The Investment Case for Community Health in Kenya

April 2018
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EXECUTIVE SUMMARY
Executive Summary

Context for Investment Case

• There is global evidence that investing in community health (CH) can generate up to 10x return on investment. There is need for a Kenya country-specific investment case to provide empirical evidence on the benefit of investing in CH and potentially spur increased funding and prioritisation of CH in the country.
• The national-level investment case for community tool presented here is a useful advocacy tool that should be used to drive increased investments in CH by the Kenyan Government, bi- and multi-lateral donors and development partners.
• The investment case is a prototype from which county-level investment cases can be developed to generate county-specific evidence on the value in investing in CH.

Tools used

• The tools used for development of the investment case can be divided into 2: Costing Tools and Benefits Tools
  ➢ The UNICEF-MSH Costing Tool was used to calculate the total cost of a fully scaled up CH Program
  ➢ The Lives Saved Tool (LiST) was used to calculate how much in productivity benefits can accrue to an economy due to scaling up CH interventions

Key Finding: Positive ROI of up to 9.4x

• The total cost of a fully scaled up CH program in Kenya is estimated at US$2.5bn.
• The total potential benefits of scaling up CH Programs in Kenya is estimated at US$ 26.9bn.
• This implies that scaling up CH interventions in Kenya can generate up to 9.4x ROI - which means that for every one Kenya Shilling (KES) invested in CH, an economic return equivalent to 9.4 KES will be realized.
• Other non-quantitative benefits of investing in CH include empowerment of youth and women, increased knowledge and capacity at the community level as well as increased data pool on indicators not directly linked with health such as school enrolment.
BACKGROUND & JUSTIFICATION
Background - The need for an investment case

Kenya Government’s expenditure on health is inadequate to fully attain UHC

Kenya suffers from a relatively low quantum of overall government spending in health that is a bottleneck to the attainment of Universal Health Coverage (UHC).

General government expenditure on health as % of GDP in 2014

- Lesotho
- Swaziland
- Malawi
- Algeria
- Gambia
- South Africa
- Congo
- Burundi
- Mozambique
- Kenya
- Botswana
- Liberia
- Rwanda
- Ethiopia
- Zambia
- United Republic of Tanzania
- Gabon
- Benin
- Togo
- Uganda
- South Sudan
- Cameroon
- Nigeria

Kenya Government’s allocation towards health as a percentage of GDP

- 2.7%

Government allocation towards health as a percentage of GDP in countries that have progressed towards UHC

- 5%

- Red dotted line indicates Africa’s average of 3%
- Analysis: E&K Consulting Firm
Background - The need for an investment case

Kenya’s fiscal space for health as currently structured is unsustainable: There is need for better health financing and delivery models

A significant share of total health expenditure (THE) per capita in Kenya is borne by the private sector largely through out-of-pocket (OOP) payments made by households.

With Kenya’s growing population; emerging healthcare needs (e.g. non-communicable diseases); over-stretched public funding and flat-lined or reducing international funding for health, there is need to explore healthcare financing and delivery models that will generate the best health outcomes using the available resources.

- Data source: National Health Accounts (NHA) Reports
- Analysis: E&K Consulting Firm
Background - The need for an investment case

There is global evidence that investment in community health can earn up to 10x in returns, creating need for a country specific study

With Kenya’s growing population; emerging healthcare needs (e.g. non-communicable diseases); over-stretched public funding and flat-lined or reducing international funding for health, there is need to explore healthcare financing and delivery models that will generate the best health outcomes using the available resources.

10:1
Returns generated by investments in community health at a global level*

??
Returns generated by investments in community health at a country level *

In the absence of country-level evidence, community health is yet to attract optimal attention and prioritization in healthcare financing and budgetary processes from the National and County Governments.

