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Report on the Feasibility of Measuring the iCCM Task Force Indicators through Existing Monitoring Systems in DRC, Niger, Madagascar, Senegal, South Sudan and Zambia

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Cover Photo: Children in Zambia, by David Burrows, courtesy of MCHIP, 2014

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Abbreviations and Acronyms

ACT	Artemisinin Combination Therapy
ASC	Agents de santé communautaire
CBD	Community Based Distributor
CCM	Community Case Management
CHA	Community Health Assistant
CHW	Community-Based Health Worker
DRC	Democratic Republic of the Congo
HF	Health Facility
HMIS	Health Management Information System
iCCM	Integrated Community Case Management
M&E	Monitoring and Evaluation
MCHIP	Maternal and Child Health Integrated Program
MNCH	Maternal, Neonatal and Child Health
MoH	Ministry of Health
mRDT	Rapid Diagnostic Test for malaria
NGO	Non-Governmental Organization
NMS	National-Level Milestone
NRA	National Regulatory Authority
ORS	Oral Rehydration Solution
RDT	Rapid Diagnostic Test
RM	Routine Monitoring
SS	Special Study
TF	Task Force

Executive Summary

Introduction

The Integrated Community Case Management (iCCM) Task Force (TF) has proposed a list of 48 indicators to guide governments and partners in monitoring and evaluating national iCCM programs. These indicators are compiled in the document entitled *Indicator Guide for Monitoring and Evaluating Integrated Community Case Management*. Recently, the iCCM TF began a review process to determine the number of indicators being reported by country programs, and opportunities and challenges related to measuring indicators not being reported. This report supports the review process by analyzing the availability of indicators through the iCCM monitoring systems in six target countries; Democratic Republic of the Congo (DRC), Niger, Madagascar, Senegal, South Sudan and Zambia.

Objectives

- Examine existing iCCM monitoring systems in DRC, Niger, Madagascar, Senegal, South Sudan and Zambia to determine how many of the iCCM TF indicators could be calculated and reported at each level of the health system
- Identify potential issues with the application of the iCCM TF indicators, including opportunities to strengthen the indicators and/or country monitoring systems

Methods

In November and December 2013, a document review of iCCM monitoring tools was conducted to understand the feasibility of measuring the iCCM TF indicators. The monitoring tools used in the six target countries were collected and reviewed to see: 1) how many of the iCCM TF indicators are already being reported, and 2) opportunities and challenges for measuring indicators not being reported. Key informant interviews were conducted by phone with iCCM program managers, to validate findings from the document review, and to discuss other data collection issues.

Because the principle research method used for this report was a document review of monitoring tools, the report focuses on the Indicator Guide's 18 routine monitoring indicators, those that are intended to be collected through a country's iCCM monitoring system or Health Management Information System (HMIS). These routine monitoring indicators and their definitions are listed in Table 4.

Findings

For each of the six countries and 18 routine monitoring indicators, the availability of the information required for each indicator's numerator and denominator was classified on a color scale as follows: green, for information available at district level; yellow, for information available at health facility level; orange, for information only available in forms or records kept by Community-Based Health Workers (CHW); and red, for information that is not available at all.

Table 1 summarizes the results of the analysis, with indicators coded according to the element of the indicator (numerator or denominator) that is least feasible to collect. More detailed results are presented in Table 4, with the numerator and denominator for each indicator coded separately.

The analysis shows that information for only three indicators is available at the district level in all six countries. Eleven indicators would require data extraction at the health facility level, in at least half of the countries. Information for four indicators is unavailable in at least half of the countries, with monitoring tools not capturing the necessary data at any level of the health system.

