Community case management of diarrhea, malaria and pneumonia

Tracking science to policy and practice in sub-Saharan Africa

December 2012
Maternal, Newborn and Child Health
Working Paper
UNICEF Health Section, Programme Division

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Community case management of diarrhea, malaria and pneumonia: Tracking science to policy and practice in sub-Saharan Africa

Knowledge Management and Implementation Research Unit, Health Section, Programme Division
UNICEF
3 UN Plaza, New York, NY 10017
December 2012

The editors of the series are Theresa Diaz, Julia Kim and Alyssa Sharkey of UNICEF Programme Division. For more information on the series, or to submit a working paper, please contact tdiaz@unicef.org or asharkey@unicef.org.

COVER PHOTOGRAPH: Community Health Worker and clients in Cacuaco Municipality, Angola
By Graeme Williams © UNICEF/NYHQ2011-0141

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Asha George, Mark Young, Rory Nefdt, Roshni Basu, Mariame Sylla, Marika Yip Bannicq, Theresa Diaz

Keywords: sub-Saharan Africa, community case management, community health worker, care-seeking, treatment, diarrhea, malaria, pneumonia, child health

Comments may be addressed by email to Mark Young: myoung@unicef.org
cc: asharkey@unicef.org and tdiaz@unicef.org

Acknowledgements

We first and foremost thank UNICEF country offices for responding to the survey and for validating survey responses. In addition, UNICEF colleagues that provided valuable support include Ahmet Afsar, Nancy Binkin, Guy Clarysse, Alexandra de Sousa, Gabriele Fontana, Sandra Fonki, Julia Kim, Yolande Kouame, Binod Mahanty, Camielle Noordam, Nicholas Oliphant, Alyssa Sharkey and Tesfaye Shiferaw.

Community health worker counselling women, Shashemene District, Aromia Region, Ethiopia
By Indrias Getachew © UNICEF/NYHQ2012-0473

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Executive summary

Community case management (CCM) increases access to treatment to those beyond the reach of health facilities and has the potential to more equitably address the three largest causes of child mortality in sub-Saharan Africa: diarrhea, malaria and pneumonia.

Based on data from UNICEF country offices, we provide a profile of government policies and implementation of CCM diarrhea, pneumonia, and malaria for sick children aged 2 months-5 years across sub-Saharan Africa in 2010. This offers an aggregated analysis and disaggregated tables for sub-Saharan Africa and where possible we explain the status of outliers based on correspondence with UNICEF country offices. We also compare our findings with previous data collected by Countdown 2015 to describe trends in CCM pneumonia policy and implementation for sub-Saharan Africa. The following bullet points represent key findings.

- The majority of governments in sub-Saharan Africa have policies supporting CCM of diarrhea, malaria or pneumonia, yet important exceptions remain. Moreover, even when supportive CCM policies exist, CCM programs are not always implemented, and far fewer are implemented at scale.
- Even as CCM pneumonia lags the furthest behind, significant change has occurred. The number of countries in sub-Saharan Africa with supportive CCM pneumonia policies has more than doubled since 2005.
- Governments' concerns regarding implementation of CCM varied depending on whether they were implementing CCM pneumonia or not. Future efforts must address these specific concerns by supporting governments to strengthen key program elements, including planning, monitoring, supervision, logistics, financing and community ownership, and to make use of innovations such as rapid diagnostics tests and e-health technology to improve supervision, monitoring, continuity and quality of care.
- Of the 29 governments that are implementing CCM in 2010, only 18 are implementing integrated CCM for all three diseases. Governments and donors should capitalize on opportunities to strengthen integrated CCM by building on existing funding initiatives and community health worker cadres currently trained to treat only one disease.

Introduction

In sub-Saharan Africa, diarrhea, pneumonia, and malaria collectively cause more than half of all child deaths (1) and access to effective treatment is low. In the region, only 35% of children with diarrhea receive oral rehydration and continued feeding; 34% of children with fever receive any antimalarial; and 23% of children with suspected pneumonia receive an antibiotic (2). This must change.

While prevention is critical, many child deaths can be avoided with appropriate and timely care in the communities where sick children live. Community case management (CCM) is a strategy that enables treatment at community level as a complement to facility-based services. In the case of children sick with diarrhea, malaria and pneumonia, CCM is modelled on the Integrated Management of Child Illness (IMCI) strategy. In addition to increasing access to services, in the context of unregulated health markets, CCM, like IMCI, may also facilitate more rational and cost-effective drug use by families (3-5).

The World Health Organization (WHO) and UNICEF have a range of policy documents in support of CCM (6-8). In addition, various reviews conclude that community health workers (CHWs) can increase coverage of child survival interventions, including CCM, and thus contribute to mortality reduction (9-12), when combined with active community involvement and a supportive health system that provides training, commodities, incentives, supervision and referral to work effectively.

Despite the technical consensus backing CCM, little is known about government policies that support CCM programs and whether governments are implementing at scale in the countries that need CCM the most. Fischer Walker et al. (13) review diarrhea treatment policy and implementation, but primarily report progress on the availability of low osmolarity oral rehydration salts (ORS) and zinc overall, with little information at community level. While Countdown 2015 (14-16) tracks CCM pneumonia policy and implementation, just as Marsh et.al. (3) did in further detail, neither publication provides information on CCM diarrhea or CCM malaria.

Based on data from UNICEF country offices, we provide a profile across sub-Saharan Africa on government policies and implementation of CCM diarrhea, pneumonia, and malaria for sick children aged 2 months-5 years in 2010. This offers an aggregated analysis combined with disaggregated tables for sub-Saharan Africa and where possible we explain the status of outliers based on correspondence with UNICEF country offices. We also compare our findings with previous data collected by Countdown 2015 to describe trends in CCM pneumonia policy and implementation for sub-Saharan Africa. Finally, we assess and rank governments' priority concerns regarding implementation of CCM.

