



Integrated Community Case Management (iCCM) in Sub-Saharan Africa

Successes & Challenges with Access, Speed & Quality



**Thematic Review Report
September 2018**

Submitted by



Commissioned by



In collaboration with



Integrated Community Case Management (iCCM) in Sub-Saharan Africa: Successes & Challenges with Access, Speed & Quality



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Thematic review report
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ACKNOWLEDGEMENTS

The iCCM special study was conducted by a team of experts from *Health & Economics Finance Development Consortium (HEFDC Group)*, Nairobi, Kenya. The study was funded by the Global Fund, Geneva.

Several international and country institutions and individuals made immense contributions towards preparations and execution of this study. In particular, Global Fund team guided the study protocol and preparations, supported the various stages and gave valuable inputs and comments at other various stages to completion: Nathalie Zorzi, Estifanos Biru Shargie (study coordinator), Nicholas Furtado, Michelle Monroe, Joyce Witherspoon, Olga Bornemisza, Roopal Patel, Emanuel Olatunji, Jose Tchofa, Jo-Angeline Kalambo, Paul McCarrik, Bruno Clary, and Wilfried Lasme Thalmas, all of the Global Fund. The UNICEF team at central, regional and country levels supported the various stages of the study and gave valuable inputs and guidance from protocol stage to the final report: Valentina Buj; Anne Detjen; Musonda Kasonde; Nathan Miller; Luwei Pearson; Alyssa Sharkey; Hayalnesh Tarekegn, Mark Young, Maureen Momanyi, and country staff respectively. The WHO team provided support to all stages of the study and gave valuable inputs: Aboubaker Samira, Baugh Gunther, and Were Wilson Milton.

The Ministry of Health (MOH) teams and country representatives of various international organizations including iCCM implementing partners for the six (6) “Deep Dive” countries supported the study at various capacities: Swedberg Eric of the Save the Children Fund, Abidemi Okechukwu of UNICEF Nigeria, Maxwell Kolawole of Nigeria Malaria Consortium, Issa Kawu of MOH NMEP Nigeria, Adeniran Bose of MoH Family Health Nigeria, Lynda Ozor of CRS GF PR Nigeria, Abidemi Okechukwu of USAID/PMI Nigeria; Humphreys Nsona of MOH Malawi; Dean Phiri of MOH PMU Zambia, Mutinda Mudenda of MOH Zambia, Eliabeth Chizema head of NMEP Zambia; Kediende M.A. Chong Chair of South Sudan Country CCM, Gerishon Gachoki of PSI and GF Principle Recipient South Sudan; Dorothy Achu of MOH Cameroon; and Robert Lucien Jean-Claude Kangougou of MOH Burkina Faso respectively.

The efforts and commitments accorded by the countries’ National level study focal persons and assistants are greatly acknowledged. They participated tirelessly in setting and follow up of interview meetings, document gathering, data-collection; and in interview exercises, including translating during Focus Group Discussion and Key informant interviews in local language at community level.

HEFDC Group, Team
Nairobi, Kenya, August 2018

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ABBREVIATIONS

ACT	Artemisinin-based Combination Therapy.
AMREF	African Medical Research and Education Foundation.
ARI	Acute Respiratory Infection.
BMGF	Bill & Melinda Gates Foundation.
CBNC	Community Based Newborn Care.
CCM	Community Case Management.
CHW	Community Health Worker.
DHIS 2	District Health Information System 2.
DHS	Demographic Health Survey.
DRC	Democratic Republic of Congo.
EDHS	Ethiopia Demographic Health Survey.
FHG	Family Health Guide.
FMoH	Federal Ministry of Health.
GAPPD	Global Action Plan for Prevention Control of Pneumonia.
GDP	Gross Domestic Product.
GF	Global Fund.
GoE	Government of Ethiopia.
HBMF	Home Based Management of Fever.
HC	Health Centre.
HDA	Health Development Army.
HEP	Health Extension Program.
HEW	Health Extension Workers.
HMIS	Health Management Information System.
HP	Health Post.
HPDPD	Health Promotion Disease Prevention Directive.
iCCM	Integrated Community Case Management.
IFHP	Integrated Family Health Program.
IMCI	Integrated Management of Childhood Illness.
IMNCI	Integrated management of Newborn and Childhood illness.
INGO	International Non-Governmental Organizations.
IPLS	Integrated Pharmaceutical Logistics System.
IRC	International Rescue Committee.
IRT	Integrated Refresher Training.
JHU-IIP	John Hopkins Institute for International Programs.
JSI	John Snow Inc.
L10K	Last Ten Kilometers.
M&E	Monitoring and Evaluation.
MDG	Millennium Development Goals.
MoH	Ministry of Health.
NEML	National Essential Medicines List.
NHA	National Health Accounts.
NHE	National Health Expenditure.
NMS	National Medical Stores.

ORS	Oral Rehydration Salts.
ORT	Oral Rehydration Treatment.
PCD	Primary Care Directive.
PHCU	Primary Health Care Units.
PRCMM	Performance Review and Clinical Mentoring.
RAcE 2015	Rapid Access Expansion 2015 Program.
RDT	Rapid Diagnostic Test.
RUTF	Ready-To-Use Therapeutic Food.
SBCC	Social and Behaviour Change Communication.
SC4CCM	Supply Chains for Community Case Management.
SCI	Save the Children International.
SNNPR	Southern Nations, Nationalities and Peoples Regions.
SOP	Standard Operating Procedure.
SSA	Sub-Saharan Africa.
TWG	Technical Working Group.
U5MR	Under 5 Mortality Rate.
UNICEF	United Nations Children’s Fund.
USAID	United States Agency for International Development.
VHT	Village Health Team.
VHW	Village Health Worker.
WHO	World Health Organization

EXECUTIVE SUMMARY

The Integrated Community Case Management (iCCM) has been identified as an effective strategy for reduction of Under five-year-old deaths, through provision of timely quality life-saving treatment of malaria, diarrhoea, pneumonia, and in some countries malnutrition. The iCCM program strategy aims to achieve equity and access of quality of U5 children services in hard to reach far flung areas located beyond five (5) Kilometres from a health facility. Majority of countries in Sub-Sahara Africa have adopted iCCM as a national health strategy.

According to this study, supplemented by the findings from other previous reviews, evaluations and assessments, countries that embraced iCCM and implemented the programme as a national health strategy for approximately 5 years or more had experienced significant reduction in mortality rates of children U5 years children. However, despite the reported progress, recent findings show about 75% of deaths are still caused by severe pneumonia, diarrhoea, malaria, and conditions affecting the new-borns; malnutrition contributed to almost half of the 5.6 million annual deaths¹.

There is evidence of a reduction in under-five mortality globally from 91 deaths/1000 live births in 1990 to 43/1000 (53% reduction) in 2015, sub-Saharan Africa countries still continue to experience the highest under-five mortality rate, despite a 54% decline from 180/1000 in 1990 to 83/1000 in 2015^{2, 3}. These deaths were largely preventable by means of countries adopting low cost, high impact interventions and effective delivery strategies such as those articulated in the iCCM national and global strategies.

In most Sub Saharan African (SSA) countries the iCCM program has not reached the optimal scale at which the impact of iCCM on child health outcomes (i.e., reduction of morbidity and mortality) can be evaluated. The justification of this study is based on the fact that even pilot and sub-national projects have the capacity to yield valuable information and evidence that can be used by countries, the Global Fund and partners to take iCCM to scale. While there is already considerable evidence and literature reviews⁴ undertaken to date, this study aims to add value.

¹ 2017, UN interagency Levels and trends in child mortality

² Liu L, Oza S, Hogan D, Perin J, Rudan I, Lawn E, et al. Global, regional, and national causes of child mortality in 2000–13, with projections to inform post-2015 priorities: an updated systematic analysis.

³ Barros AJ, Ronsmans C, Axelson H, Loaiza E, Bertoldi A, França G, et al. Equity in maternal, newborn, and child health interventions in Countdown to 2015: a retrospective review of survey data from 54 countries.

⁴ a. Xavier Bosch-Capblanch; Claudine Marceau. 2014. Training, supervision and quality of care in selected integrated community case management (iCCM) programmes: A scoping review of programmatic evidence. Journal of Global Health. Vol.4. No.2. 020403.

b. Benefits of Integrating Malaria Case Management and iCCM - Prepared by the iCCM Financing Task Team

c. Agbessi Amouzou, Saul Morris, Lawrence H Moulton, David Mukanga. 2014. Assessing the impact of integrated community case management (iCCM) programs on child mortality: Review of early results and lessons learned in sub-Saharan Africa. Journal of Global Health Vol. 4. No.2. 020403

This report presents the experiences and lessons learned through assessment of the iCCM programme implementation in selected eighteen countries (18) in Sub-Saharan Africa. The study explores, and documents successes, challenges, and lessons learnt from existing iCCM programmes; and makes suggestions/recommendation to inform implementing countries and partners on best practices that may be adopted for improving the programme expansion or scale up in terms of access, quality of services and future sustainability based on countries' context and various governments continued leadership commitment.

Methods and Methodology

The thematic review of the iCCM in Sub-Saharan Africa (SSA), involved a mixed methods study with indepth analytical desk review of available documents, and field level qualitative interviews with collection of available data⁵ in 18 SSA countries⁶ ; that have been implementing the program through funding and technical support from the Global Fund's iCCM platform, and other partners during the last few years. Of the 18 study countries, Six (6) were selected for field study namely: Nigeria, Cameroon, Burkina Faso, South Sudan, Malawi and Zambia; in-depth analytical desk review was done on six other countries⁷ to derive country-specific case studies. The findings of this study highlight: successes, challenges, lessons learned by countries during phases of implementation, pilot, expansion and scale up of the program; and best practices for replication.

Data on the number of cases managed for malaria, diarrhoea, pneumonia and malnutrition at the health facility and community level for the past 3-5 years was abstracted from available records. This data provided comparison of iCCM and health facility U5 children services utilization. The study found iCCM data in most countries was being consolidated with IMCI data. Nigeria and Malawi had iCCM data visibility at the district level this made it possible to undertake comparative descriptive analysis of iCCM services utilization.

Summary of key Highlights on the study findings and recommendations

The thematic review of iCCM in SSA countries provide key findings and recommendations derived from analysis of information and data from published / un-published literature, and qualitative interviews. The findings from the descriptive and analytical analysis covered success and challenges with access, speed and quality of iCCM services: Scale up speed of iCCM services; coverage, equity and access of iCCM services; policy, integration, leadership and coordination of iCCM strategy implementation; Behaviour Change Communication (BCC) and demand creation for iCCM services; iCCM funding landscape and costing; human resources training, optimal ratio of Community Health Worker (CHW) to target population to ensure access of services; incentives and attrition effect; supportive supervision and quality assurance; supply chain management; service delivery and referral; and monitoring and evaluation.

⁵ In-depth interviews (IDIs) and Focus Group Discussions (FGDs) covering key stakeholders and partners at global, national, sub-national, and community levels

⁶ The desk review included review of published literature of available peer-reviewed studies, national and international iCCM guidelines, national community health strategies, training and supervision materials, program reports as well as past assessments in the following 18 countries: **Eastern Africa:** Ethiopia, Kenya, Rwanda, South Sudan, Uganda, Burundi; **Southern Africa:** Malawi, Zambia; **Western Africa:** Ghana, Mali, Niger, Nigeria, Senegal, Benin, Burkina Faso, Sierra Leone; **Central Africa:** Cameroon and Democratic Republic of Congo.

⁷ In-depth analytical desk review countries: Ghana, Senegal, Niger, Rwanda, Uganda and Ethiopia.

This study found iCCM program implementation varied across all the eighteen countries in terms of: the size of programs; coverage of hard-to-reach and target areas; the nature of the implementing organization Ministry of Health (MOH) or Non Governmental Organization (NGO); pilot/non-pilot stage; supervision and quality assurance; supply chain management; CHWs literacy, length of training and refresher training, remuneration, salaried and non-salaried; user fees and insurance, and other aspects. These variations have enriched findings on success and challenges with access, speed and quality that countries will learn from others and replicate best practices.

i. iCCM Policy, Integration, Leadership and Coordination

The role of country governments in providing policy leadership, coordination and integration of iCCM activities held the key to the progress made in implementation during pilot and expansion phases of the program. Findings of this study, show that countries which managed to achieve significant expansion of iCCM program to national scale such as Rwanda, Ethiopia, and Malawi, attributed the achievement to Governments' political will, existing national primary health care and home based care programs, and established coordination structures and support. Countries that had managed to reform national policies and financing in favour of strengthening decentralized health services including community health systems, registered faster scale up of iCCM programme both geographically and access by population (Marsh *et. al.* 2008) and (George A. *et. al.* 2012).

In the 18 SSA study countries, iCCM coordination was designated to the following: MOH's Division of Child Health, community health departments, Primary Health Care Departments, Integrated Management of Childhood Illnesses (IMCI); and national malaria programs; with iCCM Task Force and MOH-led Technical Working Groups (TWGs) acting as apex decision making entities. At districts levels the MOH District Health Management Teams (DHMTs) with leadership from iCCM or IMCI focal persons coordinated all aspects of the programme implementation including support supervision, training of CHWs, iCCM supplies chain management, and monitoring and evaluation.

According to this study, none of the study countries had an established position of a national iCCM Coordinator; with responsibility to lobby for the programme's prioritization and articulation in national health strategic plans, costed annual operational plans and in the MOH budget allocations from national treasury. This marginalization of the iCCM programme together with lack of visibility in MOH priority programmes, was identified by this study, as a key contributor to stagnation of the programmes expansion in some of the study countries.

This study further established that, in almost all the 18 countries iCCM traverses multiple directorates in the MOHs and hence, programmes that were well resourced and more visible such as the malaria and Maternal Neonatal and Child Health (MNCH) programs were given more attention and visibility, while others such as pneumonia and diarrhoea home based care that were relatively resource poor were invisible with lesser attention in terms of resources and priorities.

ii. Demand creation and implementation of BCC for iCCM

In all study countries, BCC and demand creation for iCCM initiatives was anchored in MOHs' national health promotion platform, and leveraged on standardized materials already developed and used by WHO and partners' supported programmes. This study found the effectiveness of BCC and demand creation for iCCM services' utilization was directly linked to the availability, timeliness, quality and efficiency of delivery. Hence, care-seeking and utilization of iCCM treatment of childhood illnesses was influenced by both supply and demand elements of the programme. The supply elements included maintaining trained CHWs and adequate commodities, while the demand elements included program package or promotion of timely and appropriate care-seeking and treatment utilization. However, both supply and demand elements experienced multiple barriers that need to be addressed by programme managers and implementers: financial barriers or inadequate investments in combined BCC approaches; non-financial barriers (such as geographic access); caregivers' understanding of the illness; preferences for home management and alternative treatments for example traditional doctors and; limited decision-making autonomy (gender influence) to seek care; as well as caregiver perspectives on the quality of services provided.

According to this study and other previous studies, countries that combined awareness and utilisation of iCCM services and key family practices increased levels of care seeking for treatment of the childhood illnesses, compared with those that used non-participatory BCC approaches. For example, different studies conducted in Rwanda, Ethiopia, Niger and Mozambique and also separately in Cameroon, Uganda, Zambia and Ethiopia confirmed that countries that implemented integrated BCC demand creation approaches that also involved community participation, reported increased care seeking and uptake of iCCM services (utilization) compared with those where BCC was conducted by MOH without effective participation of CHWs and community beneficiaries.

Best Practice. The participatory approach for BCC that involved policy makers, partners, stakeholders, CHWs and households was attributed to increased uptake of iCCM package by Children U5.^{8, 9, 10, 11}

However, a recent study of Ethiopia's iCCM approach, where an ambitious iCCM scale-up was being implemented noted that having community-based services in place was not enough to drive appropriate uptake by local populations, and demand creation activities to promote use of services must be a key element.^{8,9,10}

Challenges: Care seeking and utilization of iCCM faces numerous challenges that need to be addressed by countries to enhance demand creation, scale up and sustainability of the programme, these include the following:

⁸ [Alyssa B Sharkey, et al](#) Demand generation and social mobilization for integrated community case management (iCCM) and child health: Lessons learned from successful programmes in Niger and Mozambique

⁹ Littrell M, Moukam LV, Libite R, Youmba JC, Baugh G. Narrowing the treatment gap with equitable access: mid-term outcomes of a community case management program in Cameroon. *Health Policy Plan.* 2013;28:705–16. doi: 10.1093/heapol/czs110. [[PubMed](#)] [[Cross Ref](#)]

¹⁰ Seidenberg PD, Hamer DH, Iyer H, Pilingana P, Siazele K, Hamainza B, et al. Impact of integrated community case management on health-seeking behavior in rural Zambia. *Am J Trop Med Hyg.* 2012;87(Suppl):105–10. doi: 10.4269/ajtmh.2012.11-0799. [[PMC free article](#)] [[PubMed](#)] [[Cross Ref](#)]

¹¹ Yeboah-Antwi K, Pilingana P, Macleod WB, Semrau K, Siazele K, Kalesha P, et al. Community case management of fever due to malaria and pneumonia in children under five in Zambia: a cluster randomized controlled trial. *PLoS Med.* 2010;7:e1000340. doi: 10.1371/journal.pmed.1000340. [[PMC free article](#)] [[PubMed](#)] [[Cross Ref](#)]

- Despite evidence of efforts by countries' governments and partners in supporting health promotional activities including iCCM demand creation, most study countries, still experienced predominantly low access to health services. A multi-country study on iCCM services utilization covering Cameroon, DRC, Malawi, Senegal, Sierra Leone, South Sudan and Zambia, respectively, established that iCCM utilization rate was low, ranging from a total of 0.26 to 3.05 contacts per capita (children 2–59 months) per year for the diseases treated, representing a range of 2.7% to 36.7% of the expected numbers of cases. However, given the differences across the countries and programs, the results of the study were treated as indicative and not definitive (*Collins, D., et. al., 2014*);
- Evidence from this study show that generating demand for iCCM has not been an easy task to achieve due to financial resource barriers and multiplicity of other influencing factors: a) involvement of local communities in selecting CHWS to ensure their ownership; b) making community members aware of CHWs and skill training to generate confidence of households on CHWs; c) continuous availability of iCCM commodities (no stock outs); d) optimal density of CHW per community (CHW: target population ratio) to ensure availability of services. Most of the 18 countries in this study had not conducted either comprehensive review or evaluation of iCCM coverage and impact in terms of access vis a vis programme utilization, and barriers that hinder demand. Absence of such up-to-date data makes it difficult to gauge the effect of BCC demand creation strategies adopted by countries.

iii. iCCM Funding Landscape, Costing and Financial Sustainability

The iCCM funding landscape comprises country governments, donors and development partners. For the period 2014 -2017, major donors and development partners such as UNICEF, WHO, GF, CIDA (Canada), USAID/PMI, DFID, World Bank, and the Bill and Merinda Gates Foundation, increased their funding and technical support for implementing iCCM packages in all the 18 countries covered by this study. One specific iCCM project was the Canada-financing Rapid Access Expansion project (RACe) implemented by the WHO between 2013 and 2017 covering DRC, Malawi, Mozambique, Niger, and Nigeria, which was a major source of funding support for expansion of iCCM in these countries. RACe partners were given logistical, technical and financial support for implementing countries' iCCM scale-up. As a result, over 8.2 million children under 5 were diagnosed and treated for malaria, pneumonia and diarrhoea as well as training for 8420 community health workers in RACe-supported sites between 2013 and 2017. Each country also has updated their national policies to facilitate iCCM scale-up. The project generated solid evidence on iCCM programme implementation through research on supervision, motivation of community health workers, quality of care, supply chain management, and the use of innovative tools such as mobile phone applications. The project facilitated country-ownership including development of sustainability plans to be able to hand over the programme to implementing countries

While the Global Fund had been providing incidental funding for iCCM to countries that requested it through the rounds-based system it was not until the New Funding Mechanism (NFM), that substantial and specific support for certain iCCM components was made available mainly through the malaria and HSS allocation. Over the 2014-2017 allocation

period, the GF committed \$ 2.8 B in 61 countries (as of Oct 2016) for the support of the WHO Global Technical Strategy (GTS) core interventions: 45% to vector control, 28% to case management; and 2% to chemoprevention; while 7% was committed for surveillance/monitoring & evaluation. Within case management 57% of funding was allocated to support public sector facility based treatment. In a review assessing how countries prioritize malaria interventions when awarded Global Fund financing, highest priority was given to purchasing commodities and supporting basic implementation costs for case management and universal coverage of vector control. A medium level priority was assigned to severe malaria management, basic surveillance, monitoring and evaluation and IPTp. Lowest priority was given to integrated community case management (iCCM) and private-sector case management.¹² It is thus that within NFM allocations, 14% of case management funding went to iCCM in 38 countries. However, the study found that WHO and GF tools and guidelines on how best to prioritize on malaria interventions are yet to be fully applied.

According to the multi-country study, iCCM utilization rate ranged from a total of 0.26 to 3.05 contacts per capita (children 2–59 months) per year for the diseases treated by the program. This rate represented a range of 2.7% to 36.7% of the projected numbers of cases expected per year. Low utilization of iCCM package, coupled with high fixed costs particularly for program management and supervision activities, were the key attributes to costs for iCCM services being significantly high. However, given the differences across the countries and programs, the results of the multi-country study, were treated as indicative and not definitive. In all 18 countries studied, financial sustainability of the iCCM program is challenged by significant dependence on external funding support from donors and development partners; domestic funding through national budgets continues to be proportionally low. For example, in Malawi over 60% of iCCM funding support was financed by external partners. In addition, lack of social insurance schemes and internationally recommended provision of free services meant that large populations in almost all the study countries, experienced the burden of accessing care and medicines as out of pocket expenditures. Other challenges to scale up include the lack of dedicated donors and/or synchronicity of arrival of non-malaria iCCM components which was a hindrance for a number of countries (e.g Nigeria)^{13, 14}.

A comprehensive understanding of iCCM program costs and results can be useful for optimal planning by countries, and donors to budget and obtain resources and use them efficiently to maximize the program services. To be cost-effective and affordable, iCCM programs must be well-utilized while program management and supervision should be optimally organized to minimize costs and ensure quality of care. While economies of scale and scope can be achieved with good planning, geographical or socio-economic inaccessibility where the needs are greatest, the costs increase.

Training and capacity support for Programme managers and other implementers on

¹² *Country programmatic gap analyses, 2015–2017 and 2018–2020. Dr Melanie Renshaw and Dr Peter Olumese (RBM, CRSPC). Currently unpublished.*

¹³ *UNICEF/GFTAM, 2016. Scaling up integrated Community Case Management in the context of the UNICEF - GFATM Memorandum of Understanding, Meeting Report, March 2016.*

¹⁴ *Global Fund, 2014. Nigeria - Standard Concept Note Malaria*

appropriate tools for the programme financing, costing, and cost analysis is necessary to inform decision making and for improvement of the programme funding and cost-effectiveness.

A substantive unit is necessary that will present and ensure iCCM-specific issues are captured in the national health sector strategic plans and costed in annual operation plans.

iv. Human Resources for Health, Quality of Services and CHWs Incentives

Most countries do not have sufficient human resources for health at all levels of the health delivery system, especially at the primary facility and community levels. In the context of iCCM, critically necessary human resources include supportive supervisors of CHWs at health facilities, and community resource persons (CHWs who do not provide curative services, providing mostly BCC and other health promotion activities). Other necessary supportive human resources include iCCM focal persons who bridge the various implicated programmes (e.g. national malaria programs, child health programs, etc) to improve program coordination and M&E staff at district level or facility level.

CHWs are also rarely institutionalized as a formal part of the health care system. In most of the studied countries, community health providers (CHWs) are unpaid volunteers, while in a few they have salaried CHWs who are MOH employees. Countries with 2 types of CHWs - salaried and volunteer CHWs - are Ethiopia, Niger, Mali and Zambia. These four (4) countries had to make changes in the policy environment to provide an opportunity for the CHW cadre to be formalized and thereby increase access to basic health care services. However, this salaried cadre of CHWs do not necessarily come from the community they serve they are instead randomly assigned to iCCM catchment areas; for Ethiopia the policy is 'they should be posted to areas that they come from.' Except in South Sudan and Ethiopia, which have predominantly female CHWs, most of other countries have either all-male CHWs or few female CHWs. Some reasons given by respondents on reasons there are fewer female CHWs include: cultural practices, women are less available as they have to tend to domestic chores, illiteracy, and security especially when services have to be given at night, this is when travelling either to visit households or to collect medicine at HFs among other reasons. Remuneration or incentives for motivation of CHWs to commitment and retention were a challenge in most of the countries where CHWs were unpaid volunteers. Lack of policy and legal framework regarding incorporation of CHWs into the formal health care system, staff welfare, and inclusion of additional resources to support this cadre were identified as significant challenges to the program's sustainability. Efforts to support institutionalization of community health workers are key and need increased propagation among countries, example is Ethiopia and Malawi.

Not all the 18 SSA countries in this study adhered to the recommendations of the duration of training. The reason shared for not giving refresher training was lack of funding. The study found that in some instances the CHWs were being given one-on-one mentorship and this was regarded as refresher training. Adherence by countries to the WHO guidelines on iCCM training and refresher training is critical to ensure CHWs capacity in quality services provision.

In general, many CHWs expressed underlying dissatisfaction with the amount and uniformity of allowances given as incentives, which was also identified as one root cause of

attrition in a number of study countries as demonstrated by the following examples: in Ghana by 2017, 8% of CHWs had left work, Niger 7%; Ethiopia 4% and Malawi 3% and South Sudan 3%, respectively. Countries need to initiate policy changes to regularize employment and remuneration or incentives to ensure CHWs were motivated and operated within codes of Government employment terms.

Allocation of number of CHWs should be guided by mapping based on population density of the target iCCM geographical area. Mapping and allocation needs to ensure equitable access to CHWs. Mobilization of funds locally and globally should be undertaken with the leadership of the MOH and iCCM coordination mechanism. Technically the WHO/GMP has a community health unit and UNICEF also supports training. However, a global body to provide oversight on adherence of training to WHO standards offered by countries should be appointed. This body should provide dedicated specialized technical support for iCCM training to ensure understanding of the objectives of training and completion of the full course.

The GF is one of the main donors for iCCM training, therefore countries should submit request for the funds under the NFM. This funding allocation should not be cut; and should be topped up if insufficient.

Training budgets need to be maintained in donor proposals rather than have them cut (included as part of support for supportive supervision). Exploration of innovative training and mentoring approaches is needed, including district mentors, on the job training etc. There should be strengthening of the linkages between CHWs and health facilities as feedback loop to strengthen capacity building on data for decision-making: There is need to ensure data capture of gaps identified and adequate analysis to better tailor refresher training and/or corrective supportive supervision.

v. Supply chain management; service delivery and referral

It is unanimously accepted that for iCCM programme to be effective and sustainable, countries need to ensure availability and consistency of commodities to meet demand for iCCM services. This study, established that, since 2014, with increased funding there was improvement in commodities supplies with reduction in stock outs; all study countries made significant progress in strengthening major areas of PSM such as procurement of sufficient commodities, warehousing and distribution. In Uganda, with availability of commodities, caretakers were satisfied with iCCM services, a clear indication that the program was meeting the intended goals and objectives regarding iCCM procurement and supply chain.¹⁵

In an effort to addressing the issue of persistent countries' inadequate funding for iCCM commodities; UNICEF, GF, WHO and other partners, joined hands and initiated a pool funding. These interventions included, strengthening procurement and distribution capacity of MOH at both national and other levels; warehousing and transportation, and in some cases contracting third-party distribution logistical support. UNICEF, GF, WHO, USAID/PMI and other partners, have been sub-contracting NGOs and Faith Based Organizations (FBOs) including private sector to facilitate MOH in iCCM supply chain implementation to ensure no stock outs. UNICEF has been using Regular Resources (RR) resources in some countries to fill

¹⁵ **Muguruza G et al:** Acceptability and Utilization of Community Health Workers after the Adoption of the Integrated Community Case Management Policy in Kabarole District in Uganda

the funding gap of iCCM commodities. UNICEF is in the process of approximating the funding need for the GF countries to support the iCCM commodities with a view of supporting countries scale up of access to the programme package and sustainability of the programme.

Challenges faced with iCCM Supply Chain include: non-integrated iCCM supply chain with the MoH Supply chain; iCCM consumption data not available and accurate: iCCM data is not visible and is not captured/available; iCCM drugs and supplies are not fenced out from use by the linked health facility; inadequate funding for pneumonia and diarrhoea commodities; weak distribution systems; and insufficient or inadequate quantifications and forecasting.

Suggestions and recommendations:

- Some countries have already received funding support for strengthening the supply chain. However sufficient funding is required for integration of iCCM into the MOH drugs and supplies chain including inclusion of the iCCM drugs and supplies into the Logistics Management Information System (LMIS), and support for increased visibility of iCCM consumption data from all levels. There is need for advocacy and mobilization of adequate resources at global level to support iCCM supply chain integration with the National supply chain to ensure sustainability of iCCM supplies. The MOH leadership and iCCM coordinating mechanism should work with the national drugs and commodities supply chain to make sure the iCCM drugs and supplies are ring fenced from use by the distributing health facility (iCCM linked facility). Support is required for early quantification and forecasting of needs at both community and health facility to avoid cannibalization of one level by the other. There is need for support for rolling out m-health innovations to help capture commodity data at community level. Countries need to encouraged to scale-up use and access to amoxicillin dispersible tablets including through market analysis related to their use, availability, supply, coverage, pricing and trends. Also use available data from partners (e.g. UNICEF, Malaria Consortium, CHAI, etc) which profiles the needs and technical specifications required through innovation to ensure products are fit for purpose, efficient, effective and affordable. Countries need to be encouraged to ensure all iCCM commodities are included on their EML.

vi. Supervision, Performance and Quality assurance

Support supervision of CHWs by trained supervisors from MOH staff in conjunction with implementing partners was viewed as an integral part of ensuring quality and timeliness of iCCM program implementation. The CHWs' supervisor's roles are routine clinical monitoring and mentorship of CHWs in diagnosis and treatment including referrals; and in maintenance of iCCM records. In the six countries done the field studies, iCCM CHWs supervisions used standards indicators and checklists as guides for monitoring performance of CHWs, and also the overall performance of the programme supervision.

Challenges: supervision and programme management costs were the highest unit costs of iCCM program. The high costs of running and general inadequate funding for the programme resulted in lapses in iCCM supervision; lack of funds for transport; unavailability of clinical supervisors due to understaffing at the linked (supervising) health facility, ratio of supervisor to CHW is not optimal; and hence impossible to implement scheduled supervisions; attrition contributing to use of supervisors not trained in iCCM; inadequate checklists or checklists for

supervision to check quality of applied services not available; and lack of clear tools for quality assessment.

Lessons Learned and Recommendations: Budgeting should provide funds for transport between HF and communities as part of incentives and/or in HF budgets. Support is required for replication of m-health innovations that have been assessed and found suitable for adaptation, this will increase contact points and links between HF and CHWs. Mentorship programs for example Malawi: when CHWs go for their monthly supplies they are asked to perform an iCCM algorithm, gaps identified from errors and those in their patient registers are addressed through mentorship. Districts with iCCM program need to ensure there are trained pools of supervisors such that there is a sufficiently high ratio of supervisor to CHW to permit adequate supervision by the appropriate officers.

vii. Referrals from Community Level to Health Facilities

This study observed that CHWs handled two types of referrals: a) A situation where a sick child exhibited danger signs and CHW administered pre-referral procedures within 24 hours and then referred child to nearest health facility if danger symptoms persisted and; b). A situation where CHWs experienced stock-outs of iCCM commodities and hence referred the sick child to health facility for management.

All study countries used appropriate guidelines for clinical assessment, diagnosis, management and referral to guide CHWs to manage U5 children illness. CHWs were using referral forms to record pre-referral, referral and counter-referral to manage a child with danger signs. This study confirmed from interviews and review of paper trail that referred cases on receiving treatment at the health centre, the healthcare provider retained one copy of the referral form and give the other copy to the caregiver for the CHW to use in monitoring the patient adherence to management and treatment instructions.

Challenges: The distance and time it takes to reach a referral health facility; cost associated with reaching a referral facility and access services; Stigma/discrimination and other socio-economic factors impeding travel out of the community to nearest referral facility hindered adherence to referral advice. There was suboptimal use of referral notes for referral and counter referral. Low and irregular clinical investigations and CHWs had difficulties in identifying danger signs, this resulted in children with danger signs not being referred. In other instances, care givers were unable to complete referrals due to stock-outs or inadequately trained staff at referral centres which had eroded trust of referral facilities.

There is need for adequate and sufficient supplies to be available to CHWs to deal with simple cases to avoid overburdening link health facilities and surfeit of referrals. The low referral rate should be addressed using the evidence available such as gaps in clinical skills among CHWs that require re-training/re-fresher training, and targeted supervision. There is need for mobilization of resources for the required refresher training/re-training and targeted supervision. Consideration needs to be given for support for social insurance schemes (e.g. transport vouchers) to help complete referrals. The MoH and partners should ensure the referral health facility is well-stocked and has sufficient staff available and trained to deal with severe cases.

viii. Monitoring and evaluation and health information system

All study countries embraced monitoring and evaluation of iCCM as an integral thematic area that tracked and reported on the performance of the programme implementation. In study countries, during the last few years, iCCM programs have expanded significantly and many countries have managed to cover as many districts building on experiences gained from pilot phases.

This study found majority of countries' monitoring systems had not been effective to deliver complete, relevant, timely, accurate and quality data for use in planning and programming, decision-making and corrective measures. However, there were concerted efforts by the Governments and supporting partners towards improving HMIS/M&E quality data, transmission and use, the achievements yielded included: i) integrating routine facility data including iCCM and community data into the HMIS and DHIS2; ii) all study countries had adopted and used the global standard benchmark indicators for routine monitoring and translated these indicators to reflect country context. The study also established that in all study countries, CHWs were well versed with recording and reporting of iCCM data. Some countries, such as Malawi, Rwanda and Burkina Faso, entered iCCM data into HMIS and DHIS2.

The study found all the 18 countries received support from multiple donors and bilateral agencies such as UNICEF, WHO, GF and USAID among others, which built the capacity of MOH M&E systems including community programs' monitoring data improvement. However, most NGOs and other implementation partners used their own parallel M&E systems for short-term reporting requirements that often did not meet country information needs or take into account the underlying system capacities or constraints.

The iCCM M&E system faced a number of challenges: iCCM data consolidated with IMCI data and hence not retrievable from HMIS and DHIS2 for use in services management i.e. supply chain; iCCM data is poor with inaccuracies; iCCM data is not timely reported; parallel unsustainable iCCM data reporting; difficult to calculate treatment ratios of iCCM versus IMCI because data is in consolidated form; and lack of financing for operational research/implementation research, among others.

Consider support for development and incorporation of community-health capture modules - replication of best practice (example - Upscale in Mozambique) linked with HMIS/DHIS2, including resource mobilization. Advocate for support for capacity building for use of data for decision-making. Consider support for replication by other countries of the data visualization (example Malawi best practice support from implementing partners and University of Oslo). Need for District Health Teams (DHTs) to be supported to have specific M&E focal points to improve data quality and reporting.

MOH heads of technical units: M&E, Child Health etc. under the leadership of MOH and iCCM coordination mechanism should provide leadership and support the integration of iCCM data into the HMIS including that sourced by international agencies; Sustainable mHealth solutions (technical and financial) should be developed to submit iCCM data to the DHIS 2 platform. MOH heads of technical units: M&E, Child Health etc. under the leadership of MOH and iCCM coordination mechanism should provide leadership and support the harmonization of

classification of childhood illness under iCCM and IMCI. Sustainable solutions (technical, financial, mHealth) should be developed to submit disaggregated and specific iCCM data to the HMIS/DHIS2 platform. Evaluations of pilot study outcomes should be built into projects from the beginning to determine best-practices and improve implementation outcomes.

SECTION ONE

1.0. BACKGROUND INFORMATION

Globally, the under-five mortality rate has decreased by 53%, from an estimated rate of 91 deaths per 1000 live births in 1990 to 43 deaths per 1000 live births in 2015. However, the WHO global health estimates of 2015 showed that nearly 50% of under five childrens' deaths were in the SSA region (2,947,136 deaths out of 5,944,556 global under five deaths).

The integrated community case management (iCCM) strategy was developed with the aim of extending the integrated management of child illnesses (IMCI) (malaria, pneumonia, diarrhea and in some cases, malnutrition) beyond health facilities to communities where most childhood deaths are occurring. Based on evidence¹⁶ generated from various countries, appropriately trained, supervised, and supplied CHWs can correctly identify, classify and treat most children who have uncomplicated cases of these illnesses, and refer those with any danger signs to higher level facilities. The iCCM concept was built from previous community-based disease programs such as the Home-based Management of Malaria (HMM) strategy, which was implemented when coverage of malaria prevention (esp. LLINs) was low and childhood fevers were mostly managed presumptively as malaria.

Recent efforts at evaluation and evidence gathering¹⁷ have shown that properly implemented iCCM is a key strategy for reducing mortality among children who may otherwise have limited or no access to lifesaving treatments. Many countries in SSA including those covered by this study, adopted and have been progressively implementinhg iCCM as part of their national health sector strategies. Apart from Rwanda, Ethiopia and Senegal that have managed to achieve wider scale up of iCCM implementaion, most other stdy countries have been lagging behind covering only a few districts. Starting in late 2012 the program gained considerable momentum in 2014 under the New Funding Model (2014-2017 GF allocation period), countries have been requesting and receiving funding from the Global Fund to support some of the costs for the iCCM platform such as training and salary costs for CHWs, malaria commodities, supportive supervision, supply chain system strengthening, and health information system costs. While the 2010 Board recommendation¹⁸ encouraged "Country Coordinating Mechanisms (CCMs) to identify opportunities to scale up an integrated health response that includes maternal and child health in their applications for HIV/AIDS, TB, malaria and health systems strengthening"; the integrated programming approaches for TB and HIV through the iCCM platform did not surpass small pilots. And this did not extend to the use of Global Fund monies to procure non-malaria iCCM commodities (i.e. amoxicillin, breathe timers, and ORS/zinc nor RUTFs for severe acute malnutrition). Support for these

¹⁶a. Xavier Bosch-Capblanch; Claudine Marceau. 2014. Training, supervision and quality of care in selected integrated community case management (iCCM) programmes: A scoping review of programmatic evidence. *Journal of Global Health*. Vol.4. No.2. 020403.

b. Benefits of Integrating Malaria Case Management and iCCM - Prepared by the iCCM Financing Task Team

¹⁷ Agbessi Amouzou, Saul Morris, Lawrence H Moulton, David Mukanga. 2014. Assessing the impact of integrated community case management (iCCM) programs on child mortality: Review of early results and lessons learned in sub-Saharan Africa. *Journal of Global Health* Vol. 4. No.2. 020403

¹⁸ GF/B21/DP20 & GF/B22/DP4

necessary commodities for iCCM must then be sought from governments, donors and other partners. Several studies (Young et.al, 2014, Daelmans 2016, Kumanan R. 2015), notably an entire Supplement in the American Journal of Tropical Medicine Hygiene¹⁹ have documented valuable lessons from early iCCM adopters. The supplement however, also concludes that there are many gaps in the understanding of the optimal approaches to the implementation, scale-up, and sustainability of iCCM programming (Kumanan R., (2015).

The main objective of this study was to assess and document replicable good practices in ensuring integrated delivery of interventions for malaria, pneumonia, diarrhea and (if part of a country's iCCM program) malnutrition at scale. It also sought to assess the relationships between iCCM and the linked health facilities in terms of service delivery, data reporting from the CHWs, supportive supervision and feedback mechanisms. The study also assessed whether the iCCM programs are embedded within the broader national health system or implemented as separate, piecemeal, vertical programs. Finally, the study assessed and documented the type of CHWs offering iCCM, their training, remuneration, supervision and operational issues that influence their performance.

1.1. Study Justification

While most programs have yet to reach the optimal scale at which the impact of iCCM on child health outcomes (i.e., reduction of morbidity and mortality) can be evaluated, even pilot and sub-national projects have the capacity to yield valuable information and evidence that can be used by countries, the Global Fund and partners to take iCCM to scale. While there is already considerable evidence and literature reviews¹⁹ undertaken to date, this study aims to add value in the following areas:

1. Provides an opportunity to synthesize information from key partners implementing and providing support for iCCM in the countries that has been reviewed. Specifically, the study documents elements of iCCM supported by different partners, lessons learnt and best practices to improve coordination, alignment, communication and scale up.
2. Provides best practices of iCCM integration into health systems in provision of comprehensive service delivery where iCCM and health facility-based services complement each other.
3. Documents factors hindering and those facilitating integration of community-level data into existing Health Management Information Systems (HMIS).
4. Provides relevant policy information on existing financing and CHW remuneration models that have worked, best practices in optimizing iCCM returns on investments and benefits of paid CHWs versus those operating as volunteers (i.e. their cost effectiveness and efficiencies).