There is need to:
• Develop a Kenya-specific investment case for community health
• Use the investment case as an advocacy tool to increased prioritization and sustainable financing

* http://www.financingalliance.org/investment-case-1
METHODOLOGY
Methodology - Costing Tools

Various costing tools used in other jurisdictions were considered

UNICEF – MSH Model
- Classifies CHS Program Costs into key buckets
  - CHW related costs
  - Supervision Costs (salaries & Meeting Costs)
  - Management Costs (Salaries & Meeting Costs)
  - Training Costs
  - Equipment Costs
  - Medicines & Supplies
  - Capital Costs
  - Recurrent Costs

- Costs obtained will inform ROI calculation

OneHealth Model
- Developed by the UN InterAgency Working Group on Costing with WHO support
  - Attempts to link strategic objectives and targets of disease control and prevention programmes to the required investments in health systems
  - It is thus primarily intended to inform sector wide national strategic health plans and policies.

CORE Plus Model
- Excel-based tool developed by MSH & USAID
  - Useful for estimating cost of individual services in primary healthcare facilities
  - Bottom-up costing tool that allows estimation of standard costs for each intervention, broken down by drugs, tests, medical supplies and staff
# Methodology - Costing Tools

*The UNICEF- MSH Tool was found to be the most suitable costing tool for CH in Kenya when compared with other tools*

<table>
<thead>
<tr>
<th>Tool</th>
<th>Merits</th>
<th>Demerits</th>
<th>Recommendation</th>
</tr>
</thead>
</table>
| **UNICEF –MSH Costing Tool**      | • Specific for community health  
• Input-based model thus customizable  
• Comprehensive coverage of cost items  
• Broadly endorsed by organizations working in community health  
• Validated in several African countries (will allow for future comparison across countries) | • Usefulness depends on availability of data  
• Does not have benefits/ value / ROI function inbuilt | Adopt and augment with benefits/ value / ROI functions from LiST or customized excel-based model |
| **OneHealth Tool**                | Ideal in estimating cost of healthcare at macro (e.g. national and regional levels)                                                           | • Not tailored for community health  
• Not endorsed by stakeholders in the community health space | Avoid since it will not respond to community health-specific needs of the current assignment |
| **Cost Revenue Analysis Tool Plus** | • Input-based model thus customizable  
• Broadly endorsed by organizations working in primary healthcare space | • Not tailored for community health. Designed to cost primary health care services  
• Does not compute benefits/value/ROI | Avoid since it will not respond to community health-specific needs of the current assignment |
Methodology - Benefits Tool

The Lives Saved Tool has been widely used and was found to be the most appropriate for calculating the benefits of scaling up CH services.

<table>
<thead>
<tr>
<th>Tool</th>
<th>Merits</th>
<th>Demerits</th>
<th>Recommendation</th>
</tr>
</thead>
</table>
| Lives Saved Tool (LiST)    | • Can compute benefits/ value of community health in terms of lives saved (which can be directly used to estimate economic value of community health e.g. DALY)  
  • Comprehensive coverage of key interventions  
  • Allows for the addition of customized interventions  
  • Endorsed by organizations working in community health  
  • Validated in several African countries (will allow for future comparison across countries) | • Usefulness depends on availability of data on the expected increase in coverage of specific interventions over the forecast year  
  • Does not compute benefits resulting from i) increased employment ii) insurance against future health crises | • Adopt and augment with excel-based model that compute benefits resulting from i) increased employment ii) insurance against future health crises |

**Costs**

UNICEF-MSH Tool

**Benefits**

UNICEF-MSH Tool

**ROI**
Return on investment (ROI) was established by comparing the benefits versus the costs of scaling up CH in Kenya.

**Methodology – Return on Investment Calculation**

**ROI** = \frac{BENEFITS}{COSTS}

BENEFITS

COSTS

UNICEF-MSH TOOL

UNICEF

MSH
Methodology - Qualitative Data Collection

Quantitative establishment of the ROI in CH investments were complemented by qualitative insights

Key Informant Interviews

Focus Group Discussions (32 CHVs and CHEWS)

78 people from 7 partner organizations, 4 counties and national level stakeholders

Technical approach to data collection:

• Key Informant Interviews (KII) and Focus Group Discussion (FGD) with selected study participants at national and county levels

• Use of semi-structured interview/discussion guides

Objective and value of qualitative data collection:

• Contextualize costs & benefits of community health in different settings (rural/urban; county/national etc.);

• Establish motivations and constraints facing community health in Kenya;

• Document ‘value’ that may not be apparent from the quantitative data.