Key findings from indicator analysis

- Countries are already collecting much of the information needed to calculate several of the routine monitoring indicators
- Compiling most routine monitoring indicators would require data extraction from documents at district or health facility level (e.g. from monthly health facility reports, monthly CHW reports, or supervision checklists)
- Information for many indicators is gathered through supervision checklists; which, in most countries, are not aggregated or compiled routinely in the way that monthly reports from CHWs are aggregated
- Information for some indicators is unavailable because the relevant question or field is not included in monitoring tools, or is not aligned with indicator guide definitions
- Many indicators require CHW training and deployment data, CHW supervisor training and deployment data, or population demographic data, which are not routinely reported
- Use of "CHW assessed" as the denominator for some indicators, particularly those collected via supervision checklists, could result in measurements that suggest a more positive scenario than is actually the case

Discussion

The findings of this report provide a means for understanding opportunities and challenges that countries could face, should they decide to measure some of the iCCM TF's 18 routine monitoring indicators. As a general principle, the collection and use of indicators should be driven by the information's value for decision-making, either at the national, district or health facility level. Given the findings presented above, it seems reasonable to ask whether the efforts required to measure some of the 18 routine monitoring indicators are worthwhile. It may be the case that, for some countries and some indicators, the value of the indicator is outweighed by the work required to measure it.

Ultimately, it is for countries to determine which of the 18 routine monitoring indicators to measure. Countries may decide that, although it is possible to measure some indicators through routine systems, these indicators will instead be measured through special studies; or countries may decide to measure an indicator, but not with the exact definition specified in the Indicator Guide. These decisions should be considered by countries over time, and articulated in national iCCM Monitoring and Evaluation (M&E) policies. The iCCM TF is well positioned to support countries through its broad membership.

Meanwhile, the iCCM TF should decide whether to encourage countries to collect a fixed set of routine monitoring indicators, with globally agreed definitions; or to encourage countries to select their own indicators and/or definitions, according to their resources and context. Likely, a balance exists between requiring countries to collect a standard set of indicators for the purposes of comparison across countries; and, on the other hand, allowing countries the freedom to define their own set of indicators, at the expense of global standardization. Balance will best be achieved through a dialogue with countries, after countries have had time to review the newly launched Indicator Guide and consider the consequences for their iCCM programs and monitoring systems.

Recommendations

Recommendations for iCCM TF

- Engage countries in a discussion on iCCM monitoring and the indicators that would best guide decision-making
- Consider reducing the number of routine monitoring indicators to those that are most valuable for national and sub-national decision-making, given the resources required to measure each indicator
- Encourage future research on data quality issues and in-country data use

Recommendations for countries

- Determine which indicators would best inform national and sub-national decision-making, and develop an M&E plan for iCCM that specifies the routine monitoring indicators to be collected and reported at each level of the health system
- Revise first-level monitoring tools (CHWs forms and supervision checklists) to ensure all relevant information is collected and, where possible, aligned with indicator guide definitions
- Ensure that information is aggregated and communicated to the appropriate level of the health system, according to the M&E plan
- Ensure that CHW training and deployment data is collected and kept up-to-date

Table 1. List of 18 routine monitoring indicators with summary color classifications

Dark green	*Information is reported in district reports (which may or may not be sent to national level)*
Light green	*Requires data extraction from documents at district level (e.g. monthly reports from HFs)*
Yellow	*Requires data extraction from documents at health facility level (e.g. supervision checklists, monthly reports from CHWs)*
Orange	*Requires data extraction from documents at CHW level (e.g. sick child forms, patient registers)*
Red	*Requires information that is not collected at any level*

Indicator	DRC	Madaga -scar	Niger	Senegal	South Sudan	Zambia
3.2 iCCM CHW density	District	District	District	District	District	District
3.3 Targeted CHWs providing iCCM	HF	District	HF	District	HF	HF
3.4 Annual iCCM CHW retention	HF	District	HF	District	HF	HF
4.2 Medicine and diagnostic availability	HF	HF	HF	HF	HF	HF
4.3 Medicine and diagnostic continuous stock	HF	HF	HF	District	HF	HF
4.4 Medicine and diagnostic	HF	HF	HF		District	
4.5 Medicine and diagnostic validity					HF	
5.1 iCCM treatment rate	District	District	CHW	District	HF	HF
5.2 Caseload by CHW	HF	District	CHW	District	HF	HF
5.3 Referral rate	District	District	CHW	District	HF	HF
7.2 iCCM supervisor training	District	District	District	District	District	District
7.3 CHW-to-supervisor ratio	District	District	District	District	District	District
7.4 Routine supervision coverage	HF	District	HF		District	HF
7.5 Clinical supervision coverage		HF	HF			HF
7.6 Correct case management (knowledge)		HF				
7.7 Correct count of respiratory		HF				HF
7.8 Complete and consistent registration	HF	HF	HF		District	HF
8.3 District reporting	District	District	District	District	District	District

