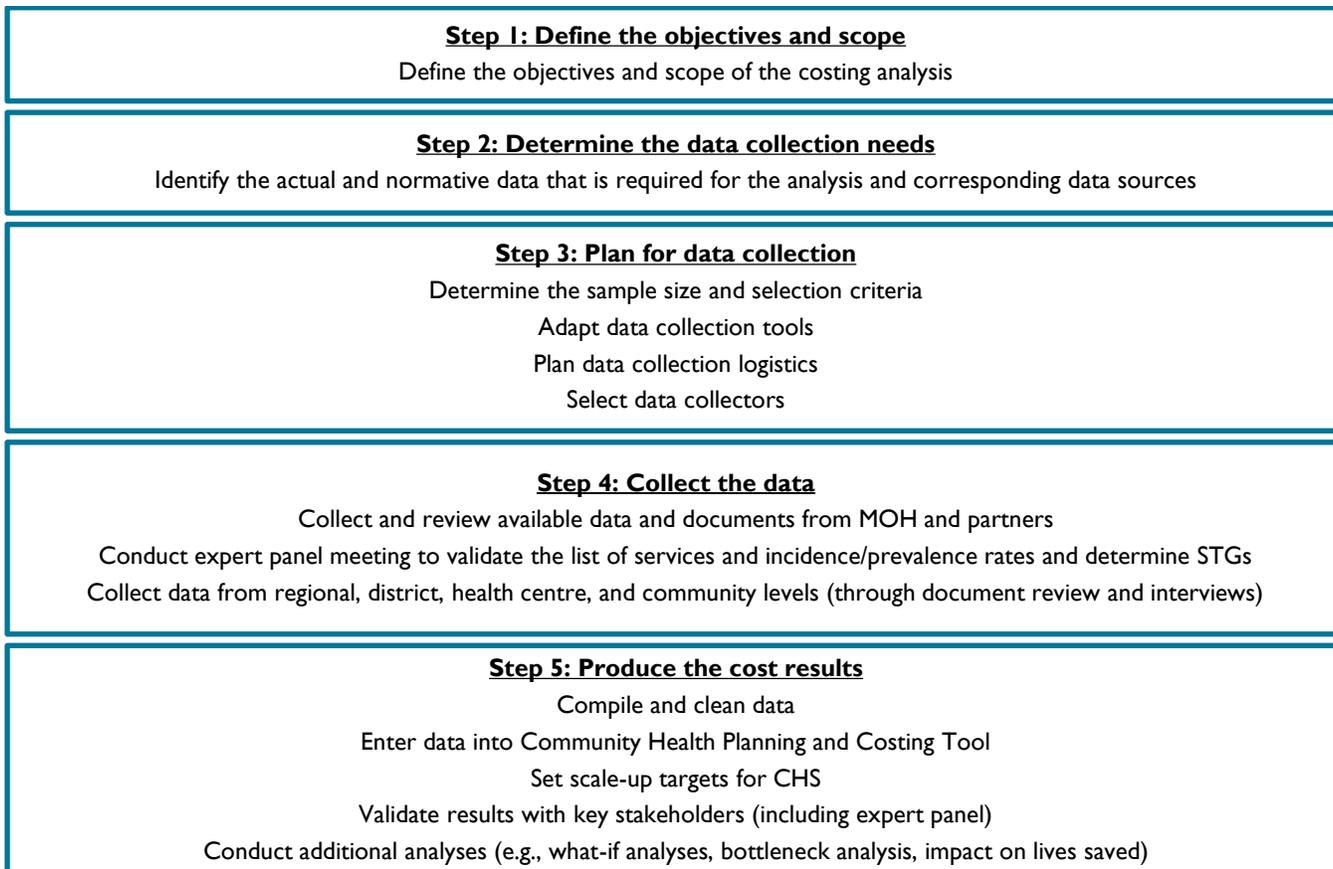
Companion tool and resources

- The Community Health Planning and Costing Tool version 2.0 for modelling the cost and financing of services based on the planned package and targets.
- Country investment cases and reports carried out using the tool.
- Video tutorial in French and English.

Organizing and Conducting a Planning and Costing Exercise

This section of the handbook describes the process for using the Community Health Planning and Costing Tool to analyse the costs and financing of a CHS program. The approach for costing CHS comprises a number of steps (Figure 2). It is recommended that this process be led by someone with a broad understanding of the areas of CHS and health financing with support from individuals with experience and skills in MS Excel, costing/economic evaluation, epidemiology, and public health. Example terms of reference are included in Annex I.

Figure 2. Steps to organise, collect, and analyse the data



Step 1. Define the Objectives and Scope

Before embarking on the costing exercise, it is important to define its objectives and scope. Helpful guiding questions include:

- What is the purpose of this analysis?
- Who is the intended audience?
- What is the time horizon of the analysis?
- What is the perspective (e.g., provider, government, NGO, private sector) of the analysis?
- What are the specific health interventions being assessed?
- What are the boundaries of the analysis and which costs or levels of the health system should be measured and included?
- Are additional analyses required (Annex 2)?

If the costing is being conducted as part of a planning exercise, the following questions should be answered:

- Who will be the principal user of the results (e.g., national or sub-national government, NGO, private sector) and who are the stakeholders?
- Who should the results be shared with?
- What is the geographic scope of the costing (e.g., national/sub-national)?
- What is the objective of the costing (e.g., set up a pilot, scale-up beyond a pilot)?
- What services are offered in the package and which, if any, should be added?
- What populations are to be covered (e.g., hard-to-reach communities, children, adolescents, women of reproductive age)?
- How many services are currently provided at the community level compared with facility or outreach levels and what are the expected levels?
- Are any of the services in the package also offered by private providers in the communities?
- Which costs will be included (e.g., government and donor-funded, donated goods and services)?
- Who is financing CHS?

Since the costing is usually conducted as part of a larger exercise, the broad objectives should usually be defined by that exercise. For example, a government or NGO may seek to:

- Analyse an existing programme to see if it can be made more cost effective.
- Prepare an investment case for the introduction of a new CHS programme or scale up of an existing programme.
- Consolidate and rationalise existing CHS, for example where they are provided by different organisations.
- Expand an existing CHS package to include new services.
- Plan the transition of financing of a community health programme to the government or other donors.

One of the main decisions is determining the geographical scope of the costing and whether its focus is at the national, provincial/regional, district, or sub-district level. If it is part of a larger planning exercise, it will need to fit within the scope of that exercise. For example, the tool has been used to support the development of costed national community health programmes and therefore relied on data from all regions of the country. The tool has also been used to support planning and costing at the district level, which is predominantly the level for planning and managing CHS. Costing at the district level allows one to take into account the district management structure and costs as well as provide an understanding of the health system and the role of CHS.

With national-level costing, it is advisable to first analyse a representative sample of districts, which will help to understand sub-national variations in service needs, service demands, and costs that may not be apparent at the national level. A national-level costing can then be based on the results of the sampled districts, which is not difficult since the same norms and standard costs can be applied at all levels. If time and funding are limited, a national-level planning and costing exercise can be conducted without involving sample districts, and the results may be sufficient for broad-level strategic planning. However, it may be less accurate and, if the plans and costs are then taken to lower levels of the system, sub-national variations will emerge, which may make the plans irrelevant.

Step 2. Determine Data Collection Needs

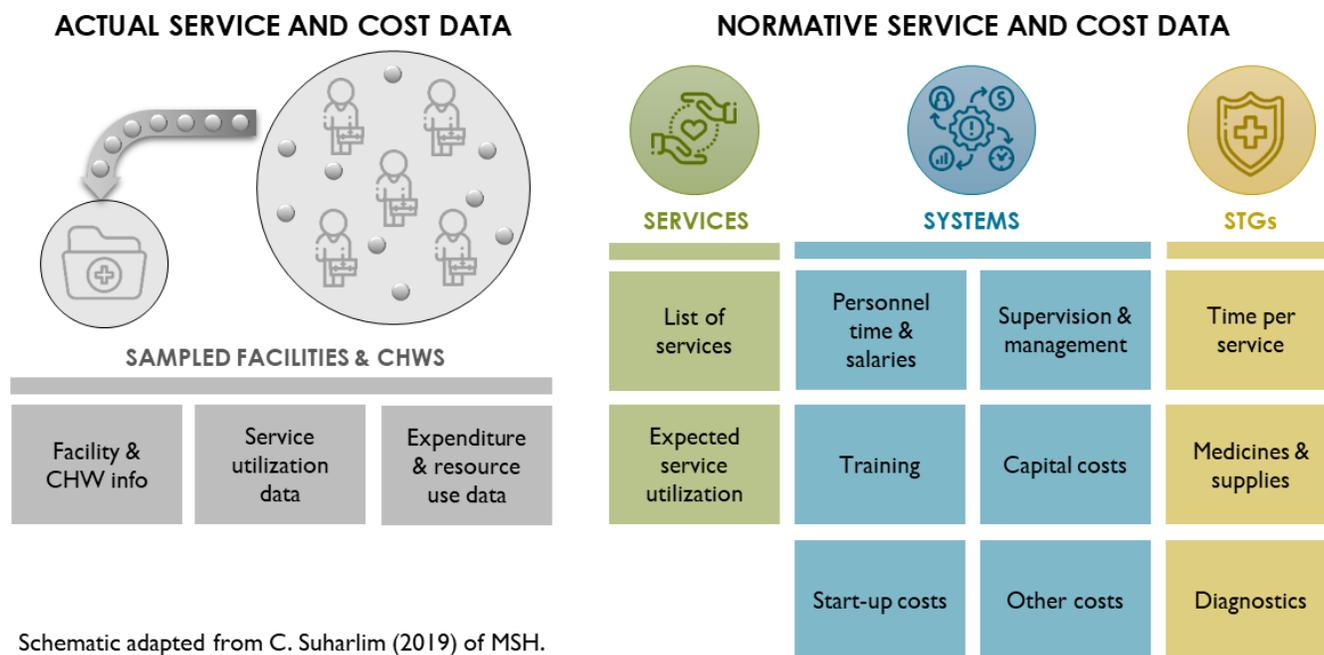
Once the objectives and scope have been defined and agreed on with stakeholders, the next step is to determine the data collection needs. This costing exercise and tool uses an ingredients-based approach to calculate the costs and relies upon two types of data: actual and normative cost data (Figure 3).

Actual cost data reflect real data from the community health programme, compiled from expenditure reports, service registers, or interviews with personnel. Often, these data are collected at the national or sub-national level in addition to a sample of health facilities and CHWs involved in the community health program. For example, while it is important

to collect normative data on the time and costs of personnel, it is also necessary to collect actual expenditure and resource (staffing) data for the baseline year of the analysis.

Normative cost data reflect the cost of providing high-quality services according to norms and standards, typically detailed in a community health strategy. This includes information on the interventions provided by CHWs; the estimated number, time, and costs of personnel supporting the programme (e.g., CHWs, supervisors, managers); expected costs of training and supervision; and costs of services based on STGs.

Figure 3. Data Collection Overview



Schematic adapted from C. Suharlim (2019) of MSH.

Before collecting data, it is important to identify where the necessary data can be collected from. The data needed for the costing and the likely sources are shown in Table 1. It is recommended that normative cost data be collected and reviewed first (typically at the district and/or national level), followed by data collection at a sample of health facilities (e.g., through interviews with supervisors and CHWs).

Most of the data needed for the costing analysis can usually be obtained from the records of the Ministry of Health or implementing NGOs supporting community health programmes. Expert panels can also help in providing service delivery and programmatic norms and standards (e.g., STGs, estimated time per activity).

However, collecting data at a sample of health facilities and from CHWs will help the costing team get a better idea of the reality of programme implementation and whether certain cost assumptions should be revised. Specifically, data relating to the time allocations and activities of CHWs, supervisors, and managers should be obtained and/or validated through a sample of interviews. Even if these data assumptions can be provided at higher levels (i.e., through experts), the interviews serve as an opportunity to confirm these assumptions while providing a reality check of how activities are conducted and identifying successes and challenges (i.e., bottlenecks) that CHWs, supervisors, and managers are facing.

In the past, interviews with CHWs and supervisors have been useful for revising specific data norms and identifying programmatic bottlenecks. For example, although a CHW is supposed to receive a financial incentive of US \$10 per month, interviews with CHWs may indicate they do not receive a financial incentive or payment has been delayed for

several months. Another example is that while a CHW is supposed to receive a monthly supervision visit, they may only receive them every six months. In these cases, the costing team may discuss with the stakeholders to arrive at a new norm that all can agree upon and actually implement.

