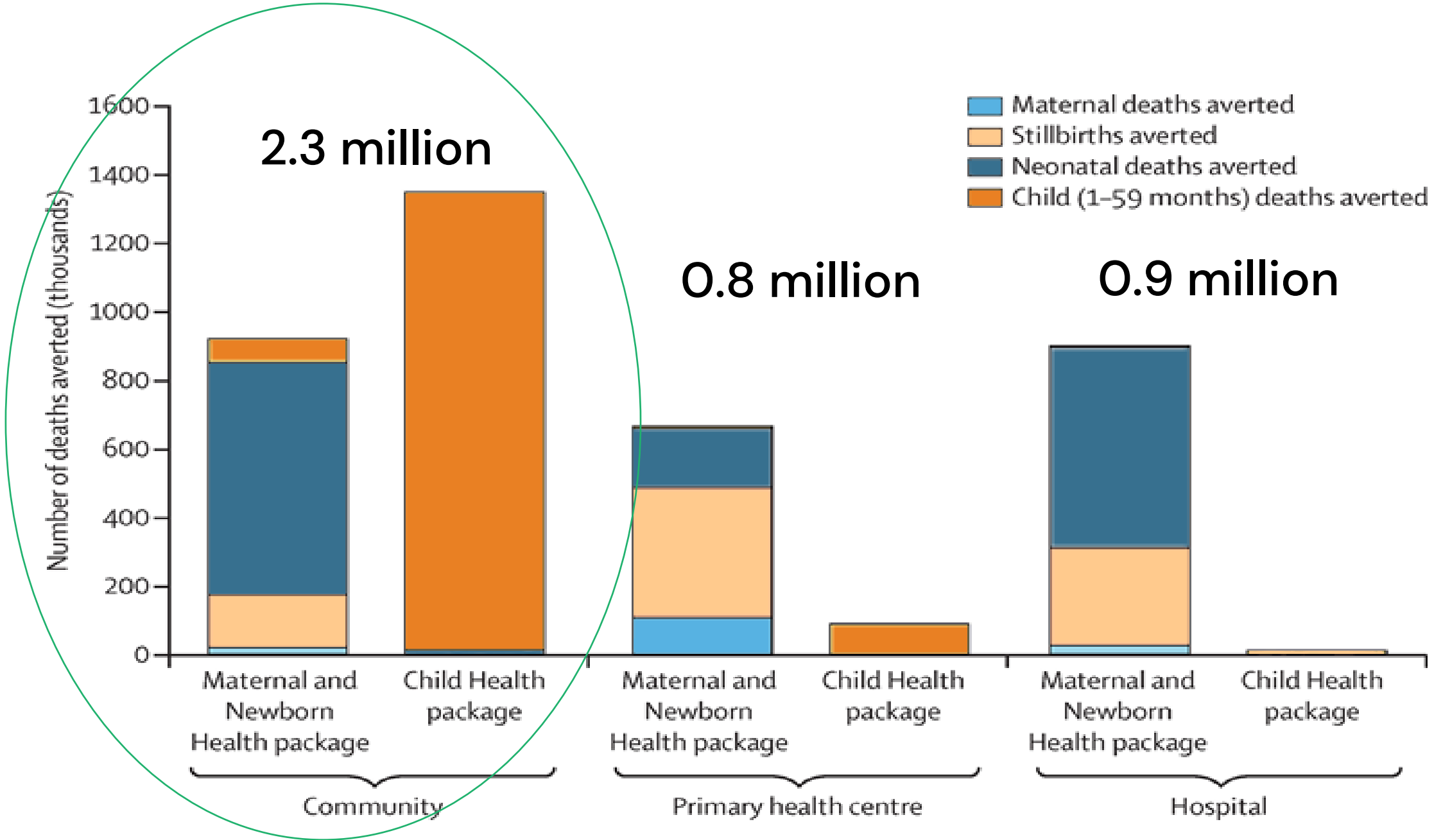# Applying the Community Health Worker Coverage and Capacity Tool for time-use modeling

May 23, 2023

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IDM Annual Symposium 2023

ICF

Strengthening and scaling up community and PHC platforms could avert 77% of preventable maternal, newborn, and child deaths and stillbirths

Legend:
- Maternal deaths averted
- Stillbirths averted
- Neonatal deaths averted
- Child (1–59 months) deaths averted

2.3 million — Community
0.8 million — Primary health centre
0.9 million — Hospital

Y-axis: Number of deaths averted (thousands)

X-axis categories: Maternal and Newborn Health package, Child Health package

SOURCE: Black RE, Walker N, Laxminarayan R, Temmerman M. Chapter 1: Reproductive, Maternal, Newborn, and Child Health: Key Messages of this Volume. DCP3 RMNCH 2016.