Methods

Data collection

Data are drawn from a cross-sectional survey enquiring about CCM policy and implementation status in 2010, using a structured instrument with closed ended questions piloted and sent out by UNICEF regional offices to 44 UNICEF country offices that work in sub-Saharan Africa. Staff in country and regional offices were followed up to obtain responses, to complete missing information and to clarify data provided by respondents. Only four out of 44 country offices were unable to respond despite follow up: Cape Verde, Gabon, Guinea Bissau and Sao Tome & Principe.

Data for CCM diarrhea and pneumonia are drawn from all responding country offices (n=40), but for CCM malaria, Lesotho was excluded since malaria is not endemic there (n=39). To examine trends in CCM pneumonia policy and any implementation, we compared our data with Countdown 2015 data sets from 2005 to 2009 (14-16) for all 45 sub-Saharan African countries, except Djibouti, Eritrea and Guinea Bissau, which were excluded due to data gaps. We used the same definitions as Countdown 2015 uses to make these comparisons (Box 1).

Analysis

Epi Info was used for data entry and to calculate frequencies. Correspondence with UNICEF country offices undertaken as follow-up enquiries was used to explain outliers. In order to collectively rank the top three Ministry of Health (MoH) concerns regarding CCM, as perceived by each country office, the first priority identified was given a score of 3, the second priority a score of 2, and the third a score of 1. Each score was multiplied by the number of country offices that had listed it, to derive the aggregate score for each MoH concern listed.

Box 1: Definitions of variables and terms used

Policies were defined to include official written policies, supported memos or letters or national guidelines (e.g. treatment protocols, guidelines on roles and responsibilities of CHWs) from the Ministry of Health. Training materials alone were not considered to be national policy. Two questions were asked about the existence of policy. First, whether policy documents detailing CCM (community level treatment) of diarrhoea, malaria or pneumonia existed (ensuring comparability with the definition to be used by future Countdown assessments). Second, whether these policy documents specifically permit trained CHWs to provide treatment for any of these conditions, rather than task-shifting to other cadres. This ensured comparability with the previous Countdown surveys that categorized policy status as follows: Yes: Policy authorizing CHWs to treat pneumonia with antibiotics, Partial: No policy but implementation exists; No: No policy nor implementation (15,16, 3).

Country need for CCM was based on whether the country had surpassed the MDG 4 child mortality target for the region (60 per 1,000 live births) and whether it had less than 23 physicians, nurses and midwives per 10,000 population, the standard estimated to be needed to deliver basic maternal and child healthcare services (16). Botswana, Cape Verde, Eritrea, Gabon, Madagascar, Namibia, Sao Tome and Principe, South Africa and Swaziland were considered to have less need for CCM than other sub-Saharan African countries based on their child health outcomes or health systems (Table 1).

CHW was defined as any health worker carrying out functions related to healthcare delivery, trained in some way in the context of the intervention, and having no formal professional or paraprofessional certificate or tertiary education degree (11).

Implementation was defined as governments deploying trained CHWs to provide curative services as a part of routine programs according to WHO and UNICEF recommendations which prioritize ORS and zinc for management of diarrhoea and antibiotics, rather than paracetamol, for treatment of pneumonia (7,8). Pilot projects or operations research were not considered as part of routine government programs.

Integration was assumed based on the extent to which CHWs were expected to provide treatments for different conditions. Further enquiry as to whether integration exists at other levels of the health system was not made.

Geographic scale of implementation was measured as either being: a) less than half of the districts in the country, or b) greater than or equal to half of the districts in the country.

Table 1: Contextual variables relevant to assessing country need for community case management for sick children in sub-Saharan Africa, various years

	Under five mortality (per 1000 live births)		% under-fives with suspected pneumonia receiving antibiotics		% under-fives with diarrhea receiving oral rehydration and continued feeding		% under-fives with fever receiving first line antimalarial treatment		Density of physician, nurses, midwives per 10,000 pop	
Country	**Date**	**Statistic**	**Date**	**Statistic**	**Date**	**Statistic**	**Date**	**Statistic**	**Date**	**Statistic**
Angola	2010	161					2006-7	5	2004	14.3
Benin	2010	115			2006	42	2006	1	2008	8.3
Botswana	2010	48			2000	7			2006	31.8
Burkina Faso	2010	176	2006	15	2006	42			2008	7.9
Burundi	2010	142	2005	26	2005	23	2010	70	2004	2.2
Cameroon	2010	136	2006	38	2006	22	2011	29	2004	17.9
Central African Republic	2010	159	2006	39	2006	47	2006	4	2004	4.9
Chad	2010	173	2010	31	2010	23	2010	3	2004	3.2
Comoros	2010	86			2000	31			2004	8.9
Congo	2010	93			2005	39			2007	9.2
Côte d'Ivoire	2010	123	2006	19	2006	45	2006	8	2008	6.2
Djibouti	2010	91	2006	43	2006	33	2009	22	2008	10.3
Democratic Republic of the Congo	2010	170	2010	42	2010	37	2010	4	2004	6.4
Equatorial Guinea	2010	121			2000	36			2004	8.3
Eritrea	2010	61			2002	54	2008	5	2004	6.3
Ethiopia	2010	106	2011	7	2011	25	2007	47	2007	2.6
Gabon	2010	74			2000	44			2004	53.1
Gambia	2010	98	2005-6	61	2010	67	2006	0	2008	6.1
Ghana	2010	74	2008	24	2008	45	2008	50	2009	11.4
Guinea	2010	130			2005	38			2005	1.4
Guinea-Bissau	2010	150	2010	35	2010	53			2008	6