Table 1. Data Sources

Data and Location in Tool	Primary Sources	Secondary Sources (sample sites)
Country Data <ul style="list-style-type: none"> ▪ National and sub-national population figures and growth rate ▪ Population breakdown by gender and age groups ▪ Annual inflation rate ▪ Average number of persons per household ▪ Currency exchange rate 	National Statistic Office United Nations Development Programme World Bank Demographic Health Survey www.oanda.com	
Programme Data (local) <ul style="list-style-type: none"> ▪ Population breakdown between urban and rural areas ▪ Health system levels—numbers of districts, sub-districts, health centres, health posts, dispensaries and clinics ▪ CHS financing sources 	MOH or NGO offices	District manager
Programme Scale Up <ul style="list-style-type: none"> ▪ Current CHS population and geographic coverage, service coverage, and planned levels of scale up 	MOH or NGO records and interviews	District manager
CHW Categories <ul style="list-style-type: none"> ▪ Current and planned cadres and numbers of CHWs ▪ Actual and normative ratios of CHWs per population and/or per community or household ▪ Estimated or actual CHW attrition rates ▪ Standard or expected CHW working hours ▪ Financial incentives, including salary/stipend and benefits ▪ Non-financial incentives 	MOH or NGO records, policies, and interviews	District manager, CHWs, and supervisors
Supervisor Categories <ul style="list-style-type: none"> ▪ Current and planned cadres and numbers of CHW supervisors ▪ Actual and normative ratios of CHWs per supervisor ▪ Standard or expected time for supervision of CHWs ▪ Financial incentives including salary and benefits ▪ Non-financial incentives 	MOH or NGO records, policies, and interviews	District manager and supervisors
Package <ul style="list-style-type: none"> ▪ List of services provided by CHWs grouped by health area/programme type (e.g., MNCH; family planning; water, sanitation, and hygiene) and service type (e.g., curative, promotional, preventive) ▪ Cadre of CHWs providing the service (e.g., in some programmes, only rural female CHWs are trained to provide family planning services) ▪ Target population group for each service (e.g., the target population of family planning services are women of reproductive age) ▪ Where service is provided (if different packages are provided in urban and rural areas) ▪ Incidence and prevalence rates as well as expected utilisation rates for each service 	MOH or NGO records, policies, and interviews Demographic Health Survey	District manager, CHWs, and supervisors
Number and Type of Services Delivered and Coverage <ul style="list-style-type: none"> ▪ Actual number of services provided in the baseline year of analysis ▪ Projected number of services and/or coverage targets for each future year of analysis (up to five years) ▪ Type of services – counselling, treatment, referral, etc. 	MOH or NGO records, health facility and CHW registers, and/or health information system	District manager

Data and Location in Tool	Primary Sources	Secondary Sources (sample sites)
Supervision <ul style="list-style-type: none"> ▪ Numbers and costs of supervision visits and meetings 	MOH or NGO records, policies, and interviews	District manager, supervisors
Management <ul style="list-style-type: none"> ▪ Current and planned cadres and numbers of programme managers ▪ Standard or expected time for management of community health programme ▪ Financial incentives, including salary and benefits ▪ Non-financial incentives ▪ Numbers and costs of management meetings 	MOH or NGO records, policies, and interviews	District manager
Training <ul style="list-style-type: none"> ▪ Training session types (for CHWs, supervisors, and managers); frequency; number of participants; and costs 	MOH or NGO records, policies, and interviews	District manager, CHWs, and supervisors
Equipment <ul style="list-style-type: none"> ▪ Equipment quantities, unit costs, and replacement frequency for CHWs, supervisors, and managers 	MOH or NGO records, policies, and interviews	District manager, CHWs, and supervisors
Medicines <ul style="list-style-type: none"> ▪ Unit costs and unit mark up (the types of medicine and supplies are derived from the STGs) 	MOH or NGO records, policies, and interviews (including medicine price lists)	District manager, CHWs, and supervisors
Other Recurrent Costs <ul style="list-style-type: none"> ▪ Descriptions, quantities, replacement frequency, and costs 	MOH or NGO records, policies, and interviews	District manager, CHWs, and supervisors
Capital Costs <ul style="list-style-type: none"> ▪ Descriptions, quantities, replacement frequency, and costs 	MOH or NGO records, policies, and interviews	District manager
Financing <ul style="list-style-type: none"> ▪ Financing sources and amounts per year for baseline year and each future year of analysis (up to five years). 	International and domestic financial partners, MOH, or NGO records, policies, and interviews	District managers, supervisors, and CHWs regarding user fees
Standard Treatment Guidelines <ul style="list-style-type: none"> ▪ For each service provided by CHWs, description; target population; time per service; and quantities of tests, medicines, and supplies 	Expert panel	CHW interviews for validation of standard times

Step 3. Plan for Data Collection

Having a clear and structured plan for data collection will help to ensure that all necessary data are collected to meet the objectives and scope of the analysis.

Determine the Sample Size and Selection Criteria

If field data collection is required, it is important to identify the sample size and selection criteria (for health facilities and CHWs) which will largely depend on the agreed-upon objectives of the exercise and the mapping that were completed in Step 1, as well as time availability and funding. If very robust data estimates are needed for the exercise, the sample size will need to sufficiently represent the diversity of the programme and ensure that the data captured are robust.

Ideally, the sample should be representative of the programme area to be costed and should take into account geographic and partner diversity, different cadres of CHWs, and CHS package diversity (if applicable). Other criteria might also be applicable, such as programme maturity, distance from a health facility or district capital, and cultural or ethnic diversity.

Sample Design Optimizer

The Sample Design Optimizer instrument is a helpful resource for teams using hierarchical clustered sample designs. It draws on user information to maximise expected precision within a data collection budget constraint. Although designed for immunisation costing studies, it is broadly applicable to community health programs.

Additional details: <http://immunizationeconomics.org/sample-design-optimizer>

In some cases, the sample size will be limited due to funding constraints and/or issues of insecurity or other travel constraints. For example, past investment cases conducted in South Sudan and Burkina Faso relied largely on normative data collected at the national level due to issues of insecurity and funding limitations. While the data used for these exercises may not be considered robust, they were sufficient for the purpose of estimating the future costs of national community health programmes and mobilising resources.

Ultimately, the users of the costing results (MOH staff or implementing partners) should provide guidance on the sample selection size and criteria, as they need to be satisfied with the results. However, extensive sampling can take considerable effort, and the available time and resources should be taken into account when determining the size of the sample.

Examples of selection criteria used are:

- Geographical representativeness
- Socioeconomic diversity
- Accessibility—distance from nearest health facility and district capital
- A mix of urban and rural areas represented across selected districts
- Population size—to have a mix of large and small
- Strong district leadership and willingness to collaborate based on past experience
- An active group of CHWs involved in CHS
- Service package maturity (i.e., how long the programme has been in place)
- Cultural and ethnic diversity
- Complementary work of NGOs and other supporting partners

The amount of time needed for the visits will depend on:

- Sample size
- Number of staff supporting the data collection activity (e.g., number of data collectors)
- Geographical context and accessibility (i.e., ease of travel)
- Availability of those being interviewed, especially for government employees and partners

The time required for data collection will depend on the aforementioned criteria and factors. A sample calendar is provided in Figure 4. Based on recent costing exercises, data collectors have typically spent between two and five days per district, including travel, depending on distance. This includes a half to full day at the District Health Office and a half-day at each health centre (during which they are able to interview both health centre staff and CHWs). The timing of the visits should be planned according to the time necessary for travel as well as the availability of the personnel being interviewed. Additional time should be allotted for any unexpected delays or logistical issues.

Figure 4. Sample Calendar of Data Collection for One District

	Activity
Day 1	Meet with District Health Office personnel to provide an overview of the study, conduct necessary interviews, and collect data
Days 2–5	Morning: Visit health facility and conduct interviews with CHW supervisors and CHWs Afternoon: Visit health facility and conduct interviews with CHW supervisors and CHWs

Adapt Data Collection Tools

The interviews with expert panels, central level managers, district managers, CHW supervisors, and CHWs are facilitated by the use of questionnaires (Annex 2–6). These questionnaires are applied to each level of the health system (central, district, health centre, CHW) and to partners if applicable. After defining the purpose of the analysis and completing the preparatory research, the questionnaires should be adapted to accurately reflect the data collection needs. Where needed, the data collection tools should be translated into the local language(s).

In addition to using the questionnaires, it is important to collect written data during the field visits. It is especially important to get a copy of the HMIS data broken down by health facility, since national-level data will usually only have aggregate district data. In addition, the data for CHW services may need to be collected at the visited health centres since these data are often aggregated with health centre data when submitted to the district.

Plan Data Collection Logistics

Prior to field data collection, the MOH should provide written authorisation allowing the costing team to begin data collection and visit selected districts and health centres and conduct interviews. Field data collection should be conducted according to MOH policy (e.g., if the costing team requests that CHWs travel to the health centre for interviews, they should be reimbursed for their transportation expenses if required by MOH policy). Prior to the field visits:

- Adapt data collection tools to the local context and service package (see above section)
- Finalise and confirm the list of interviewees, including contact information
- Schedule the interviews (meeting time/location)
- Arrange transportation for data collectors or paid reimbursements (written receipts may be required)
- Engage and train data collectors or translators (see section below on selecting and training data collectors). This may include preparing binders for data collectors (with a hard copy of the data collection tool and protocol); paper to write on (e.g., post-it notes, note pads); pens; and a sign-in sheet with the names and contact information of interviewees and the scheduled meeting times and locations. Some data collectors may prefer to have a digital copy of the data collection tool for direct entry.
- Per diems/allowances (and small denomination bank notes) for drivers, interviewees, and data collectors, if required
- Funds for paying fuel, hotels, meals, and incidentals, if required
- Drinks/light snacks for data collectors and interviewees, if required
- Cell phone for organising interviews and communicating with interviewees
- Camera to take pictures of CHWs, beneficiaries, and/or data only available in hard copy
- Computer, if documenting interviews electronically, along with an extra computer battery (in areas without electricity) or charger

Based on previous costing exercises, there are a number of lessons learned that could be helpful for those conducting similar exercises:

Location:

- To reduce the time needed for data collection, the interviewer should have the CHWs gather at a central location (e.g., a health centre) to conduct the interviews, rather than have the interviewers travel to the home of each CHW, which could be time consuming.
- Ensure that vehicles have sufficient fuel to cover the distance to be covered.
- Set an interview location that is separate from the day-to-day activities of the health centre to allow for a more focused and transparent conversation with CHWs and supervisors. For example, the location could be outdoors or in a separate room/building.

- To ensure open and honest interview responses, it is advisable to conduct separate interviews with CHWs and supervisors. If the two groups are interviewed together, CHWs are unlikely to openly discuss any challenging realities of their role and/or may provide answers that are incorrect (e.g., “My supervisor visits me every month”).

Budget and financing:

- Prepare a budget prior to field data collection of all required expenses (e.g., per diems, fuel, hotels, meals, incidentals, printing, and cell phone credit).
- If bank machines are unavailable in the selected districts, it is advisable to bring sufficient cash or balances in mobile phone, if that is the preferred method for cash transfers (e.g., m-PESA).
- Have enough cash, preferably in low denomination notes, for the payments as well as fuel and spare funds for emergencies.
- If CHWs are normally reimbursed for travel to the health centre, identify the amount of reimbursement to ensure harmonisation with existing MOH policies and partner interpretations.
- Include a sign-in sheet for participants to provide their name and contact information and to confirm receipt of payment, if applicable.

Before the interviews:

- Travel with counterparts from the MOH or implementing partners to make introductions and facilitate data collection.
- Ensure that data collectors are well prepared and have reviewed the list of interview questions in advance.
- Depending on the location of selected districts, ensure that data collectors speak the local language and can translate the nuanced responses of interviewees.
- Scheduling interviews:
 - Schedule all interviews and meetings well in advance and keep an accessible list of phone numbers for each interviewee.
 - Confirm the interview time and location with the interviewee the day prior. During this time, also mention the types of questions that will be asked, the data that will need to be collected and expected time requirement (~1–2 hours/interview). This will allow the interviewee to gather any necessary documents before the interview. It is beneficial to reconfirm the interview the morning of as well.

During the interviews:

- During the interviews, data may be collected either as a hard copy or on a computer, depending on preference and availability. If the data collector decides to document the responses on a computer, he or she should continuously back up the information to ensure no data are lost. In addition, as interviews can last all day, it is helpful to bring along an extra computer battery or charger.
- Often, CHW or health centre data (e.g., catchment population data, a list of CHWs) is only available in a hard copy. In these cases, the data collector should take photographs of the documents and make a note in the photo of what the document is and where it came from.
- Inquiring about private information such as estimated monthly/annual salaries can be inappropriate, depending on the setting. Instead of asking for a specific figure, one can ask for an estimate or salary grade level, which can be identified using an MOH salary scale.

The following are lessons learned from conducting group interviews with CHWs:

- Have the CHWs sit in a semicircle with the facilitator to create a more natural and conversation-like environment.
- Become familiar with the questionnaire so that it can be administered in a conversational manner (as opposed to a strict question-and-answer format).
- If possible, hold the conversation outside of the direct health centre to create a more comfortable and open discussion with the CHWs.

- A group of three—one facilitator who administers the question, one recorder who enters responses into the questionnaire, and one note taker for back up—typically works well. Having a national counterpart who understands the task and can help translate into the local language (if needed) will help in terms of moving the conversation along and ensuring that accurate information is gathered.

Select Data Collectors

The selection of data collectors should take into account their ability to understand and communicate in the local language and familiarity and experience with interviewing techniques. Familiarity with CHS and/or community health activities is also useful, as this will aid in their ability to obtain and document responses.

After data collectors have been selected, a brief protocol for data collection that addresses data collection tools, interview techniques, and procedures should be developed. Training on this protocol should be provided to the data collectors prior to implementing data collection activities. During the training, information on the local context and background of the study should be provided. This will ensure consistency across the data collectors and enable them to more appropriately apply the questionnaires.

Once data collectors have been trained, they should field test the questionnaires with supervision from the primary tool users. This will ensure not only that the data collectors are consistent in their techniques but also that the tools are appropriate to the local context.

Step 4. Collect the Data

Collect and Review Available Data and Documents from MOH and Partners

An important part of the initial data collection is a review of available written policies and guidelines, as well as recent reports, studies, and plans relevant to CHS from the MOH and partners. These documents will help to prepare a situation analysis and guide the data collection process. Typically, these documents include:

- National health sector strategic plan
- Community health strategy and CHW profile
- Job descriptions of CHWs and supervisors
- National strategic plans for specific health programmes supported by CHWs (i.e., Immunisation, MNCH, HIV/AIDS, malaria, neglected tropical diseases, family planning)
- Demographic health survey and/or Multiple Indicators Cluster Survey and other related surveys such as Service Provision Assessments (SPA) and Service Availability and Readiness Assessment (SARA)
- Raw health management information system (HMIS) data for baseline year and two previous years for each district (for the purpose of understanding trends of coverage) as well as DHIS2 reports where available
- National benefits package
- Packages of services at health centres and at the community level
- STGs
- Description of the HMIS and flow of data at different levels of the health system
- A breakdown of the population and population density for each district by gender and age group

Central Data

Information to be obtained at the central level includes:

- National strategy for CHS
- National CHW policy

- Types of CHWs, salaries, and percentage time spent on the CHS programme (including supervision, training, and meetings)
- National treatment protocols
- District health information system data disaggregated by health facility and community
- National Integrated Management of Childhood Illness (IMCI)/iCCM manual
- CHW standard training module descriptions
- Standard package of CHS services
- Medicine information
- Any user fees in place for CHS

Partner Data

Depending on the involvement of nongovernmental and private sector partners in the country, it would be advisable to conduct interviews with partners supporting community health services to identify:

- Districts where partners are supporting CHS implementation
- Number of staff supporting CHS, their level of effort, and estimated salary costs for the management of CHS
- Training data, including different training modules, number of CHWs trained, and unit and total costs
- Supervision data, including frequency of supervision visits, the estimated cost per supervision visit, and the total amount spent per year at each level (e.g., central supervision of health facility, health facility supervision of community)
- Costs and quantities of medicines and supplies provided to CHWs for CHS (including transport, storage, and other mark-up costs)
- CHS support costs to the MOH, including those for management, mentoring, and reporting
- Previous and projected budgets for CHS activities
- Financial and non-financial incentives provided to CHWs (e.g., payments, t-shirts, transportation)

Conduct Expert Panel

An essential component of the costing exercise is the use of an expert panel to determine or confirm the STGs for the services in the package as well as incidence rates, expected numbers of services, and other aspects of the CHS program. This activity should take place at the start of the costing exercise and prior to conducting field data collection, during which the data assumptions can be validated (e.g., through interviews with CHWs and direct supervisors). Ideally, the costing team should meet with the panel again near the end of the costing exercise to review the findings, provide feedback, and answer any outstanding queries. See Annex 3 for guidance.