¹⁹ a. Xavier Bosch–Capblanch; Claudine Marceau. 2014. Training, supervision and quality of care in selected integrated community case management (iCCM) programmes: A scoping review of programmatic evidence. *Journal of Global Health*. Vol.4. No.2. 020403.

b. Benefits of Integrating Malaria Case Management and iCCM - Prepared by the iCCM Financing Task Team

c. Agbessi Amouzou, Saul Morris, Lawrence H Moulton, David Mukanga. 2014. Assessing the impact of integrated community case management (iCCM) programs on child mortality: Review of early results and lessons learned in sub-Saharan Africa. *Journal of Global Health* Vol. 4. No.2. 020403

5. Documents approaches to assessing performance and quality of iCCM services including the cost effectiveness and efficiency of existing supervision models and follow up on CHW training in different contexts.
6. Systematically analyses data and information on available evidence of the impact of iCCM outcomes.
7. Compiled lessons learnt to inform country-level iCCM planning and implementation including financial requests to the Global Fund and other donors.
8. Identifies and documents factors and challenges hindering financial sustainability of iCCM e.g. Mechanism for channelling funding flows in support of community level integrated case management
9. Documents case studies of well performing practices that could be replicated in other countries and strategies adopted to overcome challenges experienced in iCCM implementation in different contexts.

1.2. Study Goals, Objectives and Questions

1.2.1 Study Goal

The goal of the study is to document the experiences of iCCM implementation in a subset of countries supported by the Global Fund to rollout iCCM in sub-Saharan Africa.

1.2.2 Study Objectives

The specific objectives of the study:

1. To systematically assess replicable good practices in the delivery of iCCM as per nationally defined quality standards in programs supported by the Global Fund.
2. To assess key challenges in operationalization of iCCM both in countries in the early and expansion phases of implementation
3. To document the relationship between iCCM and health facility-based services.
4. To conduct a systematic review of documented evidence of the outcomes and impact of iCCM scale up on child health outcomes as well as on community systems for health.

Note: The Study Questions can be found in ANNEX 1

SECTION TWO

2.0 STUDY METHODS

This Study was undertaken in coordination with all national iCCM stakeholders including the National Malaria Control Program (NMCP), Maternal and Child Health department and other relevant in-country partners in the selected countries. The study team worked with identified in-country and external focal persons who are knowledgeable about the country specific context. The study team also worked closely with the relevant Global Fund staff (specific Country Teams, MECA team, etc.) to ensure appropriate linkages and introductions to local in-country partners.

The local, regional and global UNICEF and WHO offices were consulted as part of this study. Feedback was requested from these partners into the full study protocol and various staff members requested continued involvement and regular updates. The iCCM Financing Alliance was consulted for guidance on relevant materials to be included in the planned review.

2.1 Study Design

A descriptive study design was applied to document factors that bear on the implementation of iCCM in sub-Saharan Africa. Mixed method approaches applying both quantitative and qualitative data collection methods were applied. Much of the data collection relied on desk and systematic reviews of the available literature as well as field observations and interviews.

2.2 Scope of Work

The study had two key components: a) desk review of relevant guidelines, policies, program reports, and past assessments; and b) field visits to six countries in sub-Saharan Africa for in-depth study.

2.2.1 Desk Review

The desk review included review of published literature of available peer-reviewed studies, national and international iCCM guidelines, national community health strategies, training and supervision materials, program reports as well as past assessments in the following 18 countries:

- **Eastern Africa:** Burundi, Ethiopia, Kenya, Rwanda, South Sudan, Uganda,
- **Southern Africa:** Malawi, Zambia
- **West and Central Africa:** Benin, Burkina Faso, Ghana, Mali, Niger, Nigeria, Senegal, Sierra Leone in West Africa; Cameroon and Democratic Republic of Congo in Central Africa.

In six of these countries where extensive reviews and studies had been done comparatively in the past, the desk review involved an in-depth analysis to produce country-specific case studies, while in the rest, the desk reviews contributed to the overall assessment of success and challenges in iCCM roll out. The following six countries had in-depth analytical desk reviews without country visits: Ethiopia, Ghana, Niger, Rwanda, Senegal and Uganda; and six

countries had desk review: Benin, Burundi, Democratic Republic of Congo, Kenya, Mali, and Sierra Leone.

The focus of the desk review was to identify scalable good practices and overarching challenges in the implementation of iCCM. The review has also documented the country context of iCCM implementation i.e., components of iCCM implemented, implementing partners, coverage, and any documented outcomes of the implementation. A desk review tool based on the study objectives and operational research questions was developed to capture relevant information on iCCM.

2.2.2 Field visits

Field visits were conducted in Nigeria, Burkina Faso, Cameroon, Zambia, Malawi and South Sudan. The countries were selected in consultation with the Global Fund country teams taking into consideration regional representation between western, eastern and southern Africa and the phase of iCCM implementation (i.e. early vs expansion stages). The focus of the field visits was to assess country-level implementation practices and document good practices and challenges in scaling up iCCM. Selection of specific study sites within the countries was done in consultation with in-country stakeholders. One or two districts, depending on the country context, were purposely selected based on duration of iCCM implementation (i.e., 3 or more years) and performance (as judged by the country stakeholders). Well performing districts were purposely selected in order to positively identify and document good practices facilitating implementation of iCCM. In each of the selected districts, the study team, in consultation with local stakeholders, purposely selected at least two health facilities and two communities for the on-site visits to document iCCM implementation practices.

2.3 Data collection methods

Both qualitative and quantitative data were collected during the field visits. Qualitative data was collected through in-depth interviews (IDIs) and Focus Group Discussions (FGDs) with key stakeholders of iCCM at the national and local levels; the global level partners were interviewed based on key preliminary findings (Table 1). Semi-structured interview guides were developed for the in-depth interviews with key stakeholders at the different levels. The interview guides covered thematic areas of iCCM implementation delivered from the study objectives and operational questions. At the global and national levels, themes related to community health system policies, integration, complementarity and coordination as well as financing were documented. At the lower levels, implementation aspects related to community health workers, access and coverage, availability of iCCM commodities, referral links, supervision, monitoring and evaluation were documented. In-depth interviews were conducted in English for the Anglophone and French for the francophone countries, and also translated into local language to collect community viewpoints.

Table 1: Number of in-depth interviews and focus group discussions

Level and method of data collection	Targeted participants	Number of interviews
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2.4 Data Management and Statistical Analysis

All data has been stored in secure password protected computers at HEFDC offices in Nairobi and accessed only by the study team.

2.4.1 Data from the desk review

Data collected from the review was analyzed and summarized in tables. A narrative report of iCCM implementation, successes and challenges, was written as per the study objectives and questions.

2.4.2 Management and analysis of qualitative data

All qualitative interviews were transcribed verbatim in Microsoft Word. Experienced transcribers were contracted to do the transcription. The study team lead ensured that all scheduled interviews are conducted and saved in secure laptops and hard disks. The project manager and study team lead provided oversight during the transcription of the audio recordings. A framework approach was adopted for analysis. Two members of the study team independently coded a selected number of transcripts and compare their coding. A common coding tree based on the study objectives and research questions was developed. All subsequent transcripts were coded based on the agreed codes. The codes were further refined and allocated to themes based on the study questions and objectives. A narrative description of the key themes emerging from the analysis were written and supported with quotes derived from the transcripts.

2.4.3 Management and analysis of quantitative data

Quantitative data was abstracted from the DHIS2 databases, saved into flash disks and shared with the project manager at the HEFDC offices and analysis was done in Excel 2013 (Microsoft Corporation, Seattle, WA) and Stata version 12 (StataCorp, College Station, TX). The study team reviewed the collected data and refined the analysis plan. Trends in number of cases of malaria, pneumonia, diarrhea and malnutrition at health facility and community levels were analyzed. Results were summarized presented in form of tables, graphs and charts, and included in this report.

SECTION THREE

3.0 FINDINGS: iCCM INTRODUCTION & SCALE UP

This chapter presents key findings on study questions derived from the thematic areas and study objectives respectively. A descriptive analysis of information collected from the in-depth interviews, focus group discussions, desk review and of extracted data is presented.

Findings are presented on achievements, lessons learned and challenges in the following areas: iCCM scale up speed, coverage, access and equity; and the following 8 thematic areas: (i) policy development, coordination, leadership, and integration; (ii) demand creation and implementation of BCC for iCCM; (iii) funding/implementation arrangements; (iv) Human Resources: quality, capacity and compensation; (v) monitoring and evaluation and health information system; (vi) supply chain management; service delivery and referral; (vii) supervision, performance and quality assurance; and (viii) Costing.

Desk review of previous peer reviewed studies, published and grey literature, program reports and; as well as country health data bases, provided qualitative and quantitative information. Quantitative data was abstracted from the District Health Information System (DHIS2) and Health Management Information System (HMIS). Qualitative descriptive findings are from InDepth Interviews (IDIs) with Key Informants and Focus Group Discussions (FGDs) undertaken at the national and sub-national levels of well performing (show case) iCCM sites respectively in each of the six “deep dive” countries.

Experience derived from many countries has attributed successful implementation of the program expansion or scale up to high-level political support from government. The Ministry of Health (MOH) is the mandated country government arm for iCCM policies, strategic planning, and institutional structures and thus holds the key to iCCM effectiveness in each country. Several studies have documented that some countries have rapidly revised the appropriate policies and supportive legal frameworks including institutional reform to facilitated implementation of iCCM to scale, while others have taken much longer to roll-out the program to national scale. [(Marsh et. al. 2008) and (George A. et. al. 2012)]. Ministries of health which have been particularly active in providing policy support, guidelines and coordination of activities of iCCM program are Malawi, Ethiopia, Senegal and Niger.

The role of governments in providing leadership and support to the operationalization of national policy and implementation, and in ensuring the iCCM program is well integrated and costed within the national health sector plan is key in the achievement of expansion and scale up for sustained planned outcomes achievement. Evidence generated from studies have associated iCCM performance in priority ‘Countdown to 2015’ countries to various factors. Policy changes and policy reform that have been initiated by governments and MOH technical officers together with support from development partners, donors and implementing partners were indicated as one of the most important factors. Countries that have initiated new policies and policy reform that address policy gaps, legal and or institutional structures that previously impeded iCCM implementation and scale up have registered speedy scale up of iCCM compared with those whose policies and leadership have not responded to a

changing program environment. (Sara Bennett, Asha George et. al. 2014). Further findings from the in-depth analysis of national policy change for iCCM noted that countries with MOH leadership that supported CHWs programs to provide a strong platform for the provision of iCCM services, had an easier process of policy development than those with none. For instance, political leadership was key in Niger in facilitating iCCM Scaling up. (Sara Bennett, Asha George et. al. 2014)

Evidence derived from document review and in-depth interviews undertaken by this study, established that all the 18 countries covered by this study, are either on expansion or scaling up iCCM geographical coverage as well as scaling access/availability of iCCM package to the defined iCCM areas. While some countries have adapted or reformed national policies for iCCM implementation and scale up, there still remains some concerns regarding the current nature of CHWs and the history of primary health care in each country. Based on findings of this study, some countries where CHWs are unpaid volunteers, policymakers are grappling with challenge of how to expand iCCM through existing community volunteers. For instance, in Burkina Faso, Niger, Malawi, Mali and Ethiopia governments chose to build on existing platforms of paid CHWs, rather than on community volunteers that also existed in these countries. Finally, Malawi and Ethiopia are the only countries where CHWs are part of the civil service

Further findings from the in-depth analysis of national policy change for iCCM noted that countries with MOH leadership that supported CHWs program, which provided a strong platform for the provision of iCCM services had an easier process of policy development than those with none.

in Kenya, most CHWs had worked with NGO projects, and despite having community health policy, the Kenya government is struggling with how to expand the NGO CHW volunteer program into a national program; in Burkina, similar challenges (like Kenya) faces the country in terms of expanding CHW volunteer program. Other contextual factors such as legal frameworks (for example, regulations prohibiting CHWs from dispensing antibiotics that existed in Burkina Faso, Kenya and Mozambique among other countries, limited program expansion. Political leadership in Niger facilitated speedy iCCM scaling up, by ensuring successful implementation of factors that required policy change and operationalization. (Sara Bennett, Asha George et. al. 2014)

3.1. The Status of iCCM Program Expansion and Scale up

This study confirmed that all 18 countries were expanding/scaling-up their iCCM programs at varying speeds. Only three (3) countries had expanded/scaled up their iCCM program to cover all regions/districts within 2 to 5 years of introduction, the majority of countries were moving at a more moderate speed due to various factors. The speed for iCCM program scale up and expansion was dependent on the extent to which the following factors required policy change and operationalization: (i) financing; (ii) human resources; (iii) supply chain management; and (iv) quality assurance of services among others (Gatonga P. Et.al. 2012, McGorman, L. 2012). Some of the issues that had hampered iCCM scale up included: (i) lack of funds for program scale up; (ii) lack of MoH incentives and/or non-uniformity of incentives to CHWs depending on the source; (iii) lack of appropriate drug formulations; (iv) lack of co-financing for diarrhea and pneumonia drug supplies and commodities to compliment funded malaria drugs and

commodities and v) lack of simultaneity of arrival of the full iCCM package even when co-financing had been secured.

3.1.1. Partners of iCCM Implementation

At the time of the study in 2017, the following partners had supported iCCM implementation across sub-Saharan countries:

Table 2: iCCM Funders and country level implementing partners

Country	iCCM Funders	Implementing partners
1. Benin	GF; USAID; UNICEF	USAID/BASICS Project; USAID/ARM3 project; Africare
2. Burkina Faso	GF; BMGF; UNICEF; WB	Government of Burkina Faso
3. Burundi	GF; WHO; UNICEF	Caritas, Concern worldwide; WV; Pathfinder/MSH, and World Relief
4. Cameroon	CIDA; GF, WHO, UNICEF,	MoH, UNICEF, IRESCO, JHPIEGO, MC-CCAM; ACMS
5. DRC	GF; UNICEF; CIDA; ICF International; USAID, WHO	WHO Global Malaria Program; International Red Cross Committee; BASICS; MCHIP; UNICEF/IHSSP;
6. Ethiopia	GF; CIDA; UNICEF; USAID; BMGF; WHO	UNICEF, SCF; JSI/Last Ten Kilometers Project; USAID/Integrated Family Health Program (IFHP); IRC; MERLIN; USAID DELIVER Project
7. Ghana	UNICEF; USAID; WHO; DFID; PMI; Canada (DFATD)	PLAN International
8. Kenya	UNICEF, WHO, USAID, GF, JICA	AMREF, MCHIP
9. Malawi	USAID; UNICEF/WHO; PMI; CIDA(RaCE); GF; CIDA Catalytic Initiative; UNICEF, WHO; Everyone Campaign, Bank of America	USAID/BASICS/MSH/ONSE; SCF; Action Aid; WV; CRS; PMI; USAID/DELIVER Project; RaCE;
10. Mali	Canadian DFAT-D	UNICEF's Integrated Health Systems Strengthening Program (IHSSP); PSI
11. Niger	WHO, UNICEF, WAHO, USAID	UNICEF
12. Nigeria	WHO-GA Canada; GF; UNICEF-EU; DFID; USAID-WHO; BMGF; UNICEF; USAID	MC; MCSP; SFH; MOH Department/units
13. Rwanda	GF, PMI, WHO mHealth Alliance; UNICEF; Roll Back Malaria	MoH, MSF, JSI; MCSP
14. Senegal	GF; UNICEF; PMI; WB; WHO; JICA; Pfizer; ADB; IDB; IRD; Chinese Corporation; Embassy of Thailand; BTC	WB-Booster Program; Child Fund; Africare; Plan Senegal; WV; CRS; BASICS; MSH; CAMAT; Intra health
15. Sierra Leone	GF, UNICEF; GSK; ADB	IRC; SCF; WHI; DIP

16. South Sudan	GF, DFID, UNICEF, CIDA	UNICEF, PSI, AMREF, Malaria Consortium, Health Link South Sudan, CCM, ARC, SC-I, Africa Health Africa (AHA), WVI, John Dau Foundation (JDF), Nile Hope (NH) IRC, BRAC, SCF, Diocese of Torit
17. Uganda	UNICEF; GF; WHO; USAID; DFID; Global Financing Facility;	UNICEF, MC; WV; CHAI; Shines Children Foundation; IRC; MSH; PACE; ICCM Financial Task Team; JSI/MCSP; IFRC; MSH/SIAPS.
18. Zambia	GF; PMI; UNICEF; WHO; DFID; USAID; American Red Cross Society	MOH Units; CHAZ; CHAI; SCF; USAID/JSI; WV; MC;

Bill and Melinda Gates Foundation (BMGF); Canadian International Development Agency (CIDA); Clinton Health Access Initiative (CHAI); Churches Health Association of Zambia (CHAZ); Catholic Relief Services (CRS); Global Fund (GF); Society for Family Health (SFH); Maternal and child survival project(MCSP); Rapid Access Expansion Program (RAcE); Save the Children Fund (SCF); Presidential Malaria Initiative (PMI); Management sciences for Health (MSH); Basic Support for Institutionalizing Child Survival (BASICS); Organized Network of Services for Everyone's Health Activity (ONSE); World Vision (WV); International Rescue Committee (IRC); Program for Accessible health Communication and Education (PACE); Canadian Department of Foreign Affairs, Trade and Development (DFATD); Population Services International (PSI); Maternal and Child Health Integrated Program (MCHIP); Integrated Health Systems Strengthening Program(IHSSP); world Bank (WB); l'Association Camerounaise pour le Marketing Social (ACMS); Japan International Corporation Agency (JICA); Islamic Development Bank (IDB); Africa Development Bank (ADB); Institut Pasteur Dakrand the Institute de Recherche Pour le Development (IRD); Belgium Technical Corporation (BTC); Community Action Against Malaria and Tuberculosis (CAMAT) Project; GLAXO Smith Kline (GSK); World Hope International (WHI); Development Initiative Program (DIP); Medicine Sans Frontier (MSF); Building Resources Across Communities (BRAC); west African Health Organization (WAHO).

UNICEF has supported iCCM implementation in partnership with countries, for example:

Ethiopia: UNICEF/Ethiopia's roles in iCCM:

- Technical support/leadership through dedicated experts to the MoHS and districts and implementing partners.
- Mobilize resources from donors and support implementation through partnership with NGO partners using Program cooperation agreement (PCA) which involves regular program field monitoring visits, reviews and spot-checks
- Support the procurement and distribution of iCCM supplies

Uganda: UNICEF/Uganda is both funder and implementer. In 8 districts UNICEF directly supports the iCCM programme with funding from DFID and own UNICEF resources and in 16 districts. UNICEF supports iCCM through Malaria Consortium using funds from DFID.

Burundi: In line with the UNICEF- Global Fund MoU, UNICEF/Burundi supports the purchase of diarrhea and pneumonia drugs for 12 health districts to support iCCM funded by the GF which is being implemented by Caritas.

Cameroon: UNICEF Burundi supervises work in the field; facilitates trainings of CHWs; and provides technical support.

Benin: UNICEF/Benin is involved in the training, the drugs and tools supply, the supervision and the payment of the CHW incentives in UNICEF targets intervention zones.

Sierra Leone: UNICEF/Sierra Leone's roles in iCCM are:

- Technical support/leadership through dedicated experts to the MoHS and districts and implementing partners.
- Mobilize resources from donors and support implementation through partnership with NGO partners using Program cooperation agreement (PCA) which involves regular program field monitoring visits, reviews and spot-checks

- Support the procurement and distribution of iCCM supplies

South Sudan: UNICEF finances iCCM (own funds and also from donors) and also provides technical support for implementation across the health districts.

Niger: UNICEF finances iCCM (own funds and also from donors) and also provides technical support for implementation across the health districts.

3.1.2 Status of iCCM Scale Up/Expansion for the Eighteen Countries

The table below shows the status of iCCM scale up/expansion of the 18 countries:

Table 3: iCCM services National Scale up by Country

Ref No.	Country	Scale up ²⁰
1	Benin	Scaling
2	Burkina Faso	Scaling
3	Burundi	Scaling
4	Cameroon	At Scale*
5	Democratic Republic of Congo	Scaling/Expansion
6	Ethiopia	At Scale*
7	Ghana	Scaling/Expansion
8	Kenya	Expansion will scale up
9	Malawi	At Scale*
10	Mali	At Scale*
11	Niger	Scaling/Expansion
12	Nigeria	Expansion will scale up
13	Rwanda	At Scale*
14	Senegal	At Scale*
15	Sierra Leone	Scaling
16	South Sudan	Scaling/Expansion
17	Uganda	Scaling/Expansion
18	Zambia	At Scale*

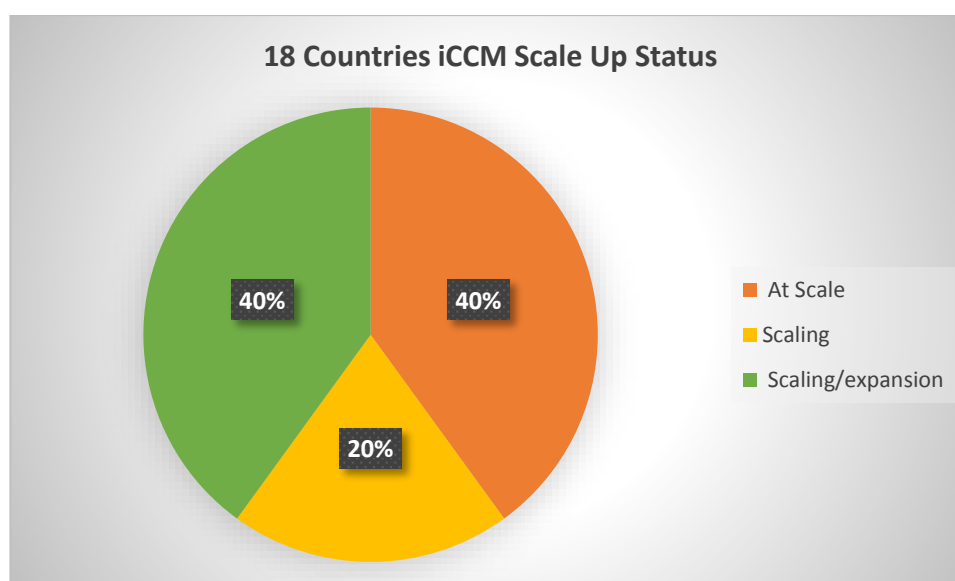
The figure below shows the status of iCCM scale up of the 18 countries included in this study as of 2017:

²⁰ **iCCM National Scale up:** geographical scale up to all eligible districts

iCCM scale up: all the iCCM eligible population is covered by services and iCCM components and services are implemented and functional

Expansion: introduction of iCCM to new illegible districts.

Figure 1: iCCM Scale-Up in 18 Countries in Sub-Saharan Africa



3.1.3. Achievements in Scaling Up iCCM Services

iCCM scale up accelerated during the period 2014 to 2017 building on the efforts of various partners to use the opening provided by the 2010 GF Board recommendation²¹ for countries to explore opportunities to scale-up an integrated health response. Using the opportunity of the 2014-2017 allocation period an iCCM Financing Task Team (FTT)²² was convened under UNICEF leadership to advocate and support the integration of iCCM into NFM concept notes (both malaria and HSS) for 28 countries (of which 27 submitted concept notes with iCCM included²³).

However as early as 2012, human resource and supply chain strengthening for iCCM were also being included in malaria and HSS grant applications under the rounds-based system.

Early pioneers (2008-2013) in iCCM scale up were Ethiopia, Malawi and Rwanda which drove iCCM to scale within 3 years (Marsh R.D., et.al. 2014, Heidkamp R., 2015, Mugeni C. et.al. 2014). The governments of Malawi, Rwanda and Ethiopia had an established cadre of CHWs who had been integrated into the MOH staffing structure (Legesse H., 2014, Rodriguez D., 2015) and were receiving salaries: Ethiopia (Legesse H., Degefie T., Taylor M., et al., 2014); Malawi (Rodriguez D., Banda H., Namakhoma I., 2015), and for Rwanda they had financed incentives through a community cooperative (UNICEF/GFTAM, 2016). With the co-financing for human resource in

²¹ “Exploring options to maximize synergies with maternal and child health, the Board **strongly encourages Country Coordinating Mechanisms (CCMs) to identify opportunities to scale up an integrated health response** that includes maternal and child health in their applications for HIV/AIDS, TB, malaria and health systems strengthening.” GF/B21/DP20

²² Partners: Red Cross, USAID, MDGHA, 1MCHW Campaign, CHAI, Save the Children, MCHIP

²³ Benin; Burkina Faso; Burundi; Cameroon; Central African Republic; Comoros; Cote d’Ivoire; Democratic Republic of the Congo; Eritrea; Ethiopia; The Gambia; Ghana; Guinea Bissau; Kenya; Madagascar; Malawi; Mali; Mauritania; Mozambique; Nigeria; Niger; Senegal; Sierra Leone; Somalia; South Sudan; Togo; Uganda; Zambia

place scaling up with speed was possible. The CIDA/IHSS and Global Fund supported the training of the CHWs in iCCM. Other SSA countries have used the lessons learned and evidence from these countries to structure and roll-out iCCM in their own countries.

The following factors have been identified as key to successful rapid roll out of iCCM:

- There was coordinated support and funding during the pilot Early Implementation phase (2008-2013): CIDA CI²⁴/HSS, UNICEF, and WHO supported/funded the pneumonia and Diarrhoea components of iCCM (in complement to other donors (e.g. GF, PMI) investments in malaria) as well as policy change, advocacy and mobilization of funds among other areas. (Doherty T., 2014, Legesse H. et.al. 2014, Review of systematic Challenges, 2012).
- In some countries USAID provided support and funding for the pilot Early Implementation Phase for example Senegal, Rwanda and Ethiopia.
- From 2014 onwards, through the GF supported/funded malaria or HSS component, iCCM staffing/human resource recruitment and training, supply chain strengthening and information systems strengthening were provided in numerous countries.
- Also, from late 2013/2014 onwards, a dedicated task team of individuals from different organizations all committed to iCCM under the leadership of UNICEF as the iCCM Financing Task Team (FTT) was established. Using various sources of financing including a supplemental grant from the Bill and Melinda Gates Foundation which was purposely kept flexible, this allowed the rapid deployment of technical assistance and adjustment of any work plans. The Global Fund and UNICEF also formalized a partnership MOU to support child and maternal health activities. In two phases (Ph I: 2014/2015 and Ph II: 2016) the following was achieved:
 - **Supported twenty-eight (28) countries in sub-Saharan Africa to integrate iCCM into Global Fund malaria and HSS concept notes;** Twenty-seven (27) submitted Global Fund concept notes which included an iCCM component.
 - **Contributed to mobilizing over \$80 million for iCCM through the Global Fund and co-funders across 12 countries** (Burkina Faso, Burundi, Cote d'Ivoire, DRC, Ethiopia, Ghana, Malawi, Mali, Niger, Nigeria, Uganda, and Zambia). This includes validated GF commitments across the 12 countries and validated commitments from co-donors across 6 countries. Additional funding across the remaining 15 countries was also been mobilized (final figures were upwards of \$120 million).
 - **Developed and disseminated various iCCM programme implementation tools²⁵** and guidance to strengthen the case and support for iCCM programming
 - **Established strong partnerships and coordination mechanisms between iCCM FTT members, UNICEF, the Global Fund, and other key stakeholders** on strengthening child health and community health platforms and building resilient health systems.
 - **Enhanced the visibility of iCCM on the global health agenda,** particularly among

²⁴ Ethiopia; Ghana; Malawi; Mali; Mozambique; Niger

²⁵ iCCM Gap Analysis Tool; Guidance for Effective iCCM integration into the GF NFM concept notes; iCCM Integration Guidelines for Government, Donors, and Partners; iCCM and Maternal Health PSM checklist; iCCM Product Selection Guide; Guide to iCCM PSM planning for Global Fund Grants; iCCM indicators matrix WHO-UNICEF iCCM Evidence Update; iCCM Integration into Malaria Programmes Flyer; iCCM Financing Integration Advocacy Brief; iCCM Implementation under the Global Fund's New Funding Model (NFM): Program Implementation Documentation Protocol. Many of the tools are available on the CCM Central website at <http://ccmcentral.com>

donors (including the Global Fund) as a key strategy to address leading causes of morbidity and mortality in children under the age of five.

- **Catalysed stronger linkages and partnerships between the child health and malaria communities at the global and national level** to work towards shared goals and a common vision.
- **Strengthened support for ICCM M&E** through the provision of tools as well as by ensuring continued M&E discussions at country level
- **Trained and oriented national and international consultants for Phase I and Phase II support**, thereby building capacity across various stakeholders and at country level.
- **Participated in joint inter-agency PSM missions to Zambia, Uganda, and Nigeria** to promote national supply chain strengthening and integration efforts for improved program results.
- **Convened the Nairobi ICCM Cross-Regional Consultation in Kenya** (February 2016) as an extension of TA support to countries
- **Specific NFM-linked ICCM implementation support** (as per request) in: DRC, Ethiopia, Nigeria, Uganda, Zambia, and Burkina Faso (Catalyzing the Scale-up of ICCM, 2016).

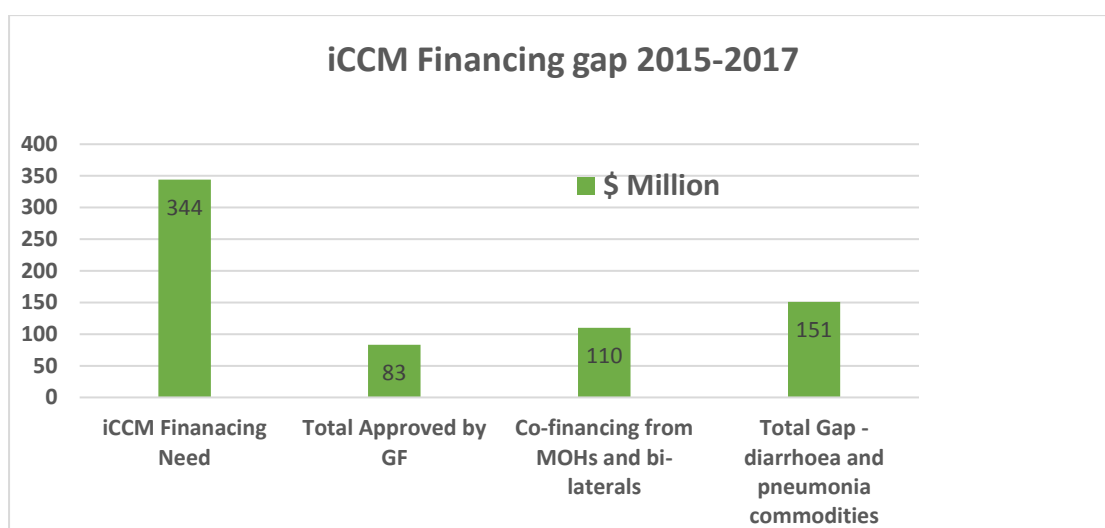
3.1.4. Challenges Hindering ICCM Scale Up

The ICCM FTT identified the following factors as hindering ICCM scale-up:

- Lack of Political Commitment and Country Ownership
- Parallel Streams of financing for different commodities
- Funding Gaps even when funding sources identified in a timely fashion
- Lack of a Joint Accountability Framework and integrated indicators
- Weak national PSM coordination mechanism and supply chain systems
- External TA Provision
- Sustaining momentum during the Grant Implementation phase
- Challenges with country grant implementation (e.g. changes in allocations during grant-making phase, long times between approval and signature, etc.)

The GF had committed to support integration with maternal and child health through the 2014 GF-UNICEF MOU (Scaling up community case management, 2016). This opportunity was exploited by 27 countries who included ICCM in their Malaria or HSS NFM Concept Notes. During concept note development countries were required to identify a source for co-financing of non-malaria commodities to facilitate speed in ICCM scale up. However, for a variety of factors including misalignment of timing between when non-malaria (pneumonia and diarrhea) and malaria financing was available, gaps in financing for the full ICCM package arose (Standard Concept Note, 2014), which negatively impacted on efforts to speed up scaling ICCM geographical expansion and coverage of the districts in need of ICCM. The gap in co-financing of non-malaria ICCM components was a hindrance to scale up for example in Nigeria (Scaling up community case management, 2016; Standard Concept Notes, 2014). The figure below shows the gap in ICCM co-financing of non-malaria commodity of 10 countries: Nigeria, DRC, Zambia, Uganda, Ethiopia, Ghana, S. Sudan, Burkina Faso, Malawi and Cote D'Ivoire:

Figure 2: Gap in iCCM co-financing of non-malaria commodity of 10 countries*



* Nigeria, DRC, Zambia, Uganda, Ethiopia, Ghana, S. Sudan, Burkina Faso, Malawi and Cote D'Ivoire
Source: iCCM Financing Task Team Consultants

3.1.5. Lessons Learned in iCCM Scaling Up

- Countries with strong leadership, policy support and national partnership were more successful at facilitating iCCM scale up (Legesse H., 2014; Nsona H. et. al., 2012).
- Ministry of Health (MOH) leadership, support for iCCM policy development and changes of policies based on evidence of pilots and global studies, and operationalization facilitated iCCM scale up speed, for example in Niger, Ghana and Rwanda (Mugeni C. 2014; The Global Fund New Funding Model, 2015; Dalglish L.S. et. al., 2015).
- Successful Primary Health Care programs at the community level with evident achievements served as a platform for iCCM introduction and scale up with speed, for example in Uganda, Senegal, DRC (Jarrah Z. et al., 2013; McGorman, L., 2012; Starbuck E., 2013).
- An already existing and competent pool of CHWs, integrated into the MOH staff structure and salaried, facilitated recruitment and training of CHWs to provide iCCM and supporting accelerated scale up.

3.1.6. Best Practices in iCCM Scaling Up

- **Evaluation/review and piloting of health systems strengthening innovations:**
 - Some countries undertook review/evaluation of iCCM program during the pilot and early implementation, this evidence facilitated the countries to secure additional funding to support expansion/scale up.
 - Some countries piloted innovations for: (i) iCCM supply chain strengthening; (ii) iCCM information system strengthening; (iii) strengthening of supportive supervision; (iv) quality health care services provision. These innovations facilitated support for iCCM scale up speed.
 - Zambia and Malawi undertook an evaluation study of the country iCCM program, the evidence derived from the evaluation study was used to develop 2017 – 2020 scale up plans which would double as a funding/resource

mobilizing tool.

BEST PRACTICE: RWANDA– SERVICES PROVISION

To strengthen community-level maternal and child health interventions, the MoH, in partnership with United Nations United Nations Children's Fund (UNICEF), launched an mHealth system named RapidSMS. This allows interactive communication between CHWs, a national centralised RapidSMS database, the closest HC and district hospital and in case of emergency, the ambulance driver. The RapidSMS system was first piloted in Musanze District starting in 2009, then scaled-up nationwide starting in 2013. In its first version, RapidSMS only tracked maternal health. CHWs received a mobile phone with a Subscriber Identity Module (SIM) card, a charging device, airtime and code cards. In 2012, the MoH expanded RapidSMS system to also track the post-delivery period, newborn care, childhood diseases of pneumonia, diarrhoea and malaria, immunisation, and nutrition

(Source: Ngabo et al., 2016, p. 13)

- A number of countries have also pooled available information and with support from various partners including UNICEF and USAID have developed iCCM investment cases to facilitate resource mobilization.

3.2 Scale up Speed during Early Implementation and Expansion Phases (2009-2014)

Regarding the scale up speed during the pilot (early Implementation) and expansion (2009-2014) phases, three countries – Rwanda, Ethiopia, and Malawi – achieved rapid national scale up within a period of 2 to 3 years of iCCM introduction. Majority (11) of the countries had moderate speed of 4-5 years and a few (3) were slow in scaling up iCCM, taking more than 5 years to achieve national scale up. The following factors influenced the speed of iCCM expansion and scale after the introduction stage:

▪ Country Context:

- Policy changes and operationalization received government support this facilitated iCCM roll-out;
- Existing, well-established and resourced Primary Health Care Programs at the community level served as a platform for iCCM introduction;
- An existing and established cadre of CHWs, already integrated into the MOH staff structure regardless of whether they are “volunteers” or if they are “salaried” made it easy to expand and scale up iCCM;
- Pre-existing and well-funded community health programs (e.g. Community Case Management of Malaria (CMMm), Home Based Management of malaria; Home Management of pneumonia) served as the platform for introduction and scaling of iCCM. Evaluations of the achievements and lessons learned from these programmes informed the introduction of iCCM.

- **Funding:**

UNICEF, WHO and CIDA funded the pilot/early implementation phase. UNICEF in particular played a key role in mobilization and advocacy for funding support in a number of countries (table 2). Canadian- CIDA funding through the Catalytic Initiative (CI/HSS) 2008-2013 supported iCCM scale up in six high burden countries: Mali, Niger, Ghana, Ethiopia, Malawi and Mozambique. Challenges and lessons learned through this CI/HSS provided evidence for further scale up (Oliver, K., Et.al. 2012) after 2014, which received the following support:

 - The GF funded supply chain strengthening, human resource training and health information system strengthening.
 - The iCCM Financing Task Team, a collaboration led by UNICEF with USAID, MDGHA Save the Children, JSI/MCSP, IFRC, CHAI, MSH/SIAPS, and others assisted twenty 20²⁶ countries in securing financing to implement and scale up iCCM programs. The support (iCCM Financing Task Team reports): was for
 - i. Reviewing existing child health strategies
 - ii. Development of iCCM gap analyses
 - iii. Supporting drafting of iCCM components of Global Fund malaria and HSS concept notes
 - iv. Sharing iCCM tools and providing remote and ad hoc support

3.2.1. Highlight on select countries' performance during the early implementation phase

- Rwanda had scaled-up iCCM with the greatest speed (2 years' time): iCCM was introduced in 2008 and by 2010 had been scaled up nationwide to all 30 districts.
 - **An existing launch platform of established community-based services provision:** As early as 2003, Home Based Management (HBM) of Malaria was initiated and in 2006 scaled to all malaria endemic districts with support from MoH, and partners under the leadership of the National Malaria Control Program (NMCP). The phase two was launched in 2007 this time as Community Case Management of malaria (CCMm) and was expanded to include CCM for malaria and diarrhea in 2007 when treatment with ORS and Zinc was approved.
 - **Early approval for treatment of presumed pneumonia with Amoxicillin.** In 2008, treatment for pneumonia with Amoxicillin was approved, this was rolled out as full iCCM introduction in 10 districts.
 - **Existing policy that allowed institutionalization of iCCM.** The Community Health Policy of 2007 institutionalized both the Community Health Department (CHD) and iCCM. In 2008, the Maternal and Child Health Technical Working Group (TWG), under the leadership of the CHD, emerged to manage iCCM.
 - **Reviews of success achieved with iCCM project (Kabehe Mwana) facilitated support for scale up.** In 2010 iCCM had been scaled up to all of Rwanda's 30 districts.

²⁶ Burkina Faso, Burundi, Comoros, Cote d'Ivoire, DRC, Eritrea, Ethiopia, Ghana, Kenya, Madagascar, Malawi, Mali, Mauritania, Mozambique, Nigeria, Niger, Somalia, South Sudan, Uganda, Zambia

- **Malawi:** had the second highest iCCM scale up speed among the 18 studied countries, having attained national scale up in three (3) years. iCCM was introduced in Malawi in 2008; within the same year WHO supported iCCM program implementation in 10 districts. In 2010, iCCM services were rolled out in 8 more districts. National Scale up was achieved in 2011 covering all the 29 health administrative districts. This speed of iCCM scale up was achieved due to the following (MoH Malawi, iCCM overview 2018):
 - The government of Malawi had prioritized Primary Health Care (PHC) as the main means of provision of health care services in the country and has ensured integration of PHC with MoH systems. The existing PHC services provision formed the platform for introduction and scale up of iCCM with ease.
 - An already existing established pool of Community Health Workers known as Health Surveillance Assistants (HSAs) – MoH employees under the staffing governance structure, forming 80% of the MOH staffing. The establishment of the iCCM human resource pool was easy as well performing HSAs received additional training to provide iCCM services.
 - Early adaptation of existing evidence-based policies provided a supportive policy environment.
 - The WHO and UNICEF committed support during the introduction phase of iCCM.
 - The contribution of Government of Malawi to the funding of iCCM through salaried CHWs (HSAs supplemented the funding from the iCCM pool of partners.