Country	Under five mortality (per 1000 live births)		% under-fives with suspected pneumonia receiving antibiotics		% under-fives with diarrhea receiving oral rehydration and continued feeding		% under-fives with fever receiving first line antimalarial treatment		Density of physician, nurses, midwives per 10,000 pop	
	Date	Statistic	Date	Statistic	Date	Statistic	Date	Statistic	Date	Statistic
Kenya	2010	85	2008-9	50	2008-9	43	2008-9	34	2002	13.2
Lesotho	2010	85			2009	48			2003	6.7
Liberia	2010	103			2007	47	2009	44	2008	2.8
Madagascar	2010	62	1992	20	2008-9	49	2008-9	5	2007	4.8
Malawi	2010	92	2006	30	2010	48	2010	89	2008	3
Mali	2010	178	1987	2	2006	38			2008	3.5
Mauritania	2010	111	2007	24	2007	32	2007	5	2009	8
Mozambique	2010	135	2008	22	2008	47	2008	91	2008	3.7
Niger	2010	143	1992	9	2006	34			2008	1.6
Nigeria	2010	143	2008	23	2008	25	2010	12	2008	20.1
Rwanda	2010	91	2007-8	13	2010	21	2007-8	88	2005	4.7
Sao Tome and Principe	2010	80	2006	63	2006	63	2008-9	43	2004	23.6
Senegal	2010	75	1992-3	18	2010-11	42	2010-11	26	2008	4.8
Sierra Leone	2010	174	2008	27	2008	57	2008	21	2008	1.9
Somalia	2010	180	2006	32	2006	7	2006	10	2006	1.5
South Africa	2010	57							2004	48.5
Swaziland	2010	78	2010	61	2010	48	2010	50	2004	64.6
United Republic of Tanzania	2010	76	1991-2	22	2010	50	2010	62	2006	2.5
Togo	2010	103	2010	41	2010	24	2006	3	2008	3.2
Uganda	2010	99	2006	47	2006	39	2009	39	2005	14.3
Zambia	2010	111	2007	47	2007	56	2010	76	2006	7.7
Zimbabwe	2010	80	2009	16	2010-11	46	2010-11	48	2004	8.8

Source: Countdown to 2015 Maternal, Newborn & Child Survival. *Building a future for women and children. The 2012 report*. UNICEF: New York. Available: http://www.countdown2015mnch.org/documents/2012Report/2012-Complete.pdf. Accessed : 14 December 2012.

Results

Existence of policies

Out of the 40 UNICEF country offices that responded, six reported countries with no community-level policies regarding treatment for child diarrhea, malaria or pneumonia (Table 2). These include Angola, Botswana, Burundi, Comoros, Equatorial Guinea and South Africa.

With regard to diarrhea, 34 out of 40 (85%) country offices reported the existence of government policy regarding community level treatment. In almost all countries these community level treatment policies explicitly supported CHWs roles in distributing ORS, except Sierra Leone. Considering country need for CCM, 29 out of 34 countries that need CCM have policies that allow CHWs to treat diarrhea (85%).

For malaria, out of 39 responding country offices, nine reported no government policies for community level treatment. These include the six countries that have no CCM policies of any kind and in addition, Mali, Swaziland and the United Republic of Tanzania. In all, 30 (77%) country offices reported the existence of government policies for community treatment of malaria. Of these, only Namibia's policy does not permit CHWs to treat either malaria or pneumonia. Considering country need for CCM, 27 out of 34 countries that need CCM have policies that allow CHWs to treat malaria (79%).

With regards to pneumonia, 30 out of 40 (75%) responding country offices reported having government policies supporting community level treatment in 2010. In addition to the six countries that have no CCM policies of any kind, Kenya, Swaziland, the United Republic of Tanzania and Zimbabwe also reported no community treatment policies for pneumonia. While Chad and Lesotho have policies that permit community treatment of pneumonia, CHWs are only permitted to dispense paracetemol, which does not qualify as supportive policy for CHW pneumonia treatment in this survey. As mentioned earlier, Namibia has policies supportive of community pneumonia treatment but it does not permit CHWs to provide that treatment. Considering country need for CCM, 22 out of 34 countries that need CCM have policies that allow CHWs to treat malaria (65%).

While CCM pneumonia policy still lags behind policies for CCM diarrhea and malaria, substantial progress is being made. When comparing across the 45 countries for which trend data reliably exists, 10 (22%) countries were listed as having supportive policies and implementation of CCM pneumonia in 2005 in contrast to 23 (51%) in 2010 (Table 3, Figure 1).

Table 2: UNICEF country offices reporting existence of CCM policies, CCM policies that allow CHWs to provide treatment, any CCM implementation, MoH CCM implementation and MoH CCM implementation at greater than or equal to 50% of all districts in the country for diarrhoea, malaria or pneumonia in sub-Saharan Africa, 2010 (n=40)