Investment Case for CHWs in sub-Saharan Africa

Madagascar
Photo Credit: Karen Kasmauski/MCSP

Ghana
Photo Credit: Kate Holt/MCSP
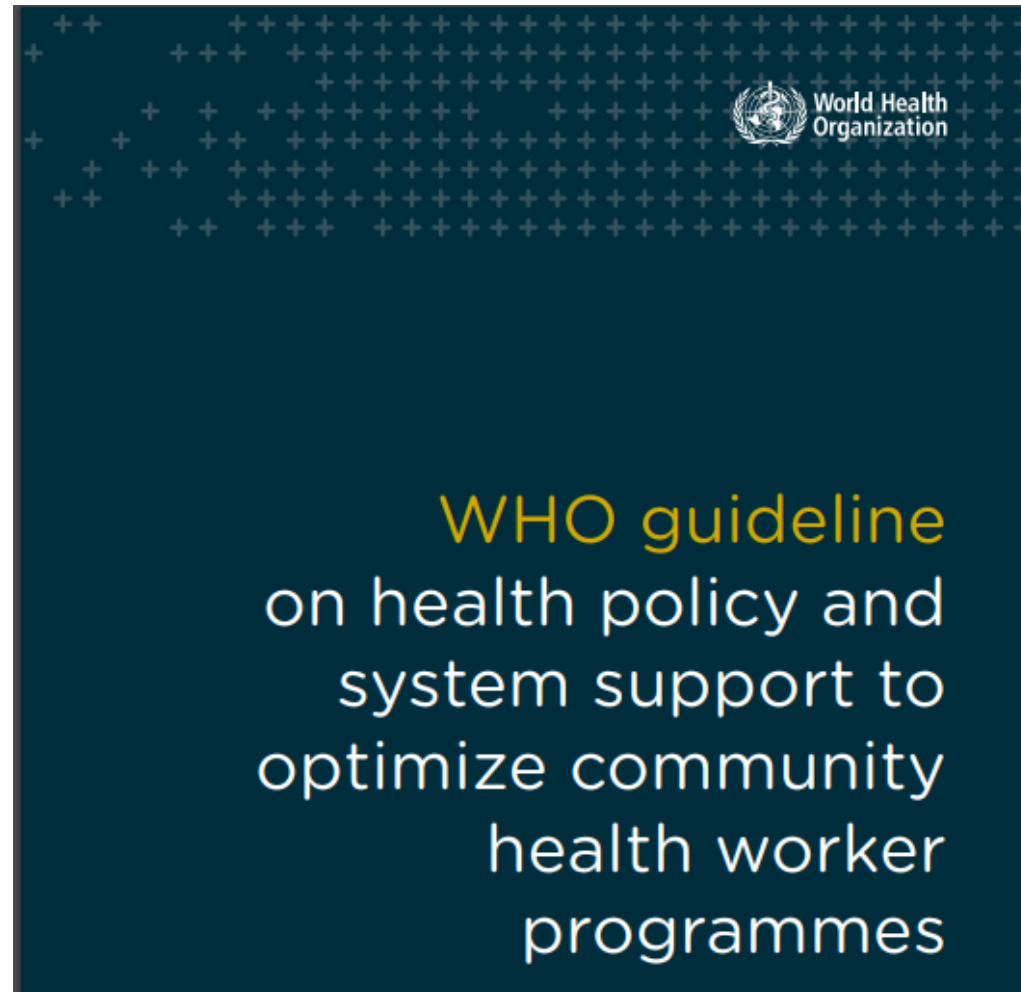
Kenya
Photo Credit: Allan Gichigi/MCSP

Economic return of up to 10:1

SOURCE: Strengthening Primary Health Care through Community Health workers: Investment Case and Financing Recommendations – July 2015
(https://www.who.int/hrh/news/2015/chw_financing/en/)

CHW Program Impact

WHO guideline to optimize CHW programs

Target population size for CHWs is not a fixed ratio in the WHO guideline (2018):

