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SUPPLEMENT

Special Supplement on integrated Community Case Management

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Evidence for the Implementation, Effects and Impact of the Integrated Community Case Management (iCCM) Strategy to Treat Childhood Infection: Introduction to a Special Supplement

David R. Marsh, Davidson H. Hamer, Franco Pagnoni, Stefan Peterson

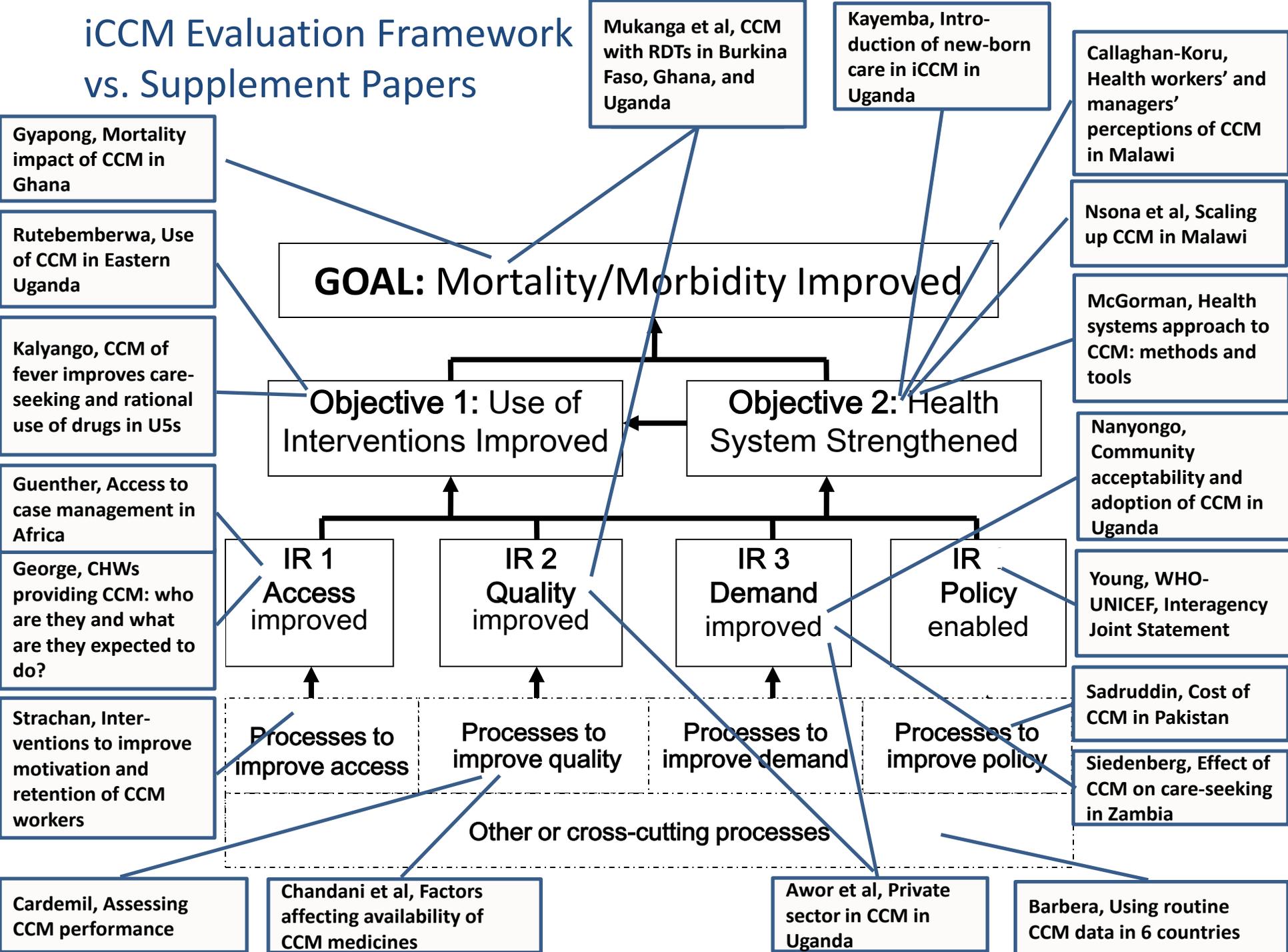
Save the Children, Westport, CT

Center for Global Health and Development, Boston University, Boston, MA; Department of International Health, Boston University School of Public Health, Boston, MA; Section of Infectious Diseases, Department of Medicine, Boston University School of Medicine, Boston, MA; Zambia Centre for Applied Health Research and Development, Lusaka, Zambia
Global Malaria Programme, World Health Organization, Geneva, Switzerland
Uppsala University, Uppsala; Makerere University, Kampala, Uganda; Karolinska Institutet, Stockholm, Sweden

The Special Supplement

- Has a preface by UNICEF's Anthony Lake
- Has 21 papers, including
 - Multilateral iCCM Joint Statement
 - Reports from over a dozen countries, mostly in sub-Saharan Africa
- Informs nearly all results and processes in a vetted iCCM Evaluation Framework
- Informs 16 of the original 31 priority iCCM research questions

iCCM Evaluation Framework vs. Supplement Papers



Previously prioritized iCCM research questions informed by papers in the special supplement

Question	Paper
1) What is the effect on the performance of CHW when management of <u>one or more disease is added</u> to the existing responsibility?	Chinbuah et al.; Kayemba et al.
2) Are CHWs able to assess, classify, and treat various illnesses under <u>integrated CCM</u>?	Mukanga et al.
5) What are the best methods for <u>evaluating the quality</u> of service provided by CHW?	Cardemil et al.
6) What is the <u>optimal number of CHWs</u> to give near universal coverage to a given geographic area?	Guenther et al.
8) Which factors <u>increase recruitment and reduce attrition</u>?	Strachan et al.
10) What are the <u>cost and cost-effectiveness</u> of CCM?	Sadrudin et al.
12) How can effective coverage be achieved by CCM (<u>equity</u>, community effectiveness, etc.)?	Guenther et al.; Kalyango et al.
13) How can the <u>private sector</u> become involved in delivering integrated CCM?	Awor et al.
14) How <u>acceptable</u> are CHWs to the health system, and how can CCM <u>requirements for drugs, supplies, supervision</u>, etc. be met?	Callaghan-Koru et al.; Chandani et al.

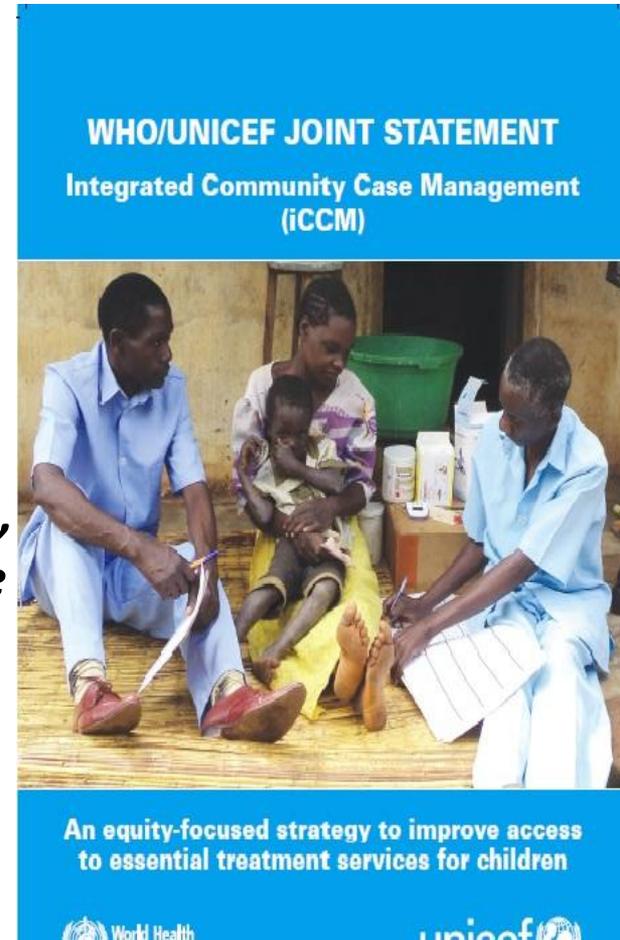
iCCM research questions vs. supplement papers (cont.)

Question	Paper
15) What are health system effects of CCM on referral and <u>caseload and mix</u> ?	Nsona et al.; Lainez et al.; Seidenberg P et al.
17) What is the impact of CCM on <u>drug use</u> and <u>therapeutic outcomes</u> in the community?	Kalyango et al.; Mukanga et al.
21) Can CHWs treat WHO-defined <u>severe pneumonia</u> in the <u>community</u> ?	Sadruddin et al.
26) Do family members <u>recognize</u> the disease and promptly seek care?	Seidenberg et al.; Nanyongo et al.; Awor et al.
27) What are the elements that facilitate family members to <u>utilize CCM services</u> ?	Rutebemberwa et al.
30) What is the impact of integrated CCM on health and <u>survival</u> of children?	Chinbuah et al.; Mukanga et al.
31) Does CCM lead to increased penetration in terms of reaching <u>the poor</u> ? (effective coverage)	Guenther et al.; George et al.

WHO/UNICEF Joint Statement Integrated Community Case Management (iCCM): an equity-focused strategy to improve access to essential treatment services for children

Mark Young, Cathy Wolfheim, David Marsh,
Diaa Hammamy

This statement presents the latest evidence for integrated community case management of childhood illness, describes the necessary program elements and support tools for effective implementation, and lays out actions that countries and partners can take to support the implementation of iCCM at scale



Section Headings and Components

- Background and Current Context
- Justification for integrated community case management
- Deploying community health workers can increase coverage and access to treatment
- Countries that decide to deploy community health workers to increase coverage of iCCM should:
 - *Examine the policy options*
 - *Build on existing programs and initiatives*
 - *Ensure quality of care*
 - *Ensure adequate and uninterrupted supplies and medicines*
 - *Monitor and assess*
- WHO, UNICEF and partners will support ministries of health in all these steps
- Benchmarks for implementation
- Conclusion

iCCM Implementation support tools

Training in clinical skills: WHO and UNICEF have developed an integrated package to train community health workers to manage illness in children 2 to 59 months of age. *Caring for the Sick Child in the Community* is the 'gold standard' training package for iCCM. The interventions require the use of four low-cost medicines and one test: an antibiotic, an antimalarial, ORS, zinc treatment and RDTs for malaria. In addition, the guidelines support an assessment using the MUAC strip. The sequence to be followed by the community health worker is based on the principle that 'one observation leads to one action', and does not depend on individual judgment.