Condition	Diarrhea					Malaria					Pneumonia				
Country	CCM policy	CHW CCM policy	Any CCM imp.	MoH CCM imp.	MoH CCM imp. 50%≥ districts	CCM policy	CHW CCM policy	Any CCM imp.	MoH CCM imp.	MoH CCM imp. 50%≥ districts	CCM policy	CHW CCM policy	Any CCM imp.	MoH CCM imp.	MoH CCM imp. 50%≥ districts
%	85%	83%	83%	70%	40%	77%	74%	77%	62%	46%	75%	65%	63%	48%	23%
N	34/40	33/40	33/40	28/40	16/40	30/39	29/39	30/39	24/39	18/39	30/40	26/40	25/40	19/40	9/40
Angola	No	N/A	No	No	N/A	No	N/A	No	No	N/A	No	No	No	No	N/A
Benin	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	N/A
Botswana	No	N/A	No	No	N/A	No	N/A	No	No	N/A	No	No	No	No	N/A
Burkina Faso	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	N/A
Burundi	No	N/A	No	No	N/A	No		No	No	N/A	No	No	No	No	N/A
Cameroon	Yes	Yes	Yes	No	N/A	Yes	Yes	No	No	N/A	Yes	Yes	Yes	No	N/A
Central African Republic	Yes	Yes	No	No	N/A	Yes	Yes	Yes	Yes	No	Yes	Yes	No	No	N/A
Chad	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	N/A
Comoros	No	N/A	No	No	N/A	No		No	No	N/A	No	No	No	No	N/A
Congo	Yes	Yes	No	No	N/A	Yes	Yes	No	No	N/A	Yes	Yes	No	No	N/A
Côte d'Ivoire	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Democratic Republic of the Congo	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Equatorial Guinea	No	N/A	Yes	No	N/A	No	N/A	Yes	No	N/A	No	No	Yes	No	N/A
Eritrea	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Ethiopia	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Gambia	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Ghana	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Guinea	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Kenya	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No	N/A	No	No	No	No	N/A
Lesotho	Yes	Yes	Yes	Yes	Yes	No	N/A	No	No	N/A	Yes	No	No	No	N/A
Liberia	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	No

Condition	Diarrhea					Malaria					Pneumonia				
Country	**CCM policy**	**CHW CCM policy**	**Any CCM imp.**	**MoH CCM imp.**	**MoH CCM imp. 50%≥ districts**	**CCM policy**	**CHW CCM policy**	**Any CCM imp.**	**MoH CCM imp.**	**MoH CCM imp. 50%≥ districts**	**CCM policy**	**CHW CCM policy**	**Any CCM imp.**	**MoH CCM imp.**	**MoH CCM imp. 50%≥ districts**
Madagascar	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	No
Malawi	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Mali	Yes	Yes	Yes	Yes	No	No	N/A	Yes	No	N/A	Yes	Yes	Yes	No	N/A
Mozambique	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	No	Yes	Yes	No	No	N/A
Mauritania	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Namibia	Yes	Yes	Yes	Yes	No	Yes	No	No	No	N/A	Yes	No	No	No	N/A
Niger	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Nigeria	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Rwanda	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Senegal	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sierra Leone	Yes	No	Yes	No	N/A	Yes	Yes	Yes	No	No	yes	No	Yes	No	N/A
Somalia	Yes	Yes	Yes	No	N/A	Yes	Yes	Yes	No	N/A	Yes	Yes	Yes	No	N/A
South Africa	No	N/A	No	No	N/A	No	N/A	No	No	N/A	No	No	No	No	N/A
Swaziland	Yes	Yes	Yes	Yes	Yes	No	N/A	No	No	No	No	No	No	No	N/A
United Republic of Tanzania	Yes	Yes	Yes	No	Yes	No	N/A	Yes	No	N/A	No	No	No	No	N/A
Togo	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Uganda	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Zambia	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	No
Zimbabwe	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	No	No	No	N/A

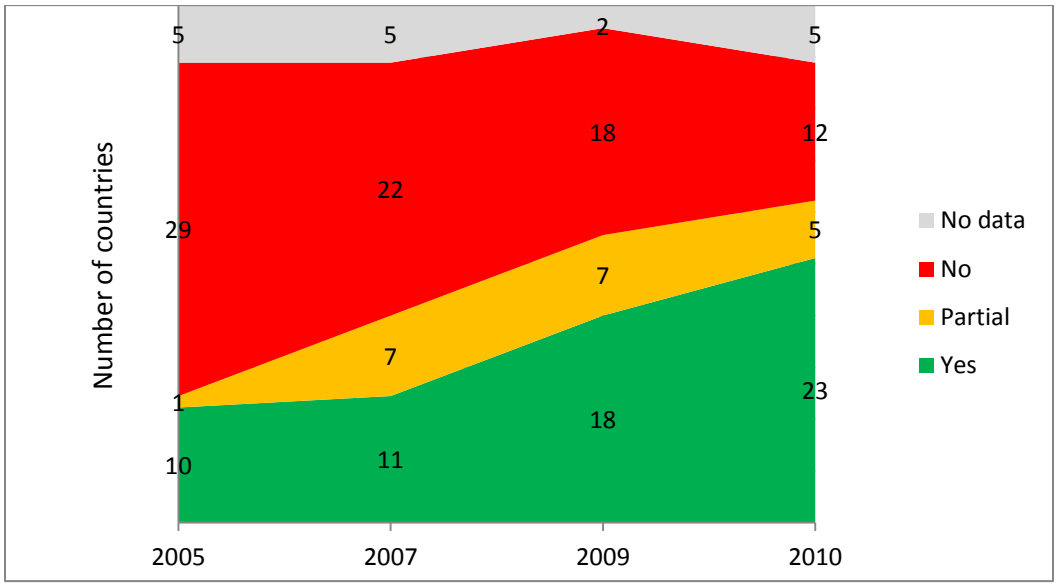
Table 3: Comparison of Countdown 2005, 2007 and 2009 data to 2010 UNICEF CCM survey data for CCM pneumonia policy and implementation in sub-Saharan Africa (n=45)