Introduction

The iCCM TF has proposed a list of indicators to guide governments and partners in monitoring and evaluating national iCCM programs (see Annex 2). These indicators are compiled in the Indicator Guide for Monitoring and Evaluating Integrated Community Case Management, launched at the 5 March 2014 iCCM Evidence Symposium. The 48 indicators cover the eight program components outlined in the iCCM Benchmark Framework (see Annex 1), and have been developed to assist program managers in measuring the components of an iCCM program, from coordination and policy setting, to supply chain management, to supervision and quality assurance. Together with the framework, the indicators provide normative guidance on how to approach iCCM, with the goal of improving quality, functionality, and sustainability across the life of the program.

The iCCM TF developed the list of indicators over several years, at the same time as countries expanded their iCCM programs from pilot phase to expansion/scale-up phase. As such, most indicators have not been tested in programs at a national scale. Now that some countries have expanded iCCM programs and established national monitoring systems, the iCCM TF has begun a review process to understand how many of the indicators are being reported by countries, and opportunities and challenges for measuring indicators are not being reported.

This report is part of the review process, analyzing the iCCM monitoring systems in DRC, Niger, Madagascar, Senegal, South Sudan and Zambia. At the time of the report, two countries, Madagascar and Senegal, have been implementing iCCM for ten years. Three countries, DRC, Niger and Zambia, have been implementing iCCM over five years. One country, South Sudan, was in early implementation phase.

The iCCM TF indicators were not intended to be a mandatory list of indicators for every country to collect. The authors hope this report will contribute to an ongoing dialogue between countries and the iCCM TF, to determine the indicators that most are valuable for both in-country decision-making and global analysis.

Objectives

The objectives of this report were to:

- Examine existing iCCM monitoring systems in DRC, Niger, Madagascar, Senegal, South Sudan and Zambia to determine how many of the iCCM TF indicators could be calculated and reported at each level of the health system
- Identify potential issues with the application of the iCCM TF indicators, including opportunities to strengthen the indicators and/or country monitoring systems

Methods

The principle review method for this report was a document review of the iCCM monitoring tools used in the six target countries. Tools were collected from MCHIP in-country partners and Ministry of Health (MoH) tools were reviewed to see how many of the iCCM TF indicators are already being reported, and to identify opportunities and challenges for measuring indicators that are not being reported. Copies of the monitoring tools were requested and compiled by MCHIP. An MCHIP consultant conducted an initial review of the tools from DRC, Madagascar, Niger and Senegal. The current report builds on the initial analysis with an analysis of tools from South Sudan and Zambia.

In addition to the document review, key informant interviews (one or two per country) were conducted by phone with iCCM program managers. The interviews validated findings from the document review and provided opportunities to discuss other data collection issues. The informants were either iCCM program managers in MoH departments, or implementing NGO partners, whose roles included support or technical assistance to the country's iCCM monitoring system. Notes were taken by the interviewer during phone conversations and were analyzed later as part of the document review. The purpose of the interviews was three-fold: 1) to verify the inclusion of all monitoring tools in the analysis; 2) to clarify how tools are used; and 3) to understand how data is collected, aggregated and reported. Additionally, informants were asked about challenges facing the iCCM monitoring system, and the extent to which data is used by decision-makers at the MoH and by iCCM implementing partners.

In the iCCM TF's Indicator Guide, the 48 indicators are divided into three groups: 1) routine monitoring indicators, to be measured through routine sources; 2) special studies indicators, to be measured through household surveys or other studies, not on a continuous basis; and 3) national-level milestone indicators. Because the principle review method for this report was a document review of monitoring tools, the report focuses primarily on the Indicator Guide's 18 routine monitoring indicators, which are those intended to be measured as part of a country's routine monitoring system. The 18 indicators are listed with definitions in Table 4. Although these indicators could be measured as part of a special study (for example, through an implementation assessment or a CHW quality-of-care study), the aim of this report was to understand the feasibility of measuring and reporting the indicators through a country's routine monitoring system.

Brief comments on the availability of special studies indicators and national milestone indicators, based on conversations with key informants, are included at the end of the report.