It is recommended that the panel comprises highly respected experts on CHS and PHC in the country. Ideally, the panel will comprise members of different MOH departments who are involved in planning and managing CHS, as well as managers and direct supervisors (e.g., health centre nurses, peer supervisors) of CHWs who have been closely involved in CHS. The panel should include public health doctors (for credibility as well as knowledge) and at least one public health nurse, a pharmacist, and a CHW supervisor or manager.

Collect Data from Identified Sample

If field data collection is required, it will be important to collect data from all those involved in CHS at the district level, such as the district health officer, finance manager, HMIS officer, IMCI programme coordinator, CHW supervisor, and pharmacist. Where there is a regional or state office, data should also be collected there. At the health centre level, data should be collected from the facility manager, the CHW supervisor, and the information officer. Information should be collected on catchment population figures, utilisation data, and expenditures for these facilities and the communities they serve. At the community level, CHWs should provide population and coverage figures for their specific catchment areas as well as information on their time; salaries; and supervision, reporting, training, and meeting requirements.

Step 5. Produce the Cost Results

Compile and Clean Data

Once data collection is complete, information should be reviewed for completeness and clarity and prepared for entering into the Community Health Planning and Costing Tool for analysis. As soon as the information is compiled, cleaned, and summarised, it should be verified with MOH national and sample district programme managers and/or NGO managers. It is also important to identify any missing data and allow time for follow up with partners and other in-country contacts.

A preliminary round of data analysis is required to synthesise qualitative results from the interviews and field data collection. This should be done by tabulating the results in Microsoft Excel with one column for each interview. The data collection team should carry out this preliminary round of data analysis at the end of each sample district data collection round.

The data should be compared with the norms and standards provided by the expert panel to reach consensus, identify areas of disagreement, and highlight important areas for follow up in subsequent interviews. One area where there is often significant disparity is in the times that CHWs say they are available and the actual times that they say they spend on a particular service (travel time and service delivery time). If CHWs are supposed to work set hours, that figure should be used as an estimate. If a standard time was provided by the expert group for each service and the average time stated by the CHWs is close to that figure, then the standard time should be used. If no standard time was provided, then the average should be used. All of these estimates should be carefully reviewed with managers and supervisors and with the expert panel.

Enter Data into Tool

Once the data have been summarised and checked, they can be entered into the tool, which has an embedded user guide with step-by-step instructions (Figure 5). If further instruction is needed, users can contact fintools@msh.org for support.

Figure 5. Example of User Guide for Data Entry

Examples of where to enter data: blue cells

I. Country Information	
Country	Malawi
Baseline year of analysis	2015
Total Population (2015)	16,695,253
Annual population growth rate	3.1%
National Currency	MWK
Exchange rate per 1 USD (2015)	665
Enter data in:	MWK
View results in:	MWK USD
Annual inflation rate:	0.0%

Direct Data Entry
(enter data manually)

Drop-down Menu
(enter data using drop-down menu - do NOT enter manually)

If conducting a national-level analysis, the user should develop one master file (i.e., model) that can be used to conduct further what-if analyses. However, if conducting multiple sub-national (i.e., district) analyses, separate versions of the tool should be used for each district, with the results ultimately aggregated in a separate workbook. If districts are combined in the tool, it will not be possible to disaggregate the results by district.

Set Scale-Up Targets

The tool can be used to model the costs and required financing of programme implementation for up to five years. These results are based on the user first entering data for the baseline year and setting scale-up targets for the five subsequent years based on the projected coverage of CHS. To reduce time for data collection and entry, the tool also

includes preloaded data. These include a list of common CHS and their STGs, unit cost of medicines, time per service, and incidence and prevalence rates.

The tool is customizable and can be used to assess the costs and financing of CHS introduction and expansion in low- and middle-income country settings with different levels of service coverage and delivery platforms. Once the master file is developed and baseline service delivery coverage is entered into the model, the user can set scale-up targets for up to five years.

In the past, different models have been created for both national and sub-national cost analyses to assess the impact of scaling up services on the total cost of the program. Many countries are particularly interested in determining the cost variation of low-coverage scenarios versus high-coverages scenarios that assume a higher CHS coverage among beneficiaries. In the tool, coverage can be modified by entering either the total number of projected CHS per year or a percentage of expected coverage.

Interpret and Use Results

The analysis produces a number of results that are key to understanding and justifying the investment in CHS. Sample results tables are shown below (Figure 6 and Figure 7), but a few principles are worth stating here:

- Comparisons of actual and normative costs across countries should be made with great caution because the context (e.g., incidence rates) and mix of services can vary significantly. The cost of a CHS package that is predominantly preventive and involves group activities will be quite different from the cost of a package that has significant one-on-one services, such as counselling for family planning or diagnosis and treatment of malaria.
- Comparisons of actual costs across districts should be made with caution because the context and mix of services can vary within a country.
- Lower costs do not necessarily mean higher efficiency—they can also mean lower quality. For example, a CHW who spends less time on a patient with malaria may be cutting corners on diagnosis. Similarly, higher costs do not necessarily mean higher quality but may signify waste or inefficiency in resource use and/or high prices paid for resources.
- Where actual costs are close to normative costs, it indicates that there is sufficient funding but the breakdown of resources may be imbalanced (e.g., too many staff and too few medicines). It is therefore important to look at the breakdown of costs and not just total costs.
- The main cost drivers of a CHS programme are often supervision and management, particularly if the CHWs are not remunerated for their work. Supervision costs involve the salary of the supervisor and the cost of transport to the location of the CHW. Special attention should therefore be paid to validating these costs.
- Supervisor and manager salary costs are based on the time that they report spending on CHW-related activities. These times are sometimes overestimated, which can greatly inflate the costs. Any times that seem high should be cross-checked.
- The cost of replacing CHWs who stop working (attrition) is often not included in budgets. However, it is important to include these costs as replacement CHWs need to be trained and equipped. If this does not happen, the numbers of CHWs and their coverage will dwindle.
- Similarly, equipment should be replaced when it is no longer usable. The length of use will depend on the circumstances. For example, in an area with rough (or no) roads, a bicycle may need to be replaced every few years.
- Refresher training is important as skills can be lost, especially where curative services are not provided frequently enough.
- Ensure that the sample of districts and CHW groups is sufficient and representative in terms of scale up to estimate national-level costs.
- One of the advantages of the tool is that it is dynamic and can show the impact of changes in the plan on costs in real time. If sufficient funding is not available, the number of activities can be reduced by removing lower-priority

interventions, reducing targets, or focusing on the neediest populations. The tool can then provide a basis for operational plans by linking activities and resources to budgets. It can also be used to quickly estimate the cost and feasibility of adding a service (e.g., a preventive service may be added for no increase in cost if the CHWs have available time, but there will be an opportunity cost if they are already fully occupied).

Figure 6. Results Table (Example 1)

COMMUNITY HEALTH PROGRAM SUMMARY TABLES (USD)							
Example Region, Malawi							
Select Currency:	USD						
		2019	2020	2021	2022	2023	2024
Population Summary							
Total Population of Example Region		1,708,930	1,748,235	1,788,445	1,829,579	1,871,659	1,914,708
Total Population covered by Community Health Program		690,408	881,111	901,376	922,108	943,316	965,013
Urban Population covered		109,372	167,831	171,691	175,640	179,679	183,812
Rural Population covered		581,036	713,280	729,685	746,468	763,637	781,201
Number of Community Health Workers							
HSA		300	375	450	450	450	450
UHSA		60	80	90	90	90	90
Total		360	455	540	540	540	540
Total Urban CHWs		60	80	90	90	90	90
Total Rural CHWs		300	375	450	450	450	450
Average number of services provided by CHW per year							
HSA		34	723	907	1,254	1,609	1,988
UHSA		34	723	907	1,254	1,609	1,988
Average (across all CHW categories)		34	723	907	1,254	1,609	1,988

Figure 7. Results Table (Example 2)

COMMUNITY HEALTH PROGRAM SUMMARY TABLES (USD)							
Example Region, Malawi							
Select Currency:	USD						
		2019	2020	2021	2022	2023	2024
Additional Cost?	Cost by Input (USD)						
<input checked="" type="checkbox"/>	CHW Salaries	449,400	578,442	701,334	715,360	729,668	744,261
<input checked="" type="checkbox"/>	CHW Equipment	7,371	221,889	255,812	348,710	539,312	548,762
<input checked="" type="checkbox"/>	Medicines and supplies	8,501	201,870	294,195	401,268	513,160	630,079
<input checked="" type="checkbox"/>	Supervision Salaries	340,416	443,676	531,253	541,878	552,716	563,770
<input checked="" type="checkbox"/>	Supervision Equipment	-	-	-	-	-	-
<input checked="" type="checkbox"/>	Supervision Visits	264,720	329,160	389,280	389,280	389,280	389,280
<input checked="" type="checkbox"/>	Recurrent Training (CHWs)	61,920	176,847	220,469	262,323	358,083	262,323
<input checked="" type="checkbox"/>	Recurrent Training (Supervisors)	1,920,000	1,880,000	2,080,000	2,220,000	2,220,000	2,220,000
<input checked="" type="checkbox"/>	Recurrent Training (Managers)	44,000	98,000	118,000	136,000	136,000	136,000
<input checked="" type="checkbox"/>	Management Salaries	14,000	15,300	15,606	15,918	16,236	16,561
<input checked="" type="checkbox"/>	Management Equipment	231,000	-	-	-	-	330,750
<input checked="" type="checkbox"/>	Management Meetings	11,185	12,481	13,777	13,777	13,777	13,777
<input checked="" type="checkbox"/>	Other Recurrent Costs	13,800	17,100	20,400	20,400	20,400	20,400
<input checked="" type="checkbox"/>	Initial Training (CHWs)	123,500	1,395,550	3,254,870	1,049,049	1,049,049	1,049,049
<input checked="" type="checkbox"/>	Initial Training (Supervisors)	-	156,000	155,000	151,500	151,500	151,500
<input checked="" type="checkbox"/>	Initial Training (Managers)	-	3,000	-	-	-	-
<input checked="" type="checkbox"/>	Start-up Costs	2,000	1,500	-	-	-	-
<input checked="" type="checkbox"/>	Capital Costs	180,000	-	-	-	-	-
	Total	3,671,813	5,530,815	8,049,996	6,265,463	6,689,180	7,076,512

Validate Results

Once the costing models have been developed and results have been produced (often in a PowerPoint report), they should be validated with key stakeholders such as the expert panel, MOH officials, and NGO managers.

Although dependent on the scope of the exercise, the following key results are typically presented:

- Total programme costs, baseline year, and five-year cost projections.
- Costs per capita, per CHW, per service, per program, and per resource type.
- Incremental costs and incremental financing (start-up and recurrent).
- Key drivers of costs and cost categories as a percentage of total costs.
- Quantities and costs of each type of medicine needed.
- Financing sources and gaps.

The costing results can be used for the following types of analysis:

- Planning and budgeting a new package or program, additions or changes to a package, or geographical expansion of a package.
- Comparing technical efficiency and cost-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 or to understand the cost implications of introducing new services or programme components (e.g., introducing financial incentives for CHWs).
- Understanding what bottlenecks exist and their impact, options for removing them, and ranges of costs required for removing them.
- Developing investment cases and lobbying for support (funding and otherwise) from donors and partners.
- Sample country analyses and investment cases are provided in Annex 8.

It is recommended that additional analyses (described below) be conducted in conjunction with and based on the results of the costing exercise.

Preparing a National Costing Model

This section focuses on national-level costing, which can be based on district cost models or use national data.

The best approach to developing a cost model for a national CHS plan is to first cost a sample of district CHS programmes, which can then be used for extrapolation to national-level costs. A minimum of three districts is recommended, which allows for some diversity among districts—for example geographical, cultural, CHS packages, and CHS service providers (e.g., government or NGOs). The STGs should be the same across all districts, although some of the unit costs may vary, such as the mark-up on medicines and supplies and incentives, which can be higher in remote areas. There are several options when preparing a national model from a sample of districts:

- One approach is to prepare a district model that represents an average of the sampled districts. The data used in this model should be weighted in favour of the sampled districts that most represent the country as a whole. If one district is representative of the characteristics of the country, for example, the costs used in the average model should be based largely on that model.
- An alternative approach would be to develop a district model for each of the main representative areas of the country. Show these results in combination for the national costing, together with a national average. This approach has the advantage of showing regional disparities.
- Only some of the data for the national model need to be based on sample district averages. These are:
 - Handling and transport mark-ups for medicines and supplies.
 - Times needed by CHWs, supervisors, and managers related to CHW services.
 - CHW and supervisor attrition rates.
- The remaining data sets for a national model would come directly from national data, including:
 - Number of provinces, districts, health centres, health posts, and communities.
 - Population data.
 - Numbers of services provided in the baseline year and targets/projections for future years.
 - Number and remuneration of CHWs, supervisors, and managers.
 - Type, length, and frequency of training events.
 - Incidence rates and expected numbers of services.
 - STGs.
 - Medicines, supplies, and equipment purchase prices (even if different prices are paid by NGOs in different districts, it is best to use prices from national procurements made by the government or donors).
 - Numbers of supervision visits and management meetings.
 - Capital costs (e.g., buildings and equipment) and costs of removing bottlenecks.
 - Financing sources.