Country	Countdown CCM CHW policy and any implementation			UNICEF survey of CCM CHW policy and any implementation 2010
	2005	2007	2009	
% N	Yes 10/45	Yes 11/45	Yes 18/45	Yes 23/45
Angola	No	No	No	No
Benin	No	Partial	Partial	Yes
Botswana	No	No data	No	No
Burkina Faso	No	No	No	Yes
Burundi	No	No	No	No
Cameroon	No	No	Yes	Yes
Central African Republic	No	No	No	Partial
Chad	No	No	No	No
Comoros	No data	No data	No data	No
Congo	No	No	No	Partial
Côte d'Ivoire	No data	No	Partial	Yes
Djibouti	No	No	No	No data
Democratic Republic of the Congo	Yes	Yes	Yes	Yes
Equatorial Guinea	No	Yes	Yes	Partial
Eritrea	No data	Partial	Partial	Yes
Ethiopia	No	No	Partial	Yes
Gabon	Yes	No	Yes	No data
Gambia	Yes	Yes	Yes	Yes
Ghana	No	No	Yes	Yes
Guinea	No	No	No	Yes
Guinea Bissau	No	No	No	No data
Kenya	No	No	No	No
Lesotho	No data	No data	No	No
Liberia	No	No	Partial	Yes
Madagascar	Yes	Yes	Yes	Yes
Malawi	Yes	Yes	Yes	Yes
Mali	No	Yes	Yes	Yes
Mozambique	No	Partial	Partial	Partial
Mauritania	Yes	No	No	Yes
Namibia	No data	No data	No data	No
Niger	Yes	Yes	Yes	Yes
Nigeria	Yes	No	Yes	Yes
Rwanda	No	Yes	Yes	Yes
Senegal	Yes	Yes	Yes	Yes
Sierra Leone	No	Yes	Yes	Partial
Somalia	No	No data	No	Yes
South Africa	Yes	No	No	No
Sudan	No	Yes	Yes	No data
Swaziland	No	No	No	No
United Republic of	No	No	No	No

Country	Countdown CCM CHW policy and any implementation			UNICEF survey of CCM CHW policy and any implementation 2010
	2005	2007	2009	
Tanzania				
Togo	No	Partial	Yes	Yes
Uganda	Partial	Partial	Yes	Yes
Yemen	No	Partial	Yes	No data
Zambia	No	Partial	Partial	Yes
Zimbabwe	No	No	No	No

Key: *Yes:* Policy authorizing CHWs to treat pneumonia with antibiotics; *Partial:* No policy but implementation exists; *No:* No policy nor implementation.

Figure 1: Summary of countries in sub-Saharan Africa reporting CCM pneumonia policy and any implementation from 2005-2010 based on Countdown 2005, 2007 and 2009 data and 2010 UNICEF CCM survey data (n=45)

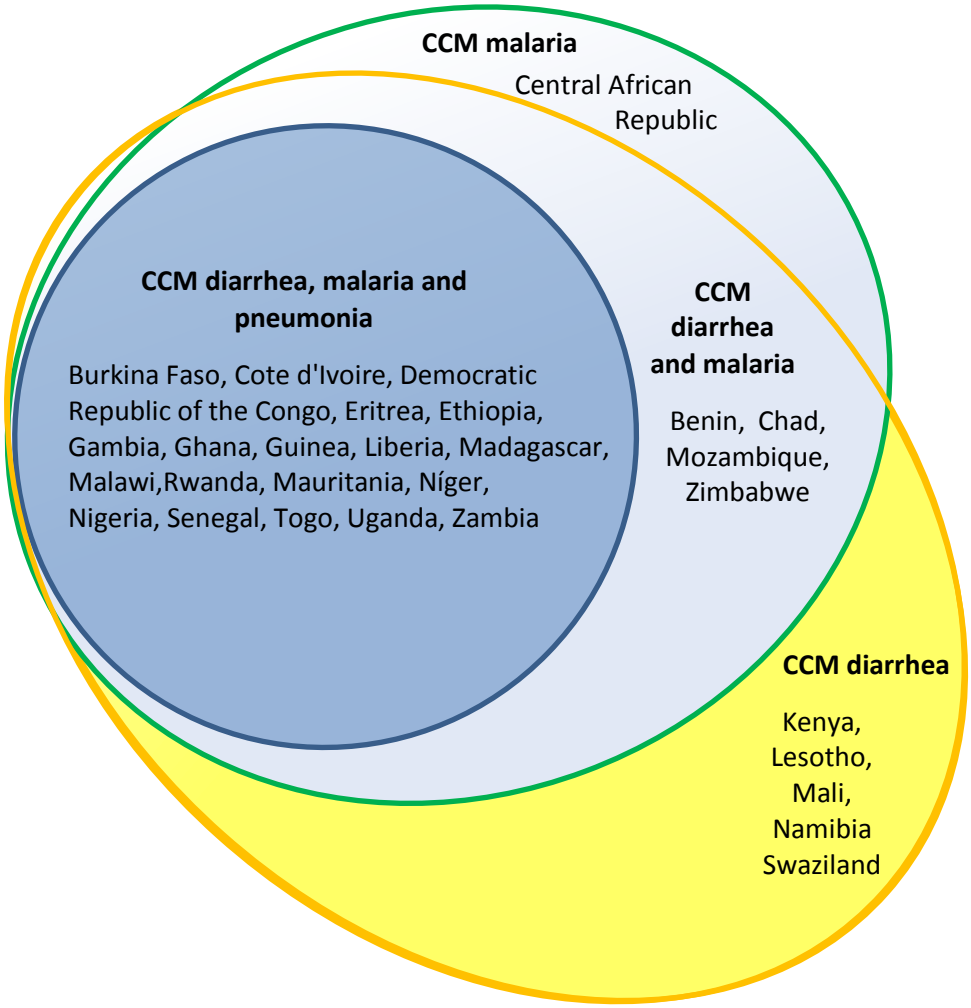


Key: *Yes*: Policy authorizing CHWs to treat pneumonia with antibiotics; *Partial*: No policy but implementation exists; *No*: No policy nor implementation.