• Participants were selected in consultation with the MOH and partners and were selected purposively based on the highest potential to yield qualitative data on the subject.
KEY FINDINGS
Investments in CH in Kenya is associated with a strong and positive return on investment (ROI); Up to US$9.4 can be earned from every $1 invested.

**ROI 9.4x**

- **Productivity Benefits**
  - US$ 24.2bn
  - Driven by increased productivity due to a healthier population from CH scale up
  - Calculated using the LiST Tool

- **Employment Benefits**
  - US$ 2bn
  - Driven by increased employment due to fiscal multiplier effect of increased government expenditure in CH Programs

- **Insurance Benefits**
  - US$ 0.5bn
  - Driven by the reduced risk of a global health crisis due to scale up of CH programs and CHWs

**Total Cost of Scaled up CH Program**
- US$ 2.8bn
Community Health Short-term Benefits

*Up to US$ 107mn can be saved in the short term across treatment costs for HIV/AIDS, TB & Malaria due to scale up of CHS interventions*

### HIV/AIDS Short Term Benefits

<table>
<thead>
<tr>
<th>No of new infections each year</th>
<th>62,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost of treating each new infection (US$)</td>
<td>250</td>
</tr>
<tr>
<td>Implied total annual cost for HIV cases (US$)</td>
<td>15,500,000</td>
</tr>
</tbody>
</table>

| Annual % decrement in new HIV cases due to community health | 2% |
| Implied annual savings from **HIV/AIDS** cases reduction (US$) | 310,000 |

### TB Short Term Benefits

<table>
<thead>
<tr>
<th>No. of new infections per annum</th>
<th>169,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost of treating each new infection per patient per year (US$)</td>
<td>352</td>
</tr>
<tr>
<td>Implied total annual cost for TB infections (US$)</td>
<td>59,488,000</td>
</tr>
</tbody>
</table>

| No. of patients with MDR-TB | 500 |
| Cost of treating a patient who develops MDR - TB | 10,000 |
| Implied total annual cost for TB infections | 5,000,000 |

| Annual % decrement in new TB cases due to community health | 2% |
| Annual % decrement in MDR - TB cases due to community health | 1% |

| Implied annual savings from TB infections reduction | 1,189,760 |
| Implied annual savings from MDR-TB cases reduction | 50,000 |
| **Total TB related short-term savings per annum (US$)** | 1,239,760 |
**Community Health Short-term Benefits**

*Up to US$ 107mn can be saved in the short term across treatment costs for HIV/AIDS, TB & Malaria due to scale up of CHS interventions*

### Malaria Short Term Benefits

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of new malaria cases per annum</td>
<td>6,506,297</td>
</tr>
<tr>
<td>Cost of each malaria episode to the household (US$)</td>
<td>150</td>
</tr>
<tr>
<td>Cost of each malaria episode to the health system (US$)</td>
<td>30</td>
</tr>
<tr>
<td>Implied total annual cost for malaria cases (US$)</td>
<td>1,167,294,745</td>
</tr>
<tr>
<td>Annual % decrement in new malaria cases due to community health</td>
<td>2%</td>
</tr>
<tr>
<td>Implied annual savings from malaria cases reduction (US$)</td>
<td>23,345,895</td>
</tr>
</tbody>
</table>

### Total Annual Short Term Benefits (Malaria, TB & HIV) (US$)

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Annual Short Term Benefits (Malaria, TB &amp; HIV) (US$)</td>
<td>24,895,655</td>
</tr>
<tr>
<td>Potential Benefit for next 5 years (US$)</td>
<td>124,478,274</td>
</tr>
<tr>
<td>Present value of Benefits (US$)</td>
<td>107,785,157</td>
</tr>
</tbody>
</table>
Community Health Scale-up Costs

The total estimated cost of a fully scaled up CHS program over a 10 year forecast period is US$ 2.5bn

Community health Program Costs by Input (US$ mn): Medicines & Salaries are the biggest cost drivers

Percentages at the top of the graph refer to the anticipated level of coverage of community health
Community Health Scale-up Costs

Scale-up of CH will result in a 14% CAGR in costs per capita

Cost per Capita: The cost per capita grows at a CAGR of 14% over a 10 year period from US$ 1.98 to US$ 7.47
Community Health Funding

28% of the current available funding for CH is provided by Government with the balance being funded by partner organisations.