The analysis was carried out using spreadsheets. Tables were created in spreadsheets for each of the 18 indicators listing, for each country, the tool capturing the numerator and denominator (if any); the health system level at which the indicator, numerator, and/or denominator are reported; and the frequency with which the indicator, numerator, and/or denominator are reported. These tables are integrated to create Table 4 in this report.

Assumptions and Limitations

The findings from this report are limited, based on three critical assumptions:

First, we did not ask each country how often data was collected using their monitoring tools; therefore, we can assume that countries use their tools to varying degrees (as was intended). Various factors (such as differing phases of iCCM implementation, availability of resources, and strength of a supporting health systems) impact whether a country's tools are: 1) completed accurately and on time, and 2) aggregated and delivered at the appropriate level of the health system. Not knowing how often indicators are gathered limits our understanding of data quality and the ability for managers to make real-time decisions, which was outside the scope of this review.

Second, our in-country contacts provided us with the relevant monitoring tools used in the six countries, and the countries are not using any other mechanisms for collecting, aggregating or reporting routine information. Our analysis was based on provided documents, and not on independent knowledge of the countries' iCCM programs or monitoring systems.

Third, we assumed that information on CHW training and deployment, CHW supervisor training and deployment, and the under-five population of health facility catchment areas, is available (and, to varying degrees, is up-to-date) at the district level. This information is not ordinarily collected via routine monitoring tools, and we did not examine any reports that showed how this information is collected or how often, but key informants said that CHW training and deployment data was available at the district level, and we assumed they were correct. Any further discussion of a country's monitoring system should verify to what extent this data is available.

In spite of the limitation of the findings, the authors believe the findings are valuable. The purpose of the report is to reveal the feasibility, in principle, of collecting the Indicator Guide's routine monitoring indicators. It is not an in-depth study of iCCM routine monitoring systems, nor is it a detailed study of how indicators are actually being collected and used in the field. Understanding data quality issues in countries is essential, but is not the purpose of this report.

These assumptions present serious limitations. The limitations reflect the nature and purpose of the report, which is to help understand, in principle, which indicators could be collected with the existing monitoring tools in each country. This report is a first step, in a larger, ongoing examination by a variety of stakeholders of how best to improve routine monitoring of iCCM.

Country Characteristics

iCCM programs are at various stages of scale-up. Because they differ, in both design and level of implementation, comparing iCCM monitoring systems across countries has limitations. Table 2 provides basic data on the iCCM programs that were reviewed in this report.

Table 2. Characteristics of country iCCM programs as of December 2013

	DRC	Madagascar	Niger	Senegal	South Sudan	Zambia
Year of introduction	2005	2007	2006	2002	2005	2006
Expansion began	2008	2008	2008	2006	2009	2010
Program phase*	Expansion	Expansion	Expansion	Expansion	Early implementation	Expansion
Coverage	107 of 516 health zones	National	National	58 districts of 69 (as of 2010)	Approximately 30% of districts (payams) covered	46 of 72 districts
Treatment package	Identification and treatment of diarrhea, pneumonia, malaria, malnutrition (moderate); provide vaccinations, Vitamin A, deworming (mebendazole); disease prevention; growth monitoring	Identification and treatment of diarrhea (with zinc and ORS), pneumonia (with antibiotics), malaria (with mRDTs and ACTs), malnutrition; provide Vitamin A, deworming	Identification and treatment of diarrhea (with ORS and zinc), pneumonia (with antibiotics), malaria (with mRDTs and ACTs), and malnutrition	Identification and treatment of diarrhea (with zinc and ORS), pneumonia (with antibiotics), and malaria (with mRDTs and ACTs)	Identification and treatment of diarrhea (with ORS and zinc), pneumonia (with antibiotics), malaria (with ACTs), and malnutrition (moderate)	Identification and treatment of diarrhea (with ORS and zinc), pneumonia (with antibiotics), malaria (with mRDTs and ACTs), and malnutrition (moderate)
Name for service Provider	Relais communautaire	CHW	Agents de santé communautaire (ASC)	Agents de santé communautaire (ASC)	Community based distributor (CBD)	Community health assistant (CHA)

*The phase of the program in each country is based on the extent of government leadership, and proportion of districts offering iCCM services

Findings

Document collection

To conduct analysis, the study reviewed all routine monitoring tools used for reporting on iCCM activities in the six target countries. In each country, the same monitoring tools are being used by all iCCM partners: the MoH and NGO partners use the same set of tools, with the goal of contributing to a national iCCM monitoring system. The authors believe that the tools reviewed are the versions currently being used in the countries (confirmed by key informants in October and November 2013).