Existence of government implementation

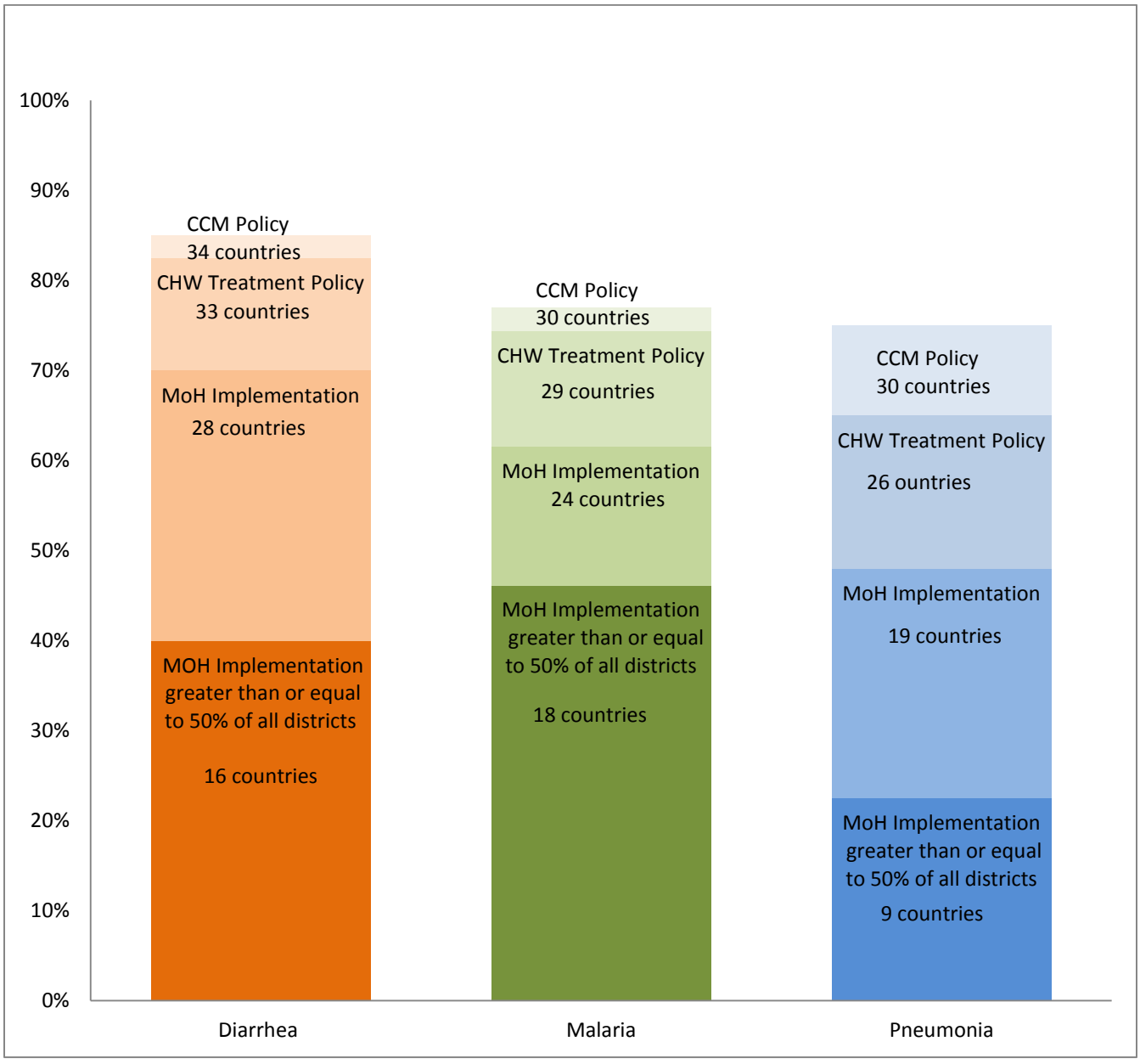
Out of 40 responding country offices, 29 reported government implementation of CCM of at least one disease and 19 reported government implementation of CCM for all three diseases (diarrhea, malaria and pneumonia) (Figure 2).

Figure 2: Extent to which implementation of government CCM in sub-Saharan Africa is integrated for diarrhea, malaria and pneumonia, 2010 (n=29)



While a higher proportion of country offices reported any government implementation of CCM diarrhea, followed by CCM malaria and CCM pneumonia, when reporting geographic scale of government implementation, more country offices reported CCM malaria being implemented in greater than or equal to 50% of districts in the country, than CCM diarrhea or CCM pneumonia (Table 2 above and Figure 3).