Program management: The CORE Group of non-governmental organizations, with support of the United States Agency for International Development (USAID), published *Introduction to Community Case Management Essentials: A guide for program managers*, which contains guidance for iCCM. WHO produced a five-day training course, 'Managing Programmes to Improve Child Health', which includes CCM as a crucial ingredient in national child health programming.

These and other tools are available online at www.CCMCentral.com. This website, set up by the global CCM Task Force, is a virtual resource centre for iCCM tools and information, including relevant publications and case studies.

Impact of community management of fever (using antimalarials with or without antibiotics) on childhood mortality: A cluster randomized controlled trial in Ghana.

Chinbuah MA, Kager PA, Abbey M, Gyapong M, Awini E, Nonvignon J, Adjuik M, Aikins M, Pagnoni F, and Gyapong JO.

Background

Child mortality:

- ▶ High and stagnating in Africa, including Ghana
- ▶ Malaria and pneumonia major causes globally contributing ~20–26%

Ghana:

- ▶ Malaria causes 23% of under 5 mortality and 10% of early childhood deaths
- ▶ Pneumonia causes 23% of under 5 mortality

Malaria and pneumonia difficult to distinguish without diagnostic tests

Main Objective

To evaluate the impact on all-cause mortality of adding an antibiotic to antimalarial treatment of 2–59 months old children with fever within the Home Management of Malaria (HMM) strategy

Antimalarial: artesunate amodiaquine (AAQ)

Antibiotic: amoxicillin (AMX)



Methods

- ▶ Cluster randomized open trial, comparing AAQ , AAQ+AMX and standard care
- ▶ Intervention introduced in stepped wedge manner
- ▶ Involvement of Community Health Workers
- ▶ Biannual Health Demographic Surveillance Surveys
- ▶ Additional data from Community Key Informants

Primary impact measure:

- ▶ All cause mortality of children 2–59 months

Results and conclusions

Significant mortality reduction:

- AAQ vs. standard care, 33%
- AAQ+AMX vs. standard care, 44%

Non significant mortality reduction:

- AAQ vs. AAQ+AMX clusters, 21%

Conclusion

- Treating fever in children 2–59 months with antimalarials with or without an antibiotic significantly reduces mortality compared with standard care
- Adding an antibiotic may be beneficial

Study participants



08/30/2006 1:47 pm

Integrated Community Case Management of Fever in Children Under Five Using Rapid Diagnostic Tests and Respiratory Rate Counting: a Multi-Country Cluster Randomized Trial

Authors: Mukanga D, Tiono A.B, Anyorigiya T,
Källander K, Konaté A.T, Oduro A.R, Tibenderana
J.K, Amenga-Etego L, Sirima S.B, Cousens S,
Barnish G, Pagnoni F

Diagnostic-based iCCM

Malaria RDT



Respiratory
timer



Background and Methods

- Evidence on the impact of using diagnostic tests in community case management of febrile children is limited.
- This effectiveness trial, conducted in Burkina Faso, Ghana, and Uganda, compared a diagnostic and treatment package for malaria and pneumonia vs. presumptive treatment with anti-malarial drugs (ACTs).
- Enrolled 4,216 febrile children between 4 and 59 months in 2009-2010.
- Study outcomes: clinical resolution of fever at Day 3 and Day 7 and use of anti-malarial and antibiotic drugs.
- Analysis was by intention to treat.

Results and Conclusion

- Compliance with malaria rapid diagnostic test (RDT) results was high in the intervention arm across the 3 countries, with only 4.9% (17/344) of RDT negative children prescribed an ACT.
- Antibiotic overuse was more common: 0.9% (4/446) in Uganda, but 38.5% (114/296) in Burkina Faso and 44.6% (197/442) in Ghana.
- Fever clearance was high in both intervention and control arms at both Day 3 (97.8% vs. 96.9%, $p=0.17$) and Day 7 (99.2% vs. 98.8%, $p=0.17$).
- The use of diagnostic tests limited overuse of ACTs. Its impact on antibiotic overuse and on fever clearance is uncertain.

Title: Use of community health workers for management of malaria and pneumonia in urban and rural areas in Eastern Uganda

E. Rutebemberwa, D. Kadobera, S. Katureebe, J. N. Kalyango, E. Mworozzi, G. Pariyo

- **Background:** Use of community health workers (CHWs) has been implemented the same way in urban and rural areas despite differences in availability of health providers and socio-demographic characteristics
- **Method:** A household survey was conducted in rural and urban areas in Iganga and Mayuge Districts in eastern Uganda. All children who were febrile in the previous two weeks were assessed on treatment received and when and where they first went for treatment

Use of CHWs in urban and rural areas

➤ **Results:**

- Care-givers of children from urban areas more likely went to health facilities than those from the rural areas
- Care-givers of febrile children in rural areas utilized CHWs, drug shops and private clinics more than urban counterparts.

➤ **Main conclusions:**

- CHWs should be promoted more in rural areas
- Drug shops and private clinics should be included in the ICCM programs.

A cross section of CHWs in monthly meeting (Note some with registers)



Increased Use of Community Medicine Distributors and Rational Use of Drugs in Children Less than Five Years of Age in Uganda Caused by Integrated Community Case Management of Fever

Joan N Kalyango, Ann Lindstrand,
Elizeus Rutebemberwa, Sarah Ssali, Daniel Kadobera,
Charles Karamagi, Stefan Peterson, Tobias Alfven

October 2012

Background

- Home based management of malaria (HBMF) improved access to anti-malarial medicines
 - But children with other illnesses were inappropriately treated with antimalarials
 - Utilization of intervention was low
- WHO now recommends integrated community case management of childhood illnesses (ICCM)
 - community medicine distributors (CMDs) treat under-5 children with antibiotics, antimalarials, oral rehydration salts
- We compared use of CMDs and drug use under ICCM and HBMF strategies in children 6-59 months in eastern Uganda

Methods, Results, & Conclusions

- Cross-sectional study with 1,095 children was nested in a cluster randomized trial
 - ICCM (CMDs treat malaria and pneumonia) as intervention and HBMF (CMDs treat only malaria) as control.
- Care-seeking from CMDs was higher in intervention (31%) than control (22%; $P = 0.01$).
- Prompt & appropriate treatment of malaria was higher
 - in intervention (18%) than control areas (12%; $P = 0.03$)
 - among CMD users (37%) than other health providers (9%).
- ICCM increased use of CMDs and rational drug use

A photograph of two women sitting on the ground under a large tree. The woman on the right is holding an open book and looking at it, while the woman on the left looks towards her. The background is a lush, green outdoor setting with trees and a red dirt ground.

Introduction of Newborn Care within Integrated Community Case Management in Uganda

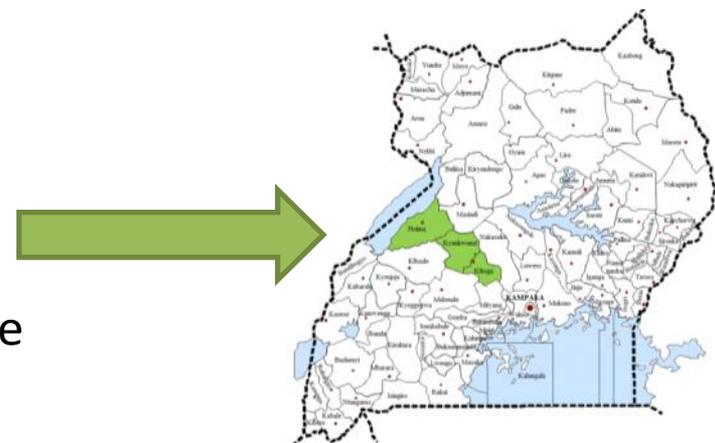
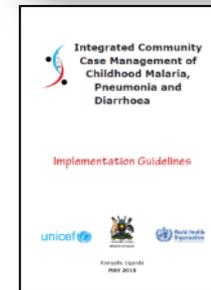
**Christine Nalwadda Kayemba, Hanifah Naamala Sengendo, James Ssekitooleko,
Kate Kerber, Karin Källander, Peter Waiswa, Patrick Aliganyira, Tanya Guenther,
Nathalie Gamache, Clare Strachan, Charles Ocan, Godfrey Magumba, Helen
Counihan, Anthony K. Mbonye, and David Marsh**

Overview

- 26% of under-five deaths in Uganda occur in the **first month of life** – the newborn period.
- In 2009, the Ministry of Health committed to **scaling up iCCM** for children under-five.
- **Preventive newborn care** was included in the iCCM package.
- Interviews and focus group discussions were conducted with **Village Health Team members, facility-based health workers, and caregivers** in 3 mid-western districts to determine how newborn care operationalized within the context of iCCM.



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Findings

- VHTs unanimously reported referring sick newborns to facilities.

“During the training, we were told not to treat the newborns at all; we just refer them to the health workers in the health units.” (VHT FGD)

- VHTs could identify danger signs, but not the most important signs of severe newborn illness.
- iCCM is seen as beneficial, but caregivers, VHTs and health workers want to be able to do more for sick babies.

“It is like we do not have a program for the newborns here. Even if we go to the health facility there are no drugs.” (Caregiver FGD)

- Further research needed: (1) ability of VHTs to identify newborn danger signs; (2) compliance with referral; (3) quality of newborns care at referral facilities.