If the intent is to develop a national model without district sampling, all figures will need to be based on national norms and estimates, including handling and transport mark-ups for medicines and supplies; time needed by CHWs, supervisors, and managers related to CHW services; and CHW and supervisor attrition rates. The expert panel will play a vital role in providing these data.

Financing Analysis

With five years of cost projections in the tool, it is important to identify committed sources of funding – whether from domestic or external resources – so that gaps can be identified and advocacy undertaken to fill them. If funding remains insufficient, the user can adjust key assumptions in the tool to reduce the cost of programme implementation and its required financing. For example, if there is insufficient funding to implement a new community health programme across the entire country, priority can be given to the geographic areas with the least access to facility-based services.

Financing can be entered as general lump sums, such as the government budget for management and supervision, or it can be tied to a particular element of a programme, such as donor funding for malaria medicines. In the latter case, the financing can be linked to the projected malaria medicine costs, which will show changes over time. Funding shifts can also be modelled, such as the transition of pneumonia medicine funding from a donor to the government.

While it is essential that governments commit sufficient resources for programme implementation to ensure their sustainability, the Community Health Planning and Costing Tool can be and has been used in settings which vary in terms of their available domestic resources and reliance on donor funding. The tool can also be used to demonstrate increasing domestic resources toward community health and facilitate the transition away from donor financing for specific programme components.

Bottleneck Analysis

A bottleneck analysis is an important component of an investment case. A bottleneck analysis typically uses a mixture of quantitative and qualitative methods and brings together a range of different perspectives and expertise to identify and understand a problem. The analysis helps to identify where problems are occurring within the health system and why they contribute to low coverage of health services. According to Tanahashi (1978), the five elements of service coverage comprise effectiveness, contact, acceptability, accessibility, and availability.⁴

A bottleneck is considered any barrier (e.g., geographic access, financial, sociocultural, knowledge) that restricts the demand, supply, and/or quality of services. A bottleneck analysis for a community health programme would identify indicators for the aforementioned aspects of coverage and estimate the coverage for each indicator using available data. For example, an indicator for effective coverage could be the percent of children under-five who are screened for malnutrition and the coverage would be the actual percentage screened (based on available survey or programmatic data).

For each bottleneck identified, a group workshop could be held to discuss causes for each bottleneck, its impact on services and/or costs, and the selection and cost of the best solution. Among community health programmes, common bottlenecks affecting intervention coverage include, but are not limited to, stock-outs of medicines, a lack of qualified personnel (i.e., those who do not meet the recruitment criteria of a CHW), and CHW attrition.

Understanding bottlenecks is a key part of the planning process. The constraints of any bottleneck on achieving targets must be taken into account when setting those targets unless it is planned that the bottleneck will be removed. The targets used in the costing will therefore reflect the presence of, or removal of, such bottlenecks. Analysing the causes of bottlenecks and their impact on service coverage and calculating the costs of removing them can be difficult and generally requires a separate analysis. For example, a shortage of medicines can be a result of a lack of funding for transport at the district level, a lack of adequate storage facilities at the provincial level, or a poor national quantification or procurement system. Each of these has different solution options and may require a study to identify, evaluate, and cost those options.

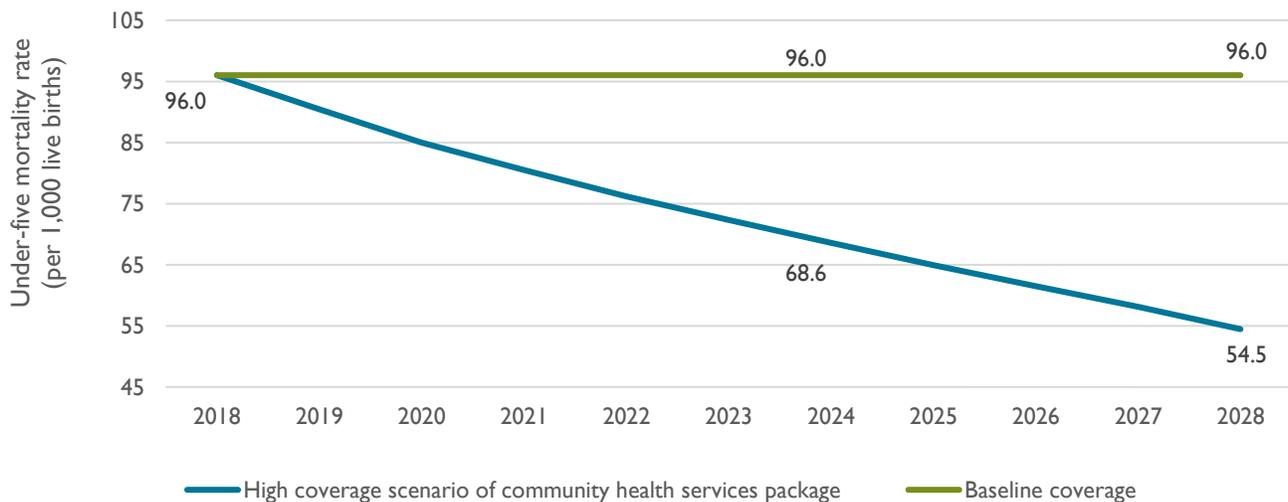
Some questions on the identification of bottlenecks are included in the data collection for the costing, but a deeper analysis is needed to get a complete picture. This is part of the planning work and is described in UNICEF's health systems strengthening approach (Annex 2).

LiST Analysis

In addition to estimating the cost and required financing of community health programmes, there is increasing demand and interest among governments and donors to determine the *value for money* (in terms of health impact) of introducing and expanding access to CHS. For example, the governments of Burkina Faso, Madagascar, and South Sudan – as part of their recent community health investment cases – sought to model the future costs and estimated impact on mortality reductions based on different coverage scenarios of CHS. To facilitate these analyses, the Community Health Planning and Costing Tool was used in conjunction with the Lives Saved Tool (LiST) to estimate the costs of implementation as well as the projected numbers of lives saved (i.e., additional deaths averted) and the percentage reduction of infant and maternal mortality rates, respectively.

LiST, developed by the Institute for International Programs at Johns Hopkins Bloomberg School of Public Health and funded by the Bill and Melinda Gates Foundation, is a mathematical modelling tool that estimates the impact of scaling up high-impact MNCH and nutrition interventions in low- and middle-income countries. LiST estimates the impact of these interventions on health outcomes to quantify the potential effectiveness of an intervention or package of interventions. In other words, LiST can be used to model the impact of increasing the population coverage of a single intervention (e.g., oral rehydration salts for diarrhoea) or multiple interventions (e.g., iCCM for diarrhoea, malaria, and pneumonia) while preventing the double-counting of impact. LiST can also be used to examine the impact of coverage changes at a global, national, or sub-national level (Figure 8).

Figure 8. Example of Using Lives Saved Tool to Demonstrate Changes in Mortality



The LiST software relies on preloaded datasets that are updated regularly and can be modified by the user. Coverage data are usually compiled from nationally representative household surveys, including the Demographic and Health Surveys and Multiple Indicator Cluster Surveys. Mortality rates come from the UN Inter-agency Group for Child Mortality Estimation and WHO, UNICEF, United Nations Population Fund, and the World Bank. Cause of death estimates are prepared by the WHO Maternal and Child Epidemiology Estimation group.

To use the Community Health Planning and Costing Tool in conjunction with LiST, there are a number of step-by-step instructions to follow which are further described within the tool (MS Excel file). This involves matching the interventions from the MOH-produced package of CHS with those included in LiST and then ensuring that their rates of annual coverage also correspond.

It is important to note that an MOH-produced package of CHS generally comprises more interventions than are included in the pre-defined package of services of LiST. For example, LiST does not include a number of promotional services (e.g., household visits and community messaging) that are typically provided by CHWs and which indirectly contribute to mortality reductions and other health outcomes. Therefore, the total cost of the CHS package may not fully correspond to the outcomes (i.e., mortality reductions) produced by LiST. Therefore, caution should be used in the interpretation of results.

It also important to note that following limitations of using LiST in conjunction with the Community Health Planning and Costing:

- Demonstrating the impact of CHWs and CHS in terms of mortality averted (i.e., lives saved) is narrow and does not consider the other health and economic benefits of CHWs. Many CHS are aimed at improving the quality of people's lives and may not have an impact on mortality (e.g., mental health, care for survivors of gender-based violence). Impact can also be expressed in terms of morbidity using Disability Adjusted Life Years and Quality Adjusted Life Years; however, separate analyses and methods are required.
- Some of the interventions included in the LiST model may not exactly correspond to the interventions included in the preloaded version of the Community Health Planning and Costing Tool or the interventions defined by the expert panel/community health programme in-country.
- The definition and calculation of coverage in LiST differ from those used in the Community Health Planning and Costing Tool. In the tool, coverage is defined and calculated as “the number of services and activities provided by CHWs (i.e., utilisation) relative to the target population in need of those services.” However, in LiST, coverage is defined as “the proportion of the population that receives the health intervention among those that needed it.” For example, in LiST, the coverage of oral antibiotics for pneumonia is defined as “the percent of children with suspected pneumonia (symptoms of acute respiratory infection) for whom advice or treatment was sought from a health facility or provider.” However, the calculation for coverage is not visible to the user. Therefore, it would be incorrect to assume that an increase in the number of services provided and activities conducted by CHWs (as per the tool) equates to exactly the same increase in the proportion of the population in need of the health intervention (as per LiST).
- Often, community health programmes do not have available coverage data for the baseline year (i.e., it is unknown exactly how many services CHWs provided and how many persons required those services). Because LiST quantifies the number of lives saved based on annual coverage increases from the baseline coverage rates, the user may use estimated coverage rates or make all baseline values zero if it is a new community health program.
- In LiST, it is not possible to quantify the impact of activities conducted by CHWs in terms of increasing the adoption of health behaviors or the coverage of health interventions provided at the health facility level. This represents a constraint in projecting the impact of CHW interventions and activities that are mostly promotional. For example, there are a number of health interventions that CHWs promote but do not directly provide, such as antenatal care at health facilities. In the absence of these data, the user should either make no changes to the coverage rates or make assumptions based on expert opinion.

To access LiST and related guidelines, go to <http://livessavedtool.org/>.

Developing an Investment Case

The purpose of an investment case is to demonstrate the value proposition of an intervention and make a compelling and objective argument for the investment of resources. While many governments seek to develop CHS-specific investment case, it is important that they are part of a broader strategy for investing resources and reinforcing the PHC system. In the case of community health programmes and strategies, an investment case is typically developed to persuade policy makers, government funding agencies (e.g., Ministries of Finance), and donors of its benefits and advocate for the sufficient allocation of resources.

Ideally, the investment case for CHS should include at the least the following key elements:ⁱⁱⁱ

- Situation analysis and problem statement
- Proposed solution and cost of interventions
- Bottleneck analysis and cost of removal
- Scale-up targets for services and costs compared with actual (baseline) figures
- Current financing commitments and gaps
- Estimates of health impact (e.g., measured in terms of morbidity and mortality averted or specifically a reduction in stunting and malnutrition in the case of nutrition interventions)
- Effects on reducing health inequities
- Comparison of situation with no investment (business as usual) with that of scale-up plan(s)^{iv} and, if possible, with alternative investments^v

References to example country investment cases are provided in Annex 8. A summarised investment case for a national community health programme in Sudan is provided below:⁵

Over the period 2015 to 2019, scaling up a package of selected nutrition-specific and nutrition-sensitive interventions to cover 90% of Sudan would:

- Reduce the under-five mortality rate from 73 to 49/1,000 live births
- Reduce the prevalence of stunting from 35% to 25% and reduce the prevalence of wasting (global acute malnutrition) from 16.5% to 6%
- Increase exclusive breastfeeding from 41% to 63%
- Reduce iron deficiency anaemia among pregnant women from 58% to 26%

The total annual cost of reaching 90% of Sudan with a package of selected nutrition-specific and nutrition-sensitive interventions amounts to US \$524 million—an increase of US \$443 million over the US \$81 million currently spent. Studies show that investing in improving nutrition can raise a country's gross domestic product by 3% per year. On the basis of Sudan's 2013 gross domestic product of US \$66.55 billion, this would translate into an annual gain for Sudan of US \$2 billion. The value of the benefit would be substantially more than the cost and would represent a fourfold return on investment.

ⁱⁱⁱ All the analysis and planning should take into account gender and equity aspects. The importance of equity has been described in Carrera et al. and Victora et al.

^{iv} Investment case can show several plan options with different financing needs.

^v The most relevant alternative investment would strengthen only facility-based services; however, challenges in access (approachability, acceptability, availability, affordability and appropriateness) may persist. It is also important to note that CHS depends heavily on the strength of the PHC system. If this system is weak, a successful CHS plan will have to include the activities and resources needed to strengthen it.

The CHS costing exercise is a key element in developing an investment case for CHS by providing the cost of different intervention packages at different levels of coverage as well as the committed resources and financing gaps. Including the additional costs of removing bottlenecks turns the service delivery plan into an investment plan, and adding the health impact estimates turns the investment plan into an investment case.

Annex 1. Sample Terms of Reference

The following terms of reference were developed by the South Sudan MOH and UNICEF for the development of an investment case for the National Community Health Strategy (Boma Health Initiative) and can be adapted for use by other countries.

Purpose	To Support the Ministry of Health, Republic of South Sudan to provide a costing and investment analysis for the Boma Health Initiative
Expected fee	Mid-Level Professional
Location	Juba
Duration	3 months
Start Date	As soon as possible
Reporting to	MNCH Manager under overall guidance of Chief of Section

Background:

South Sudan, has an estimated population of 9,297,254 which includes 1,952,423 children under the age of five years and 2,324,314 women of child bearing age (15-45 years). The country has some of the highest mortality, fertility and under-nutrition rates. The Infant Mortality Rate (IMR) and under-five mortality rates (U5MR) stand at 75 and 105 per 1000 live births respectively.