Figure 3: Proportion and number of UNICEF country offices in sub-Saharan Africa reporting existence of CCM policies, CCM policies that allow CHWs to provide treatment, MoH CCM implementation and MoH CCM implementation greater than or equal to 50% of all districts in the country for diarrhea, malaria or pneumonia, 2010 (n=40)



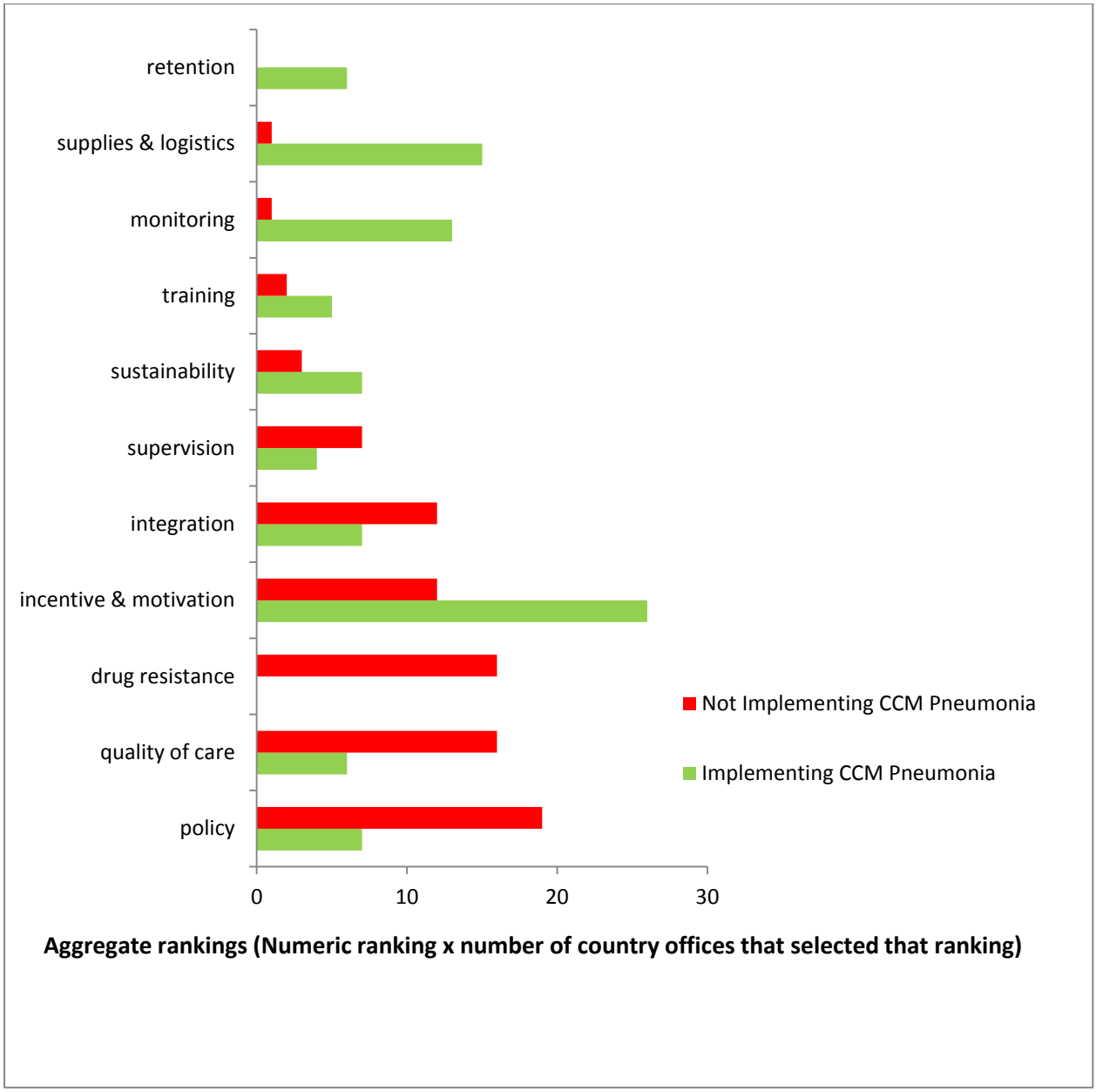
Government programs where CHWs were actually providing CCM services varied in size, including programs involving 20,000 CHWs or more (such as in Ethiopia, Nigeria and Rwanda); medium sized programs (7000 CHWs in Lesotho, 5000 CHWs in Namibia, 4,000 CHWs in Swaziland); programs involving about 1000 CHWs or less (such as in Eritrea, Madagascar and Malawi); and incipient programs (144 CHWs in Mozambique).

When comparing the existence of national policies and implementation, some governments were not implementing CCM in 2010 despite having supportive policies (Table 2). As we focused on government implementation in routine programs, i.e. those that excluded operations research or pilots, in no countries did we find implementation by governments without supportive policies. This does not mean that CCM is not being implemented by other partners in a various ways, with or without the support of national policy. For example, in Sierra Leone at the time of this survey in 2011, non-governmental organizations (NGOs) were implementing CCM with volunteers, while government policy was under development. In Somalia at the time of the survey, the government endorsed NGO CHWs and had plans to incorporate them into government programs as it scales up its services. In the United Republic of Tanzania, accredited drug dispensing outlets (ADDOs) are a regulated form of for-profit private sector provision of treatment at community level.

Specific CCM concerns

UNICEF country offices were asked to rank the top three concerns governments have with regards to CCM. Where governments are not implementing CCM pneumonia, UNICEF offices listed policy, quality of care and drug resistance as the top three aggregate MoH concerns regarding CCM. In contrast, where governments are implementing CCM pneumonia, UNICEF offices listed incentives and motivation, supplies and logistics and monitoring as the top three aggregate MoH concerns (Figure 4).

Figure 4: Aggregate ranking for top three MoH CCM concerns reported by country offices in sub-Saharan Africa contrasting those governments implementing CCM of pneumonia with those not implementing CCM of pneumonia, 2010 (n=29)



Discussion

The results presented in this paper provide an overview of CCM diarrhea, malaria and pneumonia in sub-Saharan Africa in 2011 and highlight important issues central to scaling up CCM. These include the existence of supportive policy, implementation and scale of government implementation for each CCM condition, the evolution of CCM pneumonia since 2005, the relationship between policies and implementation and the nature of Ministry of Health concerns regarding CCM.