- Workload based on epidemiology and anticipated demand for services
- Frequency of contact required
- Nature and time requirements of the services provided; and
- Expected weekly time commitment of CHWs

CHW Coverage and Capacity (C3) Tool supports realistic planning

The C3 Tool uses Excel to model different scenarios for expected implementation coverage vs. human capability (numbers * time)

Modeling Tool + Decision-making Process

C3

CHW
Coverage
Capacity
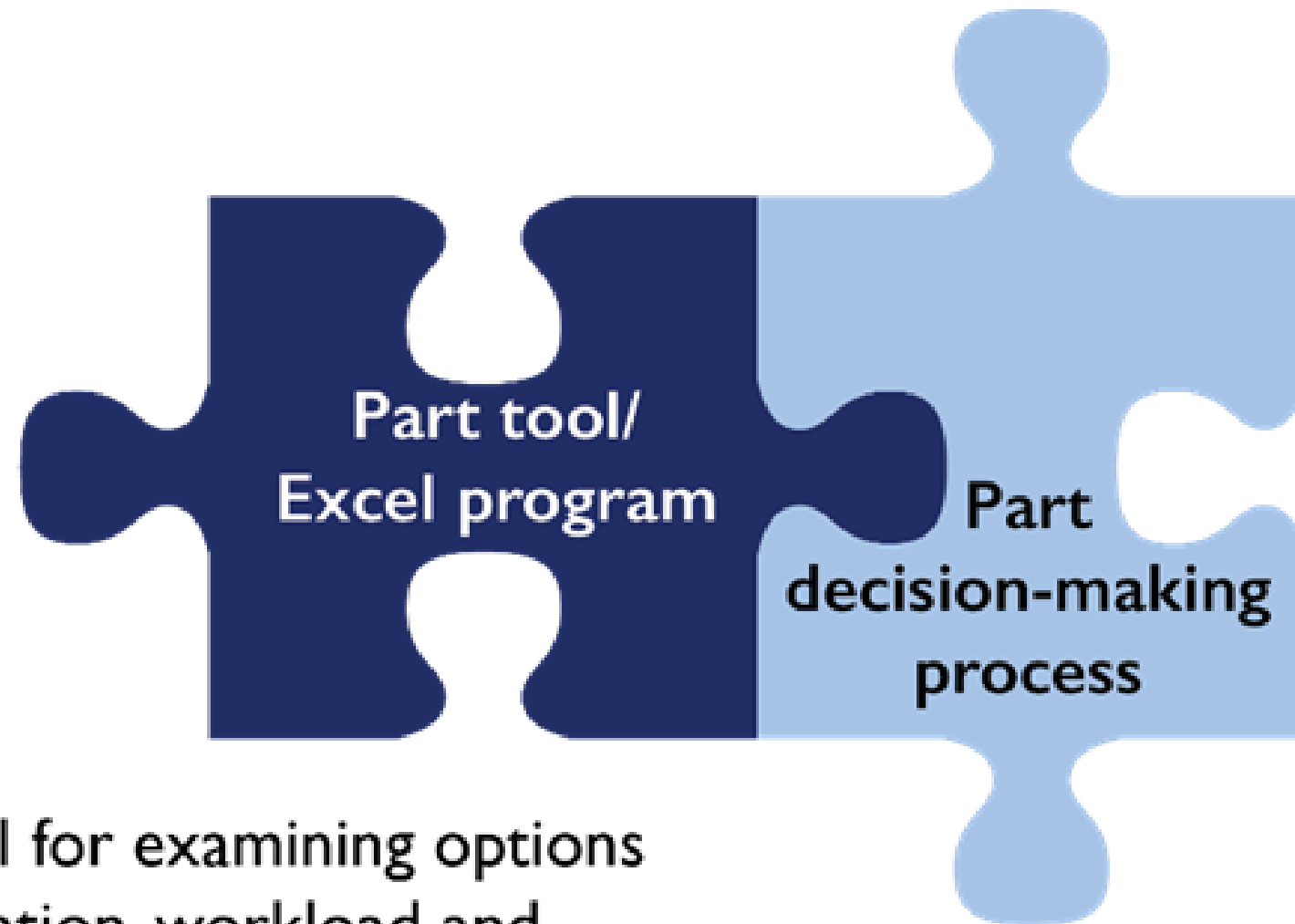
An Excel-based tool for examining options of CHW time allocation, workload and estimated coverage.