The over two decades of civil strife for independence in South Sudan impeded the establishment of community health structures, which was to the disadvantage of the Republic of South Sudan upon attainment of independence in 2011. Despite this missed opportunity, various attempts have been made to engage communities in health service delivery in South Sudan, including the period during the implementation of the Comprehensive Peace Agreement (CPA) to date. From the time the CPA was signed in 2005, community resource persons have continued to serve on an ad-hoc basis despite efforts to formalise or recognise the structure as an integral part of the national health system. As a programme priority area to address inequality, UNICEF supports numerous countries with the accelerated scale-up of integrated community initiatives, expanding cost-effective and life-saving treatments for children suffering from the major child killers - pneumonia, diarrhoea and malaria, which account for the majority of post-neonatal deaths in Africa. When well-equipped and trained, Community Health Workers (CHWs) can prevent and treat these conditions and significantly reduce U5 mortality.

Community Health Services (CHS) are a key strategy for promoting healthy behavior and for improving access to high-impact maternal, newborn, and child health interventions from pregnancy to adolescence, especially in remote communities. There is growing evidence on the benefits of community-based service delivery which also indicates that the integration of health services is important and effective. CHS has been identified as a good investment – able to prevent up to 3 million deaths per year, providing an economic return of up to 10:1 due to increased productivity and reducing the burden of services at health facilities. Much less is known, however, of the cost of effective, comprehensive, integrated community health programmes. Without this information, programmes 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 or the Global Financing Facility) are frequently missed. The current attempts at establishing community health structures are largely partner-led or disease specific, duplicative, fragmented and existing in different names and providing different packages, resulting in the absence of a harmonised structure. In addition, there is lack of clarity in the structure, composition, roles and responsibilities within the existing community health initiatives, which has led to lack of commitment of resources for selection, training and operation of the community health initiative structures.

During the Health Summit in March 2017 the Ministry of Health formally launched the ‘Boma Health Initiative (BHI)’ – a community health system strengthening strategy as a formal part of the overall health system in South Sudan. The BHI is a community-based model - comprising of Boma Health Committees (BHC), Boma Health Teams (3 Community health Workers) and volunteer Home Health Promoters (HHP) – which is meant to close the gap between health facilities and the communities. The BHI includes an integrated package of health promotion, disease prevention and selected treatment services (malaria, pneumonia and diarrhoea) delivered by Boma Health Teams with support from BHC and HHPs to the communities and households. In addition, a community based HMIS, Community based Surveillance, and registration of Births and Deaths in the Boma shall be part of the routines of the BHT in collaboration with the HHPs. The Boma Health Initiative is expected to significantly reduce ill health and deaths at a lower cost, increase service uptake and participation of communities in health activities, and promote ownership and sustainability of the community health structure. Some initial costing was done for the Boma Health Initiative, however this was done prior to South Sudan currency devaluation. Therefore there is a need to update the costing for BHI and develop an investment case to support the financing and leverage of increased resources for the BHI from government and partners.

Justification:

Poor health status and health inequality are underpinned by poor health determinants and barriers to healthcare access, which are under the primary jurisdiction of the Ministry of Health (MOH) while other determinants of health, beyond the jurisdiction of MOH, include water and sanitation, education, food and agriculture, employment, some cultural practices that are known to either promote or hurt health. The relevance of these factors underscore the need for a comprehensive health promotion programme through inter-sectoral collaboration to identify and improve determinants of health. In this context, a community health initiative – The Boma Health Initiative (BHI) is critical to increasing access to health promotion, disease prevention and community case management interventions.

Until now there have not been any adequate tools to help plan and cost comprehensive CHS and to use the results to prepare investment cases. To help meet this need MSH and UNICEF, in 2016, developed a methodology as well as a tool – the Community Health Planning and Costing Tool. The methodology and tool are intended to help managers plan CHS and also to prepare investment cases for financing, and should be part of a comprehensive health planning process. Where there is a financing gap, the figures can be used for advocacy to obtain additional funding and if that is not forthcoming, the tool can be used to re-prioritise activities and/or reduce costs so that the resulting CHS plan is fully funded.

The MOH with support of WHO is in the process of developing a new 5 year Health Sector Strategic Plan, which will be built upon the plans and activities of the individual programmes. Given UNICEF’s comparative advantage in the area of community-based programming and community health services as strategy for reaching the most vulnerable populations, UNICEF can support the MOH with the costing of the Boma Health Initiative and development of an overall investment case for the BHI as a key contribution to the new Health Sector Strategic Plan. Another key component of the BHI where there is weakness is on community data collection and tools which can link with the health management information system (HMIS) under DHIS2.

Effective reduction of the high maternal and child mortality; and under-nutrition in the Republic of South Sudan requires a strengthened health system that will provide an integrated and improved access and quality continuum of maternal, neonatal and child health care from the community level to the health facilities resulting in a good outcome of health status of the communities. This will strengthen the health system that efficiently delivers components of the Basic Package of Health and Nutrition Services (BPHNS) at community level to contribute to achievement of universal health coverage through development of community structures as a formal component of the national health system at the

Boma level with intention to increase access to quality health promotion, disease prevention and selected curative services through community engagement.

The Ministry of Health has requested technical and financial support from UNICEF in order to update the costing of the BHI as well as on finalization of the data collection tools. This work would include outsourcing for an international expert(s) with strong background and work experience in planning, costing and monitoring of community health programmes. The main aim of this consultancy is to support the Ministry of Health to finalise the costing and data collection tools for the Boma Health Initiative and to develop an investment case to support financing of the roll-out and scale up of the BHI.

Purpose of the Assignment:

The purpose and objective of the assignment is to complete the costing and investment case development for the BHI as well to finalise the community data collection tools. It is hoped that the outputs of this consultancy will make a compelling argument for investing resources in the BHI and persuade key stakeholders and donors of the public health benefits of the BHI. The results will include a comprehensive analysis of the total programme costs, required financing, and funding gaps, and finalised community data collection tools linked to HMIS, which will support the government of South Sudan for scale-up of the national Boma Health Initiative. Under the overall guidance of the MOH Directorate of Community Health and Special Programmes and the UNICEF Maternal New-born and Child Health Manager, the consultant will:

1. **Develop an inception note**, including robust detailed plan of action and time frame guided by this TOR and provide copies to the Directorate of Community Health and Special Programmes, UNICEF and the BHI Technical Working Group.
2. **Model the cost of implementing the national BHI programme** - Cost models should be developed to calculate the cost of implementing the comprehensive package of services, using the UNICEF Community Health Planning and Costing Tool. The cost should be based on average current utilization/coverage levels for a small sample of current community programmes and with three scale-up scenarios (low, medium, and high) over a ten year-period (2017-2027). The models should include a breakdown of the total programme costs by each health package (e.g. health education, iCCM, community data/vital statistics) and by category (e.g. medicines/commodities, training and supervision).
3. **Prepare financing options for the national BHI programme** – Financing scenarios should be prepared using the tool based on current and future financing pledges from the Government of South Sudan and donors. The results will be used to conduct a financial gap analysis to advocate with key stakeholders for increased the levels of programme funding.
4. **Determine the impact of the investment on deaths averted** – The Lives Saved Tool (LiST), should be used to model the expected impact of the three coverage scenarios on under-five and maternal mortality rates over the ten-year period. The results will demonstrate the return on investment (i.e. expected change in mortality decline) associated with each scale-up scenario.
5. **Identify key bottlenecks** – **An analysis of key bottlenecks should be conducted to identify the effect on the determinants of coverage** (e.g. geographic access, financial, socio-cultural, knowledge, etc.), their impact on BHI programme costs, and their causes.
6. **Provide key recommendations** – Recommendations will focus on solutions for addressing key supply- and demand-side bottlenecks for sustained BHI programme implementation and impact.
7. **Finalise the data collection tools for community health** and incorporate the community health information into the Health Management Information System (HMIS) disaggregated from health facility data (working with the Directorate of Policy, Planning, M&E)

8. Submit final reports to MOH- Directorate of Community Health and Special Programmes and UNICEF.

Education and work experience:

- Post-graduate qualification or advanced study in public health, Health systems, health economics, health policy and management or other relevant field of expertise.
- At least five years of proven work experience at national and international levels in planning and costing of community health or child health programmes in developing countries
- At least five years proven work experience with health systems and/or Community Health programmes in low and middle income countries, including health management information systems.
- Excellent communication, oral and written, skills
- Demonstrated ability to produce high quality evaluation and/or analytical reports
- Good team player with ability to work independently and under considerably tight deadlines with a creative thinking, drive for results and strong commitments.
- Good inter-personal relationship even in adverse work environment.
- Work experience in South Sudan, or similar contexts, is an added advantage

Language: Fluent spoken and written English

The consultant(s) will be assigned full time in the MOH – Republic of South Sudan, Directorate of Community Health and Special Programmes for the purpose of the assignment. The consultant(s) will be reporting to the UNICEF MNCH Manager and the Director General – Community Health and Special Programmes at the MOH. It is anticipated that the payment schedule will be based on specific deliverables in a given timeframe. The last payment will be upon submission of the final report with satisfactory evaluation.

Reporting:

Monthly progress reports, and final report at the end of the contract will be submitted to the Directorate of PHC of the Ministry of Health and UNICEF

Expected Deliverables (Hard and e-copy):

- Inception Note
- Populated costing tool with cost/finance models and LiST models corresponding to the three scale-up scenarios
- Analysis report which will include a situational analysis with identified bottlenecks; a defined methodology of the investment case; results on the costs, impact, and financing for the three coverage scenarios; and recommendations for scaling up.
- Final draft of the BHI costed plan and investment case

Duration of Assignment:

It is expected that this assignment will last about 3 months.

Annex 2. Complementary Resources

CHS planning is best conducted as a part of broader PHC planning exercise since it is important to have a comprehensive and integrated plan. It should take into account other PHC services provided at hospitals and health centres and include clear definitions of the treatment packages and planned upward and downward referral levels. The planning and related costing is best done at the PHC (district) level where it is easier to understand and plan the roles of the different levels (hospital, health centre, and community).

Several resources are available to assist managers in developing health plans, some of which are described below.

WHO Guideline on Health Policy and System Support to Optimize CHW Programs

To optimise the design and performance of CHW programmes, the WHO – through a critical analysis of available state-of-the-art evidence – developed a guideline^{vi} which provides key policy recommendations for supporting and optimising CHW programmes. Intended for use as a tool by national policy makers, planners, and managers, the guideline provides a synthesis of evidence and series of recommendations for the design, implementation, performance, and evaluation of effective CHW programmes. For example, the guideline provides recommendations for CHW selection; training and certification; remuneration; management and supervision; integration of CHWs into health systems; and community engagement.

While the guideline acknowledges that these policy recommendations will have significant cost implications, it also states that there is minimal evidence on the resource requirements of CHW programmes. The UNICEF Community Health Planning and Costing Tool can be used to facilitate decision-making by identifying the resource requirements and costs of these policy decisions at the national or sub-national levels. The WHO guideline can also be used in conjunction with the CHW AIM Tool (see below).

Community Health Worker Assessment and Improvement Matrix (CHW AIM)

CHW AIM^{vii} is a tool designed to help facilitate the participatory design, planning, and assessment of community health programmes. It focuses on 10 key programmatic components (Figure 9), each of which can be assessed based on four levels of functionality ranging from non-functional (level 1) to highly functional (level 4) as defined by suggested best practices. In some cases, it may not be possible to achieve level 4 (e.g., due to in-country resource constraints, some governments cannot pay CHWs full salaries).

The UNICEF Community Health Planning and Costing Tool can be used in conjunction with the AIM Tool for the design, planning, and assessment of CHW programmes. Specifically, the Community Health Planning and Costing Tool can be used to estimate the costs (past, current, future); resource requirements (e.g., drugs and supplies); and required financing for different models of community health programmes.

During the design/planning phases, the Community Health Planning and Costing Tool and AIM Tool can be used to conduct what-if analyses assessing the cost implications of changes in policy (e.g., what if the Government began paying financial incentives to CHWs or expanded CHW training to be highly functional [level 4] or improved its supervision structures?). For the assessment of community health programmes, the Community Health Planning and Costing Tool

^{vi} Available from: <https://www.who.int/hrh/community/guideline-health-support-optimize-hw-programmes/en/>

^{vii} Available from: <https://chwimpact.org/>

can also be used to assess the costs and cost effectiveness of community health programmes using programmatic data on populations reached and number of services provided.

Figure 9. Ten Key Programmatic Components of Community Health Programmes (CHW AIM Tool)

Role and recruitment: How the community, CHW, and health system design and achieve clarity on the CHW role and from where the CHW is identified and selected.

Training: How preservice training is provided to the CHW to prepare for his/her role and ensure he/she has the necessary skills to provide safe and quality care and how ongoing training is provided to reinforce initial training, teach the CHW new skills, and ensure quality.

Accreditation: How health knowledge and competencies are assessed and certified prior to practicing and recertified at regular intervals while practicing.

Equipment and supplies: How the requisite equipment and supplies are made available when needed to deliver expected services.

Supervision: How supportive supervision is carried out such that regular skill development, problem solving, performance review, and data auditing are provided.

Incentives: How a balanced incentive package reflecting job expectations, including financial compensation in the form of a salary, and non-financial incentives, is provided.

Community involvement: How a community supports the creation and maintenance of the CHW program.

Opportunity for advancement: How CHWs are provided career pathways.

Data: How community-level data flow to the health system and back to the community and how they are used for quality improvement.

Linkages to the National Health System: The extent to which the MOH has policies in place that integrate and include CHWs in health system planning and budgeting and provides logistical support to sustain district, regional, and/or national CHW programs.