“If you give birth in the village, VHT comes and sees your baby and advises you to take the baby to the hospital.” (Caregiver FGD)



Scaling-up integrated community case management of childhood illness: update from Malawi

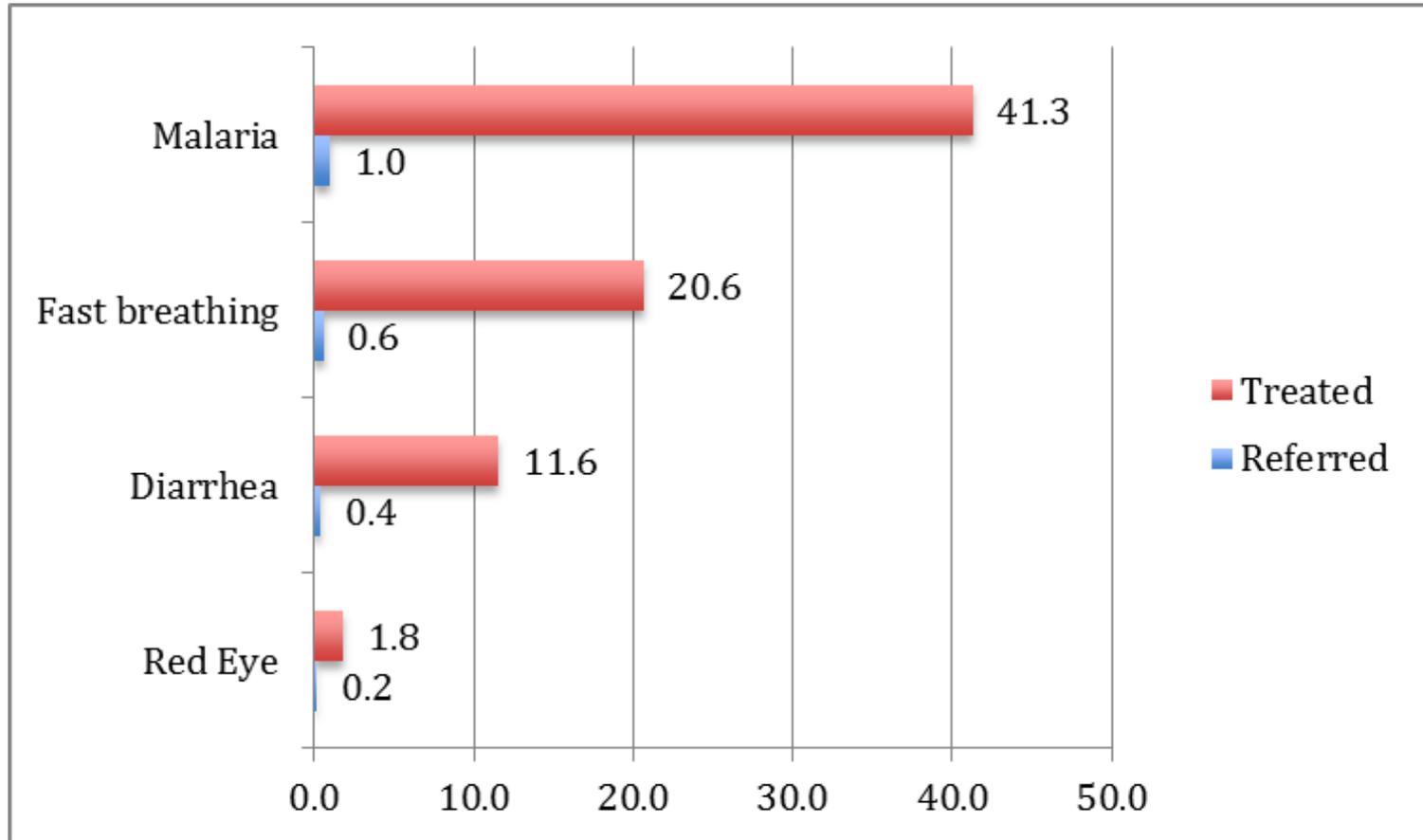
*Humphreys Nsona, Angella Mtimuni,
Bernadette Daelmans, Jennifer A.
Callaghan-Koru, Kate Gilroy,
Leslie Mgalula, Timothy Kachule*

Background



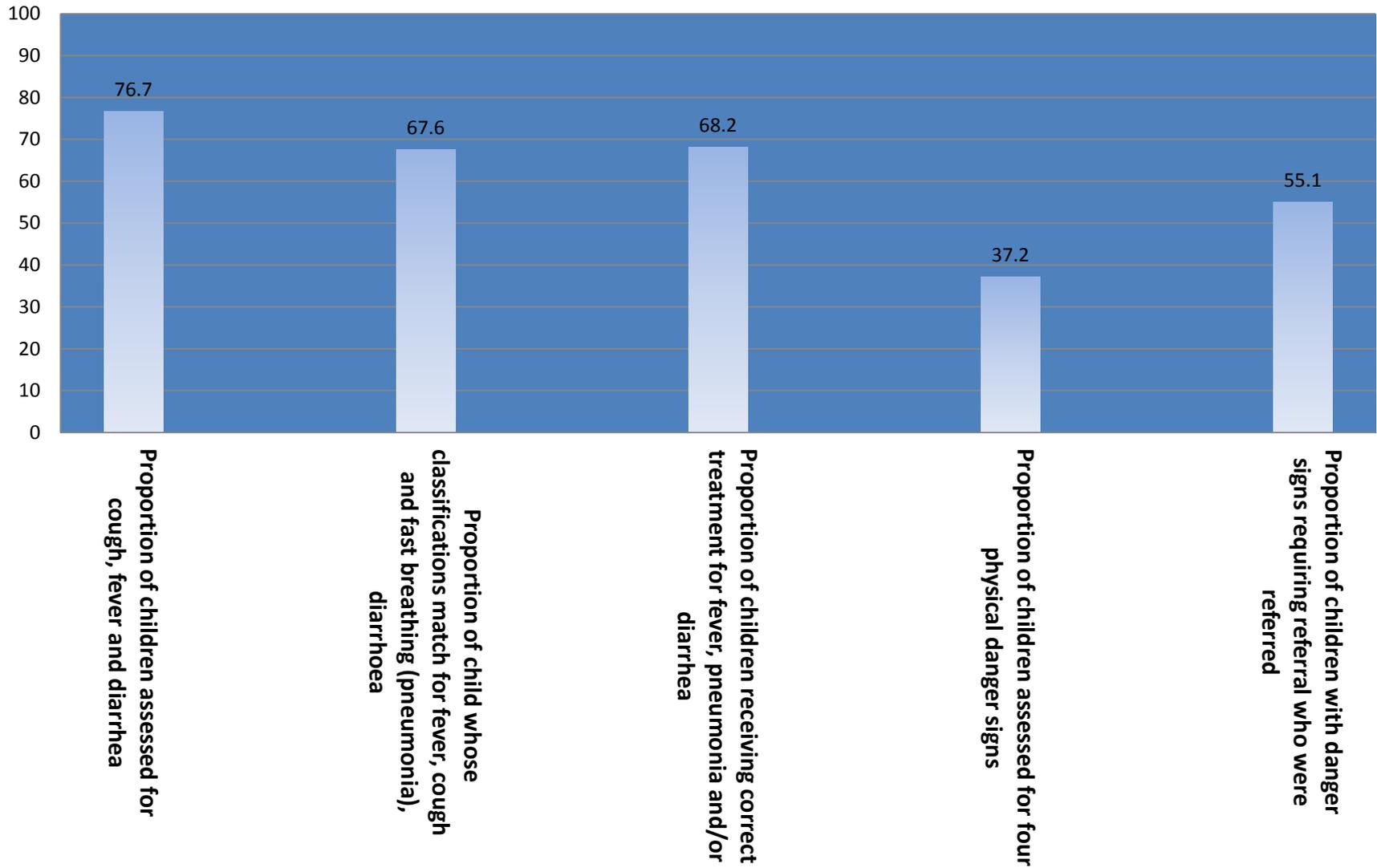
- Scale-up of iCCM strategy in Malawi started in last quarter 2008.
 - **Audience:** Health Surveillance Assistants serving hard-to-reach areas, one HSA per 1000 population
 - **Hard-to-reach areas:** Distance to the nearest health facility of 8 km or more or Difficult access due to geographical terrain or natural barriers. 3,452 hard-to-reach areas identified
 - **Functional village health clinic:** Health surveillance assistant trained, equipped with a village drug box, managing sick children
- District coverage of functional village health clinics 50% or more (except for 2 districts) in September 2011

Monthly average number of treatments given and referrals made per health clinic (Phalombe District, January to December 2011)



Of 78 total village health clinics in Phalombe district, the number reporting each month ranged from 41 to 75, with a median of 71 clinic reporting.

Quality of community case management (Survey, 2009)



Challenges and solutions



- Sustaining performance of trained HSAs through supervision
- Mentoring iCCM-trained HSAs in health facilities
- Maintaining an uninterrupted supply of medicines to HSAs
- Mobile phones for reporting and ordering of supplies
- Making community-based services available on demand, seven days a week
- Policy dialogue to clarify HSAs' job description and community residency of HSAs
- Monitoring utilization and case load
- Consensus agreement on indicators for assessing implementation strength and district capacity for implementation
- Monitoring the strength of implementation and quality of care at national and district levels

Conclusions



- Rapid scale-up of iCCM strategy is possible
 - with high levels of political commitment
 - with unified training materials and implementation approach
- The iCCM strategy in Malawi is showing signs of success
 - monthly utilization rates of HSAs' iCCM services fair
 - quality of care measured relatively high
- iCCM implementation requires strong health system supports for sustainability and impact

Health Workers' and Managers' Perceptions of the Integrated Community Case Management Program for Childhood Illness in Malawi

Jennifer A. Callaghan-Koru
Adnan A. Hyder
Asha George
Kate E. Gilroy
Humphreys Nsona
Angella Mtimuni
Jennifer Bryce



Background The success of CCM programs depends in part on how the strategy is perceived by those responsible for its implementation. This study explores health workers' and managers' perceptions about CCM provided by health surveillance assistants (HSAs) during the program's first year in Malawi.

Methods Thematic analysis of qualitative data from program stakeholders in the health system.

Focus Group Discussions
with HSAs in 4 districts,
(n = 29 total participants)

In-Depth Interviews
with national and district
managers, health facility
clinicians, supervisors, etc.
(n = 28 total informants)

Perceived Benefits of CCM

Community Benefits

- Increased geographic access for underserved areas
- Expanded service hours
- Improved care seeking
- Reduced use of traditional healers
- Reduced morbidity and mortality for childhood illness
- Reduced cases of severe illness
- Improved long-term social and economic development

Health facility benefits

- Reduced caseload at facilities
- Cost savings through shifting use to the community
- Reduced strain on health facility staff

Concerns about CCM Program

Policy concerns

- CCM program should be limited in scope
- CCM should ideally be provided by more qualified health workers
- CCM's age restrictions cause conflict with the community
- HSAs may misuse drug stocks

Implementation concerns

- Program data should be collected and analyzed to assess whether the CCM program is providing benefits
- HSAs are overburdened with activities
- Health center staff should be included in implementation of CCM (communications, supervision)
- HSAs need frequent supervision to ensure quality and work ethic
- Training period for CCM should be lengthened

A Health Systems Approach to Integrated Community Case Management of Childhood Illness: Methods and Tools



Laura McGorman, David R. Marsh, Tanya
Guenther, Kate Gilroy, Lawrence M. Barat, Diaa
Hammamy, Emmanuel Wansi, Stefan Peterson,
Davidson H. Hamer, and Asha George

Background and Rationale



- ❧ **Rationale**: Integrated community case management (iCCM) of childhood illness is an increasingly popular strategy to expand life-saving health services to underserved communities. However, community health approaches vary widely and do not always distribute resources evenly across local health systems.
- ❧ **Response**: We present a harmonized framework that supports the design of CCM through a systems approach. To verify that the framework produces results, we also suggest a list of complementary indicators, including nine global metrics, and a menu of 39 country-specific measures.