Bulk of available funding comes from partner organisations. There is limited information on the amount of funds available for CH in Kenya.

Funding Gap by Input (US$ mn). The current funding gap is estimated at US$ 29 mn.

- The current funding gap, estimated at c. US$ 29mn, is expected to rise to c. US$ 400mn over the 10-year forecast period.
Community Health Short-term Benefits

**US$355mn in cost savings can be generated from scaling CH preventing diseases that would require treatment at higher healthcare levels**

Reduction in Funding Gap due to re-purposing of existing CH allocations within vertical programs

- An estimated **US$ 107mn** can be generated from scaling up HIV, TB and Malaria interventions, effectively preventing each case from getting to a hospital (more expensive to treat). This, when extrapolated across all other CH – related interventions, can generate up to **US$ 355mn** in savings.

- The total funding gap can therefore be effectively reduced from **US$ 400mn** to **US$ 45mn** through rechannelling these savings towards community health interventions.
ROI Sensitivity

ROI in CH is quite robust – being only moderately sensitive to the discount rate and less so to other key variables

<table>
<thead>
<tr>
<th>Factor</th>
<th>Level</th>
<th>Factor</th>
<th>Level</th>
<th>ROI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discount Rate</td>
<td>Conservative</td>
<td>CHV Allowance per month</td>
<td>Base Case</td>
<td>9.4x</td>
</tr>
<tr>
<td></td>
<td>4%</td>
<td></td>
<td>2,000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Base Case</td>
<td></td>
<td>3,000</td>
<td>8.9x</td>
</tr>
<tr>
<td></td>
<td>5%</td>
<td></td>
<td>5,000</td>
<td>8.0x</td>
</tr>
<tr>
<td></td>
<td>Aggressive</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>7%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHV Allowance per month</td>
<td>Base Case</td>
<td>CHV Attrition Rate</td>
<td>Conservative</td>
<td>9.5x</td>
</tr>
<tr>
<td></td>
<td>2,000</td>
<td></td>
<td>5%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Moderately Aggressive</td>
<td></td>
<td>10%</td>
<td>9.4x</td>
</tr>
<tr>
<td></td>
<td>3,000</td>
<td></td>
<td>40%</td>
<td>9.1x</td>
</tr>
<tr>
<td></td>
<td>Aggressive</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>5,000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHV Attrition Rate</td>
<td>Conservative</td>
<td>Annual Coverage Increase</td>
<td>Conservative</td>
<td>10.1x</td>
</tr>
<tr>
<td></td>
<td>5%</td>
<td></td>
<td>3%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Base Case</td>
<td></td>
<td>5%</td>
<td>9.4x</td>
</tr>
<tr>
<td></td>
<td>Aggressive</td>
<td></td>
<td>8%</td>
<td>8.5x</td>
</tr>
<tr>
<td>Annual Coverage Increase</td>
<td>Base Case</td>
<td>Increase in cost of medicines beyond inflation</td>
<td>Conservative</td>
<td>9.5x</td>
</tr>
<tr>
<td></td>
<td>5%</td>
<td></td>
<td>3%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Aggressive</td>
<td></td>
<td>10%</td>
<td>9.3x</td>
</tr>
</tbody>
</table>
Beyond the direct health-related benefits, there is evidence of a wide range of benefits of community health to the wider society.

**Other Benefits of Community Health**

**Increased data and evidence** on indicators that are not necessarily linked to health e.g. child protection, school enrollment, sanitation and more.

**Youth and women empowerment** esp. at the community level where CHVs, CHCs and CHWs are selected and belong to the community.

**CH has given the community a voice** esp. BoP, vulnerable groups; they are able to actively participate in the health journey.