Table 3 lists monitoring tools that were collected and reviewed for the analysis.

Table 3. Documents reviewed (with reporting level)

	DRC	Madagascar	Niger	Senegal	South Sudan	Zambia
Consultation records						
Sick child reporting form	DRC-01 Individual child consultation form (Fiche individuelle de prise en charge de l'enfant malade) [Kept by CHW]	MAD-01 Child monitoring form (Visite de suivi) [Kept by CHW]	NIG-01 Individual consultation form (Fiche individuelle de prise en charge de l'enfant malade par l'ASC) [Kept by CHW]	SEN-01 General consultation register (Registre de consultation generale) [Kept by CHW]		
Referral form (and cross-referral)	DRC-02 Referral form (Fiche de reference) [Kept by CHW]	MAD-02 Referral and cross-referral form (Fiche de reference / contre reference) [Kept by CHW]	NIG-02 Referral form (Fiche de reference) [Kept by CHW]	SEN-02 Referral form (Fiche de reference) [Kept by CHW]		
Register of consultations	DRC-03 Consultation register (Registre de consultation au site) [Kept by CHW]				SOU-01 Community Based Distributor Patient Register [Kept by CHW supervisor]	ZAM-01 Community-based patient registration form [Kept by CHW]
Register of medicines				SEN-03 Stock register (Fiche/cahier de stock) [Kept by CHW]		
Monthly reports						
Monthly report aggregating multiple consultations by one CHW	DRC-04 Monthly activity report (Rapport mensuel d'activities du site) [Submitted to health facility]					ZAM-02 Community-based agents aggregation (monthly/quarterly) form [Submitted to health facility]
Monthly report aggregating monthly totals for multiple CHWs	DRC-05 Monthly synthesis report for the health zone (Rapport mensuel synthese de la zone de sante) [Submitted to district]	MAD-03 Data aggregation form (Canevas de compliation des donnees des site) [Submitted to district] MAD-04 Stock management form (Canevas de compliation de la gestion des intrants) [Submitted to district] MAD-05 Financial management and supervision form (Canevas de compilation de la gestion des fonds et des suivis supervisions) [Submitted to district]		SEN-04 Monthly synthesis report (Rapport mensuel de synthese des cases et sites par l'agent de developpement communautaire) [Submitted to district]	SOU-02 Community Based Distributor Supervisor Caseload Summary [Submitted to health facility] SOU-03 Community Based Distributor Supervisor Stock Summary [Submitted to health facility] SOU-04 Community Based Distributor Supervisor Checklist Summary [Submitted to health facility]	

Supervision checklists						
Checklist for supervision of one CHW	DRC-06 Supervision checklist for medicines and supplies (Supervision / suivi des medicaments et materiels au site) [Kept by CHW supervisor at health facility]		NIG-03 Form for monitoring CHWs (Fiche de suivi des ASC) [Kept by CHW supervisor at health facility]	SEN-05 Supervision register (Cahier de supervision) [Kept by CHW supervisor at health facility]	SOU-05 Checklist for Supervising Community Based Distributors [Submitted to district as individual sheets attached to monthly report]	ZAM-03 Follow up supervision check list (health outpost) [Kept by CHW supervisor at health facility]
Checklist for register review or medicines review for one CHW	DRC-07 Checklist for examination of individual consultation forms (Grille de depouillement des fiches de prise en charge des cas aux sites) [Kept by CHW supervisor at health facility]	MAD-06 Checklist for management of records, medicines and supplies (Fiche de controle des outiles, des medicaments et des materiels) [Kept by CHW supervisor at health facility] MAD-07 Checklist for examination of individual consultation forms and quality of care (Grille de depouillement des fiches de prise en charge des cas aux sites evaluation de la qualite de prise en charge) [Kept by CHW supervisor at health facility]				
Checklist for clinical supervision of one CHW (observation of consultation)		MAD-08 Form for evaluation of CHW