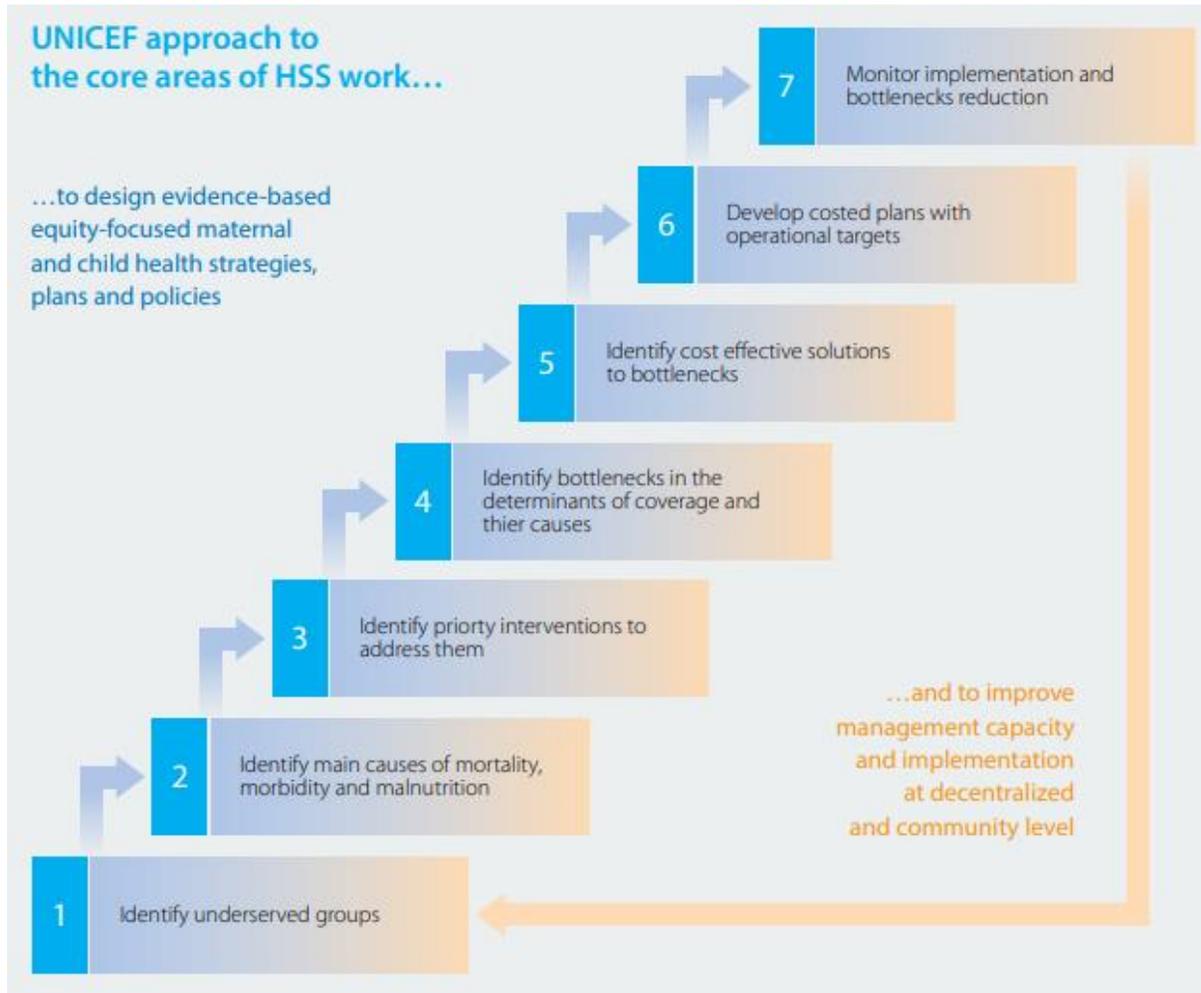
UNICEF Health Systems Strengthening Approach

In its June 2016 publication on Health Systems Strengthening, UNICEF defined its community-level approach to health systems strengthening as follows:

At community level, creating demand for and ensuring the provision of essential and affordable health and related services of appropriate quality, building on integrated community case management; working to influence social norms or barriers that deny the rights of the children and women to access care, and related behaviors; supporting initiatives to overcome financial barriers to health service access; improving the accountability of local health and community leaders for the key determinants of health and for health outcomes, and so strengthening resilience and emergency response capacity.⁶

The methodology is designed to reflect UNICEF's seven-step approach (Figure 10) and helps to identify what priority interventions cost and whether they are cost effective and affordable, identify bottlenecks and their solutions, model the lives saved, and provide an easy and flexible method for costing strategies.

Figure 10. Seven-Step Approach to Situation Analysis and Identification of Priority Actions in Health Systems Strengthening⁷



It is important to note that the strategic planning described above should be conducted for the PHC system as a whole (e.g., community, health centres, district and sub-district hospitals as well as national health ministries, including the policy and budget framework). The strategic plan for the community would be a sub-set of that PHC plan. The Community Health Planning and Costing Tool would be used to cost the strategies (Step 7) and project financing commitments. Since this is an iterative planning process, the results of the costing and financing analysis should be fed back into the planning process covered under Step 5. The scope of the strategic plan and removal of bottlenecks would be adjusted on the basis of the cost and anticipated or committed funding. This might involve removing some interventions from the package of services or reducing coverage targets or target populations. These adjustments would turn the strategic plan and costing into a funded plan, which can then be turned into operational plans. Since the unmet need was costed as part of the strategic plan, this can be included as an annex to the plan to be used for advocacy to show what could be implemented if additional funding becomes available.

EQUIST

EQUIST^{viii} is a web-based platform that brings together a wealth of existing data and tools to help policy makers and managers at national and sub-national levels make responsible evidence-based prioritisation and health system strengthening decisions about how to best invest scarce resources to reduce mother and child health inequities. It guides users through the above-described seven step approach to identify strategic priorities for narrowing the equity gap in neonatal, child and maternal mortality and malnutrition in low- and middle-income countries. The tool is hosted by UNICEF and was developed with funding from the Bill and Melinda Gates Foundation in partnership with the Community Systems Foundation. The tool incorporates at the back-end, concepts of the UNICEF and World Bank-supported “Marginal Budgeting for Bottlenecks” tool, the LiST Tool, the Tanahashi Bottleneck analysis methodology, and the 7 step approach to Health systems strengthening that has evolved over the 30 years of UNICEF’s practical field experience into a single platform.

EQUIST is used to prioritise mother and child health and nutrition interventions. While it covers more levels of care than CHS, it includes only those CHS interventions that are included in the LiST tool for Reproductive, Maternal, Newborn, Child and Adolescent Health and Nutrition components of the health programmes; EQUIST does not for example, include some interventions related to Tuberculosis control, Neglected Tropical diseases or certain aspects of the HIV/AIDS control which are not part of the typical MNCH programmes. EQUIST is applicable at all levels of the health system viz. Community, District and National levels with sub-national level analysis that is dependent on the availability of data for the various indicators that are used in the tool.

The results of an EQUIST analysis would feed into investment cases and prioritisation exercises to reach the most vulnerable and deprived and thus qualitatively assist health strategic plans to achieve Universal Health coverage addressing the barriers and bottlenecks in the health system.

^{viii} <http://equist.info>

Annex 3. Expert Panel

The purpose of the expert panel is to determine or confirm the STGs for the services in the package as well as incidence rates, expected use or numbers of services, and other aspects of the CHS program.

The panel should include six to eight people who are experts on CHS and PHC within the country and whose opinions are highly respected. Ideally, the panel will comprise members of Ministry of Health departments who are involved in planning and managing CHS, managers and supervisors from the field who have been closely involved in CHS, and service providers (e.g., nurses or CHWs). For credibility, the panel should include public health nurses or doctors, a pharmacist, and a CHW supervisor or manager. This activity should take place at the start of the costing exercise, and the results can be validated during field visits. The costing team should meet with the panel again near the end of the costing exercise to review the findings and answer any outstanding queries.

Guidelines for Expert Panel	
General notes on the workshop	
<ul style="list-style-type: none"> ▪ The panel should be scheduled in the middle or end of the first week, giving enough time to collect data and fill out initial data in the tool beforehand and to follow up on items after the workshop. ▪ Avoid having any filler attendants if possible. This is a technical meeting requiring technical input, but if you need extra people for political reasons, try to have them be present only for the intro/first hour. ▪ Gather as much of the data on the national-level checklist as possible prior to the workshop. ▪ Ensure there will be a working projector and large enough screen in the meeting room; have one person facilitate and one or two people take notes. ▪ The notetaker(s) can have two roles: taking notes on the discussions and adding data directly to the tool as the discussions unfold. <ul style="list-style-type: none"> ○ For the notetaker: If filling in the tool directly, make sure to insert notes/comments/etc. directly into the tool so you know where certain assumptions came from. ▪ Print copies of the list of services and any other data for participants to reference. ▪ It is always better to have participants react to data, as opposed to giving them a blank slate to fill out; think of this as a validation meeting rather than a primary data collection meeting. A PowerPoint presentation detailing these services can help guide the discussion. ▪ It is important to prepare well as the members of the expert panel are very busy and have little time to spare. 	
I. Preparing for the expert panel	
	Go through the data collection checklist and obtain whatever data you can.
	As much as possible, you should prefill the tool for the workshop as detailed below. Remember—only enter data in blue shaded cells!
	Enter general country information in Program_Data.
	Make a list of all possible CHW cadres working in the country. Enter information in Program_Structure.
	Note: If you can find additional information (i.e., CHW ratios per population, attrition rate), enter it.
	Make a list of all CHS in the country. Enter information in Custom_Package.
	Note: Where possible, use the services that are already pre-entered in the tool and add or change name of service as necessary.
	Avoid inserting new rows into the master list worksheet (it will disrupt other parts of the tool).
	Select the target population using the drop-down menu for each service in the package.
	For each service on the list, look for incidence rates (or number of expected contacts per year for preventive services). Input this into column H of the Custom_Package worksheet.
	For example, if women receive monthly visits for restocking on oral contraception, the expected contacts per year is 12 per woman.
	You may find much of this data using online sources (e.g., WHO, UNICEF), so do your research beforehand.
	If you are able to find an equipment list (what CHWs are typically provided), enter information in Equipment.
	Get the list of medicines provided at community level and enter information in Custom_Medicines if not already available in the default data.
	Note: If you aren't able to find medicine costs, just enter medicine names, which will help when working through STGs.
	For Training and Supervision, if you are able to get data on these before the workshop, enter information as indicated.

	It may be most useful to draft a list of the types of trainings that CHWs and their supervisors should receive based on standards.
	Sheets 1–10 are where you input STGs.
	Make sure to input the medicines list in the Medicines tab first, as you'll need this to use the drop-down menu on the protocol tabs.
	If you find national protocols for treatment of community-level services, input as much information as you can prior to the workshop.
	You can also refer to the prefilled version of the tool, which will include a number of international standards for key treatments (e.g., iCCM).
2. Conducting the expert panel	
	Agenda:
	Welcome, introduction, expectations, and objectives
	Overview of community health services costing exercise
	Mapping CHW cadres and community-based interventions
	Begin by reviewing the list of CHS with the expert panel. Have them discuss which services are offered under which program, who is the lead implementing agency, what are the sources of funding, etc.
	Facilitate discussion about how/if these services might change. Will package be expanded? Will service be integrated if currently operating under vertical programmes?
	Also discuss which populations are being reached by CHS. Rural populations? People living >5km from facilities? How are these numbers determined?
	Once you have an agreed-upon list of services, walk through the tabs from left to right, filling in information and taking notes.
	Objectives for this session:
	Validated list of CHS, including mapping by programme and CHW cadre.
	Incidence/prevalence rates for each service in the list (to the extent available, may require follow-up data collection); remember to get sources and data for each.
	Standard information about each CHW cadre.
	The following worksheets should be filled in: Programme Data, Program_Structure, Program_Scale-Up, Custom_Package, and Coverage.
	Validated STGs and treatment times for each service in the package.
	Obtain a descriptive narrative about how the current package of services might change in the future (or if there have been any recent changes).
	For each service in the list:
	Ask the panel to estimate total treatment time and note what this time entails (i.e., initial visit, visit plus follow-up).
	Facilitator will need to closely monitor these conversations and keep panel participants focused on defining the package of services.
	Next, input all medicines, diagnostic tests, etc. Use the drop-down menu under "Name of Medicine or Supply" to select each medication that will be provided for the service.
	If medication is not listed, then add the name to the "Medicines" tab. Do not directly input into the STGs tabs.
	Specify number of times/day, number of days, percentage of cases treated, and units per dose.
	Identify remaining data requirements from MOH, stakeholders, and implementers.
	Review data requirements checklist with experts; identify where data can be obtained.
	If time permits, review Equipment, Custom_Medicines, Training, Supervision_Management, and other recurrent cost tabs and assumptions.
	If appropriate, discuss bottlenecks and identify at which levels of the health system the bottlenecks are occurring.
3. Follow-up after the expert panel	
	Ensure that you have a plan for collecting any remaining data that includes name of contact person, phone number, date by when data will be available, etc.
	Fill in any remaining information in the tool.

Annex 4. Central Checklist

This questionnaire structures the gathering of data at the central level, including information that puts CHS in context and pulls from key documents on CHS before administering the district-level questionnaire.