**Increased capacity and knowledge** at the community level.
## Challenges

**Key challenges facing CH include limited funding, poor coordination across different governance levels and high CHV attrition**

<table>
<thead>
<tr>
<th>Challenge</th>
<th>Overview</th>
<th>County Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Volunteerism</strong></td>
<td>• Most CHVs are not formally recognized as being part of the health human resources, leading to challenges in remuneration and a high attrition rate</td>
<td>“… they are not anywhere in the structure when it comes to human resource. They are recognized as a level but in the human resource structure they are nowhere” – Partner 1.</td>
</tr>
<tr>
<td><strong>Funding &amp; Sustainability</strong></td>
<td>• Inadequate funding at both National and County levels • Fragmented funding by partners • Sub-optimal prioritization of CH within the funding and budgetary processes</td>
<td>“Actually our challenge has been sustaining these community units. So basically after our project ends, you’ll find that these community units will go back to being in the status of either non-functional, or semi-functional” - Partner 2</td>
</tr>
</tbody>
</table>
| **CH Coordination across different levels of Government** | • Poor implementation of CH strategy (lack of awareness, buy-in) by some County Governments • Replication of activities among partners • Redundancy in training • Poor linkages of CHUs to facilities | “… I am unhappy when I say I referred a patient and nobody attended to that patient at the facility level” – Nairobi Count Respondent 3.  
“New CHVs replacing the old ones also need trainings which we can’t always do. The issue of overreliance on partners is also a risk” – Mombasa Count Respondent 2 |
APPENDIX
Working Definitions

Community Health Unit (CHU) Definition

A service delivery unit composed of:

- 5 Government employed community health extension workers (CHEWs)

This requires approximately 45,000 CHEWs

nationally i.e. a 10 fold increase from the current number of approximately 4,500

- 10 community health volunteers (CHVs) responsible for 100 households each

- 1 Community Health Committee composed of community members

- Who serve a population of 5,000 people

DCHS Website / AMP Health

Criteria for selecting interventions

• Alignment with Kenya’s strategy/ policy (Vision 2030, KHSSP, KEPH) and PS/CS performance contracts
• Burden on disease related to the intervention
• Disease areas/ programs where funds are currently being spent

• Where savings from averting care at higher level facilities can be realized
• Impact on other sectors e.g. education, WASH, Nutrition, Environmental health

Community Health Unit (CHU) Definition

Broad categories of interventions include:

• Mother and child health
• HIV
• TB
• Malaria
• Immunization
• Chronic diseases – Diabetes, hypertension, cancer
• Additional categories of benefits: (Based on FAH and South Africa Paper)
  • Productivity
  • Insurance
  • Employment creation
  • Broader benefits: (Based on KII and FGDs)
  • Women empowerment
  • Improved education e.g. increased school enrolment
# Key Assumptions

<table>
<thead>
<tr>
<th>Area</th>
<th>Assumption</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Kenya Aspects:</strong></td>
<td></td>
</tr>
<tr>
<td>Population Growth</td>
<td>• Annual population growth of 2.6%</td>
</tr>
<tr>
<td>Inflation</td>
<td>• Annual inflation rate of 5%</td>
</tr>
<tr>
<td>Exchange Rate</td>
<td>• Base US$ –KES Exchange rate of 103</td>
</tr>
<tr>
<td>Urban-Rural Split</td>
<td>• 27% of the population is urban, 73% rural</td>
</tr>
<tr>
<td><strong>Program Data</strong></td>
<td></td>
</tr>
<tr>
<td>Scale up</td>
<td>• Current coverage is at 55%, growing to 90% in 10 years</td>
</tr>
<tr>
<td>CHVs</td>
<td>• CHVs assumed to grow from current 88,288 to 90,288, assumed to work 5 hours per day (above the 2 hour per day that most believe they are)</td>
</tr>
<tr>
<td>CHEWs</td>
<td>• 5 CHEWs per CHU assumed, growing from current 4,058 to 44,294</td>
</tr>
<tr>
<td>Sub County Heads</td>
<td>• Assumption of 1 sub-county head per sub-county</td>
</tr>
<tr>
<td>Coverage</td>
<td>• Annual increment of 5% in terms of current level of services to get to the target</td>
</tr>
<tr>
<td><strong>Training</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• All new recruits undergo an initial training. As such, given the level of attrition, all replacements will undergo initial training</td>
</tr>
<tr>
<td></td>
<td>• All CHVs undergo 7 technical training modules</td>
</tr>
<tr>
<td></td>
<td>• All CHS workers undergo periodic refresher trainings</td>
</tr>
<tr>
<td><strong>Medicines</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>A mark up of 5% on the unit cost of medicines is assumed, to cover transport, storage and distribution</td>
</tr>
<tr>
<td><strong>Capital Costs</strong></td>
<td>CHS is ‘wall-ess’ and as such should not spend on constructing a clinic or physical place to serve the people.</td>
</tr>
<tr>
<td><strong>Financing</strong></td>
<td>The current level of funding available is assumed to be maintained at the same level for the next 10 years for the sake of determining the funding gap</td>
</tr>
</tbody>
</table>
Productivity Benefits of CHS Scale Up