Part tool/ Excel program

Part decision-making process

The C3 Modeling Process

1. Engaging stakeholders

2. Defining the questions

3. Modeling assumptions and inputting data in the C3 Tool

4. Iterative testing of scenarios through the C3 Tool

5. Prioritizing and decision making
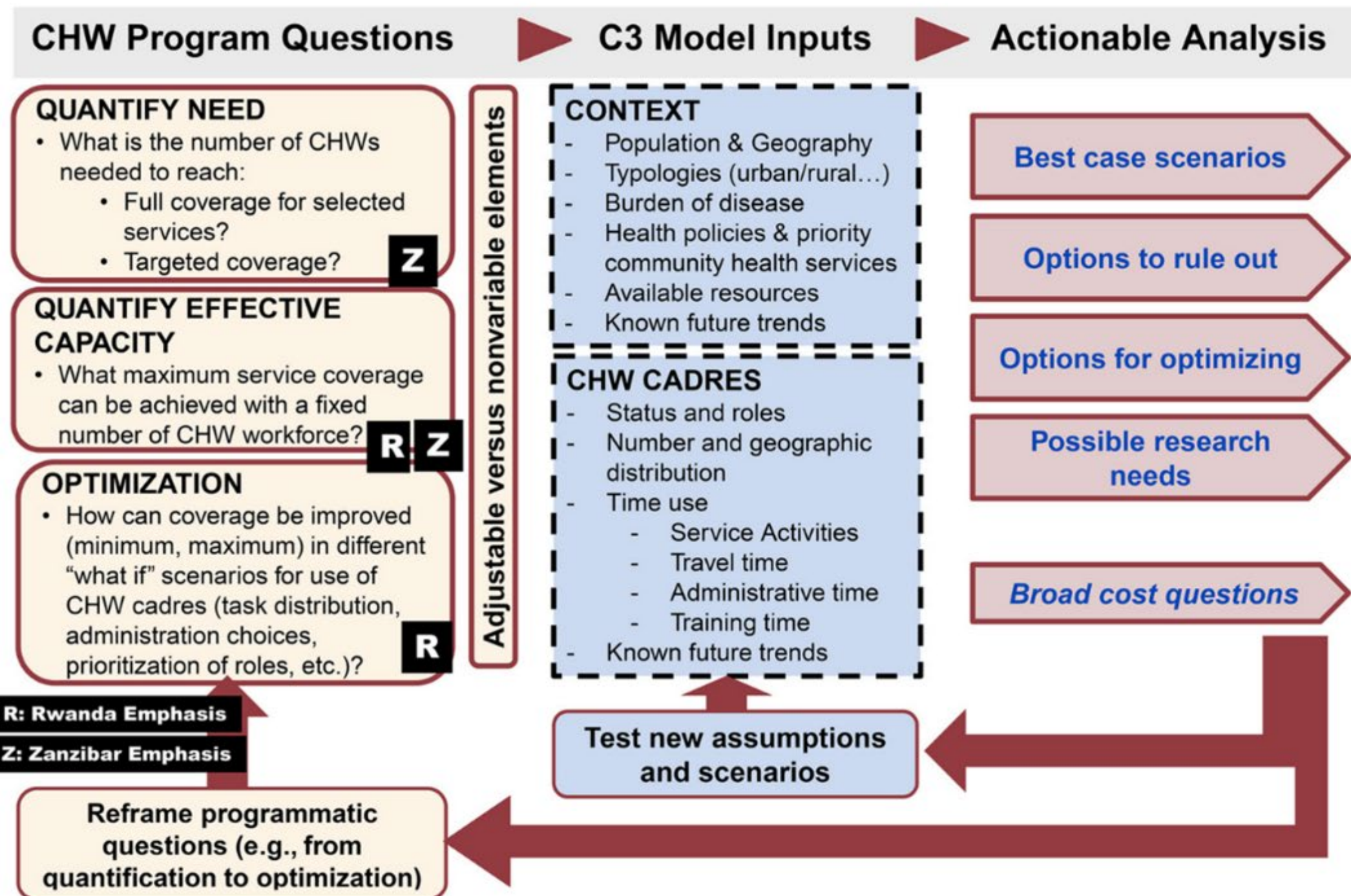
FIGURE 1. Iterative Steps of the Modeling Component of the C3 Process