Data Collection Checklist — Central Level	
0. Documents and data	
	National health sector strategic plan.
	Community health strategy and CHW profile.
	National salary schedule for civil servants in health sector.
	National strategic plans for vertical programmes (i.e., MCH, TB, HIV, malaria, neglected tropical diseases, epidemics).
	If available, raw HMIS data, with ability to disaggregate by service type, location, level of delivery, etc., for baseline year 2015 and previous years.
	CHS package.
	Health centres and hospitals packages of services.
	Standard treatment guidelines
	National data set with numbers of health services provided according to the HIS and broken down however available. Three years preferred (study year and two prior years).
	Description of HIS, especially levels at which disaggregated data can be found.
1. Country information	
	Total population and population breakdown by age group, percentage of women of reproductive age, percentage rural/urban, etc.
	Population density (urban and rural).
	Population growth rate.
	Population living within 5km of a health facility (or equivalent data).
	National currency.
	Exchange rate (to US dollar).
	Inflation rate (annual).
	Salary increase rate (i.e., annual civil salary rate of increase).
2. Community health programme information	
	Programme baseline year (data to be collected for this year, with 10-year projection made for subsequent years).
	Population of sub-national area (if applicable).
	Percentage of population that will receive CHS (e.g., iCCM services typically for people 5km from health facility).
	Health systems levels involved in community health program: number of provinces, districts, sub-districts, health centres, and communities.
3. Categories of CHWs	
	Categories or types of CHWs (current and future).
	For each category of CHW:
	Job description/standing orders/etc.
	Desired ratio per population.
	Direct supervisor (staff category, location, annual salary, percentage of time spent on supervision, number of CHWs per supervisor).
	Attrition rate.
	Expectation of working hours and days per year.
	Salary, incentive payments (if applicable), user fees/mark-up on medicines.
	Nonfinancial incentives (regular training, supervision, public recognition, opportunities for advancement and professional development).
	Total number of CHWs currently trained and deployed.
	Disaggregated by category of CHW.
	Disaggregated by location of CHW (district/sub-district/health centre).
	Total number of CHW supervisors currently trained and deployed.
	Disaggregated by location.
4. Package of CHS	
	Programmes offering CHS (i.e., child health, nutrition, TB).

	List of CHS (grouped by program).
	If applicable/available, list of services to be provided in the future.
	Type of CHW providing each service.
	Treatment protocol/guideline for each service.
	Year when package elements introduced (e.g., iCCM).
	5. Epidemiological and coverage data
	For each service in the package:
	Target population (i.e., children <5, females of reproductive age).
	Incidence or prevalence rate (number of expected episodes per target population per year).
	Utilisation figures (number of services provided for baseline year and previous years, if available).
	Coverage at baseline year.
	Coverage targets for projection years.
	6. Equipment
	List and unit costs of equipment (nonmedical) provided to CHWs (i.e., backpacks, registers, medicine box).
	Units provided per CHW.
	Replacement frequency for each type of equipment.
	List and unit costs of equipment provided to CHW direct supervisors.
	Units provided per CHW direct supervisor.
	Replacement frequency for each type of equipment.
	Costs of transport, management, storage, and delivery of equipment as total cost or percentage mark-up, if applicable.
	7. Medicines
	List of all medicines, commodities, diagnostic equipment, etc., provided to CHWs.
	Unit cost (specify unit - per pill, per test, etc.).
	Costs of transport, management, storage, and delivery of medicines as total cost or percentage mark-up, if applicable.
	Wastage of medicines.
	Stock-outs of medicines and supplies.
	8. Training
	List all types of training provided to CHWs and CHW supervisors.
	Specify if start-up (preservice) or refresher (in-service) training.
	Specify category of CHW or CHW supervisor being trained.
	Specify programme that the training falls under (i.e., nutrition, MCH, all community health).
	Number of trainings per CHW or CHW supervisor.
	Total training cost per participant (note this should include all costs, fixed and variable, per training).
	9. Supervision
	Title of direct supervisor (for each category of CHW, if applicable).
	Annual salary and incentives.
	Location/health system level (i.e., health centre).
	Percentage of total working time spent on supervision of CHWs.
	Percentage of supervision time spent on each community health programme (if applicable).
	Number of CHWs per supervisor.
	Supervision visits - frequency and costs of visit.
	10. Programme management
	List of staff involved in management of community health program.
	Health system level (e.g., central, district, health centre).
	Affiliation (i.e., Ministry of Health, NGO).
	Number of staff per health system level.
	Annual salary.
	Percentage of time spent on management of community health program.
	Percentage of time spent on individual community health programmes (if applicable).
	Management meetings - frequency and cost.
	11. Integration - from vertical programmes to integrated community service provision
	What is being done now, and what will be done in the future?
	If available, strategic plan detailing future of community health program(s).
	Description of services to be provided in the future.
	Which categories of CHWs will provide services?
	Description of CHWs (i.e., CHWs becoming less specialised).

12. Start-up costs	
	Costs of start-up activities (i.e., workshops, policy development, tool/register development, technical assistance from experts).
	Costs of start-up training (i.e., training of trainers).
	Costs of CHW identification and deployment.
	Specify start-up costs in baseline year (2015) or in previous years.
13. Recurrent costs	
	Expenditures on any elements of CHS not captured above. The time period should be the last completed calendar year or fiscal year—whichever is most convenient for the Government.
14. Financing	
	Source of financing for each programme (i.e., nutrition, MCH) and by cost input (i.e., salaries, medicines, supervision) for the same time period as for recurrent costs.
	Current and projections of financing for the same time period for recurrent costs with a maximum of three years of projected funding.
15. Impact	
	Mortality and morbidity rates in total and broken down by diagnosis (e.g., childbirth, malaria) if possible (if not all then for all services in CHS package).
16. Bottlenecks	
	Additional qualitative or quantitative descriptions of key bottlenecks pertaining to CHS: <ul style="list-style-type: none"> ▪ Stock-outs of medicines and supplies. ▪ Availability of equipment. ▪ Geographical and time access of families to CHWs. ▪ Adequate numbers of CHWs. ▪ CHWs adequately trained for all services. ▪ Regular and appropriate supervision. ▪ User fees.

Annex 5. Region / District Questionnaire

This questionnaire is used at the district level with members of the District Health Management Team (i.e., District Health Officer) and supervisor of CHWs. It can be adapted for use at the regional level. Its purpose is to structure gathering data on the district as a whole as it relates to CHS.

Data Collection Questionnaire — Region/District Level	
District name:	
Name of person being interviewed:	
Position title:	
MOH grade:	
Years of service in current position:	
Estimated monthly salary:	
Gender:	
Education:	
Contact information:	
1. Roles and responsibilities	
	Please describe your role.
	What is your role related to community health?
	Who are the main actors working in community health? If NGOs are involved, list each NGO and its role.
	Do you work with a specific community health programme (i.e., nutrition, child health)? List all that apply.
	If so, please describe your specific role within the community health program(s).
2. Population and CHW numbers	
	What is the population of this district?
	How many health centres are in this district?
	How many of these health centres supervise the provision of CHS?
	How many villages or communities are in this district?
	How many CHWs are there in this district? Can you break this down by health centre, community, and CHW category?
	How many direct CHW supervisors are in this district?
3. Programme management, supervision, training	
	Describe the supervision and management structure for the community health program(s) in your district.
	List all staff at the district level involved with management and supervision of the community health program.
	For each staff person, please provide the following:
	Title, grade, and years of service.
	Number of this category of staff at each district.
	Annual salary (including benefits).
	Specific community health programmes they are working with (i.e., nutrition, MCH, TB).
	Percentage of overall working time spent on community health.
	How time is divided among community health programmes.
	Do district-level staff conduct supervision visits relating to community health?
	If so, how frequently and where? How long are the supervision visits? How much of this is travel time and how much is time with the supervisee?
	Describe the activities involved in the supervision visits.
	Who is involved in the supervision visits, including support staff (e.g., drivers)?
	What are the costs of these visits, and what is the source of funding?
	Are the supervision visits for specific programmes (i.e., iCCM, nutrition, MCH, TB); general to community health; or integrated with routine health centre supervision visits?
	Do district-level staff hold meetings relating to community health?
	Please describe each of these meetings in greater detail - what is the subject, who is involved?
	What is the frequency of these meetings, and where are they held?
	How long are the meetings on average?
	What are the costs of these meetings, and what is the source of funding?

	Are the meetings for specific programmes (i.e., iCCM, nutrition, MCH, TB) or general to community health?
	What trainings have you and other district staff received related to community health?
	Please describe each of these trainings in greater detail - are they start-up or refresher trainings?
	Who is involved in the training? Who are the participants? Who are the trainers?
	What is the frequency of these trainings, and where are they conducted?
	What are the costs of these trainings, and what is the source of funding?
	Are the trainings for specific programmes (i.e., iCCM, nutrition, MCH, TB) or general to community health?
	Are district-level staff involved in other activities relating to community health (i.e., data validation, M&E)?
	Please describe each of these activities in greater detail - what is the subject, who is involved?
	What is the frequency of these activities, and where do you conduct them?
	What are the costs of these activities, and what is the source of funding?
	Are the activities for specific programmes (i.e., iCCM, nutrition, MCH, TB) or general to community health?
4. CHS and coverage	
	What CHS are provided in this district?
	Since when have CHS been provided in this district? Have there been any changes in services provided?
	What category of CHW provides each of these services?
	How many CHWs of each type are there, including traditional midwives?
	Where are the CHWs based and where do they work (e.g., clinic, outreach, community)?
	What types of campaigns (e.g., polio, bed net distribution, lymphatic filariasis, Ebola prevention) are provided in the district?
	Who is involved in these campaigns?
	With what frequency are they held?
	Do health centres provide outreach services to communities?
	If yes, what services are provided, and who is involved?
	With what frequency are they held?
	Can you provide the numbers of CHS delivered in 2015?
	Disaggregate by type of service/service provider/health centre or community.
	What is the coverage of each service?
	What are the targets for community health service coverage?
5. Reporting	
	Describe the reporting mechanism for CHS in your district.
	With what frequency are reports filled out? How are they transmitted from the community level to the health centre and district levels?
	Are community services disaggregated from other health services?
	Are CHS included in HMIS data?
6. Medicines, supplies, commodities, equipment	
	Describe the medicine supply and management process of CHS in your district.
	What commodities and equipment are involved in the community health program?
	Are there separate supply chains for NGO-supported community health programmes?
	Have there been any issues related to stock-outs (more than seven days) of medicines or supplies used by CHWs? If so, please specify.
	Please describe the supply chain for community health. How are medicines and commodities transported to and from the district?
	Is there a budget for supply chain to the community? If so, how much does the district receive for transporting these commodities?
7. Financing	
	Is there a budget for community health activities in this district?
	If yes, what is the annual budget?
	What activities are funded through this budget?
	Are there ever delays in budget funding?
	Do NGO community health programmes provide top-ups to district staff for programme support/supervision?

	Do you or other staff receive any incentives in kind for your services (e.g., t-shirt, hat, bicycle, cell phone/credit, umbrella)?
	If yes, from what source is the incentive, and how much is it worth?
8. Scale-up and integration	
	Are CHS currently available in all communities or villages in the district?
	If no, has the MOH developed a plan to scale-up access to CHS?
	Are CHS being provided through different vertical programmes?
	If yes, is there any plan to integrate these services?
	Are there plans to expand the package of community services (i.e., include additional interventions)?
9. Challenges/successes	
	What are the challenges/bottlenecks of delivering CHS? Could prompt for: <ul style="list-style-type: none"> ▪ Stock-outs of medicines and supplies. ▪ Availability of equipment. ▪ Geographical and time access of families to CHWs. ▪ Adequate number of CHWs. ▪ CHWs adequately trained for all services. ▪ Regular and appropriate supervision. ▪ User fees.
	What are the key challenges for providing CHS?
	What are some of the successes of community health programmes?
	What are some of the factors contributing to the community health program's success?
End time of the interview:	
Duration (minutes/hours) of the interview:	

Annex 6. Health Centre Questionnaire

This questionnaire is to be used to structure gathering information from the Health Officer In-Charge at health facilities as well as the Supervisor of CHWs.

Data Collection Questionnaire — Health Centre	
Health centre name:	
Name of person being interviewed:	
Position title:	
Grade:	
Years of service in current position:	
Estimated monthly salary:	
Gender:	
Education:	
Contact information:	
I. Roles and responsibilities	
	Please describe your role.
	What is your role related to community health?
	Who are the main actors working in community health? If NGOs are involved, list each NGO and its role.
	Do you work with a specific community health programme (i.e., nutrition, child health)? List all that apply. If so, please describe your specific role within the community health program(s).
2. Population and CHW numbers	
	What is the population served by this health centre?
	How many other health centres are in this district?
	How many villages or communities are served by this health centre?
	Are there any other service providers (e.g., health posts, traditional midwives) serving this population?
	How many of these villages or communities are hard to reach (i.e., more than 5km or 10km away)?
	How many CHWs are there in this district? Can you break this down by category of CHW and community where they are deployed?
	Where do CHWs provide services (i.e., in their own homes, traveling to households, at a fixed point of service)?
3. Health centre supervision of CHWs	
	Describe the supervision and management structure for the community health program(s) at your health centre.
	List all staff at the health centre involved with management and supervision of the community health program.
	Who is the primary direct supervisor for the CHWs?
	What is their title, grade, and years of service?
	What is their annual salary, including benefits?
	What specific community health programmes are they working with (i.e., nutrition, MCH, TB)?
	What percentage of overall working time is spent on community health?
	How is the time divided among community health programmes?
	Other than the direct supervisor, are there health centre staff involved in supervising CHWs?
	For each staff person, please provide the following:
	Title, grade, and years of service.
	Annual salary, including benefits.
	Specific community health programmes they are working with (i.e., nutrition, MCH, TB).
	Percentage of overall working time spent on community health.
	How time is divided among community health programmes.
	Do health centre staff conduct supervision visits relating to community health?
	If so, how frequently and where? How long are the supervision visits?
	Describe the activities involved in the supervision visits.
	Who is involved in the supervision visits, including support staff (e.g., drivers)?
	What are the costs of these visits, and what is the source of funding?