Benchmarks for Community Case Management: Component x Program Phase			
Component	Advocacy and Planning	Pilot and Early Implementation	Expansion/Scale-up
1: Coordination and Policy Setting	a) Mapping CCM partners conducted	f) MOH CCM leadership established	h) MOH leadership institutionalized
	b) Technical advisory group (TAG) established, including community leaders, CCM champion & CHW representation		
	c) Needs assessment and situation analysis conducted	g) Policy discussions (if necessary) completed	i) Stakeholder meetings regularly held
	d) Stakeholder meetings held to define roles and discuss policies		
	e) National policies and guidelines reviewed		
2: Costing and Financing	a) CCM costing estimates made based on all service requirements	c) Financing gap analysis completed	e) Long-term strategy developed for sustainability and financial viability
	b) Finances secured for CCM medicines, supplies, and all program costs	d) MOH funds invested in CCM	f) MOH investment sustained in CCM
3: Human Resources	a) Roles defined for CHWs, communities and referral service providers	e) Role and expectations of CHW made clear to community and referral service providers	h) Process for update and discussion of role/expectations for CHW in place
	b) Criteria defined for CHW recruitment		
	c) Training plan developed for CHW training and refreshing (modules, training of trainers, monitoring and evaluation)	f) CHWs trained	i) CHWs refreshed
	d) CHW retention strategies (incentive/motivation) developed	g) CHW retention strategies (incentive/motivation) implemented	j) CHW retention strategies reviewed and revised k) Advancement, promotion, retirement offered
4: Supply chain management	a) Medicines and supplies (i.e., RDTs) included in essential drug list and consistent with national policies	e) Medicines and supplies procured	g) Stocks of medicines & supplies monitored at all levels
	b) Quantifications completed for CCM medicines and supplies		
	c) Procurement plan developed for medicines and supplies	f) Systems implemented	h) Systems adapted and effective
	d) Inventory control and resupply logistic system developed	d) Good quality CCM delivered	g) Timely receipt of CCM is the norm
5: Service Delivery and Referral	a) Plan developed for rational use of medicines (and RDTs)	e) Guidelines reviewed and modified based on pilot	h) Guidelines reviewed and modified by experience
	b) Guidelines developed for case management and referral	f) Systems implemented	i) Systems working
	c) Referral and counter referral system developed		
6: Communication and Social Mobilization	a) CSM strategies developed for policy makers, local leaders, health providers, CHWs, and communities	d) CSM plans implemented	g) CSM plan and implementation reviewed and refined
	b) CSM content for materials (training, job aids etc) developed	e) Materials produced	
	c) Messages, materials and targets for CCM defined	f) CHWs deliver messages	
7: Supervision & Performance Quality Assurance	a) Supervision checklists and other tools developed	d) Supervision every 1-3 months, with reviewing reports, monitoring of data	g) CHWs routinely supervised for QA and performance
	b) Supervision plan established	e) Supervisor visits community, makes home visits, coaches	h) Data from reports and community feed-back used for problem solving and coaching
	c) Supervisors trained and equipped with supervision tools	f) CCM supervision is part of supervisor's performance review	i) Yearly evaluation includes individual performance and coverage or monitoring data
8: M & E and Health Information Systems	a) Monitoring framework developed for all components with information sources	e) Monitoring framework tested & modified accordingly	h) Monitoring & evaluation on-going through HMIS data
	b) Registers and report forms standardized	f) Registers and forms reviewed	i) OR and external evaluations of CCM performed as necessary
	c) Indicators and standards for HMIS and CCM surveys defined	g) All levels trained to use framework,	
	d) Research agenda for CCM documented and circulated		

Benchmarks framework and indicators list

- The benchmarks framework has eight components, drawn from WHO health systems' building blocks
- For each benchmark component, we identify 1-2 global indicators to be tracked across all CCM programs
- The global indicators list is complemented by a menu of 39 program and country-specific indicators that can be tracked based on context

Global indicators

Component	Definition
Coordination and Policy Setting	CCM is incorporated into national MNCH policy/guideline(s) to allow CHWs to give: <ul style="list-style-type: none"> • low osmolarity ORS and zinc supplements for diarrhea; • antibiotics for pneumonia • ACTs (and RDTs, where appropriate) for fever/malaria in malaria-endemic countries
Costing and Financing	A costed operational plan for CCM exists and is updated annually
Human Resources	Proportion of CHWs targeted for CCM that are trained and providing CCM
Supply Chain Management	Proportion of CCM sites with all key CCM medicines/diagnostics in stock§
Service Delivery and Referral	Proportion of sick children who receive timely and appropriate treatment¶
Communication and Social Mobilization	Proportion of caregivers who know two or more signs of childhood illness that require immediate assessment/treatment
Supervision and Performance QA	Proportion of CHWs who received at least one administrative supervisory contact** in the last three months
	Proportion of CHWs who demonstrate correct case management knowledge‡‡
Monitoring & Evaluation and Health Information Systems	Existence of a comprehensive, integrated monitoring and evaluation (M&E) plan for CCM

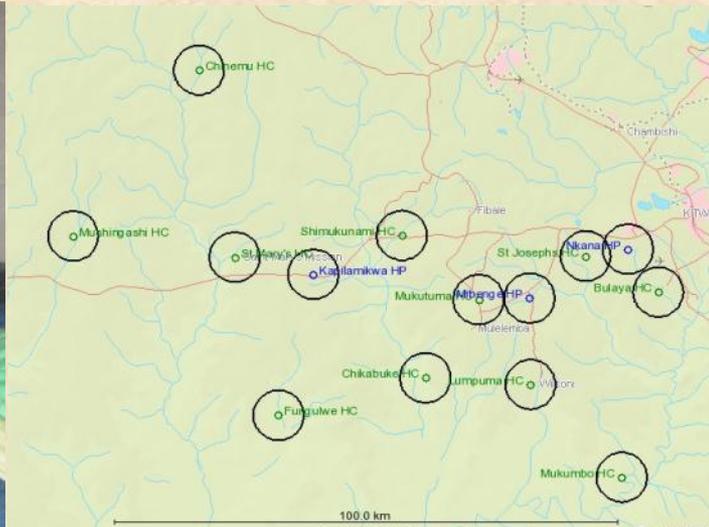
Outcome / Discussion



- ❧ **Testing:** The benchmarks have informed USAID iCCM programs, and iCCM documentation. Indicators have been used in a study of the quality of care of iCCM in Malawi, as well as in Save the Children projects in Ethiopia and Zambia. Indicator review and/or testing is on-going in 12 countries.
- ❧ **Results:** Results have been consistent with *ex ante* predictions; namely, that there has been progress in the financial and political commitments to CCM, but there is room for improvement in supervision, quality assurance, and supply chain management.
- ❧ **Conclusion:** These asymmetrical outcomes highlight the importance of examining iCCM from a systems perspective, and caution against evaluations that examine only one or two program components, which may miss the broader context and fail to offer comprehensive recommendations.

Beyond Distance: An Approach to Measure Effective Access to Case Management for Sick Children in Africa

Tanya Guenther, Salim Sadruddin, Tiyyese Chimuna, Bias Sichamba, Kojo Yeboah-Antwi, Bamody Diakate, Bamadio Modibo, Eric Swedberg and David R Marsh



Background: Access to care is often defined and measured geographically (e.g., distance to health facility). However to provide case management for childhood illness a facility must be: open daily and for sufficient duration; staffed with people trained to treat sick children and stocked with appropriate medicines

Study aim: to measure levels of effective access to case management of malaria, pneumonia, and diarrhea in Malawi, Zambia and Mali and to explore potential contribution of community case management (CCM) by trained community-based health workers (CBHWs)

Methods: Cross-sectional survey of 32 health facilities in study areas to quantify case management services and facility hours, availability of staff and medicines (ACTs, antibiotics, ORS), and distance to villages and other access barriers for catchment population, including seasonality.

Effective access to case management of childhood illness calculated as:

Geographic access



Adjusted for other barriers (physical, security)

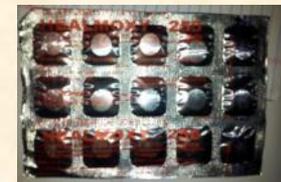
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Staff availability