Case study: Zanzibar community health strategy revision

Map source:
http://news.bbc.co.uk/2/hi/africa/416780 7.stm

- Strategy included a new Community Health Volunteer (CHV)
- Key question for Ministry of Health (MoH): "How many CHVs do we need to reach all communities in Zanzibar?"
- D–Tree International worked with MoH to apply beta version of C3 Tool in 2018–2019
  - Reviewed intended service package
  - Estimated number of visits, time/visit, travel time, etc.
  - Agreed on target levels of service coverage and feasible CHV workload
- Reviewed assumptions with broader stakeholder group from MOH and President's Office*

*PORALGSD: President's Office Regional Administration, Local Government and Special Depts.

1. Program Information

Name of subpopulation	Zanzibar
Country	United Republic of Tanzania
Policy analysis mode	Population per CHW
Year of analysis	2018
Total Population (2018) Zanzibar	1,579,849
Population per community	720
What is the average household size?	5.4

Intervention details

Service / Intervention	Program	Target population	Population in Need or Incidence rate (PIN)	Number of visits	Minutes per visit
Pregnancy Visit 2	RMNCH incl Nutrition & ECD	Pregnant Women	100.00%	1	25
Pregnancy Visit 3	RMNCH incl Nutrition & ECD	Pregnant Women	100.00%	1	25
FU-referral (preg,PP,new	RMNCH incl Nutrition & ECD	Pregnant Women	5.00%	1	15
FU visit - problem (preg,	RMNCH incl Nutrition & ECD	Pregnant Women	7.00%	2	15
Emergency support	RMNCH incl Nutrition & ECD	Pregnant Women	5.00%	1	60
Postnatal Visit 1 (normal	RMNCH incl Nutrition & ECD	Children <1	100.00%	1	60
Postnatal Visit 2 (normal	RMNCH incl Nutrition & ECD	Children <1	100.00%	1	25
Postnatal Visits (3) (smal	RMNCH incl Nutrition & ECD	Children <1	10.00%	3	30
Infant Visit 1	RMNCH incl Nutrition & ECD	Children <1	100.00%	1	45
Infant Visit 2	RMNCH incl Nutrition & ECD	Children <1	100.00%	1	45
Infant Visit 3	RMNCH incl Nutrition & ECD	Children <1	100.00%	1	35

Three scenarios defined for analysis, as seen for Zanzibar

	Best package			Less work time/CHV			Smaller catchment/CHV		
	Pop, Hours per week, total # CHVs fixed.			*Same as "best package", but with 15 hours per week*			*Same as "best package", but with smaller catchment*		
	Population per CHW	Weeks worked per year	Hours worked per week	Population per CHW	Weeks worked per year	Hours worked per week	Population per CHW	Weeks worked per year	Hours worked per week
CHV	720	48	18	720	48	15	500	48	18
	Best package			Less work time/CHV			Smaller catchment/CHV		
	% planned actitivity implemented		Provider	% planned actitivity implemented		Provider	% planned actitivity implemented		Provider
Pregnancy Visit 1	95		CHV	95		CHV	95		CHV
Pregnancy Visit 2	80		CHV	80		CHV	80		CHV
Pregnancy Visit 3	90		CHV	90		CHV	90		CHV
FU-referral (preg,PP,newborn)	90		CHV	90		CHV	90		CHV
FU visit - problem (preg, PP, nev	90		CHV	90		CHV	90		CHV
Emergency support	90		CHV	90		CHV	90		CHV

Selected outputs and results for Zanzibar

CHW Cadre:	CHV
Scenario:	Best package

Top 10 interventions, ranked by total time needed to deliver services

1. Health promotion: Average meeting (education)
2. Child Visit 1
3. Child Visit 2
4. Child Visit 3
5. Identify and coach, threats to development
6. Postnatal Visit 1 (normal)
7. Pregnancy Visit 1
8. Child Visit 4
9. Infant Visit 1
10. Child Visit 6

Modeling projected that 2,200 community health volunteers could achieve approximately 90% coverage of the defined services, working 18 hours per week, with a catchment population of 725 people.