The LiST Tool was used to generate the key inputs used for calculation of productivity Benefits

Key Inputs & Assumptions to LiST Tool

- The main objective of using the LiST tool is to quantify what number of lives could be saved from scaling up key CHS interventions. The number of lives saved are evaluated according to different potential beneficiaries of CHS scale up. It therefore involves looking at:
  - Additional deaths prevented in children under 5 years,
  - Additional maternal deaths prevented
  - Additional deaths prevented in children under one month
  - Stillbirths prevented
  - Number of stunting cases averted

- Assumptions related to the scale up of various interventions were then manually entered into the LiST tool, relative to the estimated current coverage of each intervention and the desired level of coverage in 10 years.

- The output from the LiST tool is the number of lives saved due to scale up of various interventions. This number is then used in calculation of productivity benefits to the country due to preventing deaths across the above classes.

Key Assumptions used in calculation of lives saved

- Discount Rate of 5% - This is the rate used to take into account the time value of money. Earnings 20 years from now by an individual have to be discounted to the present time to obtain its equivalent present value.

- All young lives saved are assumed to join the workforce at age 18 and work up to age 62. The equivalent per capita is used to estimate how much economic benefits an individual can contribute between ages 18 and 62 as a result of a death prevented earlier on due to scale up of a CHS intervention.

- Productivity benefits therefore relate to economic benefits to a country as a result of a life saved being able to join Kenya’s workforce.
## Community Health Investment Benefits

Productivity Benefits relate to the increase in economic output of a country as a result of a life saved due to CHS intervention joining the workforce.

<table>
<thead>
<tr>
<th>Metric</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>GDP per capita (2016)</td>
<td>1,516</td>
</tr>
<tr>
<td>GDP per capita growth rate</td>
<td>6%</td>
</tr>
<tr>
<td>Discount rate</td>
<td>5%</td>
</tr>
<tr>
<td>Total lives saved (LiST output; examples of interventions considered in LiST are shown below)</td>
<td>276,949</td>
</tr>
<tr>
<td>Benefit per death avoided (US$)</td>
<td>87,362</td>
</tr>
<tr>
<td>Maternal deaths averted</td>
<td>4,832</td>
</tr>
<tr>
<td>Benefit per maternal death averted (US$)</td>
<td>55,600</td>
</tr>
<tr>
<td>Total productivity benefit (US$)</td>
<td>24.4 Billion</td>
</tr>
</tbody>
</table>

### Productivity Benefits Calculation

Productivity Benefits relate to the increase in economic output of a country as a result of a life saved due to CHS intervention joining the workforce.

### Examples of interventions considered in the Lives Saved Tool

<table>
<thead>
<tr>
<th>Broad intervention area (examples)</th>
<th>Specific interventions offered through community health (examples)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peri-conceptual</td>
<td>Folic acid supplementation / fortification</td>
</tr>
<tr>
<td>Pregnancy</td>
<td>Micronutrient supplementation (iron and other micronutrients)</td>
</tr>
<tr>
<td>WASH</td>
<td>Hygienic disposal of children’s stool</td>
</tr>
<tr>
<td></td>
<td>Improved sanitation (e.g. hand washing with soap)</td>
</tr>
<tr>
<td>Diarrhea</td>
<td>Administration of oral rehydration salts for treatment of diarrhea</td>
</tr>
</tbody>
</table>
Employment Benefits of CHS Scale Up

Employment benefits are driven by the fiscal multiplier impact of increased government expenditure on CHS

Employment Benefits Overview

- Employment benefits refer to the multiplier effects of increased government expenditure due to an increased expenditure on CHS as government aims to increase coverage.