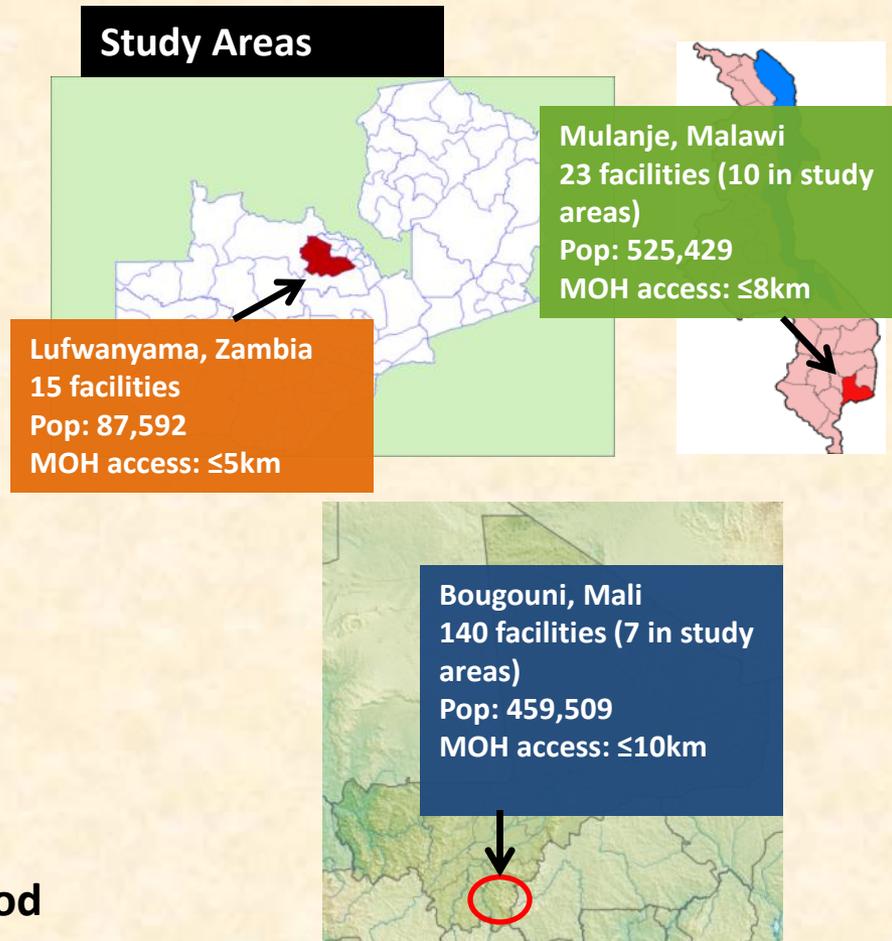
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Medicine availability



ACTs for malaria; antibiotics for pneumonia and ORS for diarrhea

Study Areas



Findings

Effective access:

- >50% of total study population lived beyond MOH-defined access limits
- Staff availability was low (range 36% in Malawi to 47% in Zambia)
- Medicine availability relatively high in Malawi and Zambia (>90%) but stock-outs for ACTs pervasive in Mali
- **Effective access was low (<20%) in all study areas –just 50% of MOH-defined access**

Potential contribution of CCM:

- Ideal scenario for CCM (CBHWs always available and fully stocked) showed large increases in potential effective access;
- Potential gaps taper off under more typical conditions (75% availability of CBHWs and 60% medicine availability)

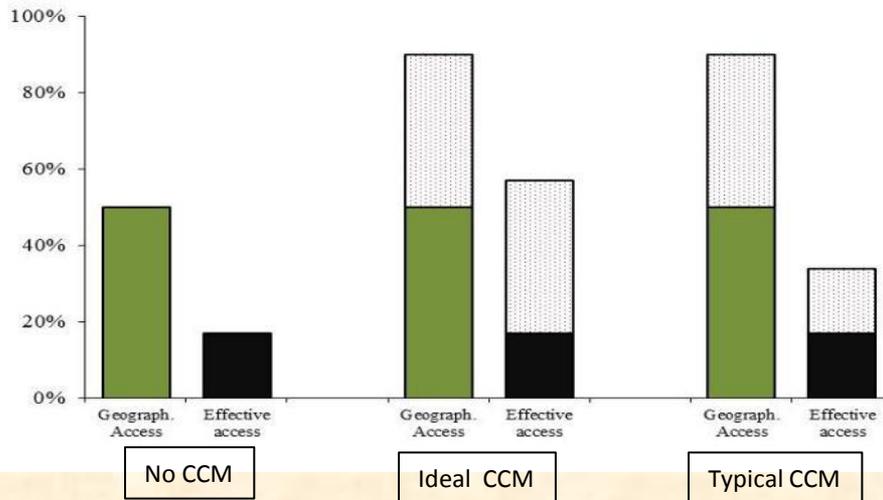


Figure 2: Model of geographic access and effective access to iCCM implemented as per MOH plans in Mulanje study area

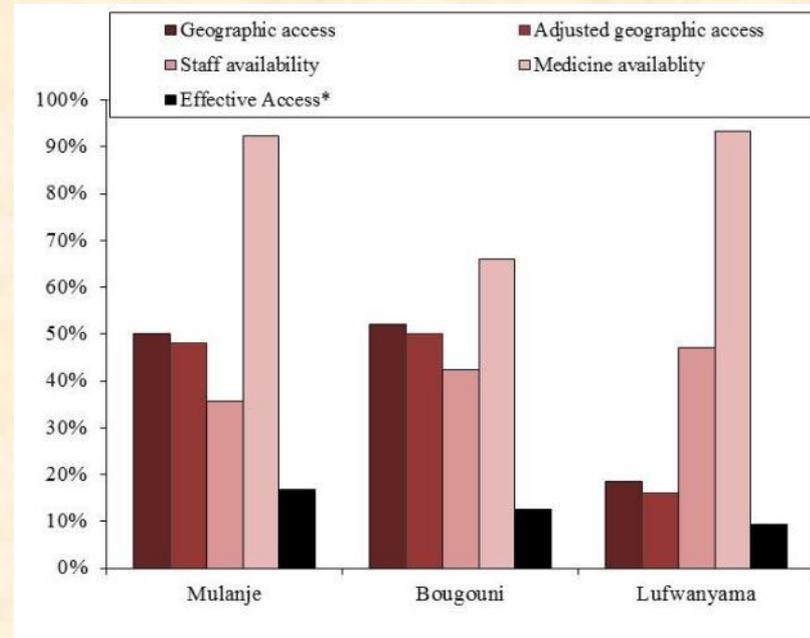


Figure 1: Effective access to case management for childhood illness at facility level by study area

Conclusions

- Distance-based measures overestimate access to case management for childhood illness 2 to 3-fold
- Critical to distinguish between access to a site vs. and access to a service – poor availability of staff and medicine sharply curtail access even for those in range of a facility
- Training and equipping CBHWs to deliver CCM offers potential to rapidly improve access to life-saving case management services provided distribution and availability of CBHWs are carefully planned and support for supervision and supplies is maintained

Community Health Workers Providing Government Community Case Management for Child Survival in sub-Saharan Africa: Who are they and what are they expected to do?

George A, Young M, Nefdt R, Basu R,
Sylla M, Clarysse G, de Sousa A, Yip-
Bannicq M, Binkin N, Diaz T

Frequencies describe CHW profiles and activities in government community case management (CCM) programs drawn from 91% of 44 UNICEF offices that responded to a cross-sectional survey in 2010 (N = 29)

- Incentives

- Partial incentives, whether financial or non-financial, are the most common form of reward for CHWs.
- Only a few governments paid CHWs monthly salaries and, at the other extreme, only a few governments had volunteers who exclusively received non-financial incentives in recognition of their contributions.

- Training

- Most government CCM programs offered training of up to a week.
- Duration of CCM training was not associated with type of motivation, number of CCM conditions or whether the government program was operating at large scale.

- Responsibilities

- The number of households each government program expects a CHW to cover varies substantially.
- In terms of curative tasks, while all government CHWs are expected to provide oral rehydration salts, fewer are expected to provide zinc, dispense antibiotics or use timers or rapid diagnostic tests.

- Conclusion

- Even if CHWs are as varied as the health systems they work in, more must be done in terms of the design and implementation of CHW programs in order for them to realize their potential.

Figure 2: UNICEF country offices reporting facility and CHW diagnostic and treatments in government implementation of CCM diarrhoea, malaria and/or pneumonia in sub-Saharan Africa 2010 (n=29, n=28 for malaria)

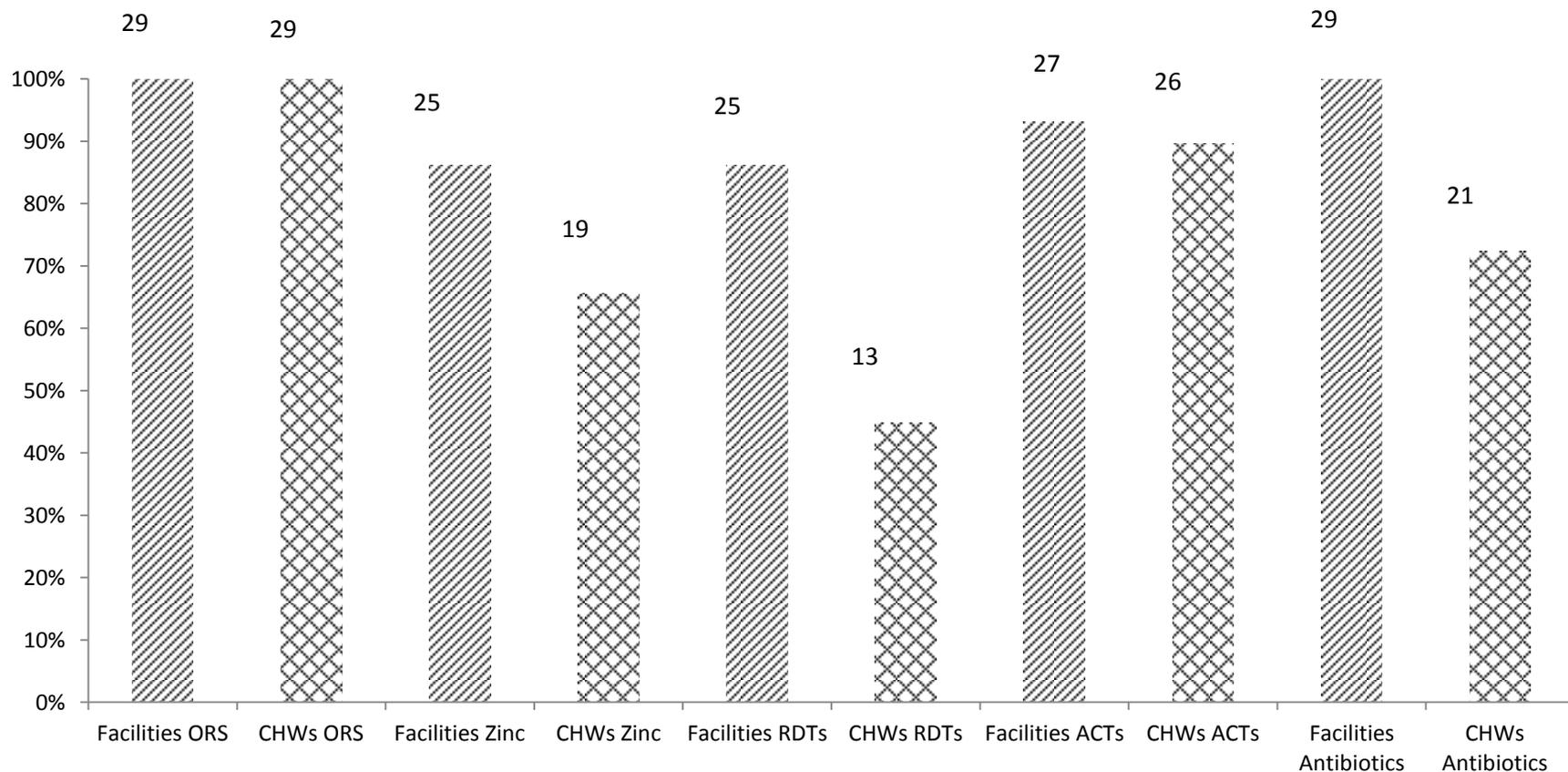


Figure 3: UNICEF country offices reporting CHW health promotion and preventive activities in government implementation of CCM diarrhoea, malaria and/or pneumonia in sub-Saharan Africa 2010 (n=29, n=28 for malaria)