Factors that had hampered iCCM program scale up speed were as follows:

- Human resource: not all HSAs giving iCCM services had been trained in iCCM.
 - Some remote areas requiring iCCM services had no HSAs to give the services.
 - Stockouts of iCCM drugs had reduced uptake of iCCM services.
 - Inadequate financing of iCCM scale up despite the Government having prioritized PHC.
- **Ethiopia** (Kesetebirham 2014, Hailemariam 2014): attained national scale of iCCM program in three (3) years; hence, sharing the second position with Malawi. The iCCM was introduced in 2010 in areas that had scaled up the health Extension Program (HEP) preventive and promotive packages, achieving scale up country-wide in 2013.

The phases of iCCM introduction and rapid scale up in Ethiopia were as follows: (i) partial introduction, (ii) policy debate, (iii) systematic demonstration (reviews and studies), and rapid scale-up throughout regions across the country based on evidence gathered on successes/achievements, lessons learned etc. The iCCM program was introduced and implemented in four agrarian regions²⁷, where about 75% of Ethiopia's population lives and the population density is greater. In 2013, iCCM implementation was scaled to cover three (3) more regions²⁸ attaining coverage of all the country's seven regions, achieving national scale up.

- **Government leadership and coordinated implementation support by the**

²⁷ Amhara, Oromia, SNNP, and Tigray

²⁸ Benishangul-Gumuz, Gambella, and Afar

- development partners:** This facilitated establishment of a technical and financial support base for iCCM.
- **Success achieved by the nationwide Primary Health Care program, the HEP:** good quality implementation benefitting from skill-based training and clinical mentoring, enhanced supervision, among other initiatives to increase “implementation Strength” of the program. This supportive environment of HEP achievements in good coverage of preventive and promotive interventions served as the foundation for iCCM introduction and scale up.
 - **Large pool of well-educated existing Primary Health Care Community health workers (CHWs) for HEP program, the Health Extension workers (HEWs).** Ethiopia has the largest pool of educated/literate salaried CHWs in SSA. The ease of both assigning part of existing pool of pool of HEWs to iCCM and of their training facilitated the speed of scale up.
 - **Continuous Reviews and evaluations of iCCM project showed success in achievements and areas for improvement.** These findings encouraged a large pool of donors and partners to support the project and facilitated scale up speed.
- **Senegal** (Dia, A.T Et. al, 2016, Raharison S. Et. al.2012, Jarrah, Z. 2014): Had a phased introduction of community-based management of childhood illnesses starting in 1990 with policy change to allow treatment at the Health Hut of (i) diarrhoea using home-based fluid and ORS; and (ii) Malaria treatment using Chloroquine. Implementation of full iCCM package commenced in 2003 with a policy change to allow treatment of pneumonia using cotrimoxazole, which started off with piloting/research phase then a first and second expansion in 2006 and 2007, respectively.

Full iCCM package scale up started in 2009 with the piloting and introduction of mRDT use in the Health Hut. Within one (1) year between 2009 and 2010 the full package of iCCM including malnutrition management was scaled to cover 58 out of 69 health districts requiring iCCM at the time. In 2012/2013 iCCM had been scaled to cover all the country’s 14 regions and 72 health districts requiring iCCM services.

Even though some of iCCM packages were introduced quite early in 1990, the phased policy changes and the accompanying research at pilot stage undertaken with the introduction of malaria and pneumonia treatment delayed the speed in scale up. The phased expansion of pneumonia treatment at the Health Hut, slowed the iCCM scale up speed.

3.2.1.1. Countries with Complex Operating Environments - iCCM scale up Speed

- **South Sudan** – iCCM scaled up to cover all the counties except one (1) which has a high level of insecurity. Below are factors that contributed to the geographical scale up:
 - **Long history of Primary Health Care and community-based services.** Due to protracted insecurity/civil unrest, health services (primary health services/ community-based services) have over the years been provided through support of implementing partners i.e. international NGOs or UN agencies. It is the primary

health care/community-based health care existing systems that provided the platform for introduction/implementation of Home Based Malaria Management and later of iCCM.

- **Lessons learned from an already existing iCCM program in some counties facilitated the subsequent scale up.** South Sudan was among the first countries to introduce iCCM. In 2005, the International Rescue Committee (IRC) started iCCM implementation with support from Canadian International Development Agency (CIDA) and UNICEF, this was in 3 counties (Payinjiar, Unity and Aweil East) and in Northern Bahr Ghazal State.
- **Scale up of iCCM was unequivocally facilitated in 2013, by the GF support for Community Case Management for Malaria, and the UK's Department for International Development (DFID) complimentary support for the pneumonia and diarrhea components.** With the GF and DFID support IRC sustained and scaled up iCCM. Scale up of iCCM implementation to other counties kicked off in 2013 with the GF and DFID support.
- **Further scale up of iCCM was supported by the GF New Funding Model grant (April 2015 to December 2017),** achieving coverage of 26 counties by 2016 in 9 out of 10 states and subsequent increment of implementing partners from only IRC to five (5)²⁹.
- **Key lessons learned and achievements of iCCM program during the 2013/2014 conflict** for example from Payinjiar county further facilitated support for scale up in 2015³⁰. A study run by IRC and UNICEF found that CHWs moved with their communities when displaced and would link with HF when possible to restock supplies, thus continuing to build trust and ensuring continuity of services. The following are key highlights of lessons learned:
 - i. **Adaptability of the iCCM model** – there was sustained provision of care and resilience of the Community Based Distributors (CBD) system and supervisory mechanism during times of crisis.
 - ii. **Stockout and supply chain issues** – during crisis there was influx of internally displaced persons (IDPs), this resulted in surge of demand in catchment population and the drug stocks were insufficient despite CBDs readiness to provide care services.
 - iii. **Funding for iCCM emergencies** - The iCCM program is considered as a development program and not as mechanism for humanitarian response in emergency settings. The implementing partners had failed to advocate for iCCM funding during emergency crisis.
 - iv. **Varying perspective and understanding of iCCM in South Sudan** – the MOH perspectives varied, this was attributed to their lower involvement in the program's implementation, and how the implementation varied across partners, counties and local MoH participation.

Factors that had hampered iCCM scale up speed to be operationalized at scale were:

²⁹ BRAC – 9 counties; IRC – 4 counties; MC – 2 counties; PSI – 7 counties and SCF – 26 counties.

³⁰Integrated Community Case Management in Acute and Protracted Emergencies – Case study for South Sudan.

<https://www.rescue.org/sites/default/files/document/1740/ircunicefsouthsudaniccmcasestudyfinal.pdf>

- Limited capacity to manage referrals at health facility.
- Drug stockouts during the rainy season and when there is heightened insecurity.

3.2.2. Countries with Moderate iCCM Scale up Speed and Contributing Factors

Ten (10) countries (Benin, Burundi, Cameroon, DRC, Ghana, Mali, Niger, sierra Leone, Uganda and Zambia) took approximately 4 to 5 years to scale up iCCM to eligible districts. This was due to lack of financing resources for pneumonia and diarrhea commodities, and iCCM human resources, lack of and slow generation of evidence on country iCCM achievements which were needed to support scale up among others. Below is a demonstration of factors that contributed to moderate scale up speed in two out of the above ten countries:

Zambia: Community IMCI, introduced in 1996, laid the platform for iCCM introduction. Zambia adopted the iCCM strategy in May 2010 and introduced iCCM program to target populations in rural communities and hard-to-reach areas. The decision for introduction of iCCM had been informed by evidence from pilot studies and operations research. The Zambia Integrated Management of Malaria and Pneumonia Study (ZIMAPPS) conducted in 2008 provided the following evidence: (i) iCCM was effective in increasing treatment coverage and reducing workload in health facilities. (ii) CHWs can effectively treat malaria, pneumonia and diarrhea at the community level. (Ministry of Health, 2017)

Scale up of iCCM in Zambia was rolled out in a phased manner; factors affecting scale up speed was time taken to generate evidence on iCCM achievements, and shortfalls in financing resources:

- (i) Started off with Malaria Consortium (MC) piloting iCCM in Luapula province: implementation started in four (4) districts of Luapula Province, scaling up increased coverage to all the eight (8) Luapula province districts by 2012. This pilot further confirmed iCCM was effective in ensuring access to treatment of malaria, pneumonia and diarrhea.
- (ii) In September 2014, all ten provinces and 36 out of 105 districts had been covered by iCCM program services.
- (iii) In 2016, iCCM had been scaled to cover all 10 provinces and 65 out of 105 districts; over 60% of districts requiring iCCM services had been covered nationwide.

Ghana: Even though the country had been an early adopter of iCCM, the program scale up speed has been slow. Ghana introduced iCCM in 2010, following a policy change to allow treatment of pneumonia with antibiotics and diarrhea with low osmolarity ORS and zinc. The introduction of home management of malaria, diarrhea and pneumonia was phased as follows: (i) In 1999, Home Management of Malaria was introduced allowing treatment with anti-malarial at community level by Community Based Agents (CBAs); (ii) in 2001 treatment of diarrhea using ORS/zinc by CBAs was allowed; (iii) in 2007 approval by Ghana Health Service (GHS) allowed CBAs to treat malaria using ACTs; (iv) in 2010 National policy changed to allow CBAs to treat pneumonia with antibiotics and diarrhea with ORS/zinc.

With support from UNICEF, Ghana had scaled up iCCM to cover 55 out of 216 districts (26%) in 2012. Ghana had planned to scale up iCCM from 4 regions to all ten (10) regions between

2014 and 2017; in 2016, Ghana had scaled up iCCM implementation to 176 (81%) of 216 districts in all ten (10) regions, however this was limited to underserved communities.³¹

3.2.3. Countries with Slow iCCM Scale up Speed and the Contributing Factors

Some countries experienced non-achievement and failures due to weaknesses in the operationalization of their respective iCCM strategies and inadequate funding. To be on course, these countries have been systematically revising their iCCM implementation strategies based on the lessons learned from their own pilots and other countries' experiences to undertake scale up thereafter. An example is Burkina Faso:

- **Burkina Faso:** A CCM strategy was launched in 2003 for malaria, diarrhea and malnutrition and was used as the platform for a limited introduction of iCCM in 2008 with support from the Bill and Melinda Gates Foundation for implementation until 2013. iCCM (malaria, pneumonia and diarrhea) was introduced and implemented in two (2) districts in the North and Central regions while CCM for diarrhea and malaria was implemented in 7 districts.

According to this study, the iCCM program implementation³² established that Burkina Faso experienced gaps in Government's political with no firm commitment due to concerns regarding feasibility and sustainability of the program; this lack of government firm support resulted in the country experiencing some weaknesses in services delivery. Based on the lessons learned and findings identified by the evaluation, it was decided the way forward was to re-design iCCM program in Burkina Faso. The Government of Burkina Faso decided to scale up iCCM to 5 regions by 2017, covering 22 districts of the 70 districts in need of iCCM services, which was 31% coverage. By end of 2017, iCCM had been scaled to 28 districts with support from UNICEF Country Office³³.

3.2.4. Countries who introduced iCCM Later than Others

Two countries: Both Kenya and Nigeria introduced iCCM programs later than other countries in 2013 and have continued to lag behind other countries due to some unresolved issues illustrated below.

- I. **Kenya:** has not been implementing full iCCM and the scale up speed has been hindered by a number of factors (Juma A.P.2015):
 - **Slowness in reviewing and/or developing policies to support treatment of pneumonia, diarrhea and malaria by CHWs:** Kenya's policy change for iCCM in Kenya has lagged behind compared with many other Sub-Saharan countries. Without policy review and/or development there was no support for CCM for pneumonia and very few policy documents articulate support of CCM for diarrhoea and malaria.
 - **Lack of coordination among partners and donors, and inadequate funding for implementation.** This has contributed to resistance to broadening the iCCM policy to allow CHWs to dispense antibiotics based on lack of local evidence.

³¹ National iCCM Implementation Plan for Ghana: Key components, strategies and challenges. Dr. Winfred Komla Ofusu. Presentation at Southern Sun Mayfair Hotel, Nairobi.

³² Bernadette Daelmans et al. 2016. Integrated Community Case Management of Childhood illness: What have we learned? Am. J. Trop. Med. Hyg., 94(3), 2016, PP 571-573

³³ UNICEF Annual Report 2017

- **Lack of evidence on successes of Community Case Management:** Policy makers have had concerns especially on the fit of iCCM in the local health system. The country would like evidence on how global level efforts to support community health services have been informed by local evidence and tailored to reflect differing needs and contexts in the country.
 - Restrictive government policy on drug administration by CHWs.
 - Retention of CHWs is a challenge.
- II. **Nigeria:** introduced iCCM in 2013 with implementation in four (4) states: Through Canadian funding/WHO Global Malaria Program (GMP), iCCM was implemented; (i) under RAcE Project in Niger (25 Local Government Areas), and (ii) in Abia (15 Local Government Areas) under Society for Family Health (SFH) an affiliate of Population Services International (PSI).

In Kebbi and Adamawa states UNICEF and National Primary Health Care Development Agency (NPHCDA), have been implementing iCCM as part of UNICEF's broader support for Maternal and Child Health Program.

The Global Fund financed the scale up of iCCM in Niger and Kebbi states between 2015 and 2017; in 2016 the grant to the NMEP was frozen. The Global Fund funding for iCCM scale up was limited to only two states due to unavailability of co-financing for non-malaria commodities (drugs and supplies for diarrhea and pneumonia) in the remaining states. This was the main factor that hampered the speed of iCCM scale up in Nigeria.

However, given Nigeria's resources, this lack of co-financing also indicates a lack of national prioritization for iCCM since national finances could easily cover the small diarrhea and pneumonia needs.

3.2.5 Scale-Up Speed for the iCCM implementation Period 2014-2017

Studies undertaken to provide evidence to inform policy change and funding support for increase in iCCM scale up speed, include the highlighted below:

- Country specific studies, reviews and evaluations of iCCM program: Ethiopia (Legesse H., et.al 2014); Rwanda (Mugeni C. et.al., 2014); Zambia; Burkina Faso; Uganda (Mubiru D. et.al. 2015; Mercader F.H. et.al. 2014); and South Sudan; provided information that facilitated funding for scale up. Multi-country studies undertaken included one for Uganda, South Sudan and Zambia (Strachan C. et.al. 2014).
- iCCM costing studies (Jarrah Z.,2014, Collins D. et.al 2014 et.al 2014, Diaz T., 2014) were undertaken in Zambia (Corazzini L. et.al 2014), South Sudan, Cameroon, DRC, and Sierra Leone. They provided evidence on costs and financing for iCCM to facilitate/advocate ministries of finance and donors to fund iCCM scale up.

3.2.5.1. Additional Funding from Global Fund for Facilitation of iCCM Scale up Speed

The iCCM Task Force led by UNICEF supported 28 countries to integrate iCCM into their Global Fund NFM grants (malaria and HSS) of which seven³⁴ due to their size and scope of programming received additional intensified funding support. Justification/argument for additional funds from GF NFM for iCCM scale up was based on the following lessons learned derived from country iCCM experiences and studies:

- **Health impact:** iCCM expands access to treatments for malaria, pneumonia and diarrhea; has the potential to reduce overuse of ACTs and increases malaria treatment rates. iCCM is more effective than malaria CCM alone in reducing all-cause mortality.
- **Co-financing:** Maximization of co-financing chances and acquisition of co-financing. The largest co-financiers of iCCM program are: UNICEF, UK/DFID, Canada/DFATD, the RMNCH Trust Fund, and the state/national governments.
- **Supply Planning:** Timely and *coordinated* procurement and distribution of malaria and non-malaria commodities will lead to cost-efficiencies and ensure effective iCCM roll-out.
- **Indicators:** iCCM indicators should be consistent with pre-approved national child health indicators and benefits from being integrated as opposed to keeping malaria, pneumonia and diarrhea indicators separate.

3.2.5.2. iCCM Financing Task Force Achievements

The iCCM Financing Task Force with UNICEF leadership achieved the following³⁵:

- Supported twenty-eight (28) countries in sub-Saharan Africa to integrate iCCM into Global Fund malaria and HSS concept notes; Twenty-seven (27) submitted Global Fund concept notes which included an iCCM component.
- Contributed to mobilizing over \$80 million for iCCM through the Global Fund and co-funders across 12 countries (Burkina Faso, Burundi, Cote d'Ivoire, DRC, Ethiopia, Ghana, Malawi, Mali, Niger, Nigeria, Uganda, and Zambia). This includes validated GF commitments across the 12 countries and validated commitments from co-donors across 6 countries. Additional funding across the remaining 15 countries has also been mobilized (exact figures to be determined).
- Developed and disseminated various iCCM programme implementation tools and guidance to strengthen the case and support for iCCM programming.
- Established strong partnerships and coordination mechanisms between iCCM FTT members, UNICEF, the Global Fund, and other key stakeholders on strengthening child health and community health platforms and building resilient health systems.

3.3. Expansion of access and equity of health services through iCCM Programs

3.3.1. Components of iCCM Implemented

³⁴ Burkina Faso, DRC, Ethiopia, Nigeria, Uganda, Zambia and Cote d'Ivoire

³⁵ iCCM Financing Task Force Final Report

Seventeen (17) of the 18 iCCM country programs assessed offered uncomplicated malaria, pneumonia and diarrhea treatment; and referred malnutrition after assessment and neonatal cases. Kenya iCCM program is only treating malaria and diarrhea; suspected pneumonia and malnutrition cases are referred. Malawi additionally treats red eye.

3.3.2 iCCM Coverage for Achievement of Access and Equity of U5 Health Services

At the time of this evaluation, all the 18 Sub Saharan Africa (SSA) countries studied were already expanding/scaling up iCCM coverage. However, they were all at different levels of iCCM coverage. Countries had different eligibility criteria for areas to be covered by iCCM services, below are factors governing iCCM coverage and equity in access to services:

3.3.2.1. Distance from a primary health care facility as a selection criterion for areas targeted for iCCM

The Standard recommended distance of villages located 5 kilometers from health facility was applied by majority of the countries for mapping communities/villages to benefit from implementation of iCCM (Integrated Community Case Management 2010; The Global Fund New Funding Model 2015; Doherty T. et.al., 2014; Federal Ministry of Health Nigeria, 2013). Apart from distance some countries also apply other criteria to define “hard to reach” such as geographical, physical or seasonal inaccessibility. The 5 kms is already a great distance to walk when seeking care³⁶. Only a few countries have undertaken evaluations of coverage achieved with iCCM services and the effect the distance to Primary Health Care facilities has on uptake of iCCM services and referrals adherence. However, numerous agencies including WHO and UNICEF have weighed in to make the standardized recommendation 5 Kilometers even if other countries might use a longer distance; for example, Malawi’s 8 Kilometers:

Malawi - Since 2013, Malawi had been scaling iCCM countrywide in all the 28 districts using the following criteria: (i) distance to the nearest health facility of 8 kilometers (KMs) or more; (ii) Difficult in access because of geographical terrain or natural barriers. However, after five years of implementation (since 2008), an evaluation undertaken by the country found that: “women did not identify distance from a provider as a barrier to health care”. The study suggested that targeting of iCCM areas based on geographic barriers should be reconsidered (Amouzou A, Et. al. 2016). This finding has informed a policy review/update as well as standardized global recommendations, and as of 2015 the distance to the nearest health facility has been revised to a distance of 5 Kilometers in order to optimize service delivery to children under-five years old in need of iCCM services (National iCCM Malawi, micro-planning report 2015. MoH and PSI).

3.3.2.2. Achievement in Access to services - Adherence to International Standards for Selecting iCCM Sites

Countries had applied different criteria for selection of districts/regions to benefit from iCCM services: Uganda and Zambia selected rural districts with high U5 mortality rate and left

³⁶(Otieno SO, Macharia D. Factors influencing utilization of health services in Kenya: the case of Homa Bay County. IJPHS. 2014; 3:213–223)

out urban districts; whereas Ethiopia implemented iCCM in all regions in the country. Documented evidence shows that areas without Health Centers or road access to vehicles had higher utilization of iCCM services, indicating that iCCM strategy addresses inequitable access to case management (Ashenafi A., 2014).

Scaling-up iCCM services to all regions/districts or areas within the regions/districts that require/need iCCM services (nationwide).

Out of the eighteen (18) study countries in SSA only seven (7) were implementing iCCM at scale nationwide (see table 3). Some countries achieved this nationwide scale up within 2-3 years for example Malawi, Rwanda and Ethiopia (Doherty, T. et.al. 2015; Langston A. 2014; Ajema W. et.al. 2014,). The factors which facilitated rapid national coverage are captured in this study in the country desk review reports (6 Case Studies) and in-depth field studies (6 deep dive countries). One key determinant that facilitated rapid national iCCM scale-up was a pre-existing Primary Health Care Program with an established cadre of Community Health Workers.

Findings from iCCM program evaluations, studies and reviews show that even though countries had achieved national coverage with iCCM services, there were some equity/access gaps for example in Malawi care takers had issues with access to iCCM services because the village clinic was open two days in a week (Government of the Republic of Malawi, 2016); and in Ethiopia far flung nomadic areas such as the Affar had the highest under five mortality rate and low population density in the country, therefore adjustments had to be made to the program implementation arrangements in these regions to ensure equitable coverage with iCCM services (Legesse H. et.al. 2014).

3.3.3. Challenges Encountered in Achieving Equity & Access of iCCM U5 Health Services

Countries are striving to achieve expanded/scaled iCCM to attain national coverage and accessibility of health services for management of U5 illnesses. However, this is hampered by various factors as demonstrated by the country examples below:

- ***Demand creation and community sensitization:*** Ethiopia's iCCM program was rolled out comprehensively to all health posts (at scale), to attain the targeted populations' access to U5 health services; however, utilization of the services did not increase as expected. Ethiopia's iCCM program had not generated levels of demand and utilization sufficient to achieve significant increases in intervention coverage and a resulting acceleration in reductions in child mortality (Amouzou A., 2016).
- ***Access:*** Studies had found the selection criteria used to identify areas to benefit from iCCM services omitted consideration of the following factors, which had affected access to U5 health services: (i) distance to the iCCM CHW; (ii) socio-economic factors for example costs for transferring a sick child to the referral center. (Ashenafi A. 2014).
- ***Links between community health programmes and health facilities:*** An iCCM program assessment in Malawi in 2013 found that the health system support had not reached

the level that would achieve the expected increases in coverage levels for referral treatment of pneumonia, malaria, and diarrhea (Callaghan-Koru J.A., 2013).

- **Availability of all iCCM commodities:** In Uganda, an evaluation study done in 2015³⁷ found less than 10% of the CHWs had all the four-iCCM drugs for treating malaria, pneumonia and diarrhoea. Over 90% of the CHWs could not effectively treat all the childhood conditions targeted under iCCM, an indication of low access of U5 services from iCCM.

3.3.3.1. Factors impeding CHW availability to provide iCCM Health Services:

CHW availability to provide iCCM services at any time they are required/needed was hampered by the following barriers:

- **The required ratio of CHW to population had not been achieved by the majority of countries.** For example in Malawi, while the objective is 1 CHW per 1,000 population in some places the ratio was 1: 1,500 and in some places 1: 2,000 (Doherty T. et.al., 2014). Only a few countries had a large pool of trained CHWs for example Rwanda and Ethiopia; however, their services were under-utilized. Malawi had inadequate numbers of CHWs offering iCCM services. In order to reach the required ratio, Malawi needs to train more than 7,000 new CHWs (Government of the Republic of Malawi 2016). Zambia also has insufficient numbers of CHWs: the required CHW to U5 population ratio is 1:500 but nationwide the average ratio is 1: 2,000 (Strachan et.al 2014).
- **Limited time for iCCM services provision per week based on CHW schedule of work (salaried).** Countries had assigned CHWs to provide iCCM services in addition to undertaking other primary health care interventions under preventive and promotive services e.g. reproductive health and immunization services among others. In Malawi and Ethiopia where CHWs are employees of the MOH, CHW schedules were split to provide different types of service in certain days of the week, for example:
 - (i) In Malawi, the Government required a CHW (HSA) to be assigned only two (2) days in a week to offer iCCM services at the health post; thus, when a child falls ill on a day when the CHW was not at the health post providing iCCM work, these services are supposed to be offered on demand. However; “on demand” is not practical because majority of the HSAs reside outside their service areas. The above arrangement reduced accessibility of iCCM services. (Nsona H. et. al., 2012)
 - (ii) In Ethiopia, the policy requires one HEW (CHW) to remain at the Health Post (HP) Monday-Friday, 35 hours/week to improve utilization of maternal and child health (iCCM) services delivered at the HP. However, the 35 hours a week of iCCM services provision was reduced as both HEWs could be absent due to meetings, trainings given or received, campaigns, or personal reasons, among other reasons. According to an iCCM implementation strength and quality of

³⁷ Bagonza et al. 2015. What influences availability of medicines for the community management of childhood illnesses in central Uganda? Implications for scaling up the integrated community case management programme. BMC Public Health (2015) 15:1180

care assessment by JHU-IIP in West Hararghe and Jima Zones in Oromia Region, HEWs self-reported that the HPs were open on average 20 hours per week. This limited time meant inaccessibility of iCCM services to some extent. (Hailemariam Legesse et. al. 2014)

- **CHWs were absent on the days and times, they were scheduled to provide iCCM services (salaried and Volunteers):** This had a negative effect on accessibility of iCCM services. CHWs in some countries – particularly where they were not salaried – absented themselves from duty including undertaking personal duties such as income generating work, thus being unable to provide iCCM services. This was the case in Kenya where volunteer CHWs could not provide iCCM services as they were busy with income-generating activities (Kabue, M.M., 2016). In Malawi, 51% of HSAs were not living in their catchment areas (Government of the Republic of Malawi. 2016). In Ethiopia, caregivers indicated the reason for not using iCCM services was that the CHWs are absent at the health post (Shaw B., et.al 2016).

BOX: Availability of CHWs and Effect on Accessibility of iCCM Services

When CHWs are volunteers, they often provide services from their homes and/or from health posts built for them from the community. However, this does not preclude their need to engage in “economically productive activities/work” or farming or other activities in order to be sustain their livelihoods^a. This requirement reduces the number of hours available to provide iCCM services e.g. In Madagascar, CHWs spent an average 2.60 hour per child <5 years diagnosed with malaria to provide care (including consultation, administration of medication, follow-up of the cases and commodity (re)supply).^b

^a In Madagascar, among a survey of 31 CHWs, the median monthly income was \$90/month. Source: DEMONSTRATION PROJECT ON THE INTEGRATION OF PNEUMONIA TREATMENT WITH MALARIA CASE MANAGEMENT AT THE COMMUNITY LEVEL IN MADAGASCAR: COSTS AND COST-EFFECTIVENESS ANALYSIS. UNICEF. May 2017 (unpublished but shared with Gates Foundation)

^bSource: DEMONSTRATION PROJECT ON THE INTEGRATION OF PNEUMONIA TREATMENT WITH MALARIA CASE MANAGEMENT AT THE COMMUNITY LEVEL IN MADAGASCAR: COSTS AND COST-EFFECTIVENESS ANALYSIS. UNICEF. May 2017 (unpublished but shared with Gates Foundation)

- **Non-participatory/involvement of communities in selection of iCCM CHWs:** In some communities across countries, there was documented evidence of no ownership and support to iCCM CHWs resulting in low demand and use of iCCM services. While countries’ iCCM policy documents and guidelines had defined the approach, methods and criteria for CHWs selection for example: Nigeria, Ghana, and Uganda studies did show that these guidelines and criteria were not always applied. Still other countries imposed iCCM CHWs onto the Community for example Malawi and Ethiopia, whose CHWs were salaried employees of MOH (Strachan C., et. al., 2014, Federal Ministry of Health, 2013, Nefdt R., 2014).

3.3.3.2. Interrupted Supply of iCCM drugs and Supplies

- **iCCM Supply Chain – stock-outs (interrupted supply):** All countries included in this review have documented stock outs of iCCM commodities at one point or another during an implementation year. This had negatively affected access and equity of iCCM services. For example, in Ethiopia, caregivers indicated they do not use iCCM

services at the health post because iCCM medicines and commodities were not available (Amouzou A., 2016). In Ghana, stock-outs of iCCM drugs were found to be a contributing factor to low utilization of iCCM services (Blanca E.F., 2016). Stock out of any of the iCCM commodity negatively affects perception of quality of services.

3.3.3.3. Inadequate BCC and Sensitization (Demand Creation): Effect on Access to and Uptake of iCCM Services

In addition to factors contributing to low uptake of iCCM services: i) recent policy introduction/implementation; ii) geographical limitations (piloting); iii) lack of sufficient CHWs; iv) drug stock-outs; there was inadequate behaviour change communication (BCC) and sensitization. For example, in (i) Ethiopia perception of quality of iCCM services lagged behind the rapid improvements that were taking place during scale up³⁸; (ii) in Rwanda there was lack of technical expertise in operationalization, and lack of finances for implementation³⁹.

3.3.3.4. Lessons Learned in iCCM Services Coverage for Equity in access to U5 Children health services

The below is what was learned and recommendations:

- The health system support with most direct impact on effectiveness and coverage of the iCCM program for achievement of equity is an uninterrupted drug supply.
- Evaluation studies show BCC has done little in achieving a shift in utilization of iCCM services, for example, in Ethiopia, Malawi, Rwanda^{30, 31}; lack of emphasis in generation of community demand in Burkina⁴⁰; in Ghana lack of funding for BCC and demand creation strategies.⁴¹
- Low health seeking behaviour contributed to low service utilization during the expansion/scaling up phase, this is because more attention was given to building technical capacity of CHWs, Supervisors and drugs/supplies distribution; and missed to emphasize on BCC and demand creation by creating awareness on available iCCM services. For example, in Burkina Faso, during the period 2008 to 2013, the under-five sick children seen by CHWs for iCCM health care services (malaria, pneumonia and diarrhoea) was very low; in urban areas it was only less than 1% and 1%– 9% in rural areas respectively. The mostly given responses for not taking a sick child to the CHW were: not knowing the CHW (78% in urban areas; 33% in rural areas); preferring the health centre services (23% and 45%, in urban and rural areas respectively). Low iCCM attendance can be related to weaknesses within the program, such as frequent and frustrating drug stock outs, inappropriate selection of CHWS for example in Uganda the village health team (VHT) candidates, and inadequate performance of VHTs; limitation in access to healthcare because of periodic migration/absence of VHTs without prior notice to the supervisor or community.

³⁸ iCCM at Scale in Ethiopia: evidence and experience. Ethiopian Medical Journal October 2014, Volume 52, supplement 3

³⁹ National community health strategic plan July 2013 – June 2018. Ministry of Health Rwanda

⁴⁰ Druetz Thomas et.al. 2015. Utilization of CHWs for malaria treatment. Malaria Journal. Doi 10.1186/s12936-015-0591-9

⁴¹ Evaluation of UNICEF's Integrated Health Systems Strengthening (IHSS) program in Ghana. UNICEF Evaluation Brief No. H2 March 2015)

- Distrust and personal issues between CHWs and community members, for example in Uganda distrust aggravated program rejection and if individual VHTs were believed to practice witchcraft this could pass on negative energies to community members
- Demand creation for iCCM services: Study findings had proven evidence of achievements in increased iCCM services utilization through behaviour Change Communication (BCC) for health services seeking for example in Zambia and South Sudan (Strachan C., 2014).

BOX: LESSON LEARNED EQUITY IN ACCESS OF ICCM SERVICES FOR U5 CHILDREN

The BCC and demand creation initiatives would not do much to improve uptake of iCCM and equity in provision of services to the most disadvantaged/marginalized/most in need, unless CHWs and iCCM commodities are available whenever they are needed, and the community approves the quality of services provided (Supply and Demand)

3.4. Policy, Leadership, Coordination and Integration

3.4.1 Policy

3.4.1.1. Achievements in Development of iCCM Policies

There have been a few achievements in policy development and implementation compared to challenges encountered:

- Majority (over 80%) of the reviewed countries had policies supporting the delivery of iCCM for U5 care for malaria, diarrhea and pneumonia by CHWs (George A., 2015).
- A few countries for example Rwanda, Niger and Ethiopia had been successful in attaining successful iCCM implementation at scale because of the approach used during the iCCM policy development and policy changes that involved key stakeholders and partners at the national and lower levels, this facilitated buy-in and support for iCCM (Kumanan R., 2014).
- Country context played a key role during policy development and operationalization; hence, the diverse progress achieved across countries. Countries that had already established successful Primary Health Care programs and community-based interventions easily embraced iCCM treatment of children illnesses by CHWs; and have applied this previous experience in the implementation of their iCCM programs. This is evident in Senegal, Malawi, Ethiopia, Niger among others.
- A few countries had successfully piloted m-Health (mobile phone technology) and had made policy decision to use it as a means of facilitating and strengthening core aspects of iCCM including data management, supervision and stock management. There is evidence m-Health's utility was useful in addressing majority of the bottlenecks being encountered in iCCM program implementation in the following countries: Ethiopia, Rwanda, and Malawi among others.

3.4.1.2. Challenges/gaps in Development and Operationalization of iCCM Policies

Reviews of iCCM programs implementation in SSA countries with iCCM policy and guidelines in place identified two key bottlenecks to iCCM policy implementation/operationalization at scale:

- Sustainable financing of iCCM, especially at national level from the government, private sector, community insurance among others; and
 - Integration of iCCM systems into national health systems.
- The major challenges/gaps encountered by countries in the implementation/operationalization of iCCM policies for achievement of planned scale up speed and access to services had been on the following:
- Interrupted supply of iCCM drugs and commodities;
 - Low utilization of iCCM services by community members;
 - iCCM human resources (CHWs and supervisors) capacity and retention;
 - Quality of iCCM service delivery;
 - Simultaneous financing of all iCCM commodities to be able to deliver the full package;
 - Monitoring: non-aligned iCCM/HMIS indicators (i.e. often just the malaria indicators are being tracked), low CHWs literacy level, low levels of reporting from community level, poor quality of data, iCCM data not integrated with HMIS etc.
 - Evaluation and review of iCCM services.
- The few reviews that have been undertaken of iCCM policy implementation established that many of the challenges encountered were linked to the approach and process used for policy development and/or of making policy changes. Often only relevant staff at the MOH headquarters and global partners have been engaged in the development of iCCM policy. The omission of the following institutions during the iCCM policy development stage are often the root cause of challenges encountered during implementation (Kumanan R., 2014):
- Departments/sections of the MOH responsible for health financing and human resources decisions;
 - Ministries of Finance, key to government's iCCM financing decisions and obligations;
 - Devolved levels of the MoH, implementers i.e. district/health facility level required to support, coordinate and supervise iCCM implementation;
 - Communities and CHWs (ownership and support of the iCCM program for increased demand for services).
- There are number of places that charge user fees either openly or under the table. This is mostly linked to countries that do not have social health insurance schemes. There are also differential costs across the iCCM commodities for example sometimes the malaria services are free but there is a charge for pneumonia and diarrhea. Countries in West Africa for example Burkina Faso charge user fees for iCCM services and mark-ups on commodities; this risks a decline in utilization of iCCM services.

3.4.1.3. Lessons Learned: iCCM Policy Development and Operationalization

Below are the key lessons learned that provide information to guide the way forward in ensuring a future for iCCM:

- **Mobilization of local resources for iCCM funding and integration of iCCM into MOH systems.** Reviews undertaken of iCCM programs across countries identified, that in general, Ministries of Finance had not been engaged during discussions and decision

making on iCCM policy and financing. This is the responsibility of the Ministries of Health (Kumanan R., 2014). Interviews undertaken during the in-country studies confirmed that the teams engaged in decision making throughout the various phases of iCCM programs did not include high level decision makers at the MOH such as the Minister of Health policy makers nor the Ministry of Finance.

3.4.2. Country Government Leadership in iCCM Scale Up

3.4.2.1. Achievements in Government Leadership to iCCM Introduction and Scale up

- Evidence from documents and interviews indicate four countries attributed their rapid expansion and scale up of iCCM program to support from their political leadership: Ethiopia, Malawi, Mali, Niger, and Rwanda.
- All the 18 study countries, had in place, the National iCCM Taskforce and Steering committee, chaired by MOH (Minister for Health or Permanent Secretary), its membership was drawn from donors (multilateral and bilateral) and implementing partners, mainly NGOs, FBOs and CSOs. The iCCM Technical Working Groups (TWGs), which is the technical implementer and coordinator of the program, comprises heads of MOH key Departments and relevant Program Units such as NMCP/NMEP, Child Health, Primary health care, Community health program coordinators, NGOs, FBOs and CSOs and private sector representatives.
- TWGs and implementing partners, have provided essential and effective forums for harmonization and coordination of the iCCM program's advocacy efforts, sharing and application of existing tools, developing common resources, and use a common organizing framework for iCCM implementation. At the national, regional and/or district levels, some countries, have put in place iCCM TWGs structures (replica of the national-level) that have been instrumental in sub-national planning, programming and coordination activities of iCCM program supporting HFs and CHWs supervision, commodity supplies, monitoring and BCC program activities.

3.4.2.2. Challenges to Government and MoH Providing Leadership to iCCM Introduction and Scale up

In contrast, some countries such as Benin, Burundi, Kenya, DRC and Sierra Leone and Nigeria, had been struggling to expand iCCM program access nationally.

- **Kenya** - For instance, recent studies have noted that, despite Kenya's having an elaborate Community Health Strategy (CHS) in place, the country lags behind many other countries in implementing iCCM across the country; several inherent shortcomings related to leadership commitment in supporting policy change, enactment of CHS, there is no support of CCM for pneumonia, and especially remunerations of CHWs have impeded Kenya's progress in program implementation. (Sara et. al. August 2013), these findings were confirmed by another study on Kenya's iCCM policy and implementation barriers in June 2014 respectively (Pamela Juma et. al. 2014). Currently, Kenya iCCM program implementation has progressed, the Maternal and Child Survival Program (MCSP) provided technical support for the review of child and adolescent health policy. The MCSP had supported dissemination of pneumonia treatment policy guidelines, collaborated with UNFPA in the roll out of

iCCM in Migori County⁴². The UNICEF Kenya Country Office has supported the National Malaria Control Program (NMCP) to roll out iCCM implementation in eleven (11) counties. The Community Case Management of Malaria (CCMm) is supported by GF and Presidential Malaria Initiative (PMI), and UNICEF provides antibiotics, ORS/zinc and respiratory timers for Community Health Volunteers (CHVs) implementing iCCM in eleven (11) counties. However, the CCMm and iCCM has not been done⁴³.

- Documented findings have indicated that weak engagement of other key relevant policy makers, such as Ministry of Finance (MoF) in policy discussions, was a bottleneck to iCCM scale up. This being a failure across much of health programming, advocacy is required to initiate MoFs' engagement in iCCM policy operationalization discussions to facilitate allocations of Government financing support.
- Documented evidence indicates that several stakeholders – such as communities, CHWs and civil society who generally held positive positions regarding iCCM policy and could have helped support implementation and uptake, were not engaged as leaders.

3.4.2.3. Lessons Learned in: Government and MoH Providing Leadership to iCCM Introduction and Scale up

- Whereas, high-level government leadership is important in driving policy changes necessary for program implementation, experience from countries that embraced policy changes (that are necessary for program support), show that the most critical actors in driving iCCM policy development and implementation, are the technical officers within MOH, supported by key development partners, particularly WHO and UNICEF and, to a slightly lesser extent, USAID and its collaborating. For example, during policy making processes in Rwanda, Ethiopia, Malawi, Mali, Zambia and Niger there were reports that senior MoH policymakers, particularly those with a clinical background, were initially resistant to iCCM program due to concerns about entrusting CHWs with treatment of more complex conditions, and it took time and effort to convince them of the benefits of this strategy. Once, these cadres of health staff consented to supporting policy reform, the processes proceeded and were completed with speed. Integration of iCCM requires engagement of leadership at all levels for sustainability:

BOX: LESSONS LEARNED – LEADERSHIP AND INTEGRATION

“It is also significant to note that technical officers are also coordinators and field implementers, therefore their buy in is critical for sustainability of the program. It also be noted that support for iCCM varied across different MoH technical units and depended on where responsibility for iCCM was located within the ministry”^a

^aSara Bennett, Asha George et. al. 2014

⁴² Kenya Country Summary. March 2017 MCSP

⁴³ PMI (Kenya) Malaria Operational Plan FY 2018

- The Rwanda MOH together with international partners established Technical advisory group (TAG) that included community leaders, iCCM champion and CHW representation, they were involved in conducting needs assessment and situation analysis for package of services. They conducted Stakeholder meetings to define roles and facilitated discussions of current policies and policy change where necessary (Health Policy and Planning, December 2015).
- Countries and Partners need to intensify investments in advocacy at the government's highest levels and MOH technical units to ensure leadership support for both external and internal resources mobilization. With expansion/scale up of iCCM, new donors and implementing partners are joining to support the implementation and the TWGs coordination mechanisms will need to be sustained. In some countries the TWGs were not meeting as required due to lack of funding, for example in Malawi the Global Fund had to start providing support for the meetings. The ability of TWGs to harmonize monitoring practices is possible when the MOH exerts leadership and is able to bring partners in line with appropriate policies, and when institutions relevant to iCCM are reformed.