FIGURE 3. Number of Community Health Volunteers Needed in Zanzibar to Carry Out All Activities, as Calculated Using the C3 Tool
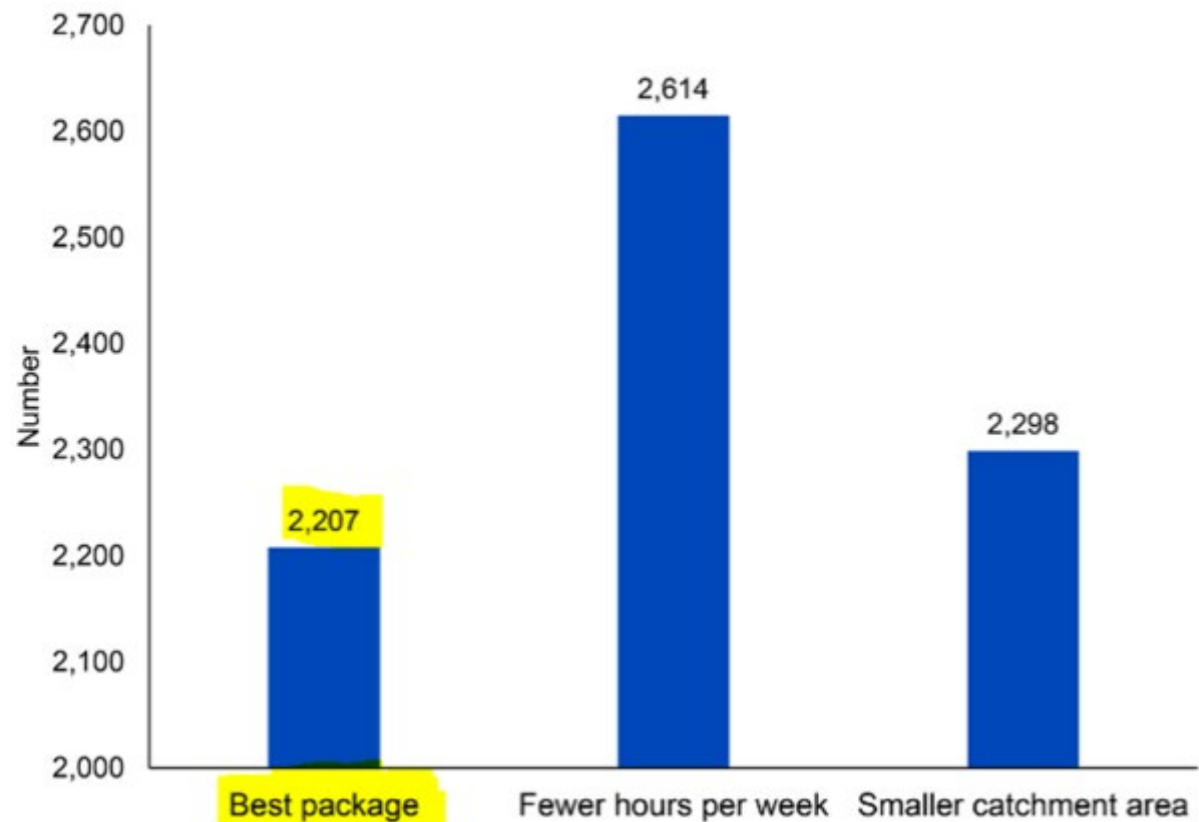
C3 Tool influence in Zanzibar

- Zanzibar MoH updated its community health strategy, launched in February 2020, based on the service package and coverage estimates modeled using the C3 Tool.

- Determined acceptable monthly performance-based incentive for CHVs

- Informed costing of the CHV program using the Community Health Planning and Costing Tool

Photo Credit: Jamii ni Afya Program Brief, D-Tree International https://www.d-tree.org/wp-content/uploads/2022/09/Jamii-ni-Afya_Program-Brief-Sep2022.pdf

More information:

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ORIGINAL ARTICLE

Applying the Community Health Worker Coverage and Capacity Tool for Time-Use Modeling for Program Planning in Rwanda and Zanzibar

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https://doi.org/10.9745/GHSP-D-20-00324

Discussion and postscript: the C3 Tool

- **Challenges & Opportunities**
  - Learning curve
  - Timing
  - Advocacy
  - Tool updates
- Currently in use by:
  - Unicef and USAID's MOMENTUM Country and Global Leadership project in Sierra Leone
  - World Vision in 17 countries, with 16 more country offices to be trained in 2023

Photo: Kate Holt/MCSP (Gaza, Mozambique)

Rwanda
Photo: Mamy Ingabire/MCSP

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