- Government expenditure is driven by the estimated cost of a totally scaled up CHS program relative to the current expenditure. To attain full scale up therefore, government will need to increase expenditure on CHS. This expenditure has a fiscal multiplier on the entire economy.

- As fiscal multiplier of 0.7% for developing countries is used to calculate how much is the benefit to the Kenyan economy as a result of incremental government expenditure.

<table>
<thead>
<tr>
<th>Metric</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total cost of a fully scaled up CHS program</td>
<td>2,552,173,535</td>
</tr>
<tr>
<td>Incremental costs incurred</td>
<td>2,863,849,836</td>
</tr>
<tr>
<td>Fiscal multiplier for developing countries</td>
<td>0.7%</td>
</tr>
<tr>
<td>Benefit to economy due to incremental expenditure on CH (US$)</td>
<td>2 billion</td>
</tr>
</tbody>
</table>
Insurance Benefits of CHS Scale Up

Insurance benefits are driven by the potential to reduce the chances of a global health crisis due to scale up of CHS interventions

Insurance Benefits Overview

- The premise of insurance benefits is the potential to prevent a global health crisis due to the increase in the number of community health workers globally.

- Increased scale up of CHS interventions will result in an increase in the current number of health workers, resulting in better chances of a reduction in a global health crisis and consequently acting as an insurance policy against such a crisis.

- Calculation of the insurance benefits is based on the estimated potential adverse economic impact of a global health crisis, estimated to occur once in 50 years and estimated the potential benefit based on the increase in health workers in Kenya.

Insurance Benefits Table

<table>
<thead>
<tr>
<th>Metric</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economic impact of severe health crisis</td>
<td>3E+12</td>
</tr>
<tr>
<td>Years over which a severe health crisis could occur</td>
<td>50</td>
</tr>
<tr>
<td>Annual economic risk from a severe health crisis</td>
<td>60 Billion</td>
</tr>
<tr>
<td>Size of global health workforce</td>
<td>59,220,000</td>
</tr>
<tr>
<td>Number of CHWs added to Kenya</td>
<td>64,236</td>
</tr>
<tr>
<td>Percentage increase in global health workforce(Economic risk of health crisis is assumed to reduce in proportion to size of global health workforce)</td>
<td>0.11%</td>
</tr>
<tr>
<td>Annual value of CHW contribution to reduction of health crisis economic risk</td>
<td>65 M</td>
</tr>
<tr>
<td>Total 10-year benefit of CH in reducing health crises and their economic impact</td>
<td>502 M</td>
</tr>
</tbody>
</table>
Calculation of ROI

UNDERLYING DRIVERS
- Program scale up
- CHW categories
- Supervisor categories
- CHS coverage data

HUMAN CAPITAL RELATED COSTS OF CHS DELIVERY
- CHV Salaries & Benefits
- Sub-county focal person salaries & benefits
- CHDU Salaries & Benefits
- Supervision Meeting Costs
- CHEW Salaries & Benefits
- County CHS Head Salaries & Benefits
- Cost of Supervision visits
- Training Costs (CHVs, CHEWs & Management)

OTHER KEY COSTS
- Cost of Medicines
- Recurrent Costs
- Equipment Costs

COSTS
COSTING TOOL: Output = Total Costs of fully scaled up CHS

Step 1 - Input cost estimates into UNICEF-MSH tool

Step 2 - Calculate value of benefits
- Benefit: Productivity Benefits
  Tool: Lives Saved Tool (LiST)
- Benefit: Employment Benefits
  Tool: Excel (Fiscal Multiplier)
- Benefit: Insurance Benefits
  Tool: Excel (reduced risk of global pandemic)

Step 3 - Calculate ROI
ROI = Benefits/ Costs