3.5. Costing and Financing of iCCM Program

3.5.1. Introduction – funding for iCCM

This study and the findings from many other previous studies, noted that full implementation of iCCM programme, required large amounts of investments and many countries have been struggling to raise sufficient funds for not only expanding or scale up of the program, but also to fund the overall MOH health care interventions. Adequate funding for iCCM, is critical to address multiple factors that influenced access, quality, demand and other contextual barriers that affected services delivery at community level. These barriers include: (i) the geographical nature of hard to reach areas for example unavailability or non-functional physical infrastructures, roads and transport; (ii) human resource and appropriate skills (recruitment and training adequate CHWs); (iii) community awareness and social mobilization; (iv) commodity procurements and distribution support; programmer management, supervision and monitoring among others.

In efforts to improve funding and financial management for implementing iCCM geographical coverage and access to treatment for children under five years, a number of study countries have made policy changes and financial reforms that have worked in terms of scaling up of the programme during the last few years. However, due to high investments requirement for implementing iCCM to scale, and also given the limited government resources, this study established that a number of countries were hesitant to venture into large scale implementation of the programme. Hence, in all study countries, donors and other external partners have been the major sources of financing iCCM. In addition, this study has established that countries' capacity for tracking the results and capturing data from community level on the performance of life-saving results of iCCM implementation has been a key challenge for planning and resource investment.

Despite reported general successes in scaling up of iCCM programme in several study countries, by the time of this study (November 2017), only about 7 countries had managed to achieve national scale up of the program.

3.5.2. Success in iCCM funding and costing

The iCCM funding landscape comprises country governments, donors and development partners. For the period 2014 -2017, major donors and development partners such, UNICEF, WHO, GF, CIDA (Canada), USAID/PMI, DFID, World Bank and the Bill and Merinda Gates Foundation, increased their funding and technical support for implementing iCCM packages in all the 18 countries covered by this study. One specific iCCM project was the Canada-financing Rapid Access Expansion project (RAcE) implemented by the WHO between 2013 and 2017 covering DRC, Malawi, Mozambique, Niger, and Nigeria, which was a major boost for support to the expansion of iCCM in these countries.

RAcE partners were given logistical, technical and financial support to implementing countries for iCCM scale-up. As a result, over 8.2 million children under 5 were diagnosed and treated for malaria, pneumonia and diarrhoea as well as training for 8420 community health workers in RAcE-supported sites between 2013 and 2017. Each country also has updated their national policies to facilitate iCCM scale-up. The project generated solid evidence on iCCM programme implementation through research on supervision, motivation of community health workers, quality of care, supply chain management, and the use of innovative tools such as mobile phone applications. The project facilitated country-ownership including development of sustainability plans to be able to hand over the programme to implementing countries

3.5.4. Global Fund support to iCCM

Since 2014-2017, the Global Fund, through the New Funding Mechanism (NFM), played and continue to play a leading role in funding for Malaria, TB and HIV including substantially supporting health systems and community systems as cross-cutting enablers to iCCM implementation. During the 2014-2017 allocation periods, the GF committed substantial NFM grant for the first 61 grant recipient countries and by October 2016 a total of \$ 3.4 billion in NFM funding was had been committed, out of which over 80% (\$ 2.8 B) in support of the WHO Global Technical Strategy (GTS) for malaria core interventions covering vector control and case management combined with case management. 57% of funding was allocated to support public sector facility-based treatment as a critical priority for Global Funding, within the same NFM grants, GF allocated 14% of case management funding for supporting iCCM platform in 38 countries; the GF NFM grant also supported the private sector case management interventions with a similar fiscal amount as iCCM covering 18 countries. Through the above allocation window or “incentive finding” NFM grant; in October 2016, 28 countries were awarded funding which supported community health systems and country innovations to support robust disease interventions. The GF also provided ‘incremental’ awards to assist countries fill major outstanding gaps in their funding landscape⁴⁴.

⁴⁴ Ref: African Leaders Malaria Alliance, 2016: A review of recipients’ decisions under the Global Fund’s New Funding Model, 2014-2017

The initiative for Integration of iCCM funding was also realised in October 2016, when external partners agreed to create the iCCM Financing Task Team (iCCM FTT) led by UNICEF through a Memorandum of Understanding (MOU). The iCCM FTT support initiative covered 28 countries which integrated iCCM into their Global Fund NFM grants (malaria and HSS) of which 27 countries submitted Global Fund concept notes which included an iCCM for funding. Through this joint initiative, integrated funding allocations for iCCM improved remarkably as demonstrated below:

- \$80 million was contributed by GF and co-founders for iCCM implementation across 12 countries (Burkina Faso, Burundi, Cote d'Ivoire, DRC, Ethiopia, Ghana, Malawi, Mali, Niger, Nigeria, Uganda, and Zambia). This included validated GF commitments across the 12 countries and validated commitments from co-donors across 6 countries. By the time of this study, an additional funding across the remaining 15 countries had also been mobilized.
- Development and dissemination of various tools and guidance to strengthen community case management including iCCM programming;
- Establishment of strong partnerships and coordination mechanisms between iCCM FTT members, UNICEF, the Global Fund, and other key stakeholders on strengthening child health and community health platforms and building resilient health systems.

Against the backdrop of huge funding gap experienced by the study countries, the external funding partners encouraged grants recipient countries to adopt prioritized model of planning and resource allocation to ensure deserving health interventions were not left out from funding support. For instance, the Global Fund, through NFM grant, countries were guided (in their concept note grant application), to make full expression of demand on basis of fully-costed National Health Strategic Plan (NHSP) with clear indication on activities, which were being prioritized for allocation request (PAR), and also those present as an above allocation funding request (AAFR), as a way of capturing quality demand on the activities that countries considered most appropriate to consolidate or further accelerate disease control gains to access additional financing available within the Global Fund. In addition, the GF assisted high-disease burden countries, faced with huge funding gaps and were struggling to maintain the existing scope and scale of essential/prioritized services to access NFM above allocation funds. Through this GF's window, over 80% of the GF's above allocation and incremental funds had been awarded to countries in the Global Fund's 'High Impact Africa I & II' regions in 2016⁴⁵.

3.5.4. Case Studies of Countries initiatives to improve iCCM funding landscape

As a result of external partners' increased funding support during 2011-2017, most study countries, achieved improved levels of expansion of iCCM programme implementation from pilot to current status, and continued to improve as more funds were allocated through various external sources. In addition, during the same period, most governments with

⁴⁵ (African Leaders Malaria Alliance, 2016: A review of recipients' decisions under the Global Fund's New Funding Model, 2014-2017).

Technical Assistance (TA) from partners, also initiated several policy changes, financial reforms and human resource skills development (training of CHWs and remunerations), that contributed significantly to further acceleration of the programme scale up by a number of study countries. For example, this study established that the above efforts (by MOH and external partners' support), played key roles in countries that successfully managed to achieve iCCM programmes' scale up including registering some significant reduction in mortality rates trend for children aged below five years such as: Rwanda, Malawi, Zambia, Senegal, Ethiopia, Cameroon and Mali as illustrated by few examples below:.

Malawi: Malawi, implementation of the decentralized health policy framework, and the government maintained sustained increase annual of budgets that provided increased funding to the primary health care and preventative interventions, was a key strength to the countries achievement in expansion of iCCM nationally. In the 2016/2017 Financial Year Budget, Malawi MOH allocated 20% of total health budget to primary health care, while 15% was allocated to secondary health care and 8% to tertiary health care⁴⁶. The MOH implementation of financial management reform, resulted in an increased direct funds flow to the districts, based on the Districts' Development Plan/District Implementation Plan (DIP), prioritized and costed district annual operation plans (DOPs). Malawi's move to fortify the MOH annual budgets from budget-cuts through Government policy, together with decision to "ring-fence" health budgets from annual reductions (unlike other sectors such as agriculture), ensured communities in rural areas have continuous access to essential health services and care. The current GoM NHSSP II for 2017-2021, has revised Essential Health Package (EHP) for rolling out and sustaining implementation of health program and achievement of the universal access to health services targets by 2021. In Malawi, UNICEF has been supporting non-malaria commodity needs in the country using JICA and EU funding to date, but was only able to cover about 60% of needs.

In Zambia the GoZ has also gradually managed to increase financial resources and financial management that improved access, equity and quality of health services in the country. During the last five years (2006 and 2013), MOH health expenditure as a percentage of total Government expenditure increased significantly from 38% in 2006 to 58% in 2013⁴⁷. External resources contributed heavily and have remained relatively stable, accounting for 34% of total health expenditure in 2013. The country's per capita government expenditure on health was US\$54, compared to US\$93 from all sources (*Zambia Health Financing Profile, May 2016*). Zambia has achieved expenditure on health of 5% of GDP, compared to an average of 4.2% in other lower middle-income countries (LMICs). With 12.6% of general government expenditure spent on health, Zambia is more than double the LMIC average (6.2%) and is nearing the Abuja target of 15% for the share of government budget allocated to health. Continued growth of expenditure for health and improvement of equity and access to services face a number of challenges.

Uganda: To complement Global Fund investments in the malaria commodities (RDTs, ACTs)

⁴⁶ UNICEF Health Budget Brief for 2015/2016 MOH Malawi Budget, March 2017

⁴⁷ Zambia Institute for Policy Analysis and Research, UNICEF: "Analytical Brief on Social Sector Budget 2018", 5th October 2017

and VHT platform costs, UNICEF mobilized resources for the diarrheal and pneumonia commodities in 33 districts, complemented by funding from the RMNCH Trust Fund⁴⁸ as well as its own resources.

Burundi: UNICEF has supported diarrhea-pneumonia inputs under the Global MoU in 16 Health Districts including 12 GF / Caritas and 3 with World Relief and 1 with Concern. To cover the 16 health districts, estimated annual budget requirements are approximately USD 85,000. Add to these essential medicines some uncovered renewable inputs such as gloves, timers, MUACs, safety boxes, torch lamps, and others for an estimated additional cost of about US \$ 60,000 which is also needed to ensure the continuity of services.

During the period of political unrest, the GF also approved an extension of their NFM implementation funding to end 2017 through savings, and additional Global Fund support and emergency funding from other bilateral agencies⁴⁹.

Ghana: UNICEF in collaboration with MCHIP supported the National Malaria Control Program to conduct an iCCM programmatic and financial gap analysis prior to the development of the country's concept note submitted to the Global Fund. Over the period 2015-2017, the near-term iCCM need (excluding ACTs and RDTs), 2015-17 was USD15,487,594.00⁵⁰ of which the GF NFM approved USD 4,378,452.00 for 2015 and 2016 for iCCM: (Source: GF approved document). The same iCCM Gap analysis report found a co-financing (non-malaria) requirement for iCCM 2015-17 of USD \$600,000 of which UNICEF/Ghana was able to mobilize USD \$512,058 from its own resources.

Rwanda: Rwanda is one of the successful countries to achieve implementation of iCCM to scale within a period less than five years, compared to many other study countries. The GoR policy changes in favour of decentralization of health systems including involvement of Peer Review Partners and decentralized financial and human resource allocations, was a big strength towards significant improvement in reduction of mortality for CU5 within the period of iCCM implementation.

South Sudan and Malawi: GF approved extension of their NFM implementation funding to end 2017 through savings, and additional Global Fund support and emergency funding from other bilateral agencies⁵¹.

3.5.5. RAcE contribution to iCCM funding and scale up

The RAcE project initiated and supported by UNICEF and WHO in 2015 covering five countries, of, DRC, Malawi, Mozambique, Niger, and Nigeria respectively, contributed to significant in expanding treatment for children under five years and reduction of mortality rate in countries

⁴⁸ The Global Fund New Funding Model: Lessons from Uganda on Integrating the Integrated Community Case Management. Model (iCCM). www.mcsprogram.org. November 2015

⁴⁹ African Leaders Malaria Alliance, 2016: A review of recipients' decisions under the Global Fund's New Funding Model, 2014-2017

⁵⁰ Source: From iCCM GAP Analysis Report

⁵¹ African Leaders Malaria Alliance, 2016: A review of recipients' decisions under the Global Fund's New Funding Model, 2014-2017

of implementation. The RAcE project also contributed to catalyse the scale-up of community case management of malaria (CCMm) and integrated community case management (iCCM), including stimulating policy review and regulatory update in each country on disease case management and accelerate adaptation of supply management and surveillance systems to include services at the community level.

For example, in Malawi, areas where RAcE has been implemented, there was reportedly increase in national coverage of iCCM program scale up in community catchment areas beyond 5 kilometers from the nearest health facility. RAcE also made major contribution to Malawian during episodes of diarrhoea, pneumonia, and malaria in children ages 2–59 months through a network of HSAs, and was implemented in four districts in Malawi (Dedza, Mzimba North, Ntchisi, and Ntcheu) by Save the Children, in collaboration with Medical Care Development International, Clinton Health Access Initiative, and D-Tree and with support from Malawi's IMCI unit in the MOH.⁵² In Niger, there was also documented evidence that iCCM services increased with implementation of Rapid Access Expansion 2015 Program (RAcE programme report, 2015) where four districts now provide community level iCCM services. Many communities are actively supporting their CHWs known as Relais Communautaires by building clinics, paying their transportation fees, and making financial or in-kind contributions for their services. The relais are selected by community members⁵³.

3.5.6. Costs and costing for implementing iCCM

Various multi-country costing and financing studies conducted by MSH with funding support from Bill and Melinda Gates Foundation, covering seven sub-Saharan African countries namely: Cameroon, DRC, Malawi, Senegal, Sierra Leone, South Sudan and Zambia on diverse dates, documented that iCCM utilization rate was generally low across the seven countries, ranging from a total of 0.26 to 3.05 contacts per capita for children under five years per year for the three diseases treated by the program. This translated to a range of 2.7% to 36.7% of the projected numbers of cases attendance per year. The study further reported that total recurrent cost per treatment ranged from US\$ 2.44 to US\$ 13.71 for diarrhoea; US\$ 2.17 to US\$ 17.54 for malaria (excluding rapid diagnostic testing); and from US\$ 1.70 to US\$ 12.94 for pneumonia. Some countries registered a remarkably lower iCCM package utilization (0.26%.) an indication of poor program performance.

However, given that the MSH study conducted in the above countries, only assessed the initial implementation of the program and considering differences across the countries covered, the results of the multi-country study, could be taken as indicative and not definitive⁵⁴. In addition, this study was undertaken prior to the period when many countries' implemented major expansion of iCCM following significant increased financing by external partners 2014-2017.

⁵² Monitoring and Evaluation of the WHO Rapid Access Expansion (RAcE) 2015 Program Save the Children Malawi, August 21, 2014

⁵³ WHO, November 2017 <http://www.who.int/bulletin/africanhealth>

⁵⁴ (Journal Article: David Collins, Zina Jarrah, Colin Gilmartin and Uzaib Saya: Journal for Global Health, Vol, No.4, December, 2014: "The Costs of Integrated Community Case Management Programs: A Multi-country Analysis in(Cameroon, DRC, Malawi, Senegal, Sierra Leone, South Sudan and Zambia).

South Sudan: experienced intermittent conflicts and emergency situation, and implementing partners played major role in the management of iCCM. This study established that costs for executing the programme were generally higher compared with other countries. This finding corroborated the findings of previous costing and cost analysis study conducted in Kapoeta District by MSH in 2015, which documented that South Sudan experienced high unit costs in virtually all the activities of iCCM implementation. In both studies, the highest cost elements comprised supervision (50% of total recurrent cost), followed by program management (18%); and implementing partner's overhead costs (13%); cost of medicines was just 6%; cost for meetings was 5%; and cost of refresher trainings was 8%⁵⁵.

3.5.7. Key Challenges in iCCM Financing and Costing

Based on assessment of financing and costing of the 18 study countries, the following challenges were documented:

- I. The 18 countries in this study had poor understanding of prioritizing their resources to maximize impact in health interventions including planning and costing for needed resources to address disease interventions for iCCM services and health sector generally;
- II. All the study countries had not adopted the standard *USAID iCCM Costing and Financing Tool* though the tool was tested and accepted as standard measure and appropriate for cost analysis and cost- effectiveness to derive prioritization and budgeting or resource allocation for the project effectiveness⁵⁶. It was also noted that even in the above countries, where the costing and financing studies were carried out and disseminated, the costing tools had not been optimized to improve program costing and cost-effectiveness analysis to improve. Some challenges cited by countries regarding use of the program costing and financing tools include: Country ownership lacking-MOH leadership not sufficiently briefed and helped to adapt the tools; Lack of sufficient dissemination and technical support for application and; lack of skilled human resource.
- III. **Nigeria:** Irregular and late disbursements of funds by external iCCM supporting partners. Some countries experienced lack of arrival of financing for non-malaria iCCM components simultaneously with malaria financing was a hindrance to scale up, for example in Nigeria^{57, 58}. Although the Nigeria case, was however, eventually resolved in the two States (Niger and Kebbi). The effects were multi-folds: i) the suspension of the Nigeria grant meant that funding was available for non-malaria but not for malaria; then ii) quantifications: the PRs have been quantifying state-wide iCCM needs

⁵⁵ (Based on this study in-depth interviews and; costing study by Management Sciences for Health- Bill and Melinda Gates Foundation: The Cost of Integrated Community Case Management in Kapoeta North County, South Sudan December 2014).

⁵⁶ David Collins et al. The costs of integrated community case management (iCCM) programs: A multi-country analysis

⁵⁷ UNICEF/GFTAM, 2016. Scaling up integrated Community Case Management in the context of the UNICEF - GFATM Memorandum of Understanding, Meeting Report, March 2016.

⁵⁸ Global Fund, 2014. Nigeria - Standard Concept Note Malaria

without considering that some LGAs are already fully covered (e.g. By UNICEF with its own plus EU resources). UNICEF non-malaria commodities have been ready and waiting in the state warehouse for deployment down to the PHC level for nearly 18 months. Niger recently signed a state-specific MOU with the BMGF which should help to cover their iCCM needs.

- IV. According to the findings of this study, a large proportion of population in almost all study countries accessed medicine through out of pocket expenditure (from their own pockets), thus posing a huge burden on affordability and accessibility. For example, in Nigeria, up to 69%-75% of the population paid out of pocket for healthcare, meaning that public health system supported about 30% of health care including commodities⁵⁹.

iCCM Challenge affecting access to services: Health financing/health service expenditure (Out-of- pocket): was identified as a key barrier to equity and access of health care; as well country's financial sustainability in supporting iCCM package. In addition, the existing regulatory mechanisms in most of the countries were weak.

Financing option to increase accessibility of iCCM services. Government subsidies to the private sector and increased regulatory capacities may improve the overall availability and accessibility of health services to the majority of the population, while relieving the government of having to provide that additional care directly.

3.5.8. Lessons learned on iCCM Financing and Costing

Based on the 18 study countries' findings, almost all countries had little understanding of costing and budgeting for iCCM programme:

- I. A comprehensive understanding of iCCM program costs and results can be useful for optimal planning by countries and donors to budget and obtain resources and use them efficiently to maximize the program services. To be cost-effective and affordable, iCCM programs must be well-utilized while program management and supervision should be optimally organized to minimize costs and ensure quality of care. While economies of scale and scope can be achieved with good planning, geographical or socio-economic inaccessibility - where the needs are greatest – the costs increase;
- II. Training and capacity support for Programme managers and other implementers on appropriate tools for the programme financing, costing, and cost analysis is necessary to inform decision making and for improvement of the programme funding and cost-effectiveness;
- III. MOH need to institute cost-reduction measures on programme overheads and other recurrent costs through MOHs' taking lead and direct involvement in programme management, supervision and routine monitoring. For example, sharing of vehicles by different programmes staff during field visits would result to some overheads costs

⁵⁹ (National Strategic Health Development Plan (NSHDP 2010-2015);

cutting; in addition, increased investments in health systems strengthening would greatly improve service availability and access of iCCM package by the communities.

Financing of countries in complex Emergencies: The lessons learned from countries that experienced conflicts emergency situations, such as South Sudan, attested the need for funding partners considering flexible to address challenges such as drugs stock out due to unplanned emergency and conflicts situations. There have been also multiple papers demonstrating the validity and inbuilt resilience conferred by iCCM programming and CHW training to help communities during periods of insecurity^a.

^a<https://www.rescue.org/sites/default/files/document/1740/ircunicefsouthsudaniccmcasestudyfinal.pdf>

3.6.

Human Resources

The key human resource for iCCM are the CHWs: other cadres are the supervisors and the health staff at the linked health facility whose role includes: (i) management of referrals, (ii) mentoring and continuous training of CHWs in quality services provision; (iii) management and iv) drugs and commodities supply and improvement. From document review and in-country field observations, this study established that all countries had in place procedures and criteria for CHWs recruitment. Only Ethiopia and Rwanda had a large pool of CHWs that might be optimal. The rest of the 18 countries had a smaller number of CHWs than the required for achievement of iCCM coverage.

3.6.1. Designated Titles used for Community Health Workers (CHWs)

The 18 countries had given different job titles (designations) to iCCM community health workers (CHWs). This also varied across the different implementing partners in a country. The job title given to the CHWs was based on their role and activities, and also on their place in the health system either volunteers or salaried formal employees. The table below shows the different titles given to CHWs by countries and implementing partners both the paid and unpaid cadres.

Table 4: CHWs Job Titles Given

	Country	Job Title/designation of iCCM Community Health Worker
1.	Benin	Relais Communautaire
2.	Burkina Faso	Agents de santé communautaire
3.	Burundi	Agents de Santé Commaunatiare
4.	Cameroon	Community Health Worker (CHW)
	Cameroon	Relais Communautaire
5.	DRC	Relais Communautaire
6.	Ethiopia	Health Extension Workers (HEWs)
7.	Ghana	Community Based Agents (CBAs)
8.	Kenya	Community Health Volunteers (CHVs)
9.	Malawi	Health Surveillance Assistants (HSAs)
10.	Mali	Community relais
11.	Niger	Community Health Worker (CHW)
12.	Nigeria	Community Owned Resource Persons (CORPs)
13.	Rwanda	CHW; Community Based Distributor (CBD)
14.	Senegal	Agents de Santé Communautaire ; Matrone ; and Relais Communautaire

15.	Sierra Leone	CBDs
16.	South Sudan	Community Based Distributors
17.	Uganda	Village Health Committee Member (VHT)
	Uganda	Village Health Team (VHT)
	Uganda	Community Based VHT
18.	Zambia	CHW; Community health agent (CHA)

Source: Xavier Bosch et. al. 2014 (www.jogh.org -doi.10.7189/jogh.04.020403); iCCM study 2017, Global Fund.

3.6.2. Work Undertaken by iCCM CHWs

The current direction is having different types of CHWs for different health programs. This is a move towards integration rather than verticalization. The overburdening is mainly due to insufficient number of CHWs and the solution should be increasing their number rather than shrinking their roles.

The activities carried out by CHWs in community-based programs can be categorized as follows based on in-country interviews and documents reviewed:

- (i) Provision of clinical care with or without other components; and health promotion and prevention Services:
 - **Clinical care (treatment services):** included for the following conditions: malaria, diarrhoea and respiratory diseases assessment and treatment; early treatment conjunctivitis; malnutrition and assessment of new-borns for any risks requiring referral; treatment of new-born sepsis and treatment of measles in Ethiopia, among others;
 - **Health prevention and promotion services** on the following: malaria, diarrhoea and respiratory disease recognition and health seeking behaviours, immunization, nutrition, water and sanitation, maternal and new-born care, reproductive health and family planning, breastfeeding, complementary feeding, use of insecticide treated nets, malaria preventive treatment (e.g. IPTp and SMC), TB prevention and treatment.
- (ii) Provision of drugs and supplies, through social franchising schemes for example 'PSI Uganda – Five & Alive', and 'Living goods Uganda') or using regular procurement schemes (especially traveling to health posts for supply and resupply). These are also private sector organizations giving iCCM services and selling drugs at a nominal fee for example in Burkina Faso.

3.6.3. Selection of CHWs

The selection criteria for CHW varied across countries and implementing partners as shown in the table below:

Table 5: CHW selection criteria, community engagement and gender balance

	COUNTRY	IMPLEMENTING PARTNER	EDUCATION LEVEL and other Qualifications	Male: Female Ratio	Who Selected the CHWs
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1.	Benin	No data available	No data available	No data available	No data available
2.	Burkina Faso	No data available	Primary School certificate	50%	No data available
3.	Burundi	No data available	No data available	No data available	No data available
4.	Cameroon	PSI/CIDA	Minimal literacy with basic numerical Competence Residing in villages they are meant to serve	No data available	Community
5.	DRC	No data available	Married	No data available	No data available
6.	Ethiopia	No data available	Grade 8 - 10	100% Female	MOH
7.	Ghana	No data available	Mostly illiterate	50% Female	Community
8.	Kenya	No data available	No data available	No data available	No data available
9.	Malawi	CORE	O-level graduates	28% Female	MOH
		MOH,	Grade 10 junior certificate		MOH
		SCF Malawi	Grade 10 junior certificate		MOH
		PSI/CIDA	Staff from the MOH (where the lowest rank of MOH employees are eligible). Residing in the villages they are meant to serve		MOH
10.	Mali	No data available	9 th Grade	43% Female	No data available
11.	Niger	No data available	12 th Grade	33% Female	No data available
12.	Nigeria	No data available	No data available	No data available	Community
13.	Rwanda	No data available	No data available	No data available	Community
14.	Senegal	No data available	No data available		Community
15.	Sierra Leone	IRC	No level of literacy	26% Female	Communities

16.	South Sudan	No data available	No level of literacy	No data available	Communities – MC; Communities – SCF; Involvement of villagers & chieftaincy – PSI
17.	Uganda	MOH	Already being a CHW, Traditional Birth Attendant (TBA), drug distributors or alike. Exclusion criteria: political leaders, and those imposed by political leaders	No data available	Communities
18.	Zambia	No data available	No data available	No data available	Communities

Source : Emmanuel Daviaud et. al., 2017 (www.jogh.org doi:10.7189/jogh.07.010403) ; Xavier Bosch et. al. 2014 (www.jogh.org -doi:10.7189/jogh.04.020403).

3.6.4. Achievements in Adhering to CHWs Recruitment Guidelines

A study of iCCM implementation in Uganda, Zambia and South Sudan established the following achievements in adhering to CHWs recruitment.⁶⁰ (Clare Strachan et.al. 2014):

- (i) The countries had in their guidelines and documentation, the procedures and criteria that should be followed in CHW selection, which required involvement and participation of the community and linked health facility staff;
- (ii) Areas where communities were involved in selection of CHWs, there was higher utilization of iCCM services; more support for CHWs by the community; and more trust in the capacity of CHWs to deliver services.

Below are quotes from the study indicating satisfaction with iCCM CHW selection process:

“We were happy because we did the selection as a community and no one imposed them on us ... it is good for the people to do the selection because they select someone they trust which is good and if you show someone that you trust him he can do the work well.” (Community leader, Uganda)

“... the most important thing in the selection of Community Health Workers is openness. If the people are involved and they feel part of the process, then there will be no problems in the selection process.” (Community leader, Zambia)

⁶⁰ Clare Strachan et. al. 2014. iCCM Across Three African countries: A Qualitative Study Exploring Lessons Learnt and Implications for Further Scale Up. (Jogh. Vo. 4 No.2; doi:10.7189/jogh.04.020404)

3.6.5 Challenges Encountered with non-adherence to CHWs Recruitment Guidelines

Non-adherence to CHW selection and criteria guidelines was evident across Uganda, South Sudan, and Zambia. The practice had evident negative effects on iCCM services quality and access in Uganda (Clare Strachan et.al. 2014):

- Unqualified CHWs were sent for training;
- Caregivers were not willing to use the services of CHWs who had been imposed upon them, belong to rival political party or tribe;
- There was overall less community support for CHWs.

Study findings established that communities in Malawi were not supporting their CHWs (HSAs) by building a hut/house for them in their geographical operation areas; this was attributed to the fact that the CHWs were not from the community and had been posted by the MOH as staff.

The HSAs are salaried employees of the Government of Malawi (GoM), entirely managed within the country's health system. Communities are not engaged to participate in the iCCM HSA selection, because their deployment is top-down from Central Level; the choice of this approach had been based on education requirement criteria since literacy in rural areas is very low. The choice of not involving the community in selection of HSAs partly contributed to only 36% of hard-to-reach villages having an HSA living there; and the communities were not willing to build village clinics and HSA accommodation even when the iCCM implementing partner made the materials available. The other negative outcomes on the iCCM services resulting from posting HSAs to hard-to-reach areas were: (i) unavailability of HSAs to provide iCCM services to the community; (ii) attrition rate of HSAs⁶¹ (Wanga, Z. Zembe-Mkabile et. al. 2016).

3.6.6. Findings form the Field– Human Resource Recruitment & Community Role

The iCCM program in Malawi and Ethiopia has salaried CHWs recruited as per the country government guidelines. In Malawi the iCCM CHWs are recruited from the existing best performing HSAs to work in hard-to reach areas. It is evident the recruitment identified the best fit HSAs to work in iCCM program; HSAs in Kasungu district indicated they were competitively recruited;

“All of them, they applied for the positions, were shortlisted and underwent through interviews after which they became successful”. [FGD with HSAs]

Majority of the reviewed 18 countries had volunteer CHWs who had been recruited by the community with facilitation from the MoH staff. The involvement of the community in recruitment facilitated the community to own the CHWs; in Uganda, communities where the participatory approach in the guidelines was followed with communities involved in CHWs selection, there was higher utilization of iCCM services, more community support for CHWs,

⁶¹ Wanga Z. Zembe-Mkabile, Debra Jackson, David Sanders, Donela Besada, Karen Daniels, Texas Zamasiya & Tanya Doherty (2016) The 'community' in community case management of childhood illnesses in Malawi, Global Health Action, 9:1, 29177, DOI: 10.3402/gha.v9.29177

deeper trust in CHWs' capacity to treat children and a stronger overall sense of community ownership.⁶² In Zambia, the ownership of the iCCM program and support for the CHW was demonstrated by the quote below:

"If I had a shortage of these supplies knowing my community besides informing the clinic I would also inform the village group leader because if I don't inform them tomorrow they will say he is refusing to give us medicine maybe he is selling so it's better to inform the group leader that what you were given has run out so for these days if you hear I am not attending to people else the group leader will say 'did you tell me?'" [CHW FGD – Kalumbila District, Zambia]

Challenge - iCCM CHWs

Some of the challenges encountered were gender related, allegations of sexual harassment and insecurity while working at night was highlighted. A female CHW is not common in Nigeria due to concerns of sexual harassment.

Sexual harassment: Some male HSAs were being accused of asking for sexual favours at village health clinics when mothers/Care Givers seek care for their children, as highlighted in the following quote from Care Givers FGD;

"Yeah, now that caregiver goes direct to the community and says ah... I went to that doctor asking for medicine for my child and instead of assisting the child he was proposing to me then if their husbands hear that they will start stopping them from going to seek help from me. They will be thinking that oh when this lady is going there that man will ask her to fall in love with him so that is a barrier." [Care Givers FGD, Malawi].

Non-engagement of Communities in selection and posting of salaried CHWs: Ethiopian and Malawi faced issues of low uptake of iCCM services because the CHW were not from the community and resided outside the catchment area.

3.6.7. Incentives for Motivation of CHWs

Type of incentives given to CHWs varied across countries and implementing partners. The varied incentives given by different implementing partners in one country, for example South Sudan, this caused dissent among CHWs and attrition. High turnover rates raise the costs of iCCM programs due to constant recruitment and retraining.

Table 6: CHWs Incentives and Attrition Rate

Country	Months since at scale with trained CHWs >80% – as of 2017*	Implementing Partner	Type of Incentive Given to motivate CHWs	CHW attrition Rate
Benin	No data available	No data available	No data available	No data available

⁶² Strachan et al 2014

Burkina Faso	No data available	MoH	Monthly Salary	No data available
Burundi	No data available	No data available	No data available	No data available
Cameroon		PSI/CIDA	Per diem and allowances for reporting	No data available
DRC		PSI/CIDA	Reputation and Recognition; travel allowance; supervision	No data available
Ethiopia	11 months	MOH	Monthly salary	4%
Ghana	36 months	MoH	No data available	8%
Kenya	No data available	MoH	No data available	No data available
Malawi	2 months	MOH	Salary	3%
		PSI/CIDA	Bicycles, Uniform, T-Shirt; Training	
		SCF	Bicycles, stainless steel spoons, medicine cups, water cups, plastic medicine bags, basins, and water container	
Mali	2 months	PSI/CIDA	Cell Phone	4%
Niger	35 months	No data available	No data available	7%
Nigeria				
Rwanda	No data available	Concern – Kabeho Mwana	Performance-based financing mechanism	No data available
Senegal	No data available	MoH	No data available	No data available
Sierra Leone		IRC	Soaps and batteries	
South Sudan		MC	Certificates, Soap	Areas served by IRC attrition Rate was: 2.7%; and in Panyijar and Aweil East – 3%;
		PSI	Sugar, salt, soap, bicycles, gumboots, clear bag and rain coat. Cash 1575 – 3150 South Sudanese Pounds	No data available
		SCF	Soap, jugs, spoons, jerry cans, pair of scissors, medicine bag, pens, lunch and transport during refresher trainings	No data available
Uganda		PSI – Fire & Alive Franchise	Increase in client flow using services	No data available
		Living Goods	T-Shirt	No data available
		MC	Bicycles and T-Shirt	No data available
Zambia	No data available	MoH	No data available	No data available

Source: Emmanuel Daviaud et. al. 2017 (www.jogh.org doi.10.7189/jogh.07.010403); Xavier Bosch et. al. 2014 (www.jogh.org -doi.10.7189/jogh.04.020403); IRC South Sudan iCCM Case Study, 2017

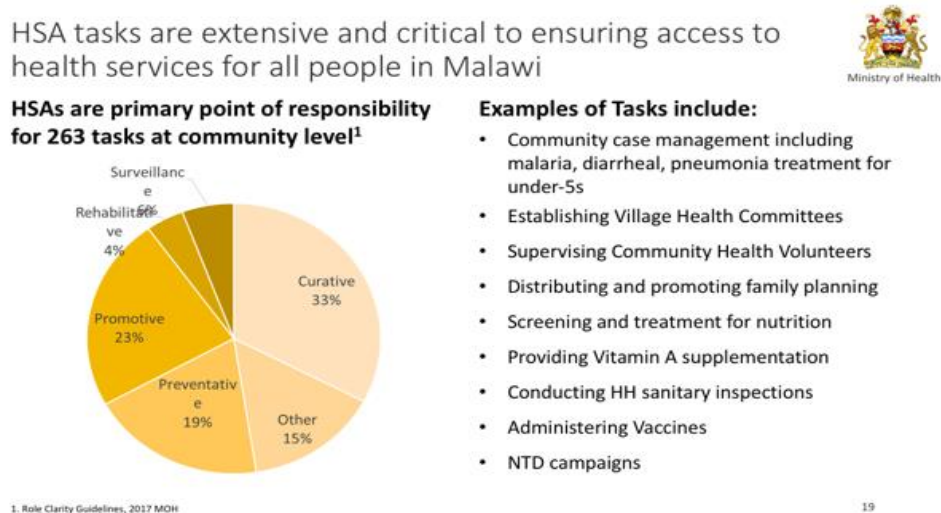
* - Number of months that programs had retained more than 80% of trained CHWs

3.6.7.1. Effect of iCCM on CHWs

In all countries, iCCM was being offered alongside the other community-based health services; hence, the iCCM CHWs were offering iCCM services as additional tasks to the usual responsibilities at the community level. In Ethiopia and Malawi, the salaried CHWs felt the workload was high because they were offering several other services in addition to iCCM.

In Malawi, the increased Scope of Work (with inclusion of iCCM treatment work) earned HSAs (CHWs) Status in the community, they were referred to as doctors; however, the HSAs perceived their workload had increased with iCCM⁶³ see figure 3 below.

Figure 3: Tasks undertaken by CHWs in Malawi



The Ethiopia CHW offered 10 different types of services. In countries, for example Rwanda and Senegal with different cadres of CHWs offering curative, promotive services, maternal and newborn health, and workload issue had not been raised. In some countries, the volunteer CHWs felt they needed time off iCCM work to undertake personal errands.

3.6.7.2. CHWs Motivation and incentives

Motivation and incentives given to CHWs varied across countries and implementing partners within a country. Countries with salaried CHWs had issues of motivation; for example, in Malawi CHWs were not comfortable working in far flung areas with issues of transportation, were not keen to reside within their catchment areas and they wanted to change from working as CHWs by taking up further training and getting employed as clinicians. Burkina Faso reviewed upwards the salary incentive; however, the CHWs were still not satisfied

⁶³ Health workers' and Managers' perception of iCCM program for childhood illness in Malawi: the importance of expanding access to child health outcomes. Am J Trop Med Hyg. 87 (Suppl 5): 61–68.

wanting additional pay. In some countries CHWs were abandoning iCCM work to undertake income generating projects for example Kenya.

In South Sudan CHWs informed the study that non-monetary in-kind support such as food and fare for transport from community members would make them (CBDs/CHWs) feel a deeper sense of appreciation and ownership by the community for their service on attending to children illnesses.

3.6.7.3. Effect of iCCM on CHWs and attrition rate:

The reviewed 18 countries were experiencing attrition of CHWs. Below is a quote by a key informant indicating the possible reason for the high attrition rate of CHWs:

“Yes, CBDs have lots of commitments and needs, which some forgo to attend to sick children, this could have been attributed to a high attrition of CBDs at 15% in some areas and this in turn has cost implications because more CBDs need to be trained regularly.” [IDI/KII in Juba, South Sudan].

In Malawi, attrition rate is high mostly due to upgrading of HSAs to other higher cadres like nursing, medical assistants, pharmacists, clinical officers. Then replacement becomes a challenge, therefore making it hard to achieve the required targets of 1 HSA: 1000 people. Nigeria for example in Niger state there was attrition of CHWs especially with the younger more educated CORPs who left the service to pursue higher education or employment opportunities in the urban areas.

“...like I’d also talked of attrition, some people just say, “Look I can no longer go on because there are no incentives to somehow motivate me, not coming from our government, not coming from the community” [KII Niger State level, Nigeria].

In South Sudan, payment of incentives to CHWs had not been harmonized across the different implementing partners, this was seen as an issue that will escalate attrition of iCCM workers at community level if not addressed appropriately. The below was highlighted during the interviews:

“...harmonization you know is an issue with incentives. I think, it has also been coming to our attention it’s a challenge, I think different partners have been paying different amounts or just small incentives for the community workers and we are trying to work towards harmonizing that so that it doesn’t cause these grievances or causing turnover of the trained community workers and especially now the BOMA health initiative is coming up with another structure, so we will work around that with the ministry to ensure that at least we harmonize these small incentives so that it doesn’t affect implementation.” [IDI national level, South Sudan]

In Nigeria, South Sudan, Burkina Faso among other countries, CHWs were not satisfied with the incentives. In Nigeria, the Kebbi and Niger states CHWs expressed dissatisfaction with the incentives received, the quote below gives a highlight:

“Every single stipend is tied to an activity... When they’re doing the actual job... They get nothing, they get nothing...in fact, what the guideline is saying is a person should be willing to do it as a volunteering, as freelance service to the community. That is why they were few ... everybody who needs the support to get some financial good motivation...” [KII state level, Nigeria].

In Burkina Faso, CHWs were being paid a monthly salary of US\$ 35. The CHWs valued their work and considered worthwhile even though their workload included several roles/responsibilities they had to undertake at once: sensitization, support-counseling, case management, among others. Subsequently, the challenge was CHWs motivation and their irregular pay. The quote below expressed dissatisfaction with the incentive given;

“I like the work we are doing but the workload is so important. You do not have time for other activities, and the amount we are given is really ridiculous. I’m not happy but we have no other things to do” [CHW from village 1, Burkina Faso].