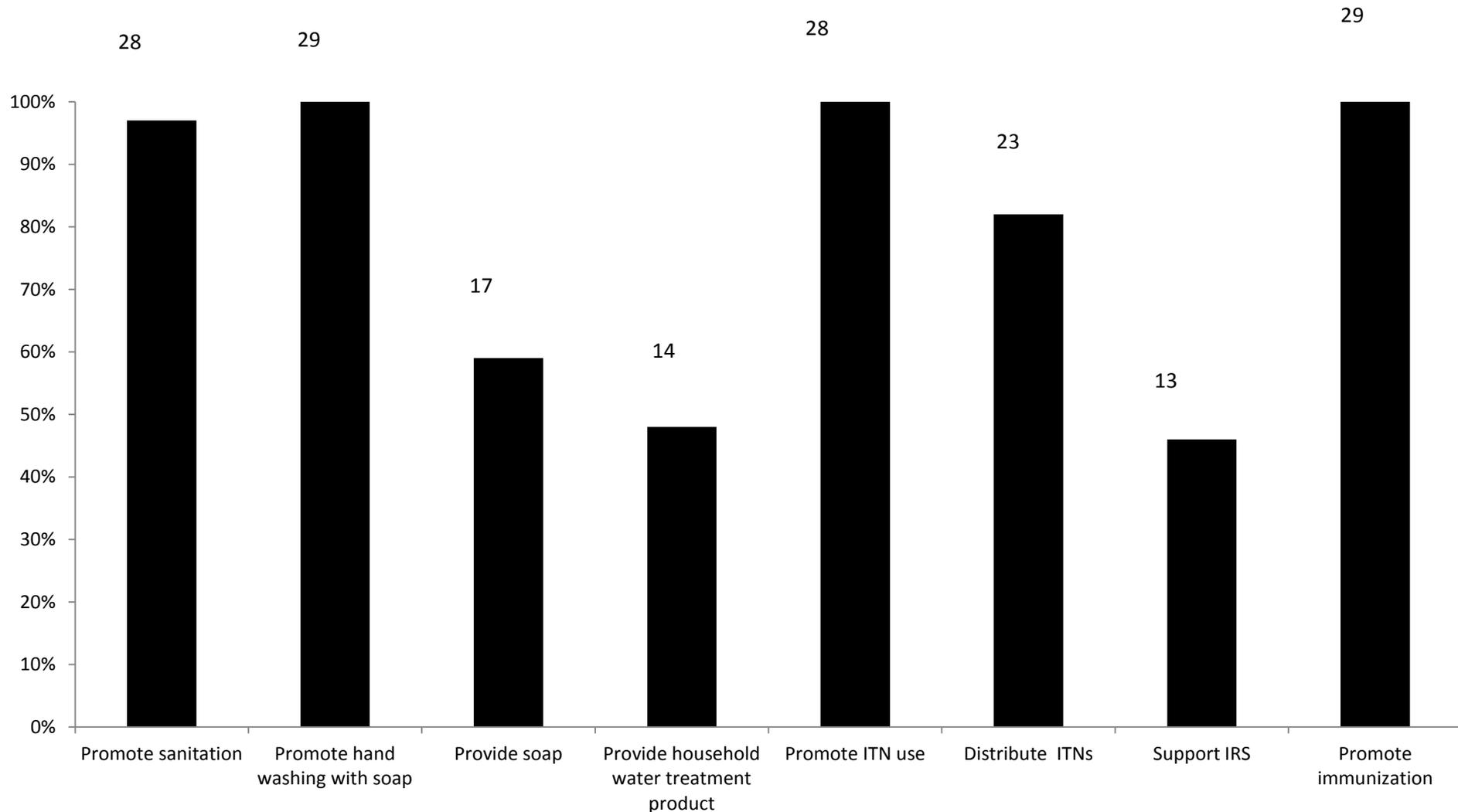
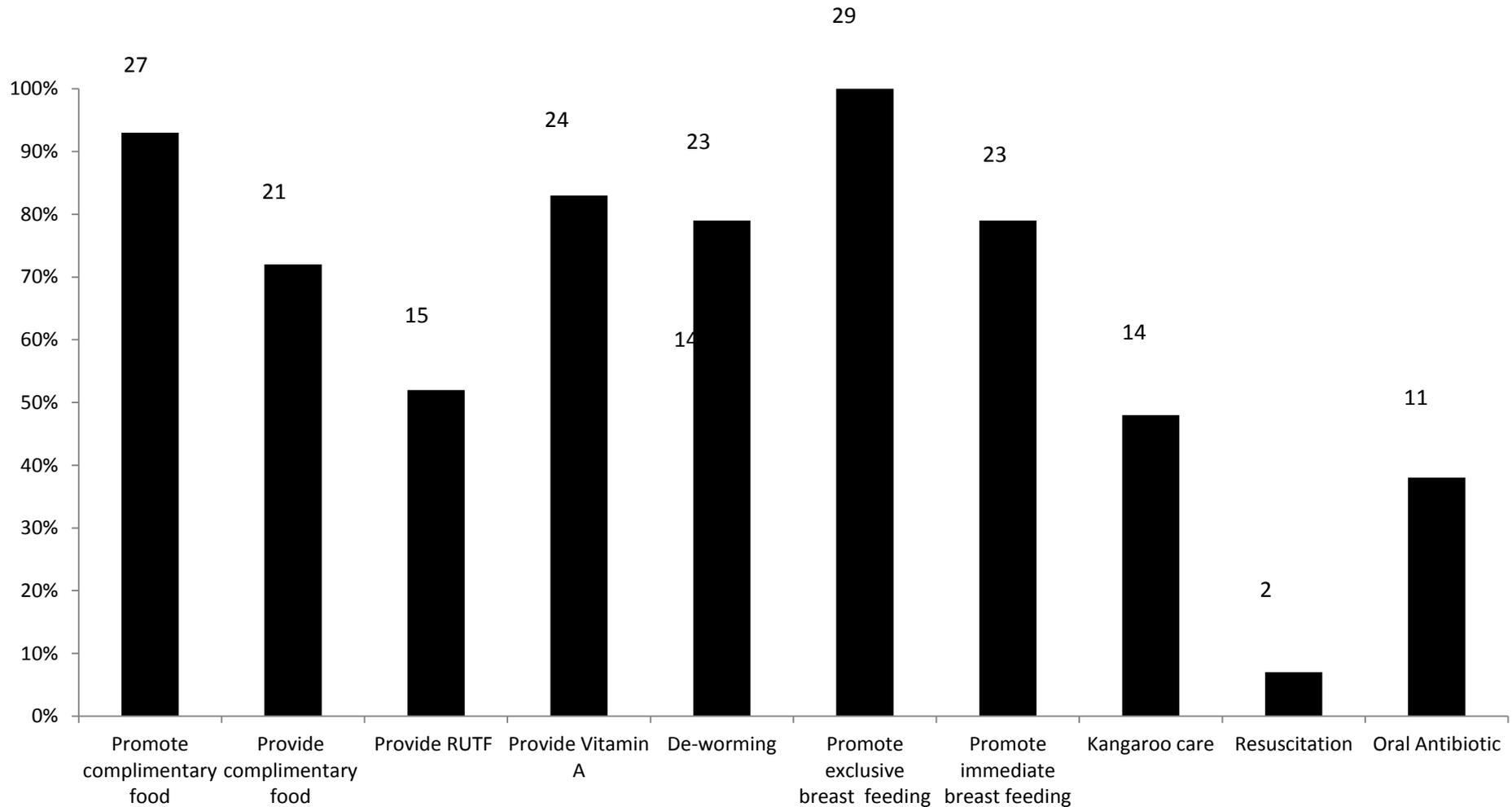


Figure 4: UNICEF country offices reporting activities related to nutrition and newborn care undertaken by CHWs involved in government implementation of CCM diarrhoea, malaria and/or pneumonia in sub-Saharan Africa 2010 (n=29)



Private Sector Drug Shops in Integrated Community Case Management of Malaria, Pneumonia and Diarrhoea in Children in Uganda

Phyllis Awor

Henry Wamani

Godfrey Bwire

George Jagoe

Stefan Peterson



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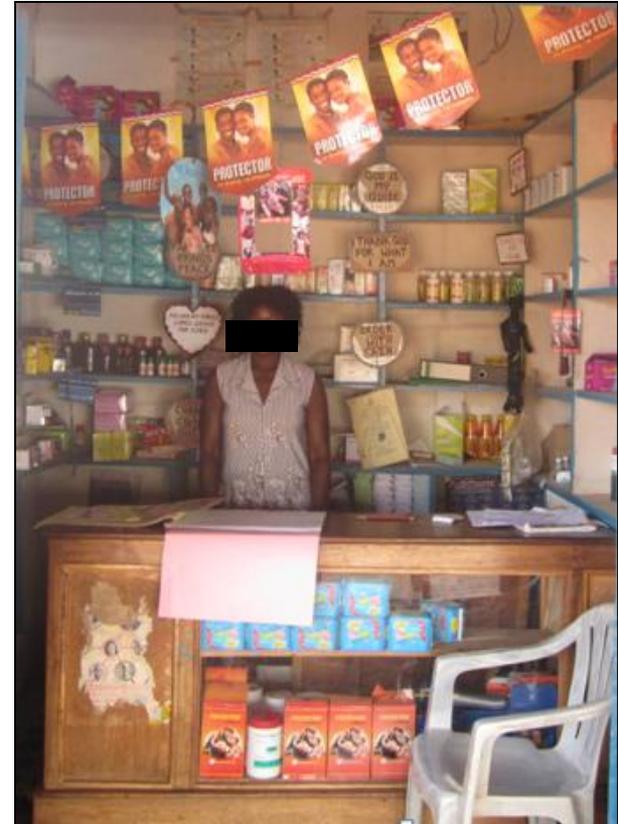


**Karolinska
Institutet**



Background

- Two thirds of febrile children in Uganda are first treated by the private sector, especially drug shops
- However, the standard of care at drug shops is poorly documented yet wanting
- Objective: To determine the role and appropriateness of care for febrile children at drug shops in rural Uganda



Results and Conclusion

Household interviews - 1604

Exit Interviews - 168

- 496 (53.1%) of febrile children first sought care in private sector vs. 154 (16.5%) in the public sector
- Few of these (15 [10.3%]) received appropriate treatment for malaria
- No child received appropriate treatment for pneumonia and diarrhea symptoms

- **Management of febrile children at drug shops in rural Uganda is largely inappropriate**
- **There is urgent need to improve the standard of care at drug shops**



Adoption and Acceptability of Integrated Community Case Management in Uganda

Agnes Nanyonjo, Maureen Nakirunda, Frederick Makumbi, Göran Tomson , Karin Källander and the inSCALE-study group



**Karolinska
Institutet**



Background and Methods

- Malaria pneumonia and diarrhea account for majority of the mortality among under fives
- Integrated community case management (iCCM) aims to tackle the three diseases at the community level
- The adoption of and acceptability of iCCM was qualitatively assessed through the conceptual frame work of Roger's theory of diffusion of innovations

Results and Conclusions

- Adoption and acceptability influencers

- ❖ Relative advantage of iCCM compared to alternative sources of care
- ❖ Compatibility of iCCM with socio-cultural beliefs and societal expectations of health care
- ❖ Quality and cost of care and flexibility in the process of access to care

- Key hindrances

- ❖ Failure of the health system to secure regular drug supplies, monetary support and safe referrals for community health workers (CHWs)
- ❖ Undesired CHW behavior, demotivation

- Conclusion

- ❖ Community sensitization and targeted health system strengthening are essential for optimal functioning of iCCM programs

Impact of Integrated Community Case Management on Health Seeking Behavior in Rural Zambia

**Philip D. Seidenberg, Davidson H. Hamer,
Hari Iyer, Portipher Pilingana, Kazungu
Siizeele, Busiku Hamainza, William B.
MacLeod, Kojo Yeboah-Antwi**

Background and Objectives

Background

- Effectiveness of iCCM to reduce under 5 mortality dependent on changes in health-seeking behavior

Objectives

- Will the introduction and availability of iCCM for malaria and pneumonia influence care seeking behavior for households with children under age 5 years?

Results and Conclusions

Results

- Increase in care sought from CHWs for children with fever and decrease in care at formal health centers between baseline and post-study periods
- For children with fast/difficulty breathing, an increase in care from CHWs only noted in areas where CHWs were trained and supplied with amoxicillin to treat non-severe pneumonia

Conclusions

- Availability of iCCM for malaria and pneumonia influences local care-seeking behavior with greater use of CHWs and reduced workload at primary health centers



Interventions to Improve Motivation and Retention of Community Health Workers Delivering Integrated Community Case Management (iCCM): Stakeholder Perceptions and Priorities

Daniel L. Strachan, Karin Kallander, Augustinus H. A. ten Asbroek, Betty Kirkwood, Sylvia R. Meek, Lorna Benton, Lesong Conteh, James Tibenderana and Zelee Hill

Background and Method

- Programs utilizing volunteer community health workers (CHWs) are on the rise, but motivation and retention of these workers remain a major obstacles to programmatic success
- Despite these challenges there are a shortage of evidence-based strategies for motivating and retaining CHWs
- To inform the design of a RCT to improve CHW motivation and performance, 15 international stakeholders with experience in CHW program design and implementation were interviewed
- Stakeholder recommendations were captured and discussed in light of key directions from the work motivation and CHW literature

Results and Conclusions

- Stakeholders recommended interventions in the areas of CHW recruitment, training, supervision and incentives as well as community involvement and ownership, information and data management, mHealth and approaches which cut across these areas
- Many suggestions echoed recommendations from the reviewed literature, especially needs satisfaction, CHW identity, context, incentives and the role of community
- Multi-level and context-specific approaches that package interventions and balance program, CHW and community needs were most favoured by stakeholders



PREVENTION

DIAGNOSIS

TREATMENT

RESEARCH

inSCALE

Factors Affecting Availability of Essential Medicines among Community Health Workers in Ethiopia, Malawi, and Rwanda: Solving the Last Mile Puzzle



Yasmin Chandani
Megan Noel
Amanda Pomeroy
Sarah Andersson
Michelle Pahl
Timothy Williams



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Supply Chains | Community Case Management

Background

- To treat common diseases of childhood, national programs need effective community supply chains to deliver affordable, quality medicines to treat pneumonia, malaria, diarrhea and malnutrition.

Methods

- 2010 Baseline assessments in Ethiopia, Malawi, and Rwanda demonstrated strengths and weaknesses of existing CCM supply chains for five products: antibiotics for pneumonia, ORS, RUTF, zinc, and artemether/lumefantrine
- The assessments led to interventions consistent with causal pathways identified in the project's Theory Of Change that were believed to influence CCM product availability



Results

- Assessment results showed weak product availability in each country, with more than 50% of CHWs stocked out of at least one tracer product on assessment day

Conclusions

- Programs should ensure three key preconditions for products to reach the last mile of the supply chain:
 - product availability at CHW resupply points
 - supply chain knowledge and capacity among CHWs and their supervisors
 - availability of appropriate transportation



Comparison of Methods for Assessing Quality of Care for Community Case Management of Sick Children: An Application with Community Health Workers in Malawi

Cristina V. Cardemil, Kate E. Gilroy, Jennifer A. Callaghan-Koru,
Humphreys Nsona, Jennifer Bryce



Background

Direct observation with re-examination by a skilled clinician is a rigorous method for assessing health worker performance

- not always feasible in the community

Methods

We assessed performance of community health workers (n=131) in community case management of children in Malawi with:

- fast breathing, fever, and diarrhea
- uncomplicated and severe illness

We measured correct treatment by 3 methods against our gold-standard:

Method

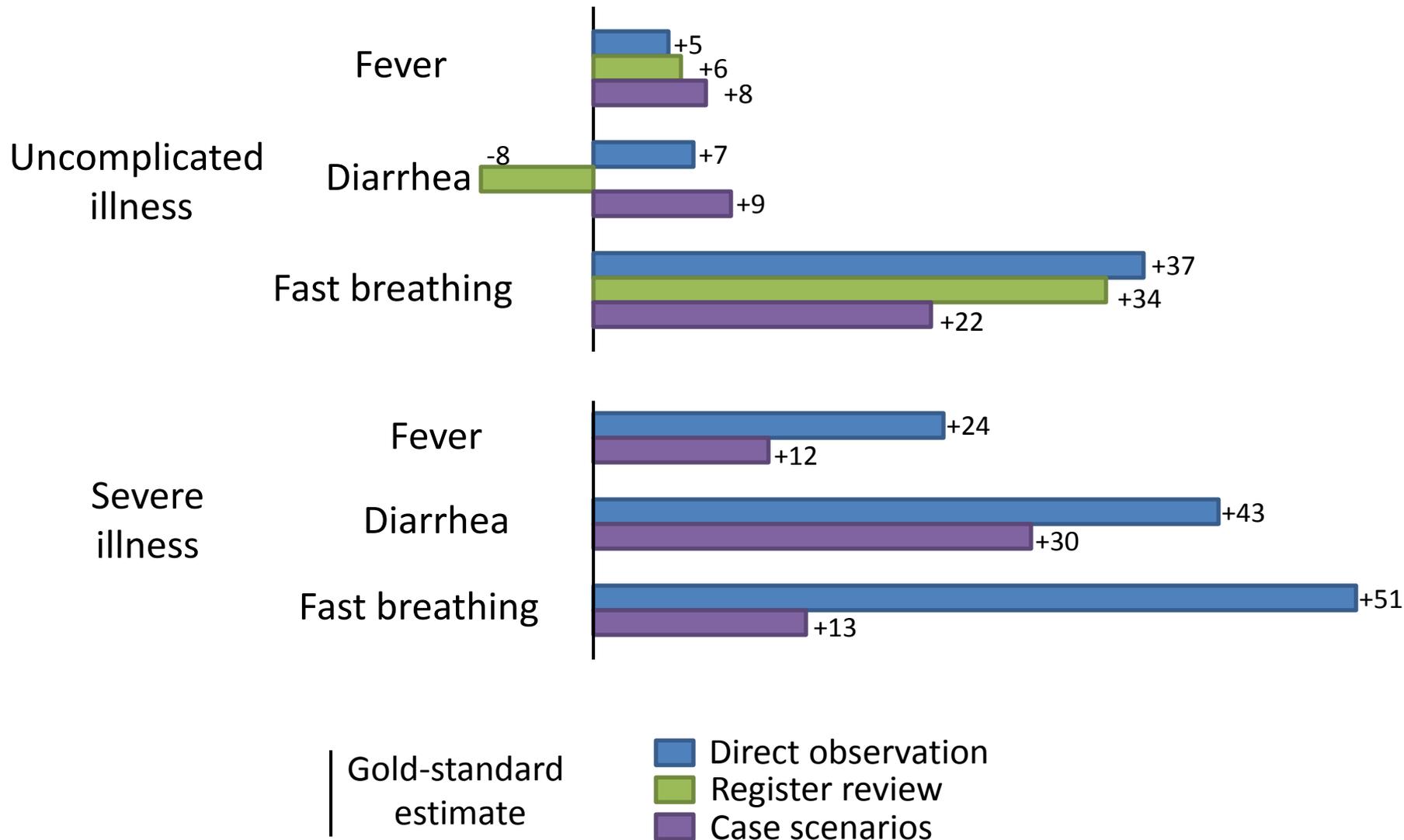
1. direct observation only (n=382)
2. register review (n=1219)
3. case scenarios (n=917)

Gold-standard

direct
observation
with re-exam
(n=382)

Results

Difference (% points) from gold-standard estimate of correct treatment



Conclusions

In Malawi, CHW treatment for *uncomplicated fever and diarrhea* can be accurately measured through:

- direct observation with or without re-examination,
- register review, and
- case scenarios

But this does not apply to fast breathing or severe illness

Future CCM assessments can use results to choose methods given specific objectives and local context

Household Costs for Community Treatment of Severe Pneumonia in Pakistan

Salim Sadruddin, Shafqat Shehzad, Abdul Bari,
Attaullah Khan, Ibad-ul-Haque, Amanullah Khan,
Shamim Qazi

Background and Objective

- Current World Health Organization (WHO) guidelines recommend that health workers refer children with severe pneumonia (chest in-drawing) to a hospital for treatment with an injectable antibiotic.
- Recent studies from Pakistan have shown that Lady Health Workers (LHWs)* can effectively and safely treat severe pneumonia (**SP**) with oral amoxicillin in the community.
- Data on cost of community treatment of SP and the resulting savings to households would help policymakers to prioritize strategies for severe pneumonia treatment.
- This study estimated and compared household costs for current recommended management by a LHW, i.e. give first dose of oral antibiotic and refer to a health facility, versus community treatment by the LHW with oral amoxicillin for 5 days.

* Community Health Workers

Methods

- Study conducted in district Haripur, Pakistan
- Nested within the severe pneumonia cluster randomized controlled trial: 28 clusters (15-25 thousand people each) randomized to 14 intervention and 14 control clusters.
- **Intervention Cluster:** LHWs treated with oral amoxicillin 50 mg/kg per dose, twice daily x 5 days
- **Control Cluster:** LHWs gave first dose of cotrimoxazole and referred. If referral not possible/accepted, continue treatment with oral cotrimoxazole at home

Cost study variables:

A. Direct Costs

Medical Costs: Consultations; medicine & supplies; lab tests; radiology; hospital admissions

Non-Medical Costs: Cost of Transportation and food

B. Indirect Costs

Self-reported loss in earnings (self, caregiver)

Opportunity cost of time spent on Care-seeking and child care (self and household members)

Results and Conclusions

Intervention Arm

- Of the 212 cases enrolled, 198 successfully treated by LHWs at home
- Average cost/episode of **SP** to house holds: **PKR 124.30* (\$1.46)**
- As amoxicillin was provided free of charge the average cost for the household: **PKR 21.51 (\$ 0.25)**

Control arm

- All 211 enrolled cases referred by the LHWs
- Average cost/episode of **SP** attributed to household: **PKR 648 (\$ 7.60)**
- 99 % of the cost borne by the household - average cost incurred per SP episode was: **PKR 640.65 (\$ 7.51)**

Conclusion

- Average cost **\$ 0.25** and **\$ 7.51** for the intervention and control group respectively, a **30-fold difference** between the two treatment groups.
- Extending severe pneumonia treatment with oral antibiotics to the community level will not only improve access, compliance, and better treatment outcomes (Lancet 2011), but also will reduce health system costs (fewer referrals and admissions) and economic burden on households.

* 1 USD= 85.30 PKR



Learning by Numbers

**Insights from
Community Case
Management Data
in Six Sub-Saharan
African Countries**

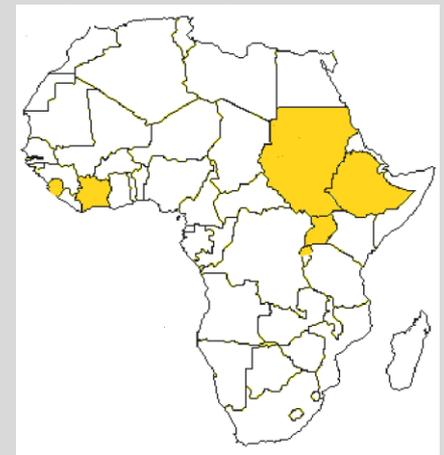
**Yolanda Barberá Láinez
Alison Wittcoff
Amina Issa Mohamud
Paul Amendola
Henry B. Perry
Emmanuel D'Harcourt**

Background

- Evidence that community case management (CCM) reduces mortality
- Lack of evidence on effect of implementation strategies
- Monitoring data are a source of learning about effective ways to implement CCM

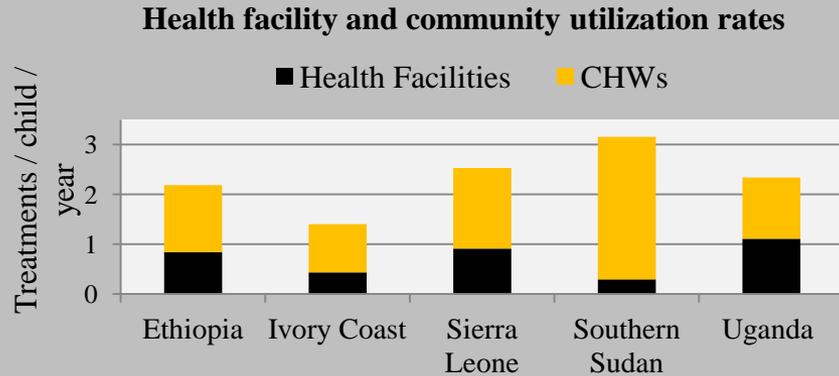
Methods

- Analysis of monitoring data from CCM programs supported by IRC covering:
 - Over 2,000,000 treatments
 - From 2004 to 2011
 - By over 12,000 CHWs
 - In 6 countries

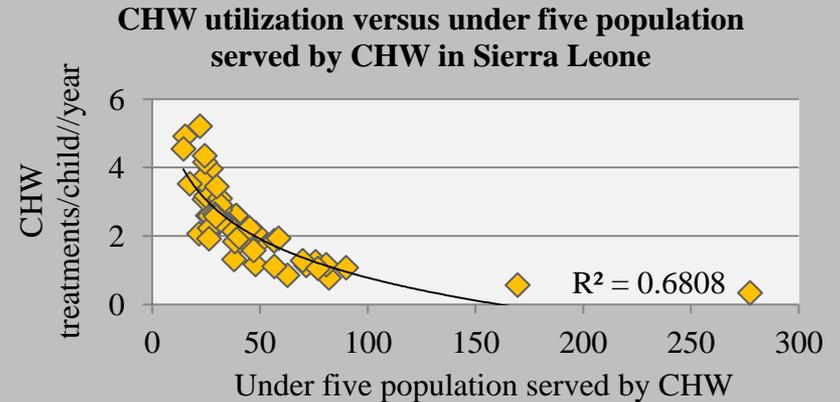


Results

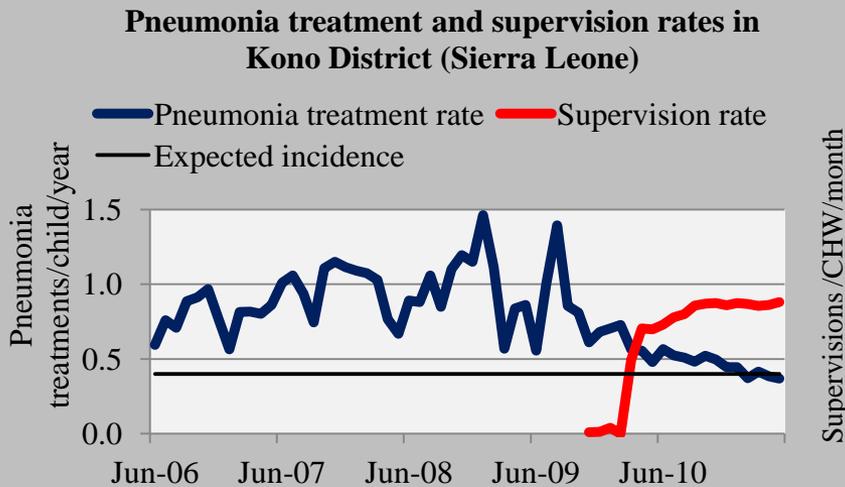
CCM increases access to treatment



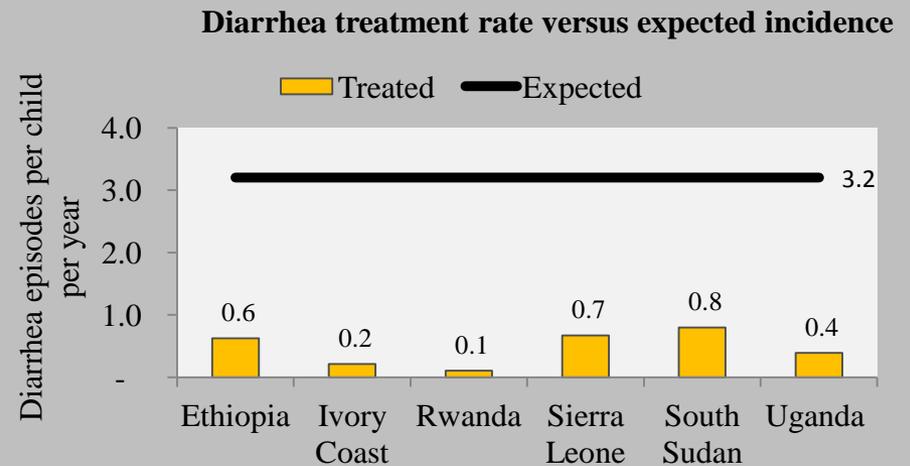
Negative correlation between number of children in a CHW's catchment area and use



Increased supervision improved quality of pneumonia treatment



Despite widespread drug availability, diarrhea coverage remains low



Conclusions

- **Size of the CHW catchment areas may significantly influence access to treatment**
- **Planners should analyze utilization rates by disease**
- **Regular supervision improves quality**
- **CCM programs should be integrated for several conditions from the outset**

iCCM Implementation Research— Next Steps

Davidson H Hamer, David R Marsh, Stefan Peterson, Franco Pagnoni



Some information gaps have been filled—or at least partially

- Impact of iCCM on survival
 - Ghana data suggest a mortality benefit
- Private sector is an important potential source of iCCM delivery
- Well-implemented iCCM results in shifts in health care-seeking behavior
- National scale-up is possible but challenges remain for supervision, supplies, and human resources

Next Steps

- Add proven, effective newborn care interventions into iCCM
- Use existing knowledge to help country programs to scale up volunteer or paid cadres of community-based health workers
- Conduct a formal review of iCCM research priorities (using the CHNRI methodology)

Thank you!

http://www.ajtmh.org/content/vol87/5_Suppl/?etoc