	Are the supervision visits for specific programmes (i.e., iCCM, nutrition, MCH, TB) or general to community health?
4. Meetings and trainings	
	Does the health centre staff hold meetings relating to community health?
	Please describe these meetings in greater detail - what is the subject, who is involved?
	Do CHWs attend these meetings.
	What is the frequency of these meetings, and where are they held?
	What are the costs of these meetings, and what is the source of funding?
	If CHWs attend meetings, are they given any incentives?
	Are the meetings for specific programmes (i.e., iCCM, nutrition, MCH, TB) or general to community health?
	What trainings have health centre staff received related to community health?
	Please describe each of these trainings in greater detail - are they start-up or refresher trainings?
	Who is involved in the training? Who are the participants? Who are the trainers?
	What is the frequency of these trainings, and where are they conducted?
	What are the costs of these trainings, and what is the source of funding?
	Are the trainings for specific programmes (i.e., iCCM, nutrition, MCH, TB) or general to community health?
	Are the health centre staff involved in other activities relating to community health (i.e., data validation, M&E)?
	Please describe each of these activities in greater detail - what is the subject, who is involved?
	What is the frequency of these activities, and where are they held?
	What are the costs of these activities, and what is the source of funding?
	Are the activities for specific programmes (i.e., iCCM, nutrition, MCH, TB) or general to community health?
5. CHS and coverage	
	What CHS are provided by CHWs in your catchment area?
	Since when have CHS been provided? Have there been any changes in services provided?
	What category of CHW provides each of these services?
	What types of campaigns (i.e., polio) are provided by health centre staff?
	Who is involved in these campaigns?
	With what frequency are they held?
	Do health centres provide outreach services to communities?
	If yes, what services are provided, and who is involved?
	With what frequency are they held?
	How many CHS were delivered in 2015?
	Disaggregate by type of service/service provider/health centre or community.
	What is the coverage of each service?
	What are the targets for CHS coverage?
6. Reporting	
	Describe the reporting mechanism for CHS in your health centre.
	With what frequency are reports filled out? How are they transmitted from the community level to the health centre and district levels?
	Are community services disaggregated at the health centre level?
	Are CHS included in HMIS data?
7. Medicines, supplies, commodities, equipment	
	Describe the medicine supply and management process of CHS in your health centre.
	What commodities and equipment are involved in the community health program?
	Have there been any issues related to stock-outs (more than seven days) of medicines or supplies used by CHWs? If so, please specify.
	Please describe the supply chain for community health. How are medicines and commodities transported to and from the district?
	Is there a budget for supply chain to the community? If so, how much does the district receive for transporting these commodities?
8. Financing	
	Is there a budget for community health activities in your health centre?

	If yes, what is the annual budget?
	What activities are funded through this budget?
	Are there ever delays in budget funding?
	Do you or other staff receive any incentives in kind for your services (e.g., t-shirt, hat, bicycle, cell phone/credit, umbrella)?
	If yes, from what source is the incentive, and how much?
	Do NGOs provide additional funding? If so, for what activities or commodities?
9. Challenges/successes	
	<p>What are the challenges/bottlenecks of delivering CHS? Could prompt for:</p> <ul style="list-style-type: none"> ▪ Stock-outs of medicines and supplies. ▪ Availability of equipment. ▪ Geographical and time access of families to CHWs. ▪ Adequate numbers of CHWs. ▪ CHWs adequately trained for all services. ▪ Regular and appropriate supervision. ▪ User fees.
	What are the key challenges for providing CHS?
	What are some of the successes of the community health programmes?
	What are some of the factors contributing to the community health program's success?
End time of the interview:	
Duration (minutes/hours) of the interview:	

Annex 7. CHW Questionnaire

This questionnaire is used to structure data gathering from CHWs and collects costs on what CHWs need to deliver CHS and how they work so that costs can be attached.

Data Collection Questionnaire - Community Health Worker	
Name of CHW being interviewed:	
Gender:	
Name of village or community:	
Direct supervisor name and location:	
Health centre:	
District:	
I. Roles and responsibilities	
	Please describe your role as a community health worker.
	When did you begin working as a CHW?
	What services do you provide?
	Are these services related to different programmes (i.e., iCCM, nutrition)?
	Is there a specific name for the type of community health worker you are?
	How big is the village or community you serve (population size and number of households)?
	Do CHWs other than you work in the village?
	If yes, how many?
	Do you provide the same types of services or different services?
	If the same, do you divide the population among the CHWs or cover the entire population but alternate days or shifts?
	If you divide the population, how many households do you cover and how many are covered by other CHWs?
2. Availability and time	
	In general, how many hours per day are you available to work as a CHW?
	How many hours per day do you actually spend working as a CHW?
	In general, how many days per week are you available to work as a CHW?
	How many days per week do you actually spend working as a CHW?
	In general, do you work as a CHW all year, or are there days/months that you take off?
	Do you decide when you want to work as a CHW, or does your supervisor ask you to work a certain number of hours per day or days per week?
	Do you feel you could spend more time providing community services, or do you feel you don't have enough time to meet the current needs of your village?
	How much time do you spend on different community health programmes?
3. Activities	
	Please list all the activities that are typically done as a CHW.
	In general, how many cases do you see or treatments do you provide in a week?
	Consider a typical week in terms of your activities as a CHW.
	List the different types of activities you do as a CHW in a typical week:
	What do you do?
	How many hours do you take for each activity?
	For each activity, where do you go?
	For each activity, how long does it take to travel (i.e., to or from a household)?
	For each activity, is this relating to a specific programme (i.e., iCCM, nutrition)?
4. Reporting	
	With what frequency do you travel to the health centre to give your reports or have data validated?
	With what frequency do you fill out activity reports?
	How many days per month do you spend filling out the monthly report?
	With what frequency do you travel to the health centre to restock medicines and supplies?
	How long does it take to get to the health centre, and how far away is it?
	Does it take a full day to go to the health centre (round trip)?

	When was the last time you received a supervision visit by your supervisor?
5. Trainings and meetings	
	Please make a list of the different trainings and meetings you had in the last year.
	For each training:
	What was the subject of the meeting or training?
	Where was the meeting or training held?
	How frequent is the meeting or training (if refresher)?
	How long was the meeting or training?
	Were you paid a per diem or incentive? If yes, how much?
6. Treatments	
	For each of the treatments you listed earlier:
	Describe what you do for each service or treatment - what steps do you take?
	What medicines do you provide?
	How much time does it take to provide the diagnosis and treatment?
	Do you conduct a follow-up visit? If so, how long does it take?
	What do you do if a patient is too sick for you to treat?
	When a patient is referred to the health centre, do you record the patient in your register?
	Do you receive a counter-reference from the health centre?
	Do you accompany the patients to the health centre?
	Do you provide initial treatment to the patient before referring them?
	Do you participate in any periodic activities relating to community health, such as vaccination campaigns or distribution of insecticide-treated nets?
	If yes, list the events and their frequency.
7. Medications and equipment	
	What types of medicines, diagnostics, and other commodities are you given?
	Do you ever have problems with medicine stock-outs?
	What do you do if medicines are not available?
	What kinds of nonmedical equipment are you given?
	Do you ever have shortages of equipment?
8. Payment and incentives	
	Do you charge people for your services as a CHW?
	If yes, how much do you charge?
	Do you charge people for providing medicines?
	If yes, how much for each type of medicine?
	How much do you earn from each sale?
	Do you purchase your medicines from the health centre?
	Do you receive any other forms of payment for your services as a CHW?
	If yes, what is the source of the payment, and how much?
	Do you receive any incentives in kind for your services as a CHW?
	If yes, what is the source of the incentive, and how much?
	Are there any other benefits to serving as a CHW (e.g., public recognition, opportunities for advancement and professional development)?
9. Challenges/successes	
	What are the challenges/bottlenecks of delivering CHS? <ul style="list-style-type: none"> ▪ Stock-outs of medicines and supplies. ▪ Availability of equipment. ▪ Geographical and time access of families to CHWs. ▪ Adequate numbers of CHWs. ▪ CHWs adequately trained for all services. ▪ Regular and appropriate supervision. ▪ User fees.
	What are the key challenges for providing CHS?
	What are some of the successes of the community health program?
	What are some of the factors contributing to the community health program's success?
End time of the interview:	
Duration (minutes/hours) of the interview:	

Annex 8. Publications and Reports

Publications

Collins D, Jarrah Z, Gilmartin C, Saya U. “The costs of integrated community case management (iCCM) programs: A multi-country analysis.” *Journal of Global Health*. 2014;4(2), doi: 10.7189/jogh.04.020407. Available at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4267093/>

Community Health Investment Case Analyses

Dukhan Y, Gilmartin C, Collins D, 2017. Scaling-up Community Health in Madagascar: Prioritization and Costing of the Health Service Packages. Management Sciences for Health. Arlington, VA, USA. Available at: <https://www.msh.org/resources/scaling-up-community-health-in-madagascar-prioritization-and-costing-of-the-health-service>

Gilmartin C, Collins D, Driwale A, 2018. South Sudan Boma Health Initiative Costing and Investment Case Analysis. Management Sciences for Health. Arlington, VA, USA. Available at: <https://www.unicef.org/southsudan/reports/boma-health-initiative>

Gilmartin C, Collins D, 2019. Le dossier d’investissement en santé communautaire au Burkina Faso (2019–2023). Management Sciences for Health. Arlington, VA, USA. Available at: <https://www.msh.org/resources/community-health-investment-case-in-burkina-faso-french>

Jarrah Z, Gilmartin C, Collins D, 2015. “The Cost and Impact of Integrated Community Case Management (iCCM) in Burkina Faso: Studies from the Nord, Centre-Nord, and Boucle du Mouhoun Regions.” Management Sciences for Health. Arlington, VA, USA. Available at: https://www.msh.org/sites/default/files/the_cost_and_impact_of_iccm_in_burkina_faso_final.pdf

Saya U, Collins D, 2015. “The Cost and Impact of Introducing Integrated Community Case Management in Nigeria: Studies from Benue and Kebbi States.” Management Sciences for Health. Arlington, VA, USA. Available at: https://www.msh.org/sites/default/files/iccm_investment_case_nigeria_january_final.pdf

Community Health Package Costing Analyses

Davey D, Wilhelmsen S, Newbrander W, Collins D, 2016. “Modelling the Cost of Community Health Services in Malawi: the Results of Piloting a New Planning and Costing Tool.” Management Sciences for Health. Arlington, VA, USA. Available at: <https://www.msh.org/resources/modelling-the-cost-of-community-health-services-in-malawi-the-results-of-piloting-a-new>

Gilmartin C, Tesfazghi K, Villatoro C, Collins D, 2016. “Modelling the Cost of Community Health Services in Sierra Leone: the Results of Piloting a New Planning and Costing Tool.” Management Sciences for Health. Arlington, VA, USA. Available at: <https://www.msh.org/resources/modelling-the-cost-of-community-health-services-in-sierra-leone-the-results-of-piloting-a>

Saint Firmin P, Diakite BD, Stratton S, Ortiz C, 2018. “Community Health Worker Program in Mali Under Threat: Evidence to Drive Advocacy Efforts.” Palladium, Washington, DC, USA. Available at: http://www.healthpolicyplus.com/ns/pubs/11282-11504_MaliASCBrief.pdf

Integrated Community Case Management Costing Analyses

Jarrah Z, Lee AC, Dilley K, Suraratdecha C, Collins D, 2013. “Costing of Integrated Community Case Management: Senegal.” Management Sciences for Health. Arlington, VA, USA. Available at: https://www.msh.org/sites/msh.org/files/msh_costing_of_integrated_community_case_management_analysis_report_sen_e.pdf

Jarrah Z, Lee AC, Wright K, Schulkers K, Collins D, 2014. “Costing of Integrated Community Case Management in Malawi.” Management Sciences for Health. Arlington, VA, USA. Available at: https://www.msh.org/sites/default/files/msh_costing_of_integrated_community_case_management_analysis_report_malawi.pdf

Jarrah Z, Gilmartin C, Collins D, 2014. “The Cost of Integrated Community Case Management in Nguemendouka and Doumé Districts, Cameroon.” Management Sciences for Health. Arlington, VA, USA. Available at: <https://www.msh.org/resources/the-cost-of-integrated-community-case-management-in-nguemendouka-and-doum%C3%A9-districts>

Jarrah Z, Corazzini L, Schulkers K, Collins D, 2014. “The Cost of Integrated Community Case Management in Luapula Province, Zambia.” Management Sciences for Health. Arlington, VA, USA. Available at: <https://www.msh.org/resources/the-cost-of-integrated-community-case-management-in-luapula-province-zambia>

Jarrah Z, Klein M, Collins D, 2014. “The Cost of Integrated Community Case Management in Sud-Ubangi District, Democratic Republic of Congo.” Management Sciences for Health. Arlington, VA, USA. Available at: <https://www.msh.org/resources/the-cost-of-integrated-community-case-management-in-sud-ubangi-district-democratic>

Jarrah Z, Lieber R, Gilmartin C, Collins D, 2014. “The Cost of Integrated Community Case Management in Kono District, Sierra Leone.” Management Sciences for Health. Arlington, VA, USA. Available at: https://www.msh.org/sites/default/files/sierra_leone_iccm_costing_final_report_19_dec_2014.pdf

Jarrah Z, Patel S, Gilmartin C, Collins D, 2014. “The Cost of Integrated Community Case Management in Kapoeta North County, South Sudan.” Management Sciences for Health. Arlington, VA, USA. Available at: <https://www.msh.org/resources/the-cost-of-integrated-community-case-management-in-kapoeta-north-county-south-sudan>

Annex 9. Bibliography

- ¹ Perry H, Christian M, Friberg I. How Many Lives of Mothers and Children Could Be Averted by Strengthening Community-based Primary Health Care? An Analysis Using the Lives Saved (LiST) Tool. Manuscript under review, 2015. Assumes 90% population coverage of interventions.
- ² Dahn B, Woldemariam A, Perry H, Maeda A, von Glahn D PR et al., 2015. Strengthening Primary Health Care through Community Health Workers: Investment Case and Financing Recommendations. Available at: <https://www.who.int/hrh/news/2015/CHW-Financing-FINAL-July-15-2015.pdf>
- ³ World Health Organization, 2018. WHO guideline on health policy and system support to optimize community health worker programmes. Available at: <http://apps.who.int/iris/bitstream/handle/10665/275474/9789241550369-eng.pdf?ua=1&ua=1>
- ⁴ Tanahashi T. (1978). Health service coverage and its evaluation. Bulletin of the World Health Organization, 56(2), 295–303. Available at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2395571/>
- ⁵ World Food Programme and UNICEF, 2014. The Case for Investment in Nutrition in Sudan. Available at: https://www.avenirhealth.org/download/OHTCountryApplications/PDF/150619%20P893_UNICEF_Investment_Case_Collated_v3.pdf
- ⁶ UNICEF, 2016. UNICEF Health Systems Strengthening Approach. Available at: <https://www.unicef.org/media/60296/file>
- ⁷ UNICEF, 2016. UNICEF Health Systems Strengthening Approach. Available at: <https://www.unicef.org/media/60296/file>