3.6.8. Training of iCCM CHWs

3.6.8.1. Training Methodology - Achievements

- Cascade training had been practiced in all the 18 countries, with a pool of master trainers at national and regional/levels, gold standard observers (from national, regional/state and district levels) and trainers at health facility level. The gold standard observers’/master trainers and trainers at the health facility had gone through a standard trainer of trainer (TOT) training using the WHO iCCM training tools;
- In some countries for example Rwanda, Malawi, Uganda and Ethiopia documented evidence indicate the training methods were participatory with practical sessions, including video sessions to demonstrate danger signs, evaluation feedback indicated the methods were effective and relevant especially for the illiterate CHWs. The practical clinical sessions were held at the health facilities. Some countries had innovative ways on clinical training for example Uganda used dolls for practicing the administration of rectal artesunate.

3.6.8.2. Training Methodology Challenges

CHWs had difficulties in comprehension in some areas: e.g. the training on “chest indrawing” was difficult for the CHWs to comprehend. It is possible that this can lead to some over-diagnosis and over-prescription. studies have shown that RDT negativity contributed to revert to use of fever and other symptom giving rise to over-prescription. In countries where the majority of CHWs are illiterate CHWs (e.g. South Sudan) there were requests for additional training in areas such as basic literacy and numeracy skills.

3.6.8.3. Training Methodology – Lessons Learned

- In Uganda, Zambia and South Sudan, CHWs requested for an extension of the training duration to allow time for adequately covering identification of pneumonia, completing CHW registers, correct referral and new-born care. The addition of basic literacy and numeracy skills to the training content was requested by multiple respondents in South Sudan.

- Malawi and Ethiopia have succeeded in building the capacity of CHWs in providing clinical services through incremental training. Malawi used mentorship to build the capacity of CHWs when they visit the health facility for meetings etc. (this cheaper alternative was used due to inadequate funding for refresher training in Malawi) and sustained refresher training in Ethiopia which was based on gaps identified during supervision.

3.6.8.4. Challenges with Adherence with the WHO/UNICEF iCCM Training Standards/Guidelines

Training duration for CHWs on iCCM varied across countries with some having it below the WHO/UNICEF recommended standard duration of six (6) days. Information available on seven (7) countries was as follows: four countries (DRC, Ethiopia, South Sudan and Zambia) iCCM training duration adhered to the standard, while for Mali it was 3 days, Rwanda 5 days, and Senegal – 5 days. Conversely, there is no information on the reasons the countries had a shorter training duration than the standard set by WHO/UNICEF⁶⁴. The recommended duration of clinical training inform of practical lessons by WHO/UNICEF is 12 hours; the 7 countries offered clinical training for the following hours: DRC and Ethiopia – 10 hours, Mali – 9 hours, Rwanda – 14 hours, South Sudan – 7.5 hours, Zambia – 18 hours and Senegal was revising to 15 days. Table 7 below shows the non-uniform training duration across countries.

Table 7: CHWs Training Duration

Country	Implementing Partner	iCCM CHW Initial Training Duration*
Burundi	Concern	3 weeks
Cameroon	PSI/CIDA	3 days
DRC	PSI/CIDA	2 to 3 days (depends on CHW competency)
DRC	USAID/BASICS	6 days
Ethiopia	MOH	1 year Basic. 6 days iCCM
Malawi	PSI/CIDA	6 days to 10 weeks depending on CHW competency
Malawi	Save the Children Fund	6 days to 12 weeks depending on CHW competency
Malawi	CORE Group	8 weeks
Malawi	MOH	10 weeks
Sierra Leone	IRC	6 days
South Sudan	MC	6 days
South Sudan	PSI	6 days
South Sudan	Save the Children Fund	7 days
Uganda	Living Goods	4 weeks
Uganda	MC	5 days
Zambia	MC	6 days to one-year training for CHA cadre

Source: www.jogh.org - doi:10.7189/jogh.04.020403; doi: 10.7189/jogh.04.020404

PSI = Population Services International; CIDA = Canadian International Development Agency; DRC = Democratic Republic of Congo; MC = Malaria Consortium; IRC = International Rescue Committee

*The longer training taking more than the recommended iCCM training of six (6) days was to cover the additional tasks undertaken by CHWs for example in Malawi. In other countries the extended training period based on the competency level of CHWs.

⁶⁴ USAID/MCHIP 2013. Review of iCCM training and supervision materials in ten African countries.

3.6.9. Challenges with Refresher Training for iCCM CHWs

Information on refresher training based on identified gaps during supervision and services provision offered by iCCM implementing partners was available for only a few countries. A study⁶⁵ across Uganda, Zambia and South Sudan found a need for refresher training to enable improvement in skills and to address gaps identified during supervision. Table 8 below shows that the refresher training offered by some countries/partners used the initial training tools and methods without modification based on the gaps/challenges determined from observations and data. Thus, even if refresher training was offered annually or bi-annually, it was basically just routine training using the original training tools and the opportunity to address clinical competency gaps, M&E gaps etc.

Table 8: Frequency of Refresher and Practical training, and mentoring offered to CHWs

Country	Implementing Partner	iCCM CHW Refresher Training; and mentorship - Frequency	Type of Refresher Training and mentorship
Benin			
Burundi	Concern	As required	Interactive lessons (mentorship)
Cameroon	CORE Group	No information available	
	PSI/CIDA	Bi-Annual	Refresher training (Formal)
DRC	PSI/CIDA	Monthly	Refresher training (Formal)
		As required	Interactive lessons
Ethiopia	MOH	Monthly	Refresher training (Formal)
Ghana	No information available	No information available	No information available
Kenya	No information available	No information available	No information available
Malawi	CORE Group, MoH, PSI, SCF	Monthly	Mentorship
		Monthly	Practical sessions – in-patient health facilities
Mali	PSI	No information available	No information available
Niger	Concern	No information available	No information available
Nigeria	MC, MOH	No information available	No information available
Rwanda	Concern	Annual	Refresher training (Formal)
		Mentorship	Monthly
Senegal	MOH		
Sierra Leone	IRC	Annual	Refresher training (Formal)
South Sudan	SCF	Monthly	Refresher training (Formal)
	MC	As required	Interactive lessons
Uganda	MOH	No information available	No information available

⁶⁵ Clare Strachan et. al. 2014. iCCM Across Three African countries: A Qualitative Study Exploring Lessons Learnt and Implications for Further Scale Up. (Jogh. Vo. 4 No.2; doi:10.7189/jpg.04.020404)

	MC	Monthly	Refresher training (Formal)
	PSI, Five & Alive Franchise	No information available	No information available
Zambia	SCF	No information available	No information available

During the in-country field studies, respondents in two countries indicated the length of iCCM training was inadequate and refresher training was not being undertaken due to lack of funding respectively. The following are examples of the challenges with iCCM training and refresher training highlighted by respondents:

Burkina Faso, the respondents expressed concern that the training of ASBC was incomplete because the 5 days of training was short, according to WHO guidelines 5-7 days training of CHWs was adequate. Given limited education of most ASBCs, the respondents' views were to increase the number of training days to 7 days to allow training by practical demonstration's and use of symbols/colours for comprehension. The reason given for the short duration of training was lack of financial resources. The quote below is indicative of the dissatisfaction:

"What I did not like was that the training did not even last 10 days. And yet, if it had lasted longer we would have had more knowledge. Yes, if it was longer we would have learnt many other things" [CHW FGD, Burkina Faso]

Malawi, refresher training was not being undertaken as scheduled, the reason given was lack of funds. To address this gap, the country implemented mentorship program for CHWs.

3.6.10. Supervisors

The cadre of supervisors for iCCM varied across the eighteen countries reviewed by the study. Depending on the country the following were assigned the role of supervising iCCM; examples of country iCCM supervisors: MOH Health Centre facility Staff were used by majority of the countries; Senior CHWs in Nigeria; Environmental Officers in Malawi; Zonal Coordinators in Ghana selected from the more educated and literate volunteers, and for South Sudan, Program Officers of the implementing partner. The ideal supervisors for iCCM CHWs would be health facility staff trained in iCCM, however, this was not possible because of under staffing at link health facility with insufficient numbers of health staff to take up extra iCCM supervision duties due to time constraint. The challenge of retaining a trained health staff in iCCM as a supervisor was experienced in Burkina Faso; which suffered from irregular and insufficient number of health facility/supervisory staff with sufficient understanding of iCCM and their availability. The quote below highlights the challenge;

"In the health system there is a lot of change. And there is a lot of turnover among CPCS managers (supervisors). And yet, a person who has been trained on supervision of ASBC (CHWs), if they leave it happens that the new one does not have the same training. At this moment we have to wait again to train another person" [IDI Health Facility].

3.7. Supply Chain Management

The success of an iCCM program hinges on the consistent availability of commodities and the effectiveness of the supply chain in adequately meeting demand. One of the key bottlenecks most cited by iCCM programs' scale up evaluation studies is commodity stockouts.

3.7.1. Lessons Learned on iCCM Supply Chain Management and its role on Scale up

- An adequate supply chain must meet demand, maintain or accelerate the program momentum and foster sustainable service delivery of iCCM within each country.
- Supply chain strengthening is crucial to providing adequate service delivery and the successful scale up. When iCCM commodities are lacking and CHWs cannot provide adequate and complete iCCM services it depreciates community confidence and undermines the use of CHWs.
- The challenges in iCCM supply chain management need to be addressed including the following:
 - (i) Ensuring the availability of the complete suite of iCCM commodities in the supply chain; this would cover the need to comprehensively strengthen delivery/distribution, stock management, reporting, forecasting, procurement and other supply chain factors that may be affecting availability i.e. not just addressing delivery;
 - (ii) Base quantification on consumption data and
 - (iii) increase buffer stock, especially in the rainy season⁶⁶ (Clare Strachan et. al. 2014);
 - (iv) The limited or challenging transport networks, data management and reporting (particularly for replenishment).
 - (v) Non-consideration of community needs in national strategic planning processes.
 - (vi) Special requirements for presentation and packaging to ensure appropriate use etc.
- Stock-outs of iCCM drugs and commodities occur at two levels:

Commodities shortage in some instances was due to national level shortages: this occurred as a result of any of the following: (i) inadequate funding: this is a key finding requiring to be highlighted; especially the fact that UNICEF is using Regular Resources (RR) in some of its countries, to fill this gap. The UNICEF New York are in the process of approximating the funding need for the GF countries for the iCCM commodities; (ii) weak distribution systems; (iii) poor data; (iv) insufficient forecasting processes.

 - There were instances when drugs and commodities were adequate at national, regional, and district levels but failed to reach the health centres and thence onto CHWs/communities (last mile). The reason for this was lack of timely ordering and effective distribution to the districts, health centres and CHWs. Distribution to the last mile was affected by the lack of transportation and/or funding by either the HF staff to take to community outposts and/or for CHWs to come to HF/distribution points to pick up supplies. This was also complicated by difficult terrain, rainy season and/or insecurity.

⁶⁶ Clare Strachan et. al. 2014. Doi: 10.7189/jogh.04.020404

- Ultimately, efficiency of iCCM supply chains will depend on the overall strength and capacity of the national supply chain management system⁶⁷. However, this has not been achieved because iCCM is so donor dependent; additionally, many NGOs have set up parallel distribution systems bypassing national distribution routes and modalities especially when they are weak.
- (i) There needs to a consistent supply of the entire suite of iCCM commodities especially at the community level. This requires accurate and consistent stock management and record keeping, and regular resupply/replenishment. Supportive interventions/innovations which could help strengthen data management and reporting and mobilize financial and technical support include the incorporation of m-health modalities such as “C-Stock”⁶⁸. An example from Malawi is the “Enhanced Management system EM approach which has helped foster sustainability (SC4CCM end line report Malawi, pg. 11). The supply system for **iCCM products (drugs and commodities)** was a challenge due to bicycle breakdowns and there was need for **effective iCCM product transport. Enhanced Management (EM)** resulted in better data supply and planning, which meant less trips by CHW for supplies. The CHW capacity on repair of bicycle breakdowns was built. Management was also improved with the installation of District Product Availability Teams (DPAT) who managed the health team including CHW’s by accessing gaps identified in the data and creating ways to fill the delivery gaps (Chandani et.al.2014).

3.7.2. Challenges: iCCM Supply Chain Management

- There were negative effects of stock outs on iCCM Scale up impact and CHW attrition rate: Periods of stock outs were widely reported across Uganda, Zambia and South Sudan and were more acute during the rainy season. The stock outs resulted in (Kristin Oliver et. al. 2012):
 - Communities having negative perceptions of iCCM and CHWs;
 - Increased the attrition rate of CHWs due to demotivation;
 - Health facility staff experienced a significant impact on their workload when cases could not be treated at community level
 - At the initiation of iCCM program, CHWs did not get their initial stocks for all diseases in Nigeria this delayed the implementation⁶⁹;
 - There was decline in demand for iCCM services, for example in Uganda⁷⁰;
 - Affected morale and retention of CHWs.
- No ring-fencing of iCCM commodities for the community level: This study found iCCM

⁶⁷ Kristin Oliver et. al. 2012. Review of Systematic Challenges to the Scale-up of Integrated Community Case Management: Emerging Lessons & Recommendations from the Catalytic Initiative (CI/IHSS). UNICEF/MNCH

⁶⁸ cStock is a RapidSMS, open-source, web-accessible logistics management information system for community-level health products in Malawi (CCM, FP and HIV testing). <http://sc4ccm.jsi.com/emerging-lessons/cstock/>

⁶⁹ iCCM special study finding in Nigeria, 2017. Global Fund

⁷⁰ Strachan et al. 2014

commodities were being utilized at the linked health facility in Nigeria. Previous studies had identified this challenge, for example in Zambia, health facility staff interchanged MOH commodities and iCCM supplies (Clare Strachan et. al. 2014). This had been during instances where: (i) CHWs experience stock outs of anti-malarial drugs when health centre use commodities meant for the community level to ‘top up’ their own supplies; (ii) equally when health centres ran out on RDTs or anti-malarial drugs they used iCCM stock rather than sending it on to community level.

- National level stock outs: Interrupted Supply of iCCM commodities to the Last Mile prior to 2014: For example, findings of a study done in 2012 covering Ethiopia, Ghana, Malawi, Mali and Niger⁷¹ showed these countries had stockouts at any one time for the last one year as follows:

Table 9: Stockouts experienced in one year in Five Countries

COUNTRY	ICCM DRUGS OUT OF STOCK
Ethiopia	Amoxicillin, ORS and Zinc
Ghana	Amoxicillin, Anti-malarial, ORS and Zinc
Malawi	Amoxicillin, Anti-malarial and Zinc
Mali	Amoxicillin, Anti-malarial, antibiotics for pneumonia and Zinc
Niger	Amoxicillin, Anti-malarial, antibiotics for pneumonia, ORS and Zinc

Source : Kristin Oliver et. al. 2012

After 2014 the GF support was provided for increased scale-up efforts including commodities supply chain strengthening; however, stock outs continued as shown by the examples below:

- UNICEF in 2018 established in Ethiopia that even in partner supported program areas, Amoxicillin Dispersible Tablets (AMX DT) was out of stock because it was being used for management of other conditions, such as Neonatal sepsis and Severe Acute Malnutrition (SAM). In countries where the GF is providing free Cotrimoxazole, UNICEF determined a backward shift to using Cotrimin (because its free and available) for pneumonia and using the AMX DT procured for pneumonia programs for SAM and sepsis. This is directly as a result of inaccurate quantification of needs for AMX DT, but also very much on the fact that the GF procures Cotrimoxazole and not AMX DT. Thus, children are getting the wrong treatment.⁷²
- This study established that “there have been stockouts of iCCM commodities at community level” :
In Burkina Faso, respondents indicated they had periods of stockouts: Qualitative findings of this study indicate that supply chain and the availability of drugs are still a challenge despite a slight improvement. There are still challenges and gaps encountered that contributed to stock-outs to continue;

“This year (2017) we already experienced two RDT stock-outs but there was almost no stock-outs for drugs” [ICP – Boulsin, Burkina Faso]

⁷¹ Kristin Oliver et. al. 2012. Review of Systematic Challenges to the Scale-up of Integrated Community Case Management: Emerging Lessons & Recommendations from the Catalytic Initiative (CI/IHSS). UNICEF/MNCH

⁷² Hayalnesh Tarekn. UNICEF 2018

In Malawi, stock outs occurred at the Village Clinic, while the health facility was stocked, this was attributed to: (i) to management issues; (ii) power struggle between medical assistance and HSAs; (iii) Irregular supply of drugs due to inadequate transport facilities (iv)Power struggle between Medical Assistant at health center and HSAs, and (v) irrational use of drugs.

Nigeria: respondents indicated there were prolonged stock-outs, especially ACTs for malaria.

Zambia and South Sudan respondents indicated there were periods of stock outs this was especially during the rainy season, transportation for distribution was affected.

Rwanda : CHWs experienced stockouts arising from link health facilities taking long to process refill requests, they waited long for the replenishment

3.7.3. Interventions to Address Country/National Level Stock Outs by UNICEF

In 2012 UNICEF had stepped in to ensure un-interrupted stocks by temporarily supplying essential iCCM drugs and commodities in Ethiopia, Ghana, Malawi, Mali and Niger. In Ethiopia, GF and the World Bank stepped in to supply anti-malarials and Zinc respectively, with UNICEF supplying the rest of the drugs. In Ghana, Malawi, Mali and Niger UNICEF supplied all the iCCM drugs and commodities (anti-malarials, antibiotics, ORS and Zinc)⁷³.

3.7.4. Intervention Strategies – Innovations to Strengthen iCCM Supply Chain

In order to address the iCCM supply chain bottlenecks at the two levels, UNICEF supported assessments of supply chain, procurement and distribution processes, and the implementation of operational studies in four (4) countries: Malawi, Rwanda, Ethiopia and Zambia together with the John Snow Incorporation (JSI) known as “improving supply chains for community case management project (SC4CCM)”. In 2009 the Bill and Melinda Gate Foundation funded a five-year intervention research project to test various techniques in an effort to strengthen supply chain systems in Rwanda, Ethiopia and Malawi. The objective of the intervention research project was to identify simple, affordable and sustainable community ran initiatives, which improve supply chain.

The study concluded: “Many conditions are necessary to ensure continuous product availability at the community level; however, a supply chain works best when three key elements (product flow, data flow, and effective people) are deliberately included as an integral part of the system design. Although these elements may be designed differently in different settings, streamlining and synchronizing them while ensuring inclusion of all components for each element improves supply chain performance and promotes product availability at the community level” (Chandani 2014).

3.7.4.1. Rwanda: Innovations to Strengthen iCCM Supply Chain Management

⁷³ Kristin Oliver et. al. 2012. Review of Systematic Challenges to the Scale-up of Integrated Community Case Management: Emerging Lessons & Recommendations from the Catalytic Initiative (CI/IHSS). UNICEF/MNCH

The intervention strategies implemented concurrently were: (i) “standard Resupply Procedures (RSP)”, a demand-based re-supply system for CHWs; and (ii) Quality Collaborative (QCs) and Incentives for Community Supply Chain Improvement (IcSCI). The objectives of these two interventions were to make CHW, health center and district staff engaged in supply chain tasks more effectively and hence improve product availability. These intervention strategies were developed and tried in 3 out of 31 districts nationally. The RSP required use of three tools: (i) CHW Stock cards; (ii) Magic Calculator to calculate resupply quantities; (iii) Resupply work sheet (RSW) that the cell coordinator used to aggregate data. The QCs and IcSCI targeted all three elements of the SC4CCM framework, namely product flow, data flow and effective people. The findings indicated a short-lived success of the intervention strategies; however, the success achieved resulted from project inputs and did not last long, the iCCM commodities availability dropped significantly towards end of the project despite consistent use of RSPs. Uptake of use of QI teams in Rwanda did not continue as expected due to constraints encountered. The recommendation is iCCM supply chain improvement solutions should be “a simple demand-based standard resupply procedure (RSPs), this should be supported by multi-level, performance-driven QI teams; and it must be implemented within the context of a supply chain where data are made visible to all levels and are used for effective resupply at all levels, and the iCCM program is supported by timely national level quantification and procurement”.⁷⁴

3.7.5. Malawi: m-health Innovations to Strengthen iCCM Supply Chain Management

UNICEF implemented the Catalytic Initiative (CI) funding support in Malawi from 2009 to 2014), which included innovation for improvement of management and supply of iCCM commodities known as a ‘c-Stock’, which is a mobile phone platform.⁷⁵ The C-Stock intervention strategy strengthens demand-based resupply system and improves data visibility through better data flow for operations and management and improving product flow using a streamlined resupply process. C-Stock combines two different approaches (Enhanced Management [EM] and Efficient Product Transport [EPT]): the EM combines interventions to addresses product flow and data flow, with the establishment of District Product Availability Teams (DPATs), which aimed to improve the effectiveness of the people by promoting team performance practices through the use of data to inform decisions and improve supply chain performance.

The data from cStock dashboard is used at the district level for problem solving and decision making to address supply chain issues in a timely manner. Data and Product Flow is as below:

⁷⁴ Strengthening Supply Chains at Community Level – Findings from the SC4CCM project in Malawi, Rwanda and Ethiopia. [www. Sc4ccm,JSI.COM](http://www.Sc4ccm.JSI.COM)

⁷⁵ Summative report on the external evaluation of the Catalytic Initiative (CI)/ Integrated Health Systems Strengthening (IHSS) program in Malawi. University of the Western Cape and Save the Children, USA 2014



- (i) Data flow – the HSA sends an SMS with Stock on Hand (SOH) each month into the C-stock database. The database calculates Months of Stock (MOS) and re-supply quantities, reporting rates, number and duration of stock outs displays on dashboard.
- (ii) Product Flow – District, Zonal and Central staff access HSA logistics data via dashboard and supplies products to the Health Center. The Health Center supplies HSA based on SMS message.

The C-Stock and EM strategies' implementation was scaled up from three (3) to twenty-four (24) out of twenty-nine (29) districts in Malawi by 2014.⁷⁶ Malawi is using the C-Stock for monthly reporting and ordering of stocks by CHWs known as Health Surveillance Assistants (HSAs). At the district level the DPAT meets quarterly and at the health facility level the DPAT meets monthly.

The C-Stock system connects each HSA with the supply manager in the District Health Management Team (DHMT) who receives the Short Message service (SMS) information, prepares the new supply, and notifies the HSA when it is ready for pick up at the health facility. The District Product Availability Team (DPAT) team is made up of the following members: District IMCI Coordinator; District Pharmacy Technicians; HSA Supervisors; Drug Store in-charges; and HSAs.

3.7.5.1. Malawi Achievements: mHealth and iCCM Supply Chain

The end-term evaluation of the SC4CCM in Malawi determined the following achievements:

- Product availability at community level had more than doubled from baseline to midline, the increase was driven partially by more products in the system as well as the improvements in the supply chain system.
- cStock achieved its objective by improving visibility of community logistics data; with

⁷⁶ SC4CCM endline report Malawi, pg. 11

reporting rates maintained at above 80% over a period of 5 months prior to the mid-line evaluation.

- The Enhanced Management (EM) intervention which combines cStock and District Product Availability Teams (DPATs) showed the most promising improvements in supply chain practices and processes, such as reporting rates and lead times.

Institutionalization and national support for the SC4CCM was achieved, the Global Fund grant is funding C-Stock and MOH staff took full responsibility for all system administration for cStock and support for the DPATs. The C-Stock continued to operate at national scale.

Malawi Field Study in-country Findings on achievements of C-Stock and EM Strategies

Supply of iCCM commodities at the community level required HSAs to collect iCCM drugs and supplies from the pharmacy at the closest/linked health center managed by Senior HSA or Medical Assistant. Supplies to health facilities are managed by the district level who procure drugs from the Central Medical Stores Trust (CMST) through the local government finance committees. All procurements have to be made within the confinements of the set budget. This quote from the district pharmacy in Kazungu explains procurement procedures based on push system upto district level and quantification of iCCM commodities (pull system – C-Stock) from link health facility to community level, which requires quality data from the community level;

“In other words, what he is trying to say, we know the amount in theory, not practical, we don’t handle the money, every district is being told that your monthly allocation is so much, your one-year full budget or drug budget is so much but we don’t handle the cash so when we are procuring the drugs from central medical stores we make sure that we go—we should not go beyond that but payment is done by national local government committee, yeah”. [Pharmacy KII]

The drug supplies from the central medical stores in Lilongwe are taken directly to the link health facility. Deliveries occur once in a month from Central Medical Stores (CMST) based on push system. Emergency orders including those for iCCM are placed through for-example Kasungu district hospital.

3.7.5.2. Replicable lessons learned from Malawi iCCM

The Enhanced Management (EM) approach if implemented well has the potential to strengthen the community health supply chain and improve product availability of essential medicines in the long term and should be considered a priority in efforts to achieve the indicators of child health outcomes nationally.⁷⁷ (SC4CCM mid-evaluation 2013)

3.7.5.3. Challenges Encountered with Malawi iCCM Supply Chain

- Difficulties with forecasting iCCM drugs and supplies using consumption data: this was because the Malawi’s community level data was not of the required quality to permit use of consumption data. This means the morbidity estimates have to be used for forecasting iCCM commodities and supplies leading on occasion to over- or under-

⁷⁷ Improving supply chain for Community Case Management of pneumonia and other common childhood illnesses (SC4CCM) Midline Evaluation Report 2013.

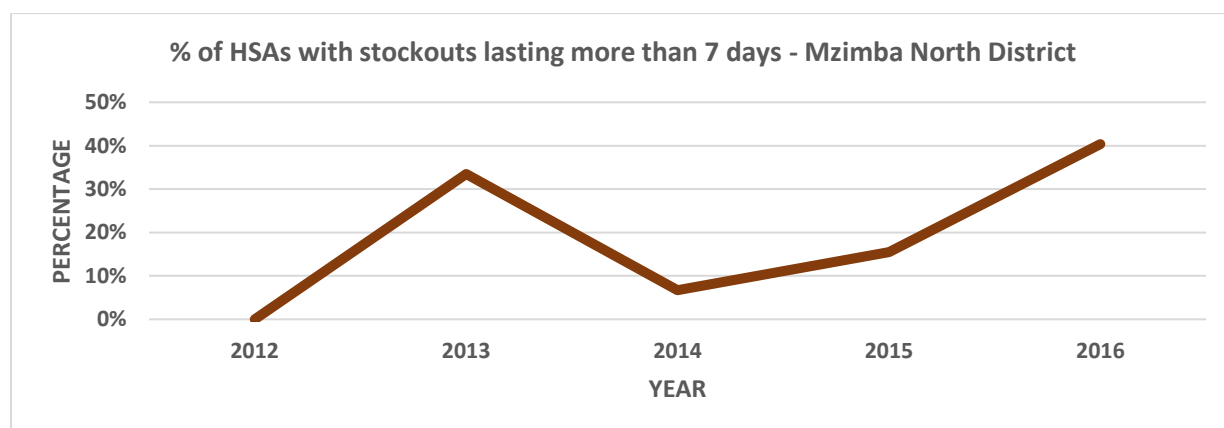
quantifications.

- This quote is on the drug distribution and delivery challenges arising on transportation from District Health Office (DHO) to health facility:

“Here we write requisition vouchers and go and deliver there if they have they supply you and sometimes they provide you with a vehicle if its available, in the past we could even use public transport but because of different issues maybe involved in drug theft it is strictly government vehicle. So sometimes you order this month, you just order and leave it there when they have a vehicle, like you have come, supposed I have an order I could say there are visitors are coming this way please can you give them so sometimes it takes two months.” [HF in-charge].

As figure 5 below illustrates, the trend of stock outs in Mzimba North district, the year with least percentage of HSAs with stock outs lasting more than 7 days was between 2013 and 2014. This was at the time cStock systems had been rolled out to scale. However, it should be noted that this achievement was short lived with the percentage of HSAs with stock outs increasing from 2014 and through to 2016 were as high as 40%. The factors that contributed to this surge require investigation as it could be related to the conclusion of dedicated supply chain support from the SC4CCM project and/or emergency situations requiring changes in the GF financing allocations.

Figure 4: Trend of Stockouts lasting more than 7 days in Mzimba North District

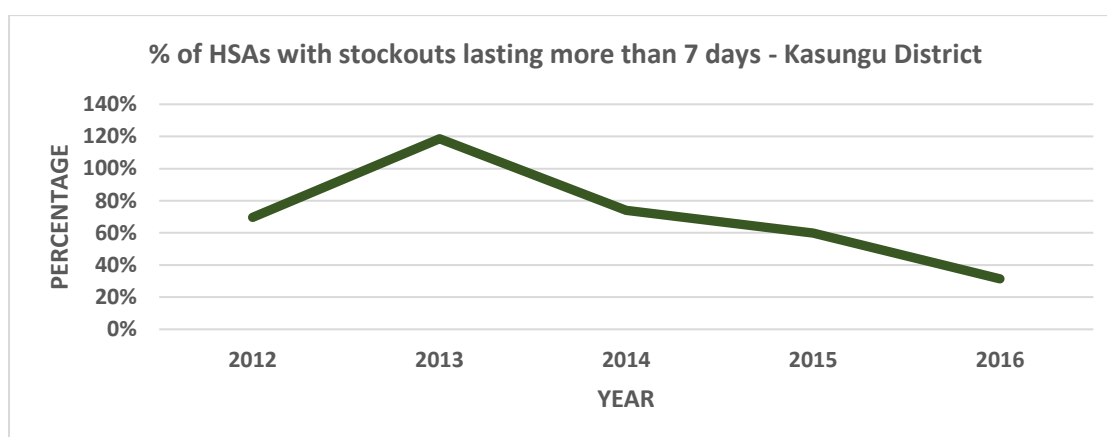


Source: Malawi DHIS2 – November 2017

NB: In 2012, there was no data on iCCM stockouts.

However, the Kasungu District showed a declining trend in the percentage of HSAs with stockouts lasting more than 7 days as shown in figure 5 below. The reasons for the decline were not clarified to this study.

Figure 5: Trend of stockouts lasting more than 7 days – Kasungu District



Source: Malawi DHIS2 – November 2017

- However, even with the best intentions, the Management of iCCM supplies chain was not always aligned to mandated flow of iCCM supplies chain:

“When partners procure drugs/commodities it is the IMCI staff who check on the stock-outs trends and prioritize districts facing critical shortages, priority is childhood diseases (malaria, pneumonia, and diarrhea) & high mortality rates. Reporting is done through C-stock, a mobile phone application”. [KII at national level]

- Gaps in training CHWs (HSAs) on c-Stock: Harmonization of data from health facilities and usability of c-Stock was hampered by lack of consistency in training where the initial batch of recruited community workers were trained but subsequent batches have not been able to undergo C-stock training. This quote explains:

“So, it’s like just by extension, we have HSA’s who were initially trained in iCCM plus that component of reporting to C-stock and then there are other who joined later who were trained in iCCM minus a very partial training on reporting tool so that is also affecting the reporting rate of the district. I am sure it’s happening in most of the districts but because we are here we are talking about our district Kasungu, but I know it is happening, there are people joining in later at a later stage but being given—not in full reporting of C-stock that is also affecting the reporting rate.” [KII Kasungu District]

3.7.6. Ethiopia: Innovations to Strengthen iCCM Supply Chain Management

The SC4CCM intervention strategy in Ethiopia was implemented in two phases:

Phase1: was development of supply chain (SC) skills of CHWs and health facility staff using ready modules and local problem solving. was to develop the capacity of CHWs and health centers on effective management of health products and supply chain knowledge and skills. At the initiation of SC4CCM in 2010, the country was transitioning from fixed-quantity supply (FQS) – kits system to a demand-based supply chain system; the Integrated Pharmaceutical Logistics System, or IPLS. The National Integrated Supply Chain Management (IPLS) outlines

how data and products should flow between the levels of the supply chain, therefore the SC4CCM project was to build capacity of CHWs and Health Center staff on CHW supply chain and IPLS.

Phase II: Strengthening the National Integrated Supply Chain Management (IPLS). This had three (3) components:

- i. Strengthening of implementation of SC procedures;
- ii. Integration of CCM products into IPLS;
- iii. Improvement of data visibility through mHealth.

The intervention strategy (SC4CCM) achieved the desired results; proved to be a rapid, affordable and effective way to build capacity in supply chain knowledge and skills for CHWs. Success was measured by the following:

- Supply and demand information was part of the resupply request; data was visible up to the HC
- Regardless of how the data were presented, once the right data were available in a usable format, the QI teams and meetings turned data into usable format for supply chain level.

3.7.7. Nigeria iCCM Supply Chain Management Achievements

Nigeria's supply chain management at Primary Health Care (PHC) and community levels is not institutionalized to operate using best practices e.g. Demand driven distribution to guarantee regular availability of quality iCCM medicine, and other commodities at the point of use⁵⁸. In Nigeria, development partners are the main providers of funding support for procurement of health commodities including iCCM package kits for malaria, and non-malaria commodities. Procurement and distribution of drugs and medical supplies by supporting partners, is done jointly with the government. FMOH and SMOH plans determine commodity requirements for distribution in different levels of health systems.

3.7.7.1. Success in iCCM Commodities Supply chain implementation

- Following the initial iCCM training supported by Global Fund; the non-malaria commodities were reported to experience less stock-out.
- Malaria Consortium, the iCCM (SR) implementing partner in Kebbi and Niger states supported the CRS (PR) in successful quantification of malaria commodities including development of distribution plans based on the organization's experience. The non-malaria drugs were supplied by UNICEF.

3.7.7.2. Challenges Faced with Nigeria iCCM Commodities Supply Chain

- This study was informed by caregivers of frequent and prolonged drug stock-outs especially malaria drugs (ACTs), which was a major challenge that resulted in CORPs' prescribing drugs for caregivers to buy from local shops during stock-out periods. The claim on stock outs was corroborated by information given by CORPs in Niger's 16 LGAs on occasional stock-outs of some drugs within a month, mainly ACTs for malaria, but also an incomplete iCCM package in the kits distributed to the CORPs.

- Bureaucracy in engagement of third party logistic companies (3PLs) delayed availability of commodities at health facilities. Early engagement of 3PLs would have reduced the effect of the bureaucratic process and ensured timely availability of commodities at service delivery points in GF supported states and LGAs.
- Quantification assumptions used in NFM was based on morbidity data in the absence of representative consumption data and this led to inaccurate estimation in the stock of health products for use in the facilities, and subsequent stock outs. However, with the new NFM (2018 – 2020) grant it was anticipated quantification will be based on actual uptake. The new NFM grant also changed to a state-wide model whereas previously it was LGA specific. There are therefore various partners working in the same state some of whom are providing the whole iCCM package and others are providing only some components, which makes quantification difficult.
- Transport and communication especially during rainy season have been major accessibility barriers for distribution of the iCCM package in some hard-to-reach places which are practically unreachable due to floods.

3.7.7.3. Lessons Learnt from Nigeria iCCM Supply Chain

Nigeria has recently launched a National Primary Healthcare Supply Chain Revitalization Strategy. One of the main pillars of this strategy is to strengthen and harmonize forecasting of primary healthcare commodities across all programmes. However, at the time of the study in 2017, this had not been operationalized.

- Consultative planning meetings could help to anticipate demand of the commodities and plan for replenishments in advance with adequate 'lead time provisions' i.e. considering the amount of time between placing and order and actual delivery of the commodities and factor this in their respective planning across all implementers.
- Key issue in addressing stock-outs especially in the GF supported iCCM implementation areas is to harmonize the supply chain to ensure that both malaria and non-malaria commodities are continuously available at the supporting/link health facilities.

3.7.8. South Sudan iCCM Supply Chain Management

Procurement and supply of iCCM commodities is done by donors and is distributed by NGOs (implementing partners) within their geographical areas of operations. However, due to lack of consumption data, commodities' procurement is based on projections planned during grant making process and not on basis of actual requirement/demand; the iCCM supply Chain in South Sudan is a push system implemented by donors and implementing partners. The management of the supply chain becomes challenging during emergencies/crisis situations, because demand for health commodity supplies soars and all implementing agencies are caught up in the crisis requiring prompt response in providing life-saving treatment for children in Internally Displaced Persons (IDPs) camps within the Implementing Partners areas of operation.

Based on the former 10 states, 8 of the states were under the Health Pool Fund, and two under The World Bank. The World Bank and Health Pool Fund supported procurement and supply of Primary Health Care drugs and commodities. The donors contributing into the Health Pool Fund are DFID, Swedish AID, the Canadian CIDA and USAID has joined recently; coordination of partner's support ensures that the global fund support was not duplicated. Coordination between partners' support in procurement of Primary Health Care drugs and commodities should ensure iCCM services for other under five (U5) year old children including diarrhea and pneumonia are covered as highlighted below:

“if we have this and this is buying other commodities other than anti-malaria and then we use the global fund money to buy so that we don't duplicate so that's the level of the coordination. If this is covering the 8 counties where is the gap so we coordinate we don't want it to be like duplication, they don't do community iCCM ok this is iCCM support we do at the community level you manage at the level of the facility, so it's just coordination that is being done but these donors—these pool funds are like covering the other essentials.” [IDI at national level]

Challenges Faced by South Sudan iCCM Supply Chain

- This study was informed that the Community Based Distributors (CBDs) services are usually faced with increased demand with the influx of IDPs following security crises, this leads to increased uptake on supplies and subsequent stock-outs.
- During security crisis situations, usually the health facilities are destroyed or looted. This information was corroborated by various other reports including DFID Annual Review and IRC Case Study on iCCM SS⁷⁸ (Naoko Kozuki Katja et. al.)
- Stock-outs at the last mile level, was attributed to complexity of management of the supply chain, which is complicated by: during security crisis and rainy season, the movement of CBDs and CBD Supervisors to collect the drugs and commodities is restricted.
- Additionally, the iCCM supply chain had been adversely affected by the stopping of storage of large quantities of drugs and commodities in warehouses due to threat of damage or looting⁷⁹ (IRC, UNICEF, iCCM Case study May 2017).
- The government of South Sudan has not been undertaking quantification, forecasting and procurement of iCCM medicines and commodities at the national level; it is the PSI (Principle Recipient) and other donors/partners who undertake quantification with participation of the MOH, as per the quote below;

“So literally—the Government of south Sudan was doing it before but for the last 3 or 4 years now it has not been buying any medicine for the country so it's all the different donors, the world bank we know, USAID, the health pool fund so the different donors do procurement but this is done in coordination with the ministry of health, this

⁷⁸ Naoko Kozuki Katja et al. An Integrated Community Case Management in Acute and Protracted Emergencies Case study for South Sudan May 2017. International Rescue Committee, UNICEF)

⁷⁹ IRC, UNICEF, iCCM Case study May 2017

department is involved when they do the quantification, the forecast of how much is required and how much they are going to procure so that there is also no duplication. So, it's still being done in bits like ok this donor is supporting this and this is procured under this donor separately.” [IDI national level]

At the community level, quantification is undertaken as highlighted below:

“Ok at the community level you know they have the malaria coordinators (covers all iCCM commodities) at the level of the state and at the level of the counties we have focal persons, health focal persons at that level and the implementers at each county are supposed to work with these people to raise the quantification, the forecast of what they need, the commodities and stuff like that and then it comes to the focal point of the state and then it comes back to this level so it's done at that level.” [IDI at national level].

Lessons Learned South Sudan iCCM Supply Chain

The findings from qualitative interviews, established that stock outs of iCCM drugs and medical supplies were being experienced due to the following contributing factors:

- (i) Delay in procurement by the PR;
- (ii) Misplaced drugs and supplies, which are not traceable and might be sitting in some store;
- (iii) Problems with transportation system;
- (iv) Storage in an inaccessible location and out of reach of the destined location;
- (v) The donor supported medicines and medical supplies do not cover all the counties/payams; this is because new counties/payams were being created (Originally there were 10 states and 86 counties; they have been increased to: 28 states with 180 counties).

3.7.9. Burkina Faso iCCM Supply Chain Management

In Burkina, iCCM drugs and supplies procurement is led by the MOH through the CAMEG - Centrale d'Achat des Médicaments Essentiels Génériques (Central Agency for the Purchase of Generic Essential Drugs). With the supply chain, when the drug supplies reach the health centers, they are received by the head of health facility who then stores them in drug stores in the health facility pharmacy. This is where ASBCs come to take them to their respective village.

The CHWs performance evaluation study in Burkina Faso by Robertson (John Hopkins University, 2015) found the iCCM implementation during the period 2008-2013, had frequent stock outs, which negatively impacted on CHWs due to perceptions by the community, this was regardless of their previous performance level in provision of iCCM. In this study, caregivers indicated stock outs and the limited performance and utility of CHWs, and negative effect on iCCM services credibility among the community.

Challenges with Burkina Faso iCCM Supply Chain

- Findings from the qualitative interviews indicate that the supply chain and the

availability of drugs was still a challenge, even though there had been a slight improvement from the past. The quote below is indication of the status at the time of the study;

“This year (2017) we already experienced two RDT stockouts but there was almost no stockouts for drugs” [ICP Boulsin]

- As in the previous iCCM program (2008-2013), ASBCs reported that they requested a new supply of drugs and supplies from the head of the health facility [CSPS]; however, due to stock-outs at the District level, ASBCs were told to refer sick children to the CSPS:

“We have been given the drugs [amoxicillin, zinc & ORS and RDT] only once and since then we do not have anymore. We reported to the “Major” [the Head of the Health Facility] and were told that we have to wait. But we have not had it yet. And yet, it has been two months since it's over” Yes, we are only giving referrals, that's it. [CHW from Tebla 2]

Findings from this study corroborate with those of previous iCCM program (2008-2013) study, that the stockouts were being perceived by the populations as one of the iCCM's weaknesses. In general, among the most common concerns within the community regarding the role of CHWs and iCCM implementation, drugs and supplies stockouts were regularly mentioned by both men and women in the community.

Below are some quotes from interviews with community members about the services offered by the ASBC;

“What I do not like is that currently the ASBC do not have drugs” (FGD women of Tebla)

“My son got sick one night and I went to see Moïse, the village's ASBC. Unfortunately, there was no medicine and I did not know what to do. Thanks to God the next day the child was feeling better” (FGD men from Boulsin)

“I do not like the fact that they do not have any medicine at their disposal. I went to see them three times and unfortunately there was nothing. My wives also went, and they got nothing. I often wonder if they are doing it on purpose or there are really no drugs” (FGD men from Boulsin)

3.7.10. Zambia iCCM Supply Chain Management

Zambia has a functioning national supply chain management, guided by the National Supply Chain Strategy for Essential Medicines and Medical Supplies (NSCSEM & MS 2013- 2016). Implementation of the National Supply Chain Strategy (NSCS) 2015-2017 had been on course, as well as the Zambia's PSM system for essential medicines supplies, which had been enjoying support from donors and development to supplement the government efforts in overall commodity supplies system in the country. Several mechanisms had been established to manage partner coordination within the various supply chain elements including a supply

chain co-ordination committee (sub-group of the Cooperating Partners group), procurement and supply technical working group led by MoH and a National Supply Chain pipeline co-ordination committee (Secretariat MSL).

Achievements made in the Zambia iCCM Supply Chain

The Global Fund and other partners have over the last few years invested and built capacity in the Zambian supply chain management system. For example, strengthening of the warehouse capacity at MSL, LMIS systems, and regional hubs: The current GF grant supports construction of regional hubs as way of improving last mile delivery. The Global Fund Office of Inspector General (OIG) found “Medical Stores Limited (MSL) was distributing most medicines and health commodities to the District Health Offices in most parts of the country including last mile distribution”.⁸⁰

Lessons learned from Zambia iCCM Supply Chain Management

- Supplies from government system were not specified or ring-fenced to ensure drugs earmarked for the iCCM program are not in any way used within the health facility.
- Drugs which are in high demand and are in short supply end up being consumed at HFs. Most community-based program such iCCM benefit from partner supplies compared to government (MOH). Commodities and supplies procured and well stocked by implementing partner Christian Health Association of Zambia (CHAZ) reach the last mile without delay.

3.8. Service Delivery and Referral

Evidence from published literature, grey materials and field study confirmed that all of the 18 countries used tools with pictorial job aides to facilitate CHW’s comprehension and in the delivery of quality health care. The iCCM CHW training tools (theory and clinical practice) covered the following areas: clinical assessment, diagnosis, management of the illness, and referral/counter referral. The training for CHWs focused on the guidelines application/adherence, completion of the data capture tools and the referral/counter referral forms. The study established that CHWs were aware of their roles and responsibilities through the qualitative interviews and review of the supervision checklist/reports. The CHWs shared information on their referral and counter referral practices. The health staff at the linked health facility, were aware of the referral and counter referral system and shared information on the management of referrals and adherence to the counter referral requirement. Qualitative interviews undertaken in five (5) out of the six (6) countries (Burkina Faso, Malawi, Nigeria, South Sudan and Zambia) indicated Care Givers were satisfied with the timely management of their sick children through iCCM services; however, they were concerned about stockouts of iCCM commodities, among other issues; which could have contributed to iCCM low utilization rates.

3.8.1. Role of iCCM Integration & Systems Capacity in Successful Service Delivery & Referral

The level of integration of iCCM systems and services with the MOH maternal, neonatal and child care/primary health care services varied across countries. Countries that had invested

⁸⁰ OIG Audit of Global fund Grants to the Republic of Zambia. December 2017.

in iCCM systems capacity development and integration of iCCM into the national health systems had made achievements in expected outcomes of iCCM program. In Malawi and Ethiopia, the iCCM program had been integrated into the Health Extension Worker Program and the national health sector program under the Essential Health Care package, respectively. The capacity of CHW in Ethiopia and Malawi had been ensured by the recruitment criteria which required the candidates to be literate and the training that had adhered to WHO standards; subsequently, facilitated the achievement in delivery of under five children quality health care services by CHWs⁸¹ (Bernadette Daelmans et. al. 2016).

Nevertheless, the iCCM programme in Malawi faced challenges in linking the HSAs and the health center level for timely referral, improved monitoring, and supervision. Gaps identified in skills reinforcement and sustained support from the linked health facility resulted in the following services quality issues:⁸² (Humphreys Nsona, et. al. 2012)

- Almost one-half of children requiring referral the severity of their condition was not well diagnosed; this is a problem of iCCM service quality delivery.
- Designated supervisors are senior HSAs and, in some instances, environmental health officers; these two cadres do not have clinical responsibilities and experience. Even though trained in iCCM they do not treat sick children.

3.8.2. iCCM versus facility-based IMCI for management of malaria, pneumonia & diarrhoea

Evidence⁸³ documented by comparative data review study in six countries: Ethiopia, Cote d'Ivoire, Rwanda, Sierra Leone, South Sudan and Uganda had shown CHWs' community case management (CCM) services had higher use rates. Review of data indicated increased treatment rates; but sometimes overtreatment for pneumonia and malaria, which raised the issue of rational drug use in management of fever cases and suspected pneumonia. This is not impacted by RDT use⁸⁴ comparatively, diarrhea recorded low number of treatments, this is likely due to the perception that fever (pneumonia and malaria) is more dangerous than diarrhea and therefore caregivers are more likely to seek care. Study findings had shown that regular supervision was associated with improved quality of care and good iCCM program outcomes^{85, 86}.

3.8.3. Field Study Deep Dive Country Findings – iCCM Services Provision and Referral

3.8.3.1. Malawi iCCM Services Provision and Referral - Achievements

⁸¹ Bernadette Daelmans et. al. 2016. iCCM what we have learned? Am. J. Trop. Med. Hyg., 94(3), 2016, pp. 571–573

⁸² Humphreys Nsona, et. al. 2012. Scaling Up Integrated Community Case Management of Childhood Illness: Update from Malawi. Am. J. Trop. Med. Hyg., 87(Suppl 5), 2012, pp. 54–60 doi:10.4269/ajtmh.2012.11-0759

⁸³ Yolanda Barberá Laínez et. al. 2012. Insights from Community Case Management Data in Six Sub-Saharan African Countries. Am. J. Trop. Med. Hyg., 87(Suppl 5), 2012, pp. 144–150

⁸⁴ Johansson E et al paper: <https://malariajournal.biomedcentral.com/articles/10.1186/s12936-016-1439-7>

⁸⁵ Yolanda Barberá Laínez. Et.al. 2012. Insights from community case management data in six sub-Saharan African countries. Am. J. Trop. Med. Hyg; 87(Suppl 5), 2012, pp. 144 - 150

⁸⁶ Guenther, T., Laínez, Y. B., Oliphant, N. P., Dale, M., Raharison, S., Miller, L., ... Diaz, T. (2014). Routine monitoring systems for integrated community case management programs: Lessons from 18 countries in sub-Saharan Africa. *Journal of Global Health*, 4(2), 020301. <http://doi.org/10.7189/jogh-04-020301>

- Most caregivers reported to have sought care from Village Clinics as first point of care, their perception was “The services at Village Clinics or the health facilities were comparable, for both undertake tests to confirm the disease”; hence, availability of expected quality of services at both village clinic and health facility respectively. The fact that in Malawi HSAs are not in the village clinics every day but rather support work at the facilities could have as well brought about this perception. There is one caregiver who had sought care services from a traditional doctor after the child continued not feeling well following a visit to a health facility. Her initial thoughts were that her child had been bewitched as indicated below;

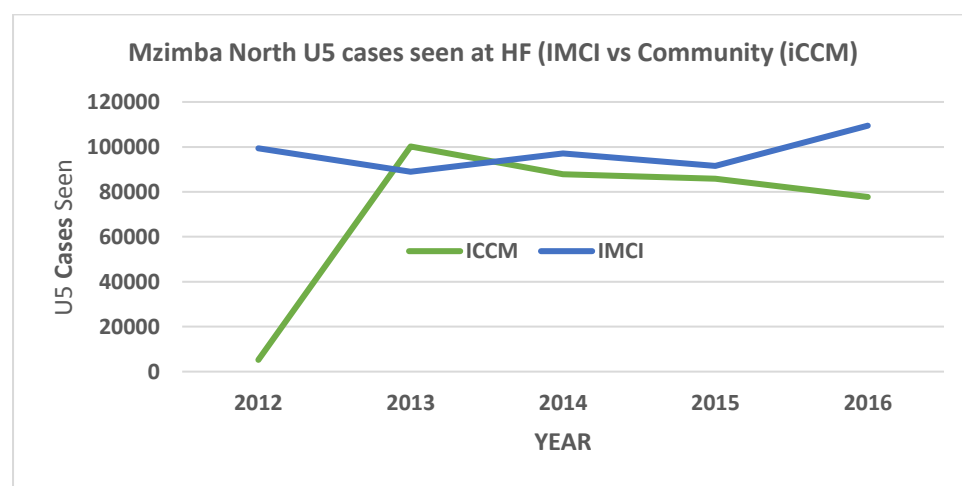
“This one went to the traditional doctor, maybe she was suspecting something (native speaking) she was suspicious with something, there were some boils here on the neck, so she thought maybe somebody has bewitched the child (laughter) (native speaking) after receiving the treatment from the health facility the child did not improve so she decided to go to the herbalist. [Caregivers FGD].

The study finding corroborated with the documented: the quality level of services provided by HSAs for under-fives illness is similar to that in first-level health facilities in Malawi; except for pneumonia, which had issues of correct assessment and treatment of suspected pneumonia and the identification and referral of sick children with danger signs.⁸⁷

Complementarity of iCCM services with Facility based Service (IMCI)

In both Kasungu and Mzimba North Districts, as of 2013, the number of sick children under five-years of age being seen by CHWS (iCCM) or at the health facilities were nearly equal as seen below figures 6 and 7.

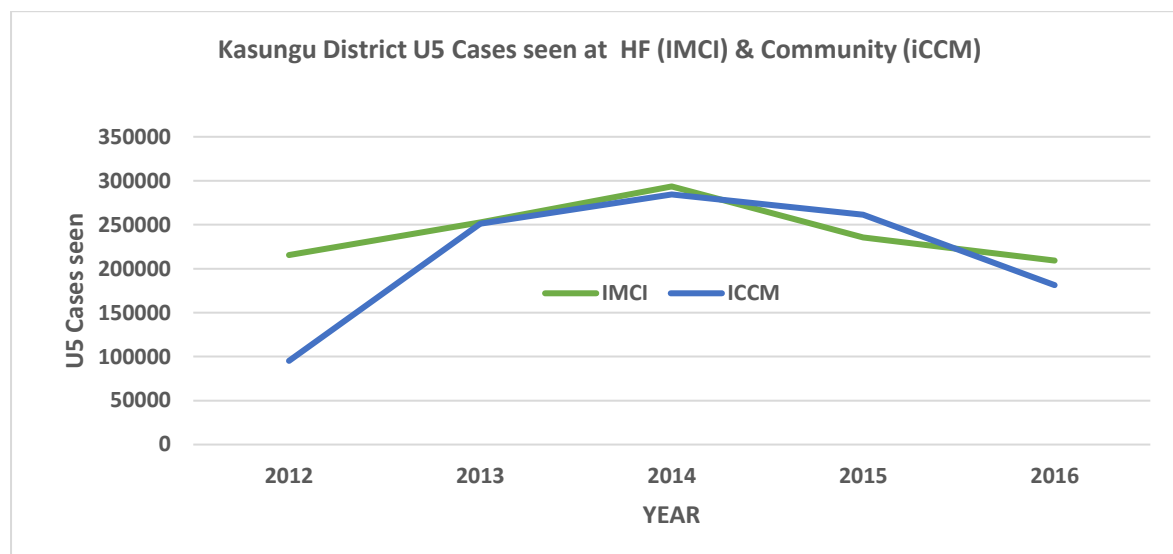
Figure 6: Mzimba North U5 cases seen at HF (IMCI vs Community)



Source: Malawi DHIS2 – November 2017

⁸⁷ Gilroy, K. E., Callaghan-Koru, J. A., Cardemil, C. V., Nsona, H., Amouzou, A., Mtimuni, A., ... Bryce, J. (2013). Quality of sick child care delivered by Health Surveillance Assistants in Malawi. *Health Policy and Planning*, 28(6), 573–585. <http://doi.org/10.1093/heapol/czs095>

Figure 7: Kasungu District U5 cases seen at Health facility (IMCI) & Community (iCCM)



Source: Malawi DHIS2 – November 2017

- Caregivers expressed satisfaction with the services offered at the village health clinics (iCCM); they had perception that “the HSAs are able to identify illnesses by asking questions, performing mRDTs and giving medications; they also expressed satisfaction with additional services provided by HSAs which include immunization, sanitation advice and family planning”. The following quote expresses satisfaction with HSAs service;

“This one says she brought her child here and the village clinic manager and the clinic manager would write a referral letter to the health center. She says a certain time the child was suffering from fever and she says the child was very serious, so the village clinic manager decided to refer the child to the health center, yes”.

The care givers indicated the HSA was a friendly man; and the community was able to put up a bricks structure to be used as village clinic by HSA. UNICEF assisted by bringing iron sheets. This support provided to the HSA and appreciation of the services offered by the community, motivates the community health worker to provide quality services to achieve iCCM outcomes, as the quote below shows;

“when we bring the child here, the child is assisted, and the services are done in a quick way, in time, yes.”

“Even if you bring a child at night he will still assist us.” [Caregivers FGD].

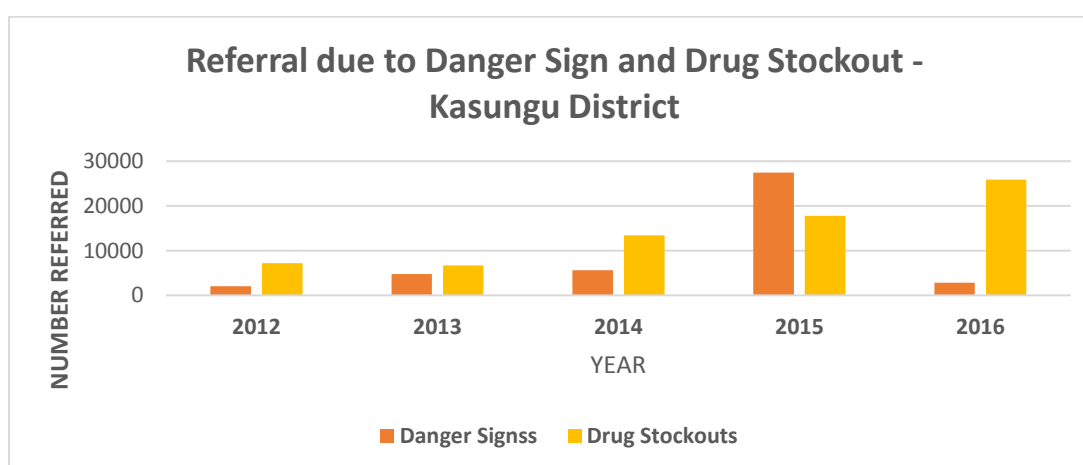
- The HSAs interviewed demonstrated “ability to identify common symptoms for iCCM childhood illnesses with the help of sick child recording form as guide; and they are able to use timers to assess whether a sick child is suffering from pneumonia, and to refer severe cases, they are able to perform MRDTs for malaria and to offer antimalarial medication, If the child has fever and is RDT negative, HSAs are able to advise caregivers on homecare ways for the child, including intensified breastfeeding, and asking them to return to the clinic after 3 days if there is no improvement, they

are able to identify diarrhea by determining if the child has passed stool (loose or watery stool) more than 3 times a day within 24 hours. HSAs reported that they refer children with bloody diarrhea to health centers and give ORS mixed right at the clinic as **pre-referral therapy**". The following quotes from HSA focus group discussion highlights their abilities to identify symptoms.

"For a child who is less than a year, if the child breaths 50 beats or more then we decide that child has fast breathing but for all children who breath 40 breaths and above for children are aged a year up to 5 years then we decide that the child has fast breathing.... We also check on chest indrawing for children.... We also do mRDT to see if the child has malaria, if he has malaria we treat at our clinic.... You we ask the mother and if she says my child is passing stool three times or more a day then that's diarrhea." [FGD with HSAs]

- **Follow –up after treatment:** HSAs indicated they "advise caregivers to return to the clinic 3 days after offering treatment whether the child **felt better or not**. They are able to do follow-ups on those who don't return because they record their physical addresses every time they visit they clinic. Once the referred children are treated at the health facility, the HF in-charge or whoever treated the child gives a report feedback to the caregiver to return to the HSA at the village clinic". Verification confirmed use of feedback section by HSAs, an indication of practice of "counter-referral".
- The referral system was well organized between village clinics and health centers. This was evidenced from the following excerpt from the IMCI coordinator.
"Yes, there is, of course the referral system—there are referral notes or referral letter which the HSAs uses so when he is referring he will write the referral note and give to the mother and below there is a feedback section whereby the mother is supposed – when the medical assistant or health worker has seen the child they have to give feedback to the HSAs." [IMCIc]

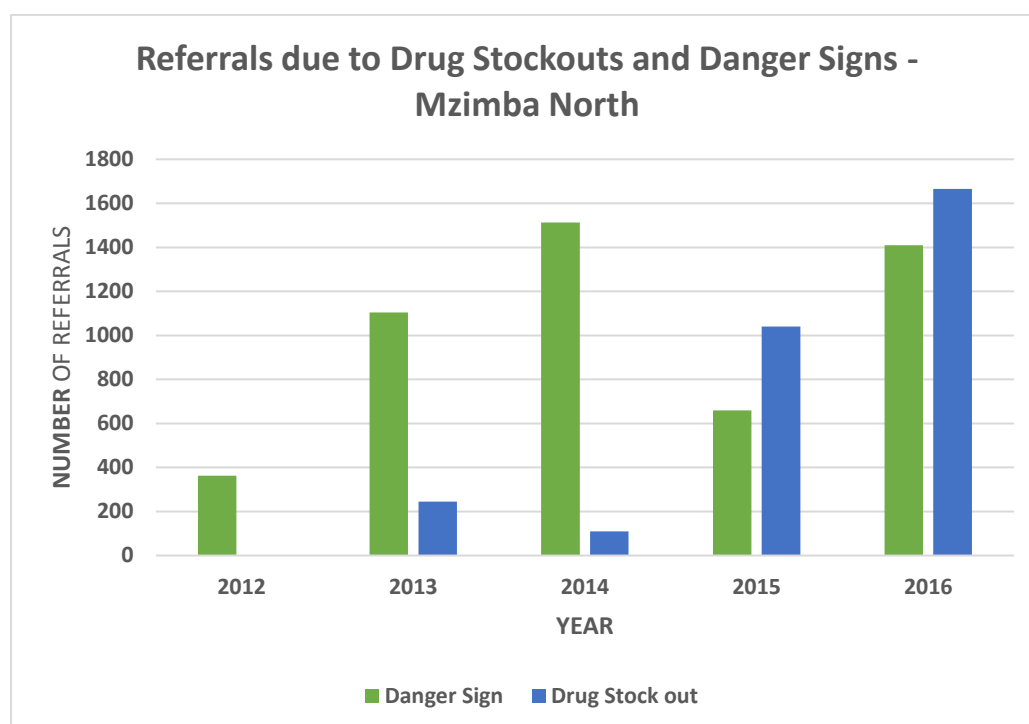
Figure 8: Referral due to Danger sign and Drug Stock-out in Kasungu District



Source: Malawi DHIS2 – November 2017

Referral due to danger sign was very low in 2016 and very high in 2015 as due to stock outs, the CHWs necessarily had to refer even in the absence of danger signs.

Figure 9: Referral due to Drug stock outs and danger signs-Mzimba North.



Source: Malawi DHIS2 – November 2017

Challenges – Malawi Services Delivery and Referral:

- Referral rate for malaria, pneumonia and diarrhea by iCCM CHWs was low as follows: 16.7%, 12.4% and 15.6% respectively⁸⁸ (PSI Baseline Study, 2015); this could be attributed to a possible irregular and mostly no clinical observation during supportive supervision⁸⁹ (Bernadette Daelmans et. al. 2016) and the CHWs having difficulties in identifying of danger signs for referral; an indication of non-adherence to clinical algorithms, no measurement of respiratory rate etc.
- Care givers were not complying with the referral advice given by HSA, the reason they gave for not taking the sick child for specialized management at referral health facility is: (i) child got better, (ii) lack of transport due to costs or (iii) distance too far. The HSAs were also not undertaking follow-up on compliance by the caretakers with the referral advice⁹⁰ (PSI Baseline Study, 2015).

⁸⁸ iCCM quality of care baseline survey in 5 districts in Malawi, 2015 - PSI

⁸⁹ Bernadette Daelmans et. al. 2016. iCCM what we have learned? Am. J. Trop. Med. Hyg., 94(3), 2016, pp. 571–573

⁹⁰ iCCM quality of care baseline survey in 5 districts in Malawi, 2015 - PSI

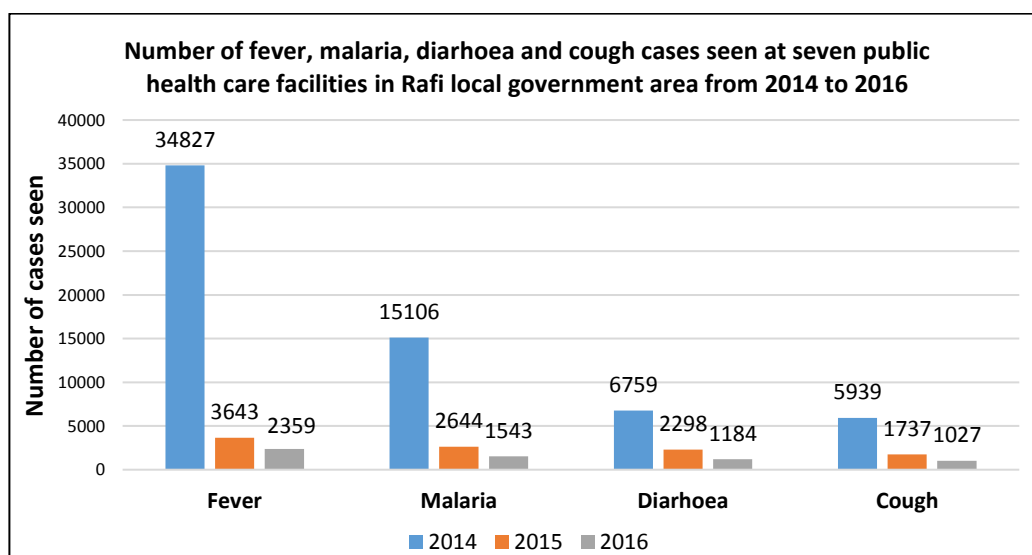
3.8.3.2. Nigeria iCCM Service Delivery and Referral

The Nigeria national iCCM implementation guidelines 2013 and the Job Aids⁹¹, outlined procedures and actions that CORPs followed for management of childhood illnesses and referral of children with danger signs. Besides referral, on recognition of danger signs in a sick child, the guidelines provided clear direction to CORPs on pre-referral treatment such as to initiate care or attenuate symptoms i.e. using various drugs in the iCCM kit to extend the available time to reach the nearest health centre.

Achievement in Complementarity between iCCM and IMCI - Nigeria

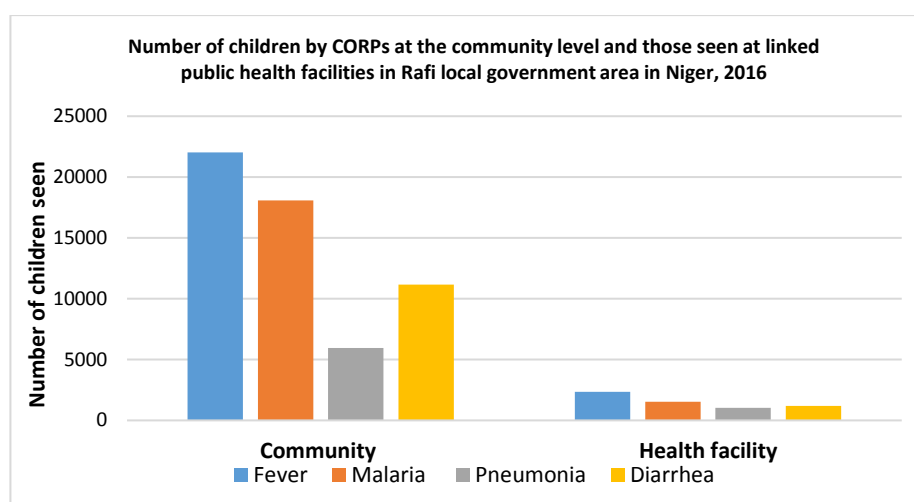
In Rafi LGA in Niger, seven primary health facilities were found supporting iCCM implementation in hard-to-reach areas within their catchment areas. There was a remarkable drop in the number of children seen at the seven health facilities for fever, malaria, diarrhoea and cough from 2014 to 2015 and a further drop in 2016. Data for 2017 was still undergoing processing at the time of the evaluation. The drop in the number of cases seen at the seven health facilities 2015 and 2016 was attributed to increased service delivery at the iCCM communities.

Figure 10: Fever, malaria, diarrhoea & cough cases- Rafi LGA, 2014-2016



⁹¹ Nigeria national iCCM implementation guidelines 2013 and the Job Aids

Figure 11: Children seen by community CORPs & linked HF, Rafi LGA, Niger, 2016



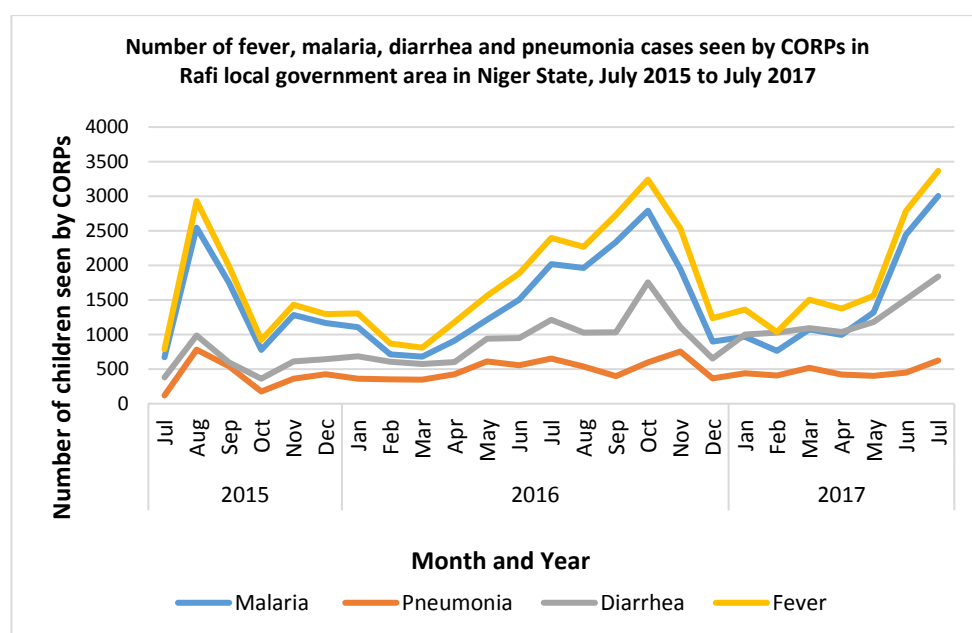
Source: iCCM Evaluation Study team

A comparison of community and health facility data for 2016 (where data were available for the full year for both community and health facility) showed a higher number of cases seen at the community compared to those seen at the health facilities. This suggests that increased access to health care services at the community level contributed to the decline in number of cases seen at the health facilities.

Challenges:

The iCCM service delivery in Rafi local government area started between June and July 2015. There was a sharp increase in reported number of children seen by the CORPs in August 2015 followed by a sharp drop in September and October which remained low until March 2016 and then began to rise again through September 2016 and then dropping again from December to April 2017. This is illustrated in figure 12 below which was derived from data provided by Niger state showing the trend in use of iCCM services. The reasons for the drop in the number of cases seen could have arisen from seasonality (especially malaria), availability of iCCM drugs and commodities and demand (health seeking behaviour) issues but could not be extrapolated only from the number of cases seen.

Figure 12: Fever, malaria, diarrhea & pneumonia cases seen by CORPs, Rafi LGA, 2015-17



- **Community-facility linkages:** Primary health facilities that supported the CORPS did not have the human resource capacity and infrastructure to manage severe cases referred from the community. In both Niger and Kebbi, the evaluation team found that when a severely ill child was referred from the community to the primary health care, quite often another referral was made to a higher hospital due to deficiency in skills or lack of medicine at the first referral HF, which meant considerable time passed between identification of a severely ill child and access to treatment.

Lessons Learned from Nigeria iCCM Services Delivery and Referral

- The additional costs in transport and time taken for eventual treatment were key factors for consideration in the future where if only secondary HFs have the capacity to manage severe malaria, then the inclusion of the PHC in the referral system need to be reviewed, and reinforcement of need to strengthen PHC facilities. This additionally reinforces need for pre-referral treatment care to initiate life-saving care at the community level.
- Exploration of ways and resources for referring severe cases from the community direct to higher referral level or hospital for prompt treatment and alleviation of possible deaths due to delayed treatment of U5 children as a result of PHC lacking capacity was being considered. However, this intervention strategy require cost analysis to determine the feasibility and value for investment considering the key focus of iCCM is to strengthen community health systems and human resource capacity to ensure patients get treated closer to their homes in hard to reach locality.

3.8.3.3. Achievements of Zambia Services Delivery and Referral

- The study established that the CHWs administered pre-referral care and wrote a referral note (to be provided to health center) and at times accompanied the care giver to the health center. Once health care had been provided at the health center, a counter-referral note was sent with the caregiver back to the CHWs who then followed up the child to ensure that all treatments are administered as expected.

- This study noted that trained CHWs were able to identify danger signs on sick children that required immediate referral to the nearest health facility. During KIs and FGDs' field interviews with CHWs, the study established that CHWs were quite versed with detecting danger signs on children brought by caregivers for treatment. They were readily able to enumerate the following danger signs that deserved referral: Unconsciousness, convulsions/fitting, vomiting everything, eye movement high temperature, unable to eat/breastfeed, drowsiness, bloody diarrhea, fever more than 7 days, cough more than 14 days, swollen feet, red or yellow on MUAC, fast breathing. All children referred were given pre-referral treatment and a referral form to take with them to the HF. At the HF referrals are given priority as a way of encouraging patients to seek treatment at community level first instead of coming straight to the HF. It also encourages compliance on referrals. The referral form has a feedback portion that was filled at the HF and taken back to the CHW for the follow up.

- During the stock-outs, CHWs referred patients to HFs to access drugs from there. The quote below shows the understanding of the CHW on the detecting signs of illness;

"A child less than a year, whose breaths are 50 beats or more has fast breathing, while all children aged a year up to 5 years who breathe 40 breaths and above have fast breathing.... We also check if chest is indrawn for children.... We also do RDT to see if the child has malaria, if he has malaria we treat You we ask the mother and if she says my child is passing stool three times or more a day then child has diarrhea." [FGDs CHWs at Mutanda]

- Caregivers expressed their satisfaction with the treatment offered by CHWs, and indicated that it saves them time and money as they do not have to travel long distances to the HF. They felt that this is a very worthy service because when their children are sick they are examined well using the testing kits and given the appropriate medication as illustrated by quote below:

"I explain to the CHW how the child is feeling, then the CHW tests my child if he is suspecting malaria"; "CHW ask for my child's U5 card, then records in the register and test the child"; "My child got better after being treated by the CHWs". [Care Givers FGD]

The quotes below show the caregivers satisfaction with the care given when they took their sick children to the CHW:

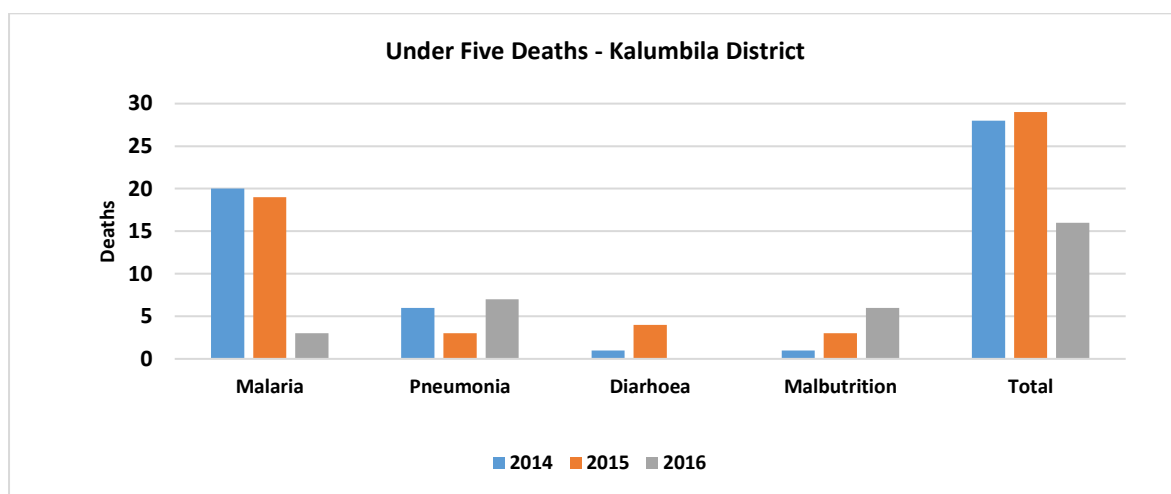
"My child had something stuck on the throat, I went to see the CHW who referred me to the HF. The HF also referred me to the hospital where I was told that maybe it was tonsillitis. I was given the medicine for tonsillitis and I was told to go back after one week. When I went back they told me that my child was fine".

"I went to see the CHW when my child had malaria. The CHW tested my child and found him positive but he did not have coartem, so he referred me to the HF where I was given coartem. The referral form remained at the HF".

“I went to see the CHW when my child had diarrhea and he gave me ORS and explained to me how to prepare it and give my child”.

- Caregivers shared benefits of iCCM as: improved access to treatment in a timely manner thus reducing disease severity and mortality, health and nutrition education, improved sanitation and hygiene, water treatment and encouragement of husbands to take their pregnant wives to hospital for delivery.
- As indicated in Figure 13 below, the under-five mortality rate in Kalumbila District (study site) significantly reduced since the starting of iCCM in 2013/2014 to date:

Figure 13: U-5 mortality trend in Kalumbila District

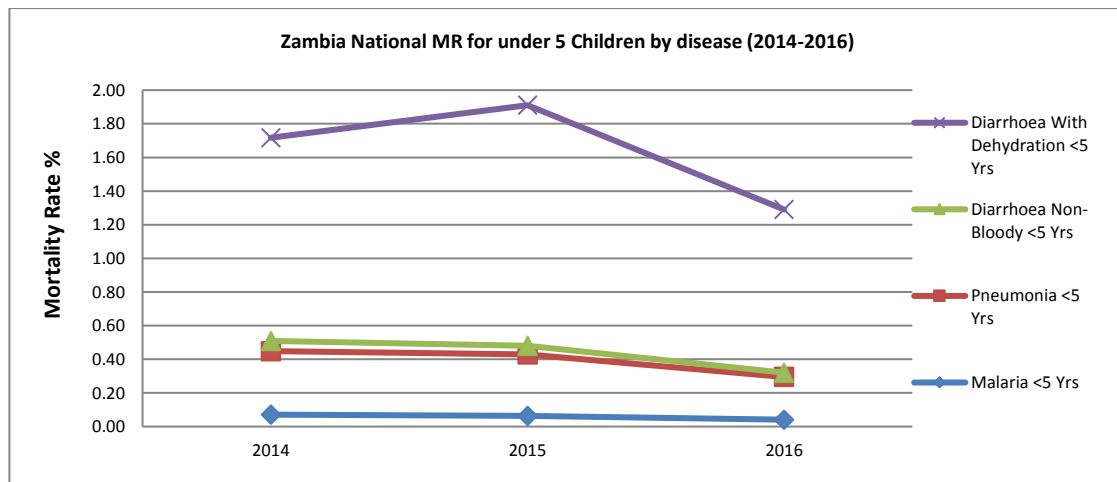


Source: DHIS 2017

Achievements/successes – CHWs Services Provision

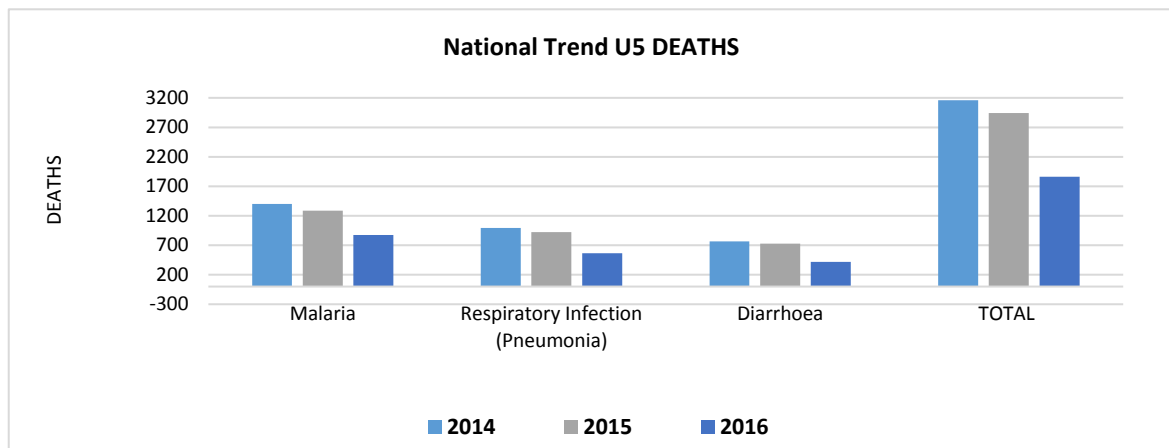
- Nationally, Community health activities and HSAs have contributed to the improved health outcomes for Zambia. Specifically, the subsequent Zambia Demographic and Health Surveys (ZDHS) (1992, 1996, 2002, 2007 and 2013/14) have documented significant decreases in the infant mortality rate (IMR) and under-five mortality rate (U5MR). Likewise, the national under-5 infant mortality rate trends for 2014-2016 also underscore the above achievement as illustrated in Figures 14 and 15 below.

Figure 14: National U-5 Mortality trend: By disease



(Source: DHIS 2)

Figure 15: Trends in U-5 Mortality Rate in Zambia – by condition



Source: DHIS 2

Challenges encountered with Zambia iCCM Service Delivery and Referral

- Caregivers were unhappy with stock outs as this made them either wait with their sick children at home or look for alternatives.

3.8.3.4. Challenges faced by South Sudan iCCM Services Provision and Referral

This study established that due to the conflict crisis in South Sudan, referral systems had collapsed, there was restricted movement due to insecurity; CBD availability and operations had been hampered during conflict crisis and rainy season (May to October) when CBDs themselves were displaced, and also during times of food shortage and insecurity. Quote from a Senior staff MOH national level:

“At the time of shortage of food due to heavy rains and sometimes floods, CBDs would be out of their homes quite often searching for food for their families, security crisis also affect care givers from accessing CBD”. (IDI at National Level South Sudan)

Study findings showed the governments' reluctance or inability to invest in the capacity of iCCM systems i.e. quality of CHWs and their motivation, which negatively affected the achievement in increased services utilization among other outcomes. However, this was somewhat compensated by implementing partners.

3.9. Behaviour Change Communication and Demand Creation

3.9.1 Introduction- BCC for iCCM

The importance of demand creation and social mobilization through BCC for iCCM implementation and scale up is a critical component that both government and partners have been supporting. In the iCCM countries covered by this study, BCC approach that focused on advocacy for MOH, community sensitization and mobilization during the program start-up and implementation proved effective in utilization of treatment of malaria, pneumonia and diarrhoea, which were major killer diseases for children under five years of age.

A case study conducted in Niger and Mozambique established that, in order for the demand creation through BCC for iCCM approaches to be effective, there was need to address both supply and demand-side factors that drive the program implementation. The supply factors included: trained community health workers, adequate supplies of commodities and supervision, while demand factors relate to the program package or promotion of timely and appropriate care-seeking and treatment. The Niger and Mozambique case studies provided further evidence of effect of BCC towards increased uptake of iCCM services (utilization), which contributed significantly in the reduction of under-five children mortality in the two countries. The study also, provided evidence attributing effect of BCC to increased participatory approach in implementation of BCC involving advocacy to policy makers and partners, communities and households; BCC social mobilization and community sensitization improved care-seeking, treatment utilization and adherence to program guidelines by both CHWs and community caregivers (Sharkey, A.B., et. al., 2014)

3.9.2. Achievements:

Based on document review and findings from this study, countries that adopted and applied BCC demand creation standards tools for advocacy and community mobilization, have progressed faster in iCCM scale up than those slow in mainstreaming BCC strategies and interventions into their policy and programs. For instance, Ethiopia's iCCM program is almost at scale except in two regions. The country's progress in iCCM BCC promotion strategy, is achieved through intensive involvement of the recruited and trained large pool of CHWs (HEWs) in BCC community sensitization and mobilization, besides offering other normal iCCM services to communities where they serve. In Ethiopia, CHWs are literate, trained, and paid salaries by government unlike many other countries where CHWs are volunteers and illiterate (e.g. South Sudan). A study undertaken to determine iCCM utilization recommended "Efforts to minimize barriers to care seeking and to improve demand should be incorporated into the iCCM strategy"; this is useful for improving impact of iCCM program in Ethiopia and other sub-Saharan countries (Shaw et al., 2015).

Rwanda: In Rwanda, within the framework of the national health system, introduction of CHWs' Peer Support Groups (PSGs), bringing together an average of 20 CHWs from 2 to 4 neighbouring villages for monthly meetings (*Kabeho Mwana*), made a successful contribution to promoting community and households' mobilization and sensitization for behaviour change and utilization of iCCM services. PSGs were designed primarily to support health promotion activities to promote healthy behaviours and create demand for CHW services; however, they also served as fora for increased interaction between CHWs, encouraging problem-solving and mutual accountability. During group meetings, CHWs were trained in health promotion, guided through joint planning of home visits to deliver messages on healthy family practices and to monitor their adoption, and they worked together to compile monthly reports (Langston A., et. al., 2014).

Niger: Niger's intensive implementation of BCC approach nationally and in community, has, over few years made significant progress towards reducing under-five mortalities through successful national expansion or scale up of iCCM, although some challenges remain. Together with partners, the Niger government, conducted participatory community and household assessments to identify the main drivers of local behaviours and analyses barriers to high coverage of each of the common family practices. Open dialogue approach during review and assessments of program, proved quite effective as it encouraged wide participation by local community and leaders to both constraints and locally acceptable solutions are discussed, and that consensus regarding the need for change can be reached.

Niger's BCC strategy, also served as a community empowerment/participation for collective change through community learning activities, community-led design, and implementation and monitoring of action plans, while the social mobilization and advocacy aspects of the strategy involved creation of partnerships and networks focusing on traditional chiefs, women and youth, local imams, traditional chiefs and national partners (**Tools utilized within the Niger program are available at:** <http://ccmcentral.com/iccm-symposium/tools/#tab>). In Niger, some of the most important demand-related barriers include lack of knowledge of danger signs, the competing household responsibilities of women, and continued confidence in the efficacy of traditional treatments, particularly in areas where there are no *relais* (Bedford, K.J.A. and Sharkey, A.B., 2014).

Senegal: In 2013, Senegal's MOH created a Division of Community Health (DCH) to determine the package of services to be provided at the community level, to coordinate community-based interventions, and to disseminate successful experiences. Promotion of advocacy, community mobilization and sensitization through BCC for iCCM, have been keenly implemented as key activities of DCH, guided by the national policy on community health and the National Strategic Plan 2014-2018. The results of the Plan's BCC strategy for iCCM has resulted in Senegal's improvement of iCCM package coverage and quality of community health services, reinforcing community participation in alleviating health issues, and ensuring the sustainability of community health interventions (USAid, African Strategies for Health, August 2016).

3.9.3 Challenges with BCC and Demand Creation

In all the study countries, concerns over lack of finances or inadequate investments to support robust community mobilization, advocacy and sensitization through BCC for iCCM strategy have been blamed (among other factors) for low utilization, including failure to achieve targets for the program expansion/scale up as witnessed in several study countries. For examples, a multi-country study on iCCM services utilization covering Cameroon, DRC, Malawi, Senegal, Sierra Leone, South Sudan and Zambia, respectively, established that iCCM utilization rate was low, ranging from a total of 0.26 to 3.05 contacts per capita (children 2–59 months) per year for the diseases treated, representing a range of 2.7% to 36.7% of the expected numbers of cases- however, given the differences across the countries and programs, however, the results of the study were treated as indicative and not definitive (Collins, D., et. al., 2014). The study identified lack of a coordinated approach among multiple program implementers to BCC for iCCM advocacy, community awareness creation and community mobilization as being responsible for lack of effective community participation. Receipt of varying and variable messages by caregivers, CHWs and community households was often indicated as being responsible for behaviour change interventions not translating into improved care-seeking, treatment utilization and adherence to program guidelines by both CHWs and community caregiver, etc.

Other factors identified by this study and supplemented by document review as responsible for impeding program's demand creation and utilization of iCCM child-health interventions/package through the program's BCC strategy include: geographic access, caregiver understanding of the illness, preferences for home management and alternative treatments, caregiver perspectives on the quality of services provided.

3.9.4 Lessons learned from BCC Demand Creation

Based on these study findings in the 18 study countries, and document review, for the iCCM BCC strategies to be effective in increasing more care-seeking behaviour for treatment utilization for childhood illnesses among caregivers, CHWs and communities, there is need to address both supply and demand factors in BCC for iCCM. This approach is important to tackle identified barriers identified through the findings of this study as well as those documented in other previous studies mentioned above.

Successful BCC, require, a multi-pronged approach, for example, three-pronged approach adopted to by several study countries proved effective to promote social and behavioural change communication for child survival. Furthermore, BCC proved to be a viable strategy for creating interpersonal communication (IPC) using participatory communication mechanisms such as local and traditional media, cinema, and theatre and community radio. The approaches that incorporated interpersonal communication activities and community participation for collective change, partnerships and networks among key stakeholders' groups within communities, media campaigns and advocacy efforts with local and national leaders made demand creation and utilization of iCCM services successful.

- A good lesson learned for improving demand creation and uptake of iCCM is

Niger's Annual participatory village meetings to assess progress and revise action plans as needed and core teams' annual celebrations of village and family 'champions,' established individuals as 'agents of change,' and identified 'model villages' when at least 70 percent of families had adopted three or more of the key family practices. 'Model mothers' in these areas are awarded with soap, mosquito nets or a radio. BCC demand creation during group meetings, also acted as forums for CHWs training in health promotion, guided through joint planning of home visits to deliver messages on healthy family practices and to monitor their adoption, and they worked together to compile monthly reports.

Uganda's inclusion of BCC strategies for the overall iCCM program into the MOH-UG National Communication Strategy for Malaria Control in Uganda 2014-2020, proved to be a successful approach for increased awareness, knowledge and stimulation of demand for malaria prevention and treatment of febrile child. The strategy included strengthening community behavioural change activities for malaria engaging community institutions, cultural groupings, religious institutions, and Village Health Teams (VHTs/CHWs). Specific activities included: community dialogues and mobilization, drama, films, and sports events to create demand for malaria prevention and treatment for febrile child at national and sub national levels.

- The successful improvement in iCCM utilization and scale up in Ethiopia, Rwanda, Niger, Senegal and Malawi was mainly associated with use the involvement of paid CHWs in providing BCC community mobilization, advocacy and sensitization activities as part of iCCM services including treatment of children with fever or malaria, suspected pneumonia, and diarrhoea.

3.10. Supervision and Performance Quality Achievement

3.10.1 Supervision and Performance Quality Achievement

3.10.1.1 Introduction

Supportive supervision by health facility workers is an integral part of ensuring quality and timeliness of iCCM program services given by CHWs. Supervisors of iCCM are expected to: i) observe the ongoing program activities performed by trained CHWs; ii) support the increment/improvement of quality of services offered by CHWs by identifying best practices for replication; iii) assess and address any difficulties encountered by CHWs in carrying out assigned tasks; iv) ensure CHWs have sufficient technical support and adequate supplies to administer services to children seeking care; and v) generating information for monitoring and evaluation process based on agreed supervision checklists and national guidelines.

A feasibility review⁹² of performance based on iCCM indicators and supervision checklists in six countries: DRC, Niger, Senegal, South Sudan and Zambia, found variance in recording and reporting systems across the countries⁹³.

A multi-country review of DRC, Ethiopia, Rwanda, South Sudan, and Zambia respectively, found a number of countries had Ministry of Health (MOH) policies that reflected the norms and expectations for iCCM supervision, while others had different models for supervision based on implementing partners either NGO, CSOs, FBOs or MoH⁹⁴.

Supervision was indicated in several human resources management strategies and roles of supervisors were clearly defined depending on nature and levels of the program activities being implemented by the country. These roles have been designated as: (i) Managerial supervision; (ii) clinical supervision and; (iii) mentorship. For most of the sub-Saharan countries implementing iCCM, managerial supervisions have been mainly coordinated by MoH iCCM Coordinators (Primary health Care Departments, Child Health Units or head of NMEP), iCCM program's coordinators/focal staff based at national, counties or districts, and health facility levels, in conjunction with counterpart supervisors from the implementing partner NGOs, CNOs of FBOs (in countries where they exist). Clinical supervision and mentorship were coordinated by the IMCI focal point at the district level and link health facility.

3.10.1.2. iCCM Supervision Successes:

For supervision to be effective and sustainable it must be an integral component and integrated into the MOH and or implementing partners' activities. Supervision must be undertaken by trained competent supervisors. In all 18 study countries, supervision was prioritized as an integral thematic area for expansion and scale up of iCCM. In addition, countries should use/adopt standard checklists to check the work of CHWs for recording information about an individual CHW's provision of the program package including availability of their medicine kit and equipment, logistics for supply and resupply, patient register, and the CHW's ability to deliver high-quality iCCM. The checklists used by supervisors should also assess CHWs' clinical skills, accuracy and timelines of submission of reports, analysis of reports and feedback, site management, relations with the community, recommendations or corrective actions.

All the 18 study countries were using the WHO/UNICEF designed standard checklists and iCCM Task Force Indicators, and MOH national supervision guidelines as guidelines to supervisors to conduct robust supervision on work performed by CHWs. However, although most of the countries applied similar set of the checklists-drawn from iCCM Task Force

⁹² Guenther, T., Laínez, Y. B., Oliphant, N. P., Dale, M., Raharison, S., Miller, L., ... Diaz, T. (2014). Routine monitoring systems for integrated community case management programs: Lessons from 18 countries in sub-Saharan Africa. *Journal of Global Health*, 4(2), 020301. <http://doi.org/10.7189/jogh-04-020301>

⁹³ USAID/Maternal and Child Program in December 2013

⁹⁴ USAID/ Maternal and Child Health Program, November 2013: Review of Integrated Community Case Management Training and Supervision Materials in Ten African Countries

Indicators some reviews and studies have reported that there were variations across checklists in some countries.⁹⁵

The study document review and in-depth interviews established that in some countries, several cadres of human resource were documented as being responsible for CHW supervision, while in others supervision was assigned to a single cadre of senior staff responsible for overseeing the activities of CHW. For example, in South Sudan, CBD supervisors who are recruited from the communities are responsible for supervising an average of 15-20 CBDs (depending on the catchment area). NGOs implementing partners assign each of their iCCM Program Officer to oversee approximately 10-15 CBD supervisors and to report to the iCCM Program Manager overseeing the entire iCCM program in each county (IRC South Sudan Report 2017).

In many countries, MOH had clear structures for supervision, running through all levels of the health system: from Officer to Coordinator levels, each are responsible to provide technical assistance, coordination, and collaboration with equivalent counterparts from MoH to ensure program implementation maintains elements of capacity building and inclusion. For example, in Burundi, supervisors included implementing partner (Concern) staff, District Health Teams and health centre staff (Concern Burundi Report 2015). In Uganda, Malaria Consortium staff conducted program supervision together with health centre staff, Community Development Officers, Health Assistants or Health Inspectors (MOH Uganda 2014). In Malawi, MOH senior CHWs (routine supervisor), health centre facility staff (mentor), health centre clinical staff (clinical mentors) including environmental officers or community nurses have been charged with supervision of CHWs (CORE Malawi' Report 2015). In Cameroon, community-based Health Area focal points and Animateurs District CCM focal points conducted routine supervision of CHWs activities (PSI Report Cameroon 2013). Senegal has two categories of supervisors responsible for supervising CHWs, the first category includes qualified health personnel (head nurses and midwives from the health posts) and the second category includes community management agents from NGOs as the implementing partner. According to national guidelines, qualified health personnel have to supervise CHWs at least six times per year for each health hut or site using integrated and harmonized tools. The supervision of the CHWs by the head nurse is mandatory and is part of the head nurse's tasks (USAID Senegal Report 2016).

This study found that Supervision was assigned to a single cadre, overseeing the activities of CHW. For example, in Rwanda, supervision was assigned to a single cadre, designated as a community health in-charge (MOH Rwanda, iCCM Training Guide, January 2014; Kabeho Mwana'). In Malawi, a senior CHW was responsible for supervision of CHWs and (CORE Malawi' Report 2015), while in Sierra Leone, CHWs supervision was conducted by health centre staff (IRC Sierra Leone Report 2013), the NGOs program officers in conjunction with MOH county and Payam levels supervised CHWs working at Boma or village level (IRC South Sudan 2017'). In DRC, supervision activities have been conducted by nursing holders of health areas (PSI DRC Report, 2014); in Uganda, community members are part of supervision of village health teams (VHTs) (MOH Uganda 2014); in Mali, the centre technical director is responsible for supervision of CHWs (PSI Mali Report 2013); In Senegal, the head nurses at the health posts are in charge of the health

⁹⁵ USAID/Maternal and Child Program in December 2013, Report on the Feasibility of Measuring the iCCM Task Force Indicators through Existing Monitoring Systems in DRC, Niger, Madagascar, Senegal, South Sudan and Zambia

huts in their areas (USAID, 2016). They have to train and supervise the ASCs and matrones. They also have to verify and validate data coming from the health huts.

BOX: SOUTH SUDAN - ICCM SUPERVISION IN COMPLEX OPERATING ENVIRONMENT

South Sudan - This study found the case of South Sudan was exceptional due to the protracted conflict situation. The state of emergency makes South Sudan a complex operating environment and it has been difficult to transition from humanitarian intervention into national development of institutions, systems, policies etc. This has made it difficult for government to take up responsibilities for supportive supervision of services delivery, which is costly due to partly the required charter of flights, the insecurity hinders ground travel. Hence, the situation in South Sudan requires International donors and humanitarian actors to recognize iCCM as a potentially high-impact humanitarian response.^{a, b}

^a. <http://journals.sagepub.com/doi/full/10.1177/2158244015581190>

^b. ¹<https://www.rescue.org/report/integrated-community-case-management-acute-and-protracted-emergencies-case-study-south-sudan>

With regards to training of supervisors and contents/materials for training, the study established that most of study countries applied standard training materials including training module/checklists on each country iCCM guidelines for supervisor's training. However, there were wide variations in materials used for training based on country context.

Regarding gender mix in CHW supervision, in most study countries, countries had a mix of both men and women conducting iCCM Supervision. However, in Nigeria both CHWs and Supervisors are men, while in contrast, South Sudan's CBD Supervisors and CBDs themselves are all women (100%), and the majority of CBDs in South Sudan are illiterate females from rural communities with pastoral or agricultural livelihoods. For IRC's iCCM program (as of January 2017), approximately 89% of CBDs are females and 83% are illiterate with no formal education; for Payinjiar County specifically, rates of female and illiterate CBDs are higher than other counties, with 98% and 93% respectively⁹⁶; in Ethiopia, all HEWs are women, while in Rwanda, there equal numbers (50-50) of male and female CHWs which is likely also reflected in the supervisors as well. Rwanda's MOH national target in CHWs recruitment is three CHWs per village – one male and one female who work on general health issues (community and child health) and a second female who works specifically with pregnant women and newborns.

"The program works because we have a good structure, funding, good governance, [and] the majority of people know the program."

Source: Cathy Mugeni et al, 2015; Rwanda's Agents de Sante Program, 2014.

⁹⁶IFRC/UNICEF Integrated Community Case Management in Acute and Protracted Emergencies Case study for South Sudan, May 2017

3.10.2. iCCM Quality of Care

It is unanimously accepted that high standards of quality of care is a means to achieve better health related services and outcomes such as reduced morbidity and mortality in population. This study attempted to provide some insights and assessments on effects of iCCM interventions in achieving program objectives and targets on quality of care indicators rather than impact or outcomes on the U-5 children mortality or morbidity. However, the study could not establish which mix of interventions or strategies such as training and supervision, commodities and incentives produced the desired effects on quality of care. The global guidance and specific tools on measurement of iCCM quality of care needs to be elaborated upon and adapted based on each country's specific setting.

Ethiopia: A study on quality of iCCM in Ethiopia's found the country's effectiveness in supportive supervision, was part of a pragmatic approach that had enabled HEWs to provide correct case management to 64% of children seeking care of which 72% were treated for pneumonia, 79% for diarrhoea, and 59% for malnutrition; sample size of children with malaria was too small to draw meaningful conclusions about management of those illnesses. In the month prior to the survey, health posts saw an average of 16 sick children. These results also confirmed that iCCM can be implemented at scale and that community-based HEWs can correctly manage multiple illnesses with constant supervision and adequate supply of medicine (Miller, N.P., Amouzou, A, et. al., 2014).

BOX: QUALITY OF CARE – MANAGEMENT OF SEVERE ILLNESS

Quality of Care assessment in Ethiopia found only 34% of children with severe illness were correctly managed. The most common assessment errors were: *"failures to assess convulsions, edema, and lethargy. Incorrect classification of pneumonia was the most common classification error for children with uncomplicated illness, partially because of incorrect assessment of fast breathing. The most common treatment errors were failure to give cotrimoxazole to children with pneumonia and failure to give ORS for diarrhea, although these items were in stock. Misclassification was common among children with severe illness, and incorrect treatment was common regardless of whether children were correctly classified. The most common treatment errors for children with severe illness were failure to give the first dose of cotrimoxazole for pneumonia, failure to give the first doses of amoxicillin and vitamin A for severe complicated malnutrition, and not referring children to health centers when it was required".*

^aMiller, N.P., Amouzou, A, et. al., 2014

Lessons learned – Quality of Services

Based on the Ethiopia quality of iCCM assessment findings, increased attention is required for the management of children with danger signs, including assessment of convulsions, edema, lethargy; classification of severe illness; and treatment errors; and not referring children to health centers when it is required.

Best Practice – Quality Assurance of iCCM services

In Rwanda, the use of peer support groups for CHWs in which the country uses a more experienced CHW serving as a mentor to a group of about four or more of CHWs is an innovative form of supervision to support both clinical supervision and mentorships.

3.10.2.1. Challenges with Services Quality of Care

Countries also used widely varying training materials for supervisors ranging from standard guidelines to country-specific materials. Most covered as a basis: danger signs both the number and types; age ranges of the target population, and the number of treatments observed. All materials covered the age range from two to 59 months, but some countries for instance Ethiopia and Mali also included care for the new-born in their training materials which was different from other countries⁹⁷.

Document review and in-depth field study, found that the most commonly cited major barriers identified during QOC supervision include:

- Inadequate and irregular supply of commodities or stock outs;
- Weak links between the CHW and the health facility;
- Insufficient capacity at the health facility itself to allow it to better support the CHWs, and; coordination of partners supporting iCCM within the country.

Additional barriers cited specifically for QOC in Uganda include insufficient supportive supervision due to shortage of transport for supervisors' visits, literacy levels among the cadre of CHWs and, lack of adequate numbers of CHWs and VHTs to cover the population of under five children needing lifesaving care.

The lack of good quality evidence on quality of care is not only a concern for the international health community, but also for policy makers who may over-estimate the value of an approach which may not have been robustly evaluated and reported. Evidence derived from assessments of the strengths and limitations of selective PHC would be useful to inform more recent initiatives to implement iCCM quality of care.

BOX – CHALLENGES MEASURING ICCM QUALITY OF CARE

⁹⁷ USAID/ Maternal and Child Health Program, November 2013: Review of Integrated Community Case Management Training and Supervision Materials in Ten African Countries.

Measuring quality of care (QOC) in the context of iCCM is a major challenge, as it requires different approaches and measurement methods that may lead to different descriptions and findings from the same situation.

Hence, in the absence of globally-vetted “Quality of Care” CHW materials, many of the countries’ materials were developed based on the guidelines for clinical IMCI; because IMCI is geared for trained health workers in a health facility but is much more inclusive and complex. The study observed that, in most cases, the roles of supervisors in clinical observation and mentoring support functions of supervision were not clear in practice, but as per guidelines and checklists, the activities were supposed to take place when CHWs were working alongside health workers at the communities.

There are limited incentives for partners to invest in strengthening a national system for routine monitoring and supervision, which requires time, sustained support (including financing), priority setting and coordination. As such, in many cases routine supervision and monitoring are often undervalued and marginalized in favour of periodic surveys.

Due to resource challenges, supervisor to CHW ratio (Ratio of CHWs deployed for iCCM supervision) varies widely by countries. In Malawi, implementing partners were covering different geographical areas and hence the varied supervisor CHW ratios: the ratio was 1:2 (*PSI Malawi report 2014*; However Save the Children Malawi 2015 reported a ratio of 1:11); Democratic Republic of Congo (DRC) the ratio was 1:6 (*PSI DRC Report 2013*), while in Sierra Leone the ratio was between 1:8 to 1:16 (*IRC Sierra Leone report 2013*); In Cameroon, the ratio was 1:10 (*PSI Cameroon report 2013*), and South Sudan 1:18 (Save the Children South Sudan 2015).

Resource constraints have affected the number of supervisory visits received by CHWs. The CHWs in DRC, Niger and Zambia received regular quarterly supervisory contacts at health facilities (Report on Feasibility on Measuring iCCM Indicators, November 2013) while, South Sudan’s supervisory visits ranged from once a year to three times a month (*PSI South Sudan report in 2014t*).⁹⁸

Mobile technology applications (m-health) have mostly been rolled-out as small-scale pilots in only a few districts. Scale-up limitations include: (1) staff shortages at health centres to supervise the CHWs, (2) need for ongoing technical support to troubleshoot challenges with mobile phones and software, and (3) recurring costs for data bundles.

Apart from involvement of communities in review and exchanging ideas on best way to implement the program as part of participatory supervision and promotional activities, there was no evidence of community engagements during design or planning for the program.

3.10.2.2. Lessons Learned – Services Quality of Care

⁹⁸ Bosch–Capblanch, X., & Marceau, C. (2014). Training, supervision and quality of care in selected integrated community case management (iCCM) programmes: A scoping review of programmatic evidence. *Journal of Global Health*, 4(2), 020403. <http://doi.org/10.7189/jogh.04.020403>

Countries Innovations to Improve iCCM Quality of Services:

This study identified some innovative approaches used by a few countries to address health care delivery faults, ultimately aiming at addressing quality of care shortcomings including improving iCCM supervision.

BEST PRACTICES

- Rwanda, Ethiopia and Malawi strengthened work-relationships between CHW either with peers or supervisors such as peer-support groups. Platforms for more effective human resources interventions such as supervision and monitoring, trust, accountability and improved coordination were key in improving iCCM quality of care. Additionally, in Rwanda, networking between CHW peers/ mentorship as well as networking among providers was used and seemed promising in some cases.
- Rwanda, Ethiopia and Uganda: community supported supervision, this was found to be an effective and viable approach for setting up village health committees and networks with the aim to improve child health services through a community led forum with the CHW as the main focus point.
- Uganda's adoption of a "micro-franchising" approach to increase access to affordable medicine by communities, has shown to achieve improvements in equity, coverage and availability of good quality medical products to all segments of the population including the poor. (Living Goods Uganda Report, Uganda).
- Burkina Faso overcome financial and human resources constraints limiting individual visits to health huts by head nurses at the health posts organized regular group monitoring meetings with ASCs and matrones. This strategy has shown high levels of regular contact with CHWs and is recommended as a best practice in terms of efficiency.
- Interagency technical working groups (TWG) led by the Ministry of Health have proven an effective mechanism in several countries (Malawi, Ethiopia, Sierra Leone, Uganda, Mali, Guinea and Rwanda). With the expansion of support for iCCM programming, new donors and implementing partners enter the mix and these coordination mechanisms need to be sustained. The ability of TWGs to harmonize monitoring practices is sensitive to the extent to which the MOH exerts leadership and is able to bring partners in line.
- A number of countries, such as Zambia, Uganda and other countries have integrated mHealth solutions, which have been adapted and used for streamlining supervision, reporting and data management procedures. These pilot mobile technology supported supervision interventions have proved viable in terms of supporting the CHWs and supervisors in providing quality case management for the under-fives who suffer from diarrhoea, pneumonia and malaria through unlimited communication with their health facility supervisors and colleagues through closed-user-groups. In Zambia, a mobile technology that uses simple-feature mobile phones has been rolled out which allows CHWs to send weekly reports on disease caseloads and commodities consumed, order drugs and supplies, and send pre-referral notices to health centres. Supervisors use the same technology to monitor and provide feedback to CHWs on referred patient outcomes and received monthly SMS reminders to set up mentoring sessions with the CHWs (Biemba, G., Chiluba, B., Yeboah-Antwi, 2017).

4.9.2.3 Recommendations

- **Task shifting:** As additional tasks are shifted from facilities to the community level health workers there is an ever-growing risk that community health systems are becoming overstretched
- **Senior-level CHWs:** Given that high transport costs and poor road networks are major factors impeding supervision, empowering and capacitating more experienced CHWs to undertake additional tasks such as supervising junior or less experienced CHWs within areas of their operation would reduce costs and be more efficient. However, this strategy requires massive recruitment of CHWs to allow those with experience to undertake supervision activities in addition to curative/promotive activities and/or separate out cadres of “senior” and “junior” CHWs.
- **MOH Coordination and leadership** are vital to develop an overarching framework and rational plans for supportive supervision (i.e. prioritization, harmonization and coordination of human resources involved in routine supervision). Minimization of parallel supervision and promotion of pooling of resources will require greatly increased collaboration with implementing partners but will vastly strengthen national program implementation.
- **Mobile technologies support for iCCM CHW reporting and supervision:**
 - mobile technologies been evidenced as viable to contribute to improved timeliness and availability of data, provided that the basic monitoring system has already been established. The most effective examples are those designed with Ministries of Health and end-users, focused on elements requiring immediate response and linked with platforms such as DHIS2 (for example the mTRAC system in Uganda).
 - There are also good examples on how mobile phone applications have helped connect and motivate CHWs and supervisors by creating closed networks that allow them to communicate at no charge. While in the short-term, m-health interventions often create an additional burden on CHWs and first level health workers - who are still required to maintain a paper record until mobile applications are widely implemented – in the long-run they will enhance timely reporting of patient data and targeted supportive supervision for CHWs. Data reported by CHWs can also be used by the district planners to forecast of medicine procurements and react to drug stock-outs or unusual data trends (e.g. disease outbreaks). Creating a system of efficient support and feedback for CHWs m-health interventions which are also cost effective, can potentially increase CHW motivation, performance and retention.
- **For successful community ownership,** individuals and leaders alike, community involvement at all stages of the program should go beyond just taking part in advocacy and review meetings and into the implementation phase of any intervention program.

- **A mix of supervision approaches**, including home visits, peer group sessions, mobile phone reporting and group/health facility supervision activities, offer CHWs multiple platforms to ask for guidance, share experiences and problem solve.
- **More QOC-specific studies and research** are necessary to generate evidence on the impact of supportive supervision for iCCM's on under-five morbidity and mortality.

3.11. Monitoring and Evaluation, and Health Information System

Monitoring and evaluation (M&E) is important and integral component of program implementation. Routine iCCM data enables monitoring of trends in program coverage, equity, quality, effectiveness and cost–efficiency. It helps tracking of demand for services and quantification of iCCM medicine and stock-outs (Guenther T., 2014). Given that many iCCM programmes are also only being gradually rolled out or are still in a limited pilot phase, routine data provides a more granular, contextual picture than national level surveys that hide disparities and differences within national averages thus diluting demonstration of an iCCM programme's effectiveness.

3.11.1. Achievements - Monitoring and Evaluation

The review of the 18 SSA countries found varied levels of success in achievement of having a functional iCCM monitoring and evaluation system, and integration of iCCM indicators into the national HMIS.

The 18 routine monitoring indicators listed in the iCCM Indicator Guide were cross-checked against the tools from 10 countries to determine the availability of the data needed to calculate each indicator. Eight (8) of these ten (10) countries were part of this iCCM study.

Achievement: Countries were already collecting the data needed to calculate many of the routine monitoring indicators. The availability of data differed from country to country, but in general the indicators for which data was most available were: human resources (iCCM Benchmark Framework component 3), service delivery and referral (component 5) and M&E and health information systems (component 8). Data was less available for indicators (i) supply chain management (component 4) and (ii) supervision and performance quality assurance (component 7)^a

^a – Robertson, T., Kasungami, D., Guenther, T., & Hazel, E. (2016). Monitoring iCCM: a feasibility study of the indicator guide for monitoring and evaluating integrated community case management. *Health Policy and Planning*, 31(6), 759–766. <http://doi.org/10.1093/heapol/czv129>.

- CHWs in all countries had been trained to complete monthly registers which were submitted to supervisors, collated at health facility level and reported upwards as part of HMIS data.
- Ghana, Uganda, Zambia, Malawi, Mali, and Niger were among the countries that had initiated integration of iCCM data into HMIS. (Guenther T., 2014)

- A scoping study undertaken in 2016 found iCCM data was being reported within HMIS routine data of the MOH in 60% (8/13) of the SSA countries; thirteen of the countries included in the scoping study were part of this iCCM study. (see table below)⁹⁹ (Grey literature - Scoping Paper USAID/MCSP 2016):
- Seven (7) countries: Ethiopia, Ghana, Kenya, Malawi, Niger, Nigeria, Rwanda and Uganda had full iCCM M&E Plans which covered all the CCM/iCCM under five illnesses and had four critical components:
 - a. Program goals and objectives;
 - b. Indicators to be measured;
 - c. How (tools), how often (frequency) and where (at what level) the indicator data will be collected (methodology);
 - d. Dissemination/use of information (how often and to what levels).

Table 10: Integration of iCCM indicators/data into HMIS

Country	iCCM data reported at national level in HMIS	DHIS2 Status
DRC	Partial	Partial roll-out
Ethiopia	Partial	Full roll-out
Ghana	Yes	Full roll-out
Kenya	Yes	Full roll-out
Malawi	Yes	Full roll-out
Mali	No	Not rolled out
Niger	Yes	Pilot
Nigeria	Yes	Full roll-out
Rwanda	Yes	Full roll out
Sierra Leone	Yes	Partial roll-out
South Sudan	No	Not rolled out
Uganda	Yes	Full roll-out
Zambia	No	Full roll-out

(Informal Scoping Paper, 2016)

Yes = Data on all iCCM conditions are included in the national HMIS system and disaggregated by level (community/facility)

Partial = Data on at least one but not all iCCM conditions are included in the national HMIS and disaggregated by level (community/facility).

No = No recommended iCCM indicators included in national HMIS or are included but not disaggregated by level (community/facility).

3.11.2. Challenges – Monitoring and Evaluation

All the reviewed 18 countries in SSA had varied challenges and gaps:

- Three (3) countries: Sierra Leone and Mali had partial/incomplete iCCM M&E plans: An M&E plan was available but had only some of the four critical components or did not cover all CCM conditions.
- Three (3) countries: DRC, Zambia, and South Sudan did not have an iCCM M&E plan.
- In most countries iCCM data were aggregated with IMCI data (not disaggregated into

⁹⁹ Informal Scoping Paper: Opportunities to incorporate integrated community case management monitoring indicators into national-level health information system reporting structures using DHIS 2 in 14 countries. USAID/MCSP 2016.

iCCM and IMCI).

- In Zambia, South Sudan and Uganda quality of iCCM data was compromised by inaccuracies in the CHW register due to poor numeracy skills, lack of sufficient training on the tool, CHWs forgetting how to correctly enter the data and human error which was suggested to largely relate to fatigue and, busyness with other activities¹⁰⁰ (Clare Strachan et. al. 2014).
- Some of the challenges faced in timely submission of iCCM data and subsequently affected quality of data are:
 - Lack of transport funds/transport availability
 - Distance to health facilities, which for remotely located CHWs was exacerbated during the rainy season
 - Unavailability of supervisors resulted in CHWs' reluctance to submit data
 - In South Sudan, insecurity affected collection of data from CHWs and provision of commodities, i.e. registers.
- Based on available documentation, Senegal had not integrated iCCM indicators into the National Health Information System (NHMIS), nonetheless the MOH has been making an effort to integrate iCCM data into HMIS¹⁰¹. (USAID/MCHIP. 2012).
- All countries in SSA face varied in forms of issues with iCCM data quality, data flow and use in programming for example management of iCCM supply chain.

3.11.3. Lessons Learned – Monitoring and Evaluation

The key lessons learnt were:

- Some countries have lagged behind in implementing evaluations and research that will facilitate support for scaling up of iCCM programs. (Daelmans, B et. al, 2016, p571-572).
- The implementation of the recommended improvements of iCCM M&E requires advocacy and coordination by interagency technical working groups (TWG) led by the Ministry of Health. These TWGs have proven an effective mechanism in several countries (Malawi, Ethiopia, Sierra Leone, Uganda, Mali, and Rwanda) (Guenther T.,2014).
- Steps need to be taken to incorporate mHealth strategies into the MOH systems based on lessons learned and best practices; and the MOHs should provide financial and technical support to ensure sustainability. Institutionalizing m-health into the MOH system will be informed by pilot stage experiences of countries.
- Evaluation of the relevance, efficiency, effectiveness, and sustainability of c-Stock is required to provide recommendations for further scale up and adaptation by other countries as best practice.
- Countries have yet to engage and agree on what type of iCCM data is needed from and at the different levels, and on the resources that would be needed to make any changes to data-collection tools feeding into the DHIS 2 platform, continuous capacity building of CHWs on iCCM M&E.

¹⁰⁰ Clare Strachan, et. al. 2014 (doi:10.7189/jogh.04.020404)

¹⁰¹ iCCM of childhood illness documentation of best practices and bottlenecks to program implementation in Senegal. USAID/MCHIP. 2012.

- Countries, which were more advanced in incorporation of iCCM information into the DHIS 2 platform, will need to review how community and facility data are aligned and/or integrated.
- Countries with several parallel reporting lines of iCCM data to different partners (e.g. in Ghana) resulted in the duplication of data in reports and the frequent changes in data and information needs by partners and other stakeholders required changes in reporting formats.

BEST PRACTICE: Recently, UNICEF in partnership with Malaria Consortium has taken this support a step further through the implementation of upscale, an mHealth programme designed to improve the quality of care provided by the APEs (Community health workers). As part of the programme, the APEs are equipped with mobile devices with pre-installed software that supports the consultation workflow, improving the quality of the healthcare. In addition, the devices record patient history files and household information. *“It’s extremely hard to reach the communities, especially in the rainy season. The best solution is to have a good first line of response in the community. These devices and applications help the community to be able to deliver such a response. For me, it generates data and statistics, so I know what is happening in communities. Can you imagine how many silent cases there would be if I didn’t have the statistics?” “It also has a positive impact in the consultation procedures as the APEs are reminded of which questions to ask and what exact prescriptions to provide to children. And while the increase in the quality of the procedure is the most important, in the future we might even get to have maps, so I’ll be able to pinpoint exactly which households have specific issues!”^a*

^a - UPSCALE the community DHIS2 module being implemented in Mozambique by Malaria Consortium and financed by UNICEF? https://www.unicef.org/esaro/5440_moz2017_mhealth-trouble-shooter.html

- In countries where other electronic information systems are used to collect iCCM data (such as CommCare in Malawi, cHMIS in Zambia), the integration or interoperability of these initiatives with the DHIS 2 platform could avoid double reporting and additional reporting burden on the CHWs and facilities by being interoperable with the broader HMIS and ensuring that iCCM data can be used within the larger context of monitoring health system performance. For example, in Malawi, the c-Stock data was not linked to DHIS2.

3.11.4. In-Country Field Study Findings on iCCM data integration with HMIS

Achievements - iCCM M&E

- Out of the six (6) countries in this study only Malawi and Burkina Faso had integrated iCCM data into HMIS and DHIS2. In both countries, at the district level the IMCI Coordinator and HMIS Officer jointly enter iCCM data into DHIS2.
- The iCCM data in Malawi was easily retrieved from DHIS2 because it was disaggregated from the health facility IMCI data. This special study determined the iCCM data is aligned to the HMIS reporting systems and timelines; and it is also linked (integrated) with the HMIS data in the DHIS2.
- The iCCM link health facilities in Nigeria and Zambia received the reported iCCM data

from the community level, which was then transmitted to the district level where it is consolidated with the IMCI data and entered into DHIS2. The retrieval of iCCM data from DHIS2 was not possible because IMCI and iCCM data is not disaggregated.

- The South Sudan iCCM data is reported vertically to the implementing partners. The MOH relies on the implementing partners who share the data on quarterly basis. The IMCI health facility data was easily retrievable from the HMIS.

Malawi:

- The MOH Malawi has continued to make progress in improvement of community level data. Multiple initiatives including the 2013 USAID-funded TRAction project and the ongoing JSI C-stock projects have worked to improve the quality and use of routine monitoring data by central and district MOH (Biemba, G. 2017).
- This study found the following in Kasungu district: The health facility in-charge received the iCCM reported data from HSAs through their supervisors and signs after verification. The health facility in-charge checks the quality of data and shares with the supervisor before the reports are sent to the Kasungu district hospital.

“Yeah I also get it from them because in that report there is a space where I need to sign after verifying the report.” [KII with HF in-charge]

Zambia: The study team was informed that a Community HMIS (cHMIS) had been developed to facilitate capture of community-level data by CHWs. However, this study could not access data at community level/link health facility to verify if this was working or not.

South Sudan: Reported achievements being accomplished in addressing reporting issues; the data flow and M&E systems strengthening gaps. This was highlighted in the quote below:

“Reporting definitely is an issue, from the community once we are scaling up we need to ensure that we are able to collect the information from the community back to the county and then to the state back to the national level and one of the studies that have been included in this new grant is definitely improving the capacity of the M&E, at the level of the ministry and also strengthening the community component of it.”
[IDI national level]

M&E Challenges Identified through in-country Field Study

- **Weak Monitoring and Evaluation Systems**
 - All countries had reported challenges in conducting monitoring and evaluation of iCCM. There were bottlenecks encountered at health post, sub-district, regional, and national levels and involved both data collection systems and human resource capacity. The data quality issues across countries included: completeness, accuracy (due to low numeracy levels) and timeliness.

- Gaps in indicator data for supply chain management are another cross country finding.
 - In some countries, such as Mali and Niger, community treatment data were aggregated with health facility treatments making it impossible to distinguish contribution of each point of service. Other countries, such as Malawi, Uganda and Zambia, have been having challenges to calculate treatment ratios because the community and facility sources use different classification systems for childhood illness. This could have arisen due to introduction of iCCM as a pilot and integration and alignment of iCCM and IMCI classification of childhood illnesses has not been done; Malawi also had this issue. This gap could affect support supervision.
- **Malawi – data quality:** There was wide variability in magnitude of over- or under-reporting across indicators and between districts, as well as issues of data quality. It was reported there had been ongoing quality control issues related to routine information system data collection and reporting. The data quality issues were present at multiple levels including the point of data collection; incomplete reporting cutting across the system to district and national levels, inconsistent application of indicator definitions or different sources for denominator.
 - **South Sudan:** There are several challenges encountered in integration of iCCM data with HMIS in a country with complex operating environment such as South Sudan:
 - In SS development of the national health information system is complicated and fragmented by external support as evidenced by 216 health projects implemented through 148 NGOs/FBOs each of them with their particular reporting system. Such fragmentation undermined an integrated data collection approach, due to divergent NGO and donor requirements.
 - The iCCM program suffers from poor routine data on CBD level of drug stockouts. This challenge can be attributed to several factors including the poor design of the routine data collection tools used by CBD Supervisors, the capacity of supervisors to implement the tool correctly and consistently, as well as the work culture beliefs and perceptions that link CBD stock-outs to supervisor performance;
 - Challenges encountered in terms of inputs/data: The low-literacy rates of CBDs continue to be an issue in terms of quality and accuracy of data reported from iCCM implementation;
 - The lack of infrastructure, access to power and internet throughout the country is a key constraint that continues to complicate services and data collection and transmission;
 - Lack of skilled staff and high staff turnover within the MoH, donors and other health partners leading to poor quality of data and loss of institutional memory that need to be addressed through MOH and partners Health Forums and support as a medium term and long-term solution.
 - Competing priorities of individual programs and funding mechanisms inhibited integration of data and information including quicker roll-out of HMIS and created parallel systems within health data and reporting system.

- The data flow system was not being followed; the data flows from the Community Based Distributors (CBD) supervisors at the community level to the M&E managers or officers at the implementing partner's office and then to PSI and to the donors for example the Global Fund. This data flow by-passes the state ministry of health, the community Health Department (CHD) and MOH/NMCP at national level. The NMCP has to request for required data and the access to data has not been regular. The shared iCCM data is mostly for the donor indicators and it is not for the national indicators being monitored by the MOH, as indicated by below quote:
- *"we don't require this data, there are no specific indicators that we continually monitor regularly so I think that is the situation. The iCCM is directly donor or partner ownership which we are currently trying to bring it under the government or ministry of health"* [IDI National Level].
- **Nigeria:** this study was informed that the link of iCCM data to DHIS2 had been developed but was yet to be activated. Evidence of this was recorded during the KII at state level:
"So, all the supervisors, CHEWs, they bring their information from cluster to the focal person at the LGA. The focal person at the LGA now has its own Local Government Monthly Summary Form, alright. And then that two copies of the corps daily register is now transferred to the local government focal person, alright. The local government focal person now has his own local government summary, okay at the end of the month, and then come along with that to the State Validation Meeting which is at the Malaria Consortium Office. Now that is where they have to go through everything, and there is a platform in Malaria Consortium Office where they key in the information. They have...they employ... they engage the...the entering clerks. You know, we have about six to ten persons who sit down to key in all the information to their database for analysis and of course the platform" [KII at State level].
- **Zambia:** This study determined both community data and health facility data are lumped together, and the aggregate is what is captured at the district DHIS2 system. This makes it impossible to aggregate the number of iCCM cases managed by CHWs.

3.11.5. iCCM M&E mHealth Initiatives

Studies have shown mHealth is a key factor in motivating and retaining CHWs. (Strachan, D.L. et.al., 2012b. P116). A few countries had tried mHealth for iCCM initiatives for: clinical management; data collection and reporting related to supplies, referrals and services delivered. However, in many instances, mobile applications had been designed as small scale, resource-intensive projects that proved a distraction rather than a contribution (Guenther T., 2014).

This study confirmed Malawi had rolled out mHealth application countrywide, this is an electronic iCCM protocol accessed through a mobile phone application that HSAs use to provide services to sick children in Malawi. Data are submitted electronically to a central database daily; this central database is accessible only through D-Tree and is not linked to the national system.

The table below shows mHealth strategies that have been initiated in a few countries among the 18 countries in this study:

Table 11: M&E mHealth Initiatives

Country	Other electronic Platforms/mHealth initiatives
Malawi	A small number of health service assistants were using smart phones with the CommCare app; service data are transmitted back to servers maintained by D-tree, but they are not integrated with DHIS 2 and presently only available to D-tree staff. A C-stock electronic data application for supply chain management was widespread. Plans were underway with UNICEF to integrate C-stock data into DHIS 2.
Rwanda	The MOH's vision was to strengthen the existing system. Rwanda had developed and scaled up a system called Rapid SMS that is designed to track referral and counter referrals between CHWs and health centers but is being expanded and could include iCCM reporting. The Rapid SMS is not yet linked to DHIS 2.
South Sudan	MHealth had been piloted in the country by different partners implementing health system strengthening projects. Save the Children used mHealth applications for iCCM data collection in the past but is not currently doing so.
Uganda	In Uganda, a number of attempts had been made to deploy mobile reporting for VHTs. Challenges had included the usability of the platforms due to low literacy levels among CHWs, phone connectivity, and poor infrastructure, i.e. power shortages. UNICEF/Uganda was using SMS-based reporting in one district, but reporting has also been low. DHIS 2 SMS-based reporting had also been deployed in four districts in Uganda but only on two maternal and perinatal indicators. The MOH of Uganda had been piloting an Android app but requires further funding to fully implement it.
Zambia	No mHealth system captures information related to IMCI or iCCM. There had been efforts and initiatives by some partners to capture a number of child health indicators. For instance, there is "Program Mwana," supported by UNICEF, which helps in the management of HIV-exposed infants. Also, partners like Better Immunization Data are trying to pilot the electronic capture of immunization data.

(Informal Scoping Paper, 2016)

Malawi Achievements Made in iCCM M&E mHealth

- (i) C-Stock, an SMS based reporting system which was created to negate existing issues with supply chain, involving keeping stock and making requests for medication in order to avoid stock-outs at the community level. C-Stock strategic intervention also aimed to bridge the gap in data availability from the community which had been in the past difficult to track (SC4CCM, 2013, P.V). The approach taken in Malawi covered the three key determinants of supply chain success according to the designed theory of change. C-Stock a mobile based data collection software was installed into CHW's phones. This improved data visibility across the board, as this information could be accessed at the community, district and national level. Prior to the use of C-Stock there were major challenges with data validity and viability. The C-Stock tool not only bridged the data gap but also improved efficiency because it expedited the contact and speed of access to supplies which are demand based (Chandani et.al.2014).

- (ii) The supply system for **iCCM products (drugs and commodities)** was a challenge due to bicycle breakdowns and there was need for **effective iCCM product transport. Enhanced Management (EM)** resulted in better data supply and planning which meant less trips by CHW for supplies. Moreover, CHW capacity on how to repair bicycle breakdowns was built. Management was also improved with the installation of District Product Availability Teams (DPAT) who managed the health team including CHW's by accessing gaps identified in the data and creating ways to fill the delivery gaps (Chandani et.al.2014).
- (iii) Due to cStock (the mHealth system), data use and visibility at all levels of the supply chain, significantly improved. By the end-line survey in 2014 SC4CCM had been scaled up to 24 of the 29 districts in Malawi. (SC4CCM endline report Malawi, pg. 11).

Burkina Faso: Achievements made in iCCM M&E mHealth

In 2016, Burkina Faso launched the community mHealth pilot project or mobile phone system use for iCCM in the Northern Region. This tool aims to increase CHWs' productivity. Through UNICEF, the pilot phase of the mHealth project has been implemented with a financial support from the Bill and Melinda Gates Foundation in two health districts of the North [Yako and Gourcy]. In total, 104,000 children under five in both districts are planned to benefit from this innovative approach. A plan to extend the system to all districts of the Northern Region in 2017 with the support of the Global Fund was in place.

Zambia: Achievements made in iCCM M&E mHealth

A mobile-based community health management information system (C-HMIS) for CHWs and Supervisors providing iCCM services was developed and piloted in two districts (Chipata and Chadiza districts) of Zambia to address challenges contributing to frequent stock-outs, inadequate supportive supervision and timely reporting was put in place with Gates Financing through UNICEF. The platform uses a simple feature mobile phones on which are loaded the District Health Information System version 2 (DHIS2) software and Java 2 platform micro edition (J2ME) aggregation and tracker applications (Biemba, G., 2017).

Uganda: Achievements made in iCCM M&E mHealth

Uganda's mTRAC is an mHealth system that was designed by Ministries of Health and end-users with support from UNICEF, and focused on elements requiring immediate response, and is linked with platforms such as DHIS2. This mHealth is a Mobile technology for CHW case management and reporting and was found to contribute to improved timeliness and availability of data (Guenther T., 2014).

3.11.6. Achievements in Funding and Technical Support for M&E Strategies

In addition to financial support various agencies provided technical assistance and support in facilitating various projects and monitoring and evaluation efforts.

- (i) **2010 to Date:** The Global Fund has been providing support to M&E strengthening: supports data quality improvement and use through data quality reviews and funding support for M&E systems strengthening.
- (ii) **In 2011: John Snow Incorporated (JSI)** facilitated an intervention research project which sought to explore three main areas which could improve the supply chain mechanisms in different countries. This project was funded by Bill and Melinda Gates (SC4CCM).
- (iii) **In 2011:** MCHIP a USAID funded a program called the Maternal and Child Health Integrated Program (MCHIP) which seeks “to aid program managers in designing, implementing, monitoring and evaluating their iCCM Programs. This team came up with indicators to assist with advocacy, planning, piloting, running early implementation and expansion / scale up (John Hopkins, 2011, p1).
- (iv) **In 2012:** The government of Canada gave a grant to WHO Global Malaria Program to support iCCM scale up in 5 countries in sub Saharan Africa which include, the Democratic Republic of the Congo, Malawi, Mozambique, Niger and Nigeria (who 2018).
- (v) **In 2013, the Bill & Melinda Gates Foundation and UNICEF** launches a drive to evaluate iCCM in Sub-Sahara Africa. The evaluations looked into mortality impact and evaluating the methods used to gain the information because of the difficulty of identifying a control group and having external validity so the results are not too specific to a context and can be analyzed and compared with the results from other external programs (Amouzou A. et. al, 2014, p2).
- (vi) **In 2013, the trACTION project** was designed to use data to shape program and service delivery. In collaboration with various research institutions and schools of research, has facilitated research studies in various countries. They have evaluated the effectiveness of C-Stock in Malawi, Monitoring and Evaluation systems in Ethiopia, Malawi, Mali and Mozambique among other projects.
- (vii) **In 2014 Management Science for Health (MSH)** was part of a team evaluation costing of various iCCM projects. This particular project was **funded by the Bill and Melinda Gates Foundation** to evaluate the costing of iCCM programs in five African countries.
- (viii) **In 2014 Save the Children** in partnership with University of West Cape and the Medical Research Council of South Africa was contracted by UNICEF AND DFATD to look into the effects of Integrated Health Systems Strengthening (IHSS) of iCCM in order to inform the delivery of iCCM in Ghana and the region (Institute of International Programs 2018).
- (ix) **Population Service International (PSI)** is active in eight countries and has collaborated with 35 different partners to strengthen iCCM in improving access to treatment, quality of case, inform caregivers about the importance of seeking care from trained

service providers. PSI assists with training, supervision, supply chain management and monitoring and evaluation with about 17,000 CHW's (PSI 2018).

- (x) **In 2012 World Health Organization (WHO) and United Nations Children's Fund (UNICEF)** launched a joint statement which considered the use of community case management in reducing child mortality as a result of malaria and Pneumonia. They have individually and collectively funded and supported various initiatives to promote better service delivery of ICCM (UNICEF).
- (xi) The 2014 iCCM Evidence Review Symposium in Ghana brought together over 400 individuals from 35 countries in sub-Saharan Africa and 59 international partner organizations. One of the thematic areas of the symposium was Monitoring, Evaluation and Health Information Systems and there was a lot that came out relating to innovations in monitoring, integrating with health management information systems, using results to drive programmatic decision-making and improvements, and evaluation design and methods.

3.11.7. Recommendations for improving iCCM M&E

- Countries have experienced stockouts of paper-based data capture and reporting tools. **Addressing the root causes of these stock-out will improve data collection and reporting.**
- **Sustainable mHealth solutions** (both technical and financial) should be developed to submit iCCM specific data to the DHIS 2 platform.
- Burkina Faso, Rwanda and Zambia are among countries, which carried out **pilot or early evaluations prior to up their ICCM scale up** and these countries achieved quicker scale up, breadth and depth of services. Through these countries the importance of research to informed practice is demonstrated as one of the major factors, which influences the success of ICCM. (Daelmans, B et. al, 2016, p571-572).
- **The flow of ICCM data** from district to the national level is key for successful tracking of progress/programming and confirmation of achievement of desired outcomes.
- **Technical assistance to improve data quality, including accurate & complete reporting:** All countries had the challenge of ensuring data collected at the community level is of high quality and complete. Countries will require technical assistance to ensure the accuracy and quality of community-level data and improved reporting.
- **Support to overcome operational, logistical and infrastructure challenges:** Based on documented findings of evaluation studies and reviews, and also findings of this study; countries have faced various operational, logistical and infrastructure challenges, which have hampered operationalizing of iCCM M&E, integration of iCCM data into HMIS and of DHIS 2. In Malawi, Ghana, Uganda, Niger among other countries, the following challenges were encountered: transport/travel costs to submit iCCM reported data to the link health facility, poor internet connectivity in the far flung iCCM areas and districts, no internet bundles, inadequate training on use of DHIS 2 applications with integrated iCCM data that require separate analysis, and absence of standard operating procedures that clearly define all data elements

and indicators. These challenges will require both technical and financial support. This study established that Nigeria and Zambia are among the countries that had an on-going financial and technical support including from Global Fund; and South Sudan had received in the past support from World Bank for DHIS2 capacity development.

- **Developing and supporting data visualization approaches, including identification of key/tracer indicators for dashboards and promotion of data use:** As countries progress with including iCCM data in their national DHIS 2 platforms, there are significant opportunities to use the DHIS 2 platform for data visualization to facilitate and foster data use at all levels. Data visualization and use can also foster improvements in data quality—i.e. when people are examining and using the data, there is more incentive to have accurate and complete data. It is documented that in Malawi, there had been potential for collaboration between UNICEF, Save the Children, and the University of Oslo to develop dashboards and build country capacity to track and use iCCM information. In Rwanda, there were opportunities to partner with University of Oslo to help develop applications and/or dashboards for district managers and/or facility-based staff to monitor key iCCM information (Informal Scoping Paper, 2016).
- **Strengthening mechanisms for data use and timely response by program managers, health workers and CHWs** requires concerted effort and culture change. An example dashboard developed by PSI for the iCCM program in South Sudan is available on request from the authors and readers are encouraged to consult the paper from IRC on analysis of routine data from six countries for additional guidance (Guenther T., 2014).
- **Integration into one reporting system of iCCM data** even if financed by different partners reduces duplication and increased coherence of data.
- Implementation of research activities to identify strategies for overcoming M&E challenges

SECTION FOUR

4.0. RECOMMENDATIONS

AREA		GAP, BOTTLENECK, CHALLENGES	ROOT CAUSES	RECOMMENDATIONS
NATIONAL POLICY				
1.	Evidence to support policy operationalization	Countries cautious to scale up, had the assumption iCCM is an expensive program.	- Evidence on cost benefits of iCCM program had not been fully understood by countries.	<ul style="list-style-type: none"> The MOH leadership and the implementing partners should undertake dissemination of evaluation and research findings to policy makers, key partners and stakeholders on iCCM achievements, lessons learned and best practices for sustainability. Capacity building in data for decision making to help understand how to use and incorporate available evidence/data in programming would also help countries understand funding needs especially fixed vs recurrent costs. The current costing tool does not include analysis of potential 'savings' made at hospital level due to reduction of cost associated with hospitalization of severe cases of malaria, diarrhea and pneumonia etc.
2.	Policy, Integration Coordination, and Leadership	The scale-up of iCCM is constrained because of: <ul style="list-style-type: none"> External donor dependence; and either lack or inadequate domestic allocations 	<ul style="list-style-type: none"> Key units of MOH such as Planning, Finance and M&E had not been involved in iCCM policy decision making. Fragmentation of funding partners and implementers 	<ul style="list-style-type: none"> MOH heads of technical units/iCCM focal coordinators and international agencies should provide leadership and support advocacy focused on key units of MOH such as Planning, Finance and M&E to ensure that iCCM planning and budgeting processes are articulated and well captured in national funding allocations across country's domestic investments to ensure sustainability. Scale-up of iCCM would be improved through domestic allocations.

AREA	GAP, BOTTLENECK, CHALLENGES	ROOT CAUSES	RECOMMENDATIONS
3.		Integration of iCCM into national health systems.	<ul style="list-style-type: none"> - Departments/sections of the MOH, key to health financing and human resources decisions in relation to integrated health systems strengthening were often left out. <p>Advocacy, sensitization and mobilization of devolved levels of the MoH, implementers i.e. district/health facility level is required to support, coordinate and supervise iCCM implementation;</p> <p>Support Institutionalization of community health</p> <p>Advocacy, sensitization and mobilization of Communities and CHWs (ownership and support of the iCCM program for increased demand for services.</p> <p>-</p>
4.		Engagement and involvement of stakeholders during policy development, review and decision making: government, private sector, social insurance schemes, etc.	<ul style="list-style-type: none"> - Weak engagement of other key relevant policy makers. - Ministries of Health did not involve senior MOH policy makers and the Ministry of Finance in iCCM policy discussions and therefore did not secure national budget lines. - Departments/sections of the MOH, key to health financing and human resources decisions were not involved during the key iCCM decision making. <ul style="list-style-type: none"> - The funding agencies for example PMI, GF, UNICEF, and WHO; MOH heads of technical units/iCCM focal coordinators; and international agencies/implementing partners for example SCF, Malaria Consortium, UNICEF, WHO etc. need to support the required advocacy and sensitization for engagement of the following: senior MOH policy makers and Ministry of Finance, Departments/sections of the MOH, key to health financing and human resources decisions, private sector and the community in iCCM policy decision making to establish local partnerships for sustainable iCCM financing. - Institutionalization of community health and iCCM is required to align all relevant partners
PROGRAM IMPLEMENTATION			
5.	Equity and access: iCCM services	<ul style="list-style-type: none"> - Below optimum utilization of iCCM services. - Inadequate numbers of 	<ul style="list-style-type: none"> - Mapping of areas with population in need of iCCM services had not taken into consideration of the following: <ul style="list-style-type: none"> - The location of the CHW working station should be reviewed and re-mapped, some studies indicate Care Takers perception of 1 (one) hour travel to a CHW is too long. - The target ratio of iCCM CHW to population to be achieved require

AREA	GAP, BOTTLENECK, CHALLENGES	ROOT CAUSES	RECOMMENDATIONS
	<p>CHWs providing U5 childhood illness services.</p> <ul style="list-style-type: none"> - Accessibility of iCCM services - Availability of iCCM services - Lack of community sensitization to the availability of iCCM services (lack of demand creation) 	<ul style="list-style-type: none"> (i) distance/time it takes for a Care Taker to reach a CHW i.e. stationed at the village health clinic, village health post; (ii) - The ratio of CHW to population is below the country target due to low number of trained CHWs. - Behaviour Change Communication (BCC) and demand creation either inadequate or lacking. - BCC activities are often overlooked during planning of iCCM implementation 	<p>mobilization of resources for their training, building their operation posts; and adherence of CHW selection processes to ensure the communities support CHWs.</p> <ul style="list-style-type: none"> - Community engagement early in implementation to ensure community knowledge and acceptance of services CHW can provide. - Increased communication, awareness raising, education to generate demand needs to be integral part of iCCM programming. - Ensure BCC activities are including in planning/programming and sufficient resources identified
	<p>Inequitable provision of services</p>	<ul style="list-style-type: none"> - Equity mapping (those areas which are most marginalized, most poor, or most in need i.e. having the highest U5 morbidity and mortality) is not undertaken prior to rollout 	<ul style="list-style-type: none"> - Focus on use of disaggregated data to target highest -risk areas (those with the highest U5 morbidity and mortality) first to ensure greatest impact - Build in evaluations to measure changes in U5 morbidity and mortality pre- and post- iCCM roll-out to demonstrate impact and build evidence base - Use routine data where possible to have greater precision and geographical granularity rather than lose details through national aggregates
	<p>Limited duration for iCCM services provision per week affected</p>	<ul style="list-style-type: none"> - (In countries where CHWs are a paid cadre) Countries had assigned CHWs a weekly schedule to provide iCCM 	<ul style="list-style-type: none"> - The demand of iCCM services is on the increase, community dissatisfaction arising from non-availability of the CHWs to provide services should be avoided. This will require a review of the schedule to ensure CHWs are available every time their

AREA	GAP, BOTTLENECK, CHALLENGES	ROOT CAUSES	RECOMMENDATIONS
	utilization level of CHW services. -	services (e.g. Malawi 2 days a week; others a limited number of hours per week.) This restricted the time CHW is available to provide iCCM services. - (In countries where CHWs are all volunteers) CHWs were absent from their posts to engage in economically productive activities to sustain themselves.	services are required. Some countries have two sets of CHWs, one for curative services (salaried) and the other for preventive and promotive services (volunteer) this arrangement should be reviewed by countries for adoption, Uganda is the latest country to try it. - Support institutionalization of CHW cadres such that they receive a salary and are available at all times to provide services.
	The required ratio of CHW to population had not been achieved by the majority of countries. For example, only a few countries had a large pool of salaried, trained CHWs: Rwanda and Ethiopia. CHW's with extremely high workloads reduced accessibility of iCCM services.	- Lack of sufficient finances to recruit and train additional CHWs. - Attrition rate affects the required CHW: population ratio. - Lack of incentives to increase retention	- The MOH need to take leadership and coordinate with funders/donors in undertaking advocacy and mobilization of funds: (i) local/domestic resources; (ii) global level – donors, philanthropists etc. - The iCCM coordination mechanism and MOH leadership should undertake mobilization and engagement of the regional, district, and community levels in iCCM decision making for ownership. This will ensure the required support is given to the CHWs and iCCM program, to avoid CHW attrition. - Support institutionalization of CHW cadres such that they receive a salary and/or consistent incentives to improve retention.

AREA	GAP, BOTTLENECK, CHALLENGES	ROOT CAUSES	RECOMMENDATIONS
	CHWs were absent on the days and times they were scheduled to provide iCCM services due to various reasons: This had negatively affected use of iCCM services due to unreliability. Some examples countries: Kenya and Ethiopia	<ul style="list-style-type: none"> - Lack of supervision of CHWs to check if they are available to provide services. - Inadequate incentives - CHWs need to leave their posts to take care of their personal business. 	<ul style="list-style-type: none"> - This is an indication of a possible lapse in the monitoring of the CHW adherence to the time schedule of services provision. The community leadership/committee and the health facility/supervisor will need to be involved in the selection of the CHW, and thereafter monitor their work ethics. - All levels: senior policy makers at the MOH and Ministry of Finance, MOH departments, the regional, district and community will need to be involved in discussions on the incentives policy; and thereafter, should agree and support incentives provision to CHWs. - The implementing partners/NGOs should adhere to the agreed incentives and there should be no disparities, as this has been the cause of dissatisfaction with incentives in some countries. - Support institutionalization of CHW cadres such that they receive a salary and/or consistent incentives to improve retention.
	There was documented evidence of lack of community ownership and support to CHWs resulting in low demand and use of iCCM services in some communities across countries	<ul style="list-style-type: none"> - Non-participatory/ lack of involvement of communities in selection of iCCM CHWs - The CHW selection guidelines and documentation were not always being followed. - Foreign/external CHWs assigned to communities (this was particularly the case in countries where CHWs are salaried staff of the MOH e.g. Malawi and Ethiopia.) 	<ul style="list-style-type: none"> - The MOH should provide leadership in ensuring adherence to CHW selection criteria, guidelines and processes. - Engage communities early in the process and to the extent possible allow them to select/nominate their own candidate(s) for iCCM training. - To the extent possible send CHWs back to their communities of origin. - Countries whose iCCM CHWs are MOH staff, will need to: (i) sensitize the community to accept a CHW who is not from their community, (ii) engage the community to select the CHW from a shortlist, to ensure ownership.
6.	Referral services	<ul style="list-style-type: none"> - Adherence to referrals - Referral costs 	<ul style="list-style-type: none"> - Distance/time it takes to reach a referral health facility. - Distance to a referral health facility need to be acceptable to the community, this requires engagement of the community in the

AREA	GAP, BOTTLENECK, CHALLENGES	ROOT CAUSES	RECOMMENDATIONS
	- Utilization of counter referrals	<ul style="list-style-type: none"> - Cost associated with reaching a referral facility and access services - Stigma/discrimination and other socio-economic factors impeding travel out of the community to nearest referral facility - Suboptimal use of referral notes for referral and counter referral 	<ul style="list-style-type: none"> choice of a referral facility. - Social insurance/voucher schemes to defray costs and increase access can also help the most in need. - CHWs and volunteers conduct home visits to follow up cases that have been referred. For severe cases pre-referral treatment (e.g. RAS for malaria) may be required.
7.	Low referral rate	<ul style="list-style-type: none"> - Low and irregular clinical investigations - Cases are referred when CHWs don't have the appropriate stocks to deal with simple cases - CHWs had difficulties in identifying danger signs - Care givers unable to complete referrals - Stock-outs or inadequately trained staff at referral centers has eroded trust - 	<ul style="list-style-type: none"> - Ensure adequate and sufficient supplies are available to CHWs to deal with simple cases to avoid overburden linked HF and surfeit of referrals - The low referral rate should be addressed using the evidence available such as gaps in clinical skills among CHWs that require re-training/re-fresher training, and targeted supervision. - Mobilization of resources for the required for the refresher training/re-training and targeted supervision. - Support for social insurance schemes (e.g. transport vouchers) to help complete referrals - Ensure the referral health facility is well-stocked and sufficient staff available and trained to deal with severe cases.
8.	Referred cases not managed at the referral health facility, a second referral is given to a	<ul style="list-style-type: none"> - Human resource/staff do not have adequate capacity to manage the referrals. - Referral health facilities do not 	<ul style="list-style-type: none"> - Ensure the referral health facility is well-stocked and sufficient staff available and trained to deal with severe cases. - Ensure targeted support from district health management team where there are many secondary referrals including supporting

AREA		GAP, BOTTLENECK, CHALLENGES	ROOT CAUSES	RECOMMENDATIONS
		higher-level health facility.	have the infrastructure to manage the referred cases.	additional resources (human and financial) for “problem areas” - Ensure designated health facilities for managing iCCM referrals are adequately trained and equipped for IMCI
9.	iCCM services supportive supervision and quality of services provision	<ul style="list-style-type: none"> - Supervision not undertaken as scheduled - Supervisors with no clinical background (e.g. Environmental Health Officers) used for supervising iCCM CHWs 	<ul style="list-style-type: none"> - Lack of funds for transport - unavailability of clinical supervisors due to understaffing at the linked (supervising) health facility - Rainy season, roads impassable/flooding - Ratio of supervisor to CHW is not optimal 	<ul style="list-style-type: none"> - Provide funds for transport between HF and communities as part of incentives and/or in HF budgets - Support m-health innovations to increase contact points and links between HF and CHWs - Mentorship programs (ex. Malawi: when CHWs go for their monthly supplies, they are asked to perform an iCCM algorithm and or gaps are identified from errors in their patient registers and they are mentored based on these gaps) - Districts with an iCCM program need to ensure there are trained pools of supervisors such that there is a sufficiently high ratio of supervisor to CHW to permit adequate supervision by the appropriate officers.
10.		Supervisors not trained in iCCM undertaking supervision	- Lack of funds to train new supervisors replacing those transferred to other posts.	- The district health management should make sure staff appointed to iCCM districts have been trained as an iCCM supervisor before reporting to the new post.
11.		Inadequate checklists or checklists for supervision to check quality of applied services not available	- Insufficient funding and/or lack of understanding how to check quality of care	- Ensure sufficient financing and training at all levels for how to check and improve quality of care.
12.		Lack of clear tools for quality assessment	-	- Develop clear guidance and tools to ensure and assess quality of service delivery
SUPPLY AND LOGISTICS				
13.	<ul style="list-style-type: none"> - Stockouts - Adaptation of 	- iCCM drugs and commodities stock-outs	- Issues of iCCM Supply Chain: (i) non-integrated iCCM	- Some countries have already received funding support for strengthening the supply chain. However sufficient funding is

AREA	GAP, BOTTLENECK, CHALLENGES	ROOT CAUSES	RECOMMENDATIONS
global treatment guidelines and essential drug lists	<p>common in all countries in SSA contributed to decreased use of iCCM services.</p> <ul style="list-style-type: none"> - Misalignment in timing of non-malaria commodities (either pre- or post- arrival of malaria commodities) - Delayed alignment of country treatment guidelines with Global guidelines 	<p>supply chain with the MoH Supply chain.</p> <ul style="list-style-type: none"> (ii) iCCM consumption data: data is not visible and is not captured/available. (iii) iCCM drugs and supplies are not fenced out from use by the linked health facility. <p>- UNICEF Supply Division recently issued a market update note¹⁰² on amoxicillin dispersible tablets (DT), highlighting supply and demand across low- and middle-income countries. Amoxicillin has demonstrated higher effectiveness as a first-line treatment for pneumonia, and supply is sufficient to meet current and anticipated demand. However, few governments to date have adopted WHO's recommendations to incorporate amoxicillin DT into their country's national</p>	<p>required for integration of iCCM into the MOH drugs and supplies chain including inclusion of the iCCM drugs and supplies into the Logistics Management Information System (LMIS), and support for increased visibility of iCCM consumption data from all levels.</p> <ul style="list-style-type: none"> - Advocacy and mobilization of adequate resources at global level to support iCCM supply chain integration with the National supply chain to ensure sustainability of iCCM supplies is required. - The MOH leadership and iCCM coordinating mechanism should work with the national drugs and commodities supply chain to make sure the iCCM drugs and supplies are ring fenced from use by the distributing health facility (iCCM linked facility). - Support for early quantification and forecasting of needs at both community and health facility to avoid cannibalization of one level by the other. - Support for rolling out m-health innovations to help capture commodity data at community level. - encourage countries to scale-up use and access to amoxicillin dispersible tablets including through market analysis related to their use, availability, supply, coverage, pricing and trends. Also use available data from partners (e.g. UNICEF, Malaria Consortium, CHAI, etc) which profiles the needs and technical specifications required through innovation to ensure products are fit for purpose, efficient, effective and affordable. - Encourage countries to ensure all iCCM commodities are included on their EML.

¹⁰² The note is accessible here: https://www.unicef.org/supply/index_69800.html

Market Notes on other topics can be found here: https://www.unicef.org/supply/index_54214.html

AREA		GAP, BOTTLENECK, CHALLENGES	ROOT CAUSES	RECOMMENDATIONS
			treatment guidelines and List of Essential Medicines.	
14.	iCCM Supply Chain	Stock outs at national level	<ul style="list-style-type: none"> - Inadequate funding - Weak distribution systems - Poor data - Insufficient or inadequate quantifications and forecasting 	<ul style="list-style-type: none"> - Advocacy and mobilization of funding resources locally and internationally (global) under the leadership of the MOH, iCCM taskforce mechanism, and international partners to build the necessary capacity and circumvent the occurrence of: (i) weak distribution systems; (ii) poor data; (iii) insufficient forecasting. - Inadequate funding is an issue that needs to be addressed because UNICEF has to use Regular Resources (RR) in some countries to fill in the gap. The UNICEF New York Office is in the process of approximating the funding need for the GF countries' iCCM commodities.
15.		Stock outs at the last mile (community level)	<ul style="list-style-type: none"> - Lack of transportation for distributing from the storage at the health facility to the community - No ring-fencing of iCCM drugs and supplies from being used at the health facility. 	<ul style="list-style-type: none"> - Strengthen the community health supply chain and improve product availability of essential medicines at community and health facility levels to ensure both are sufficiently supplied - Use available and vetted m-health tools to improve capture of data (particularly consumption data) and build in triggers for when new supplies are needed (Ex. Malawi C-Stock and Enhanced Management (EM) approach) - Build capacity of CHWs to store supplies and manage stock for effective replenishment. - In the absence of mhealth, use simplified stock management tools and reporting mechanism - Product innovation to facilitate transportation, storage and use of commodities.
16.			<ul style="list-style-type: none"> ▪ Stock-outs in the GF supported iCCM implementation areas 	<ul style="list-style-type: none"> - Harmonize the supply chain to ensure that both malaria and non-malaria commodities are continuously available at the supporting/link health facilities.

AREA	GAP, BOTTLENECK, CHALLENGES	ROOT CAUSES	RECOMMENDATIONS
		-	-
FINANCING			
17.	Co-financing of non-malaria iCCM components and commodities was a hindrance to scale up.	<ul style="list-style-type: none"> - Limited/no financial contribution by the Government (inadequate local resources) to procure iccm commodities. - Insufficient financial allocations by external co-financiers to support procurement of iCCM commodities. - 	<ul style="list-style-type: none"> - The MOH leadership and the iCCM coordinating mechanism should undertake advocacy to include iCCM into government mainstream budgeting processes; and. at the country level engagement of key policy makers in iCCM decision making. - Early quantification and forecasting of all iCCM needs will support proactive allocation of finances by donors. - A joint indicator around iCCM would support delivery and financing of the entire package rather than piecemeal budget support.
18.	Sustainability of iCCM financing	<ul style="list-style-type: none"> - Donor fatigue 	<ul style="list-style-type: none"> - There should be global level advocacy and mobilization campaigns to bring in funding required to bridge the gap. - Countries should undertake periodic review and evaluations to comprehend the costs and financing needs for iCCM implementing or expanding programs nationally. This knowledge is important to advocate for adequate funding both domestically and from external partners and also to plan for efficient use of resources. A clear understanding and analysis of cost-effectiveness, and what drives it, is needed for countries to maximize the use of scarce resources and to make evidence-based policy decisions. - To facilitate countries maintaining the existing scope and even build momentum in iCCM program scale up, the GF, which is the leading external funder for malaria community case management, needs to allow flexible funding either through increased above allocation and incremental awards in the NFM Windows, or support countries to access funding for other iCCM diseases (diarrhoea and pneumonia, including nutrition, TB, HIV or other

AREA		GAP, BOTTLENECK, CHALLENGES	ROOT CAUSES	RECOMMENDATIONS
				<p>diseases interventions addressed through community case management).</p> <ul style="list-style-type: none"> - Additional support from the GF could come from through integrated management of TB and HIV at the community level - Countries that are implementing the iCCM program need to undertake further research and cost analysis to determine the cost-effectiveness of iCCM programs and corresponding patient and service delivery costs. - Clear prioritization of community health by countries to attract and align other donors to bridge funding gaps
MONITORING AND EVALUATION				
19.	Monitoring & Evaluation, Operations Research, iCCM information system	iCCM data not retrievable from HMIS and DHIS2 for use in services management i.e. supply chain.	- iCCM Data aggregated together with IMCI data.	<ul style="list-style-type: none"> - Support for development and incorporation of community-health capture modules (Ex. Upscale in Mozambique) linked with HMIS/DHIS2 – including resource mobilization - Capacity building for data for decision-making. - Support for data visualization (Ex. Malawi best practice support from implementing partners and University of Oslo). - Support DHT with specific M&E focal points to improve data quality and reporting
20.		iCCM data is poor with inaccuracies	<ul style="list-style-type: none"> - Poor CHWs numeracy and literacy skills - Data reporting is often not adequately covered during training - Refresher training/supportive supervision does not specifically target reporting 	<ul style="list-style-type: none"> - Ensure appropriate data reporting is adequately covered during training - Ensure sufficient financing for supply and resupply of CHW patient registers - Ensure supervisors are sensitized and always look for data errors/inconsistencies during supportive supervision/ contact points with CHWs - Support DHT with specific M&E focal points to improve data quality and reporting

AREA	GAP, BOTTLENECK, CHALLENGES	ROOT CAUSES	RECOMMENDATIONS
			<ul style="list-style-type: none"> - Use pictorial tools for data recording in low numeracy settings (Ex. South Sudan)
21.	iCCM data is not timely reported	<ul style="list-style-type: none"> - Lack of transport funds/transport to deliver the data at health facilities. - Travel during the rainy season is not possible 	<ul style="list-style-type: none"> - Ensuring funding is available for CHWs to be able to transmit data to linked HF (either for their transport or HF staff to travel to communities) - mHealth innovations (Ex. Malawi, Rwanda and Zambia) - Build in incentives for timely reporting
22.	Parallel unsustainable iCCM data reporting	<ul style="list-style-type: none"> - iCCM data is not directly integrated into the HMIS - Each donor pays only for their districts and/or specific indicators as part of their projects - Project staff are overseeing iCCM projects and not embedded with national authorities 	<ul style="list-style-type: none"> - MOH heads of technical units: M&E, Child Health etc. under the leadership of MOH and iCCM coordination mechanism should provide leadership and support the integration of iCCM data into the HMIS including that sourced by international agencies; - Sustainable mHealth solutions (technical and financial) should be developed to submit iCCM data to the DHIS 2 platform.
23.	Difficult to calculate treatment ratios of iCCM versus IMCI	<ul style="list-style-type: none"> - Different classification of childhood illness under iCCM and IMCI - Data is aggregated at the HF or District level before transmission to the central level 	<ul style="list-style-type: none"> - MOH heads of technical units: M&E, Child Health etc. under the leadership of MOH and iCCM coordination mechanism should provide leadership and support the harmonization of classification of childhood illness under iCCM and IMCI. - Sustainable solutions (technical, financial, mHealth) should be developed to submit disaggregated and specific iCCM data to the HMIS/DHIS2 platform.
24.	Lack of financing for operational research/implementation research	<ul style="list-style-type: none"> - Few donors are willing to invest in OR to support evidence generation for improved decision making 	<ul style="list-style-type: none"> - Ensure evaluations of pilot study outcomes are built into projects from the beginning to determine best-practices and improve implementation outcomes

AREA		GAP, BOTTLENECK, CHALLENGES	ROOT CAUSES	RECOMMENDATIONS
OTHERS				
25.	Human Resources	Low numbers of CHWs trained in iCCM leading to most countries having a below optimal ratio of CHW to the target population.	<ul style="list-style-type: none"> - Mapping of population to CHW ratio not accurate, some iCCM areas have higher population density than others. - Lack of funds to train and retain additional CHWs - Governments are concerned of sustainability of large pool of CHWs. 	<ul style="list-style-type: none"> - Allocation of number of CHWs should be guided by mapping based on population density of the target iCCM geographical area. - Mapping and allocation needs to ensure equitable access to CHWs - Mobilization of funds locally and globally should be undertaken with the leadership of the MOH and iCCM coordination mechanism.
26.		Training of CHWs not adhering to the WHO standards i.e. shortened training duration, not giving the clinical practice adequate time	<ul style="list-style-type: none"> - Lack of adequate funds for training - Misunderstanding of the objectives of the full-course of training 	<ul style="list-style-type: none"> - Technically the WHO/GMP has a community health unit and UNICEF also supports training. However, a global body to provide oversight on adherence of training to WHO standards offered by countries should be appointed. This body should provide dedicated specialized technical support for iCCM training to ensure understanding of the objectives of training and completion of the full course. - The GF is one of the main donors for iCCM training, countries should submit request for the funds under the NFM. This funding allocation should not be cut; and should be topped up if insufficient.
27.		Refresher training not provided as required	<ul style="list-style-type: none"> - Lack of adequate funds for refresher training - Refresher training offered as a routine training i.e. annually; and there is a possibility of using the original training methodology/tools and not 	<ul style="list-style-type: none"> - Maintain training budgets in donor proposals rather than have them be cut (including as part of support for supportive supervision). - Explore innovative training and mentoring approaches, including district mentors, on the job training etc. - Strengthen the linkages between CHWs and health facilities as feedback loop to strengthen capacity

AREA	GAP, BOTTLENECK, CHALLENGES	ROOT CAUSES	RECOMMENDATIONS
		adapting them based on capacity gaps identified.	- Capacity building on data for decision-making: Ensure data capture of gaps identified and adequate analysis to better tailor refresher training and/or corrective supportive supervision

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