Assessing policy formulation and implementation across diverse health system contexts in a standardized format is challenging. With regard to definitions, we focussed on supportive policies and implementation by governments, due to the importance this has for sustainability of CCM as part of national health systems. Other tracking exercises reported the absence of negative policy as being permissive (3) and did not distinguish between implementation by governments or other actors (14-16). While community level treatment policies were largely aligned with policies that support CHWs to provide treatment, in a few countries they were not the same. Although our criteria for country need for CCM does discriminate on the basis of child mortality rate and availability of facility based human resources, it is not meaningful at an aggregate level, most likely because within the sub-Saharan African context it did not exclude enough countries to change aggregate results. Finally, we defined implementation at scale as being greater than or equal to 50% of districts in a country, but this may fail to capture full-scale implementation of target areas that are not defined on a national basis. Further refinements with respect to defining indicators are required and are being undertaken by the CCM Task Force[1].

With regard to study design, we relied on reports from UNICEF country offices and assume that their perceptions accurately portray government policy and implementation. This is intentionally a brief survey that provides an aggregate overview for the region with some details about countries reported as outliers. Further in-depth qualitative research is required to review policy documents, as well as to examine the nuances and determinants of policy change and implementation in specific country contexts.

The majority of governments have policies supporting community level treatment for diarrhea, malaria or pneumonia. Of the six that do not, most concerning are the countries that have high child mortality and low numbers of trained physicians, nurses or midwives, such as Angola and Burundi, rather than those with relatively low child mortality and higher numbers of trained physicians, nurses or midwives, such as Botswana and South Africa.

Many more governments have supportive CCM policies and implementation for diarrhea than malaria or pneumonia. Yet in terms of scaled-up government implementation, more country offices reported CCM malaria being implemented at greater than or equal to 50% of districts compared with either CCM diarrhea or CCM pneumonia. What explains the gap between policy support and implementation at scale for CCM diarrhea? While diarrhea programs are part of the history of primary health care, some countries, particularly those in southern Africa, have emphasised community-based promotion of sugar salt solution rather than use of ORS for diarrhea management (17-18). Resources previously dedicated

[1] The CCM Taskforce is an interagency collaboration involving the World Health Organization (WHO), UNICEF, the United States Agency for International Development (USAID), and Save the Children, among others, with coordination currently led by the Maternal and Child Health Integrated Program (MCHIP).

to community-level work may also have dissipated with the focus on integrating and improving care in facilities through IMCI (13, 17). Efforts to revitalize diarrhea programs include a seven-point plan that encompasses actions ranging from broad inter-sectoral strategies for mobilizing community sanitation to more focussed health strategies to ensure demand and supply of ORS and zinc (19).

With regard to pneumonia, while progress has been made as a result of efforts such as the Global Action Plan for the Prevention and Control of Pneumonia (20), concerns about authorizing CHWs to use antibiotics persist. At the same time, the widespread use of antibiotics for treatment of diarrhea when it is not medically indicated remains invisible and largely unaddressed (21,22,23). In the context of increasingly unregulated and commercialized health systems, measures are required to increase access while still maintaining standards for rational and effective care. Efforts to measure and maintain quality of care provided by CHWs was ranked as the fifth most important implementation research subject for community interventions (24). Potential gains regarding e-health technologies for improved supervision and monitoring or new diagnostics and mechanisms to ensure drug adherence need to be developed with the involvement of health managers and workers in the context of the strained health systems they work in. For example, the advent of rapid diagnostics tests (RDTs) for malaria reduces the inappropriate use of anti-malarials (25) and increases the demand to integrate pneumonia into CCM packages as a treatment alternative for RDT negative fevers (26).

Despite the relatively recent attention afforded to malaria, the greater scale of government implementation of CCM malaria is possibly due to the support provided by guidance on scaling up home based management of malaria (6), along with the availability of dedicated funding from the Global Fund to Fight Aids, Tuberculosis and Malaria and the President's Malaria Initiative (27). Our data suggests that there is scope for scaling up integrated CCM on the basis of the platform developed by malaria programs. Of the 15 governments that are implementing CCM malaria at scale, nine have yet to either implement CCM pneumonia or implement it at scale. There are encouraging signs that in addition to supporting health systems strengthening, global health initiatives recognize the potential for disease-focused programs to strengthen community systems as a part of integrated responses to improving maternal and child health outcomes (28).

To scale up CCM, Marsh et.al. (3) called for greater attention to operational policies that support key health system supports: micro-planning, supplies and logistics, supervision, and monitoring and evaluation. That call remains valid today. Drawing from reflections on scaling up community newborn care, comparable concerns include: striking the right balance between supply and demand measures, how to integrate various interventions in ways that improve rather than strain CHW performance in the health systems they work in and how to move beyond successful operations research to sustain these programs at scale (29).

This study provides an opportunity to review progress made in translating international technical consensus around CCM into national policies and in transforming those policies into action through government implementation of CCM at scale in sub-Saharan Africa. Supportive CCM policy environments are largely in place, although restrictions remain in some countries. Despite supportive policies, however, some governments have yet to implement CCM and many are not implementing at scale. Opportunities to build on existing funding and CHW cadres that may be specific to one condition must be capitalised upon for implementation at scale to be realised. Furthermore research that details policy and implementation bottlenecks, and fosters interaction among policymakers across country contexts is required. While progress has been made, more efforts are required to ensure that specific

Ministry of Health concerns are addressed so that commitments are formulated into policies, with resourced operational plans, that when implemented at scale can cascade into gains for child survival.

A Remind MI agent walks to a home in Chiima village, Southern Province, Zambia
By Christine Nesbitt © UNICEF/ZAMA2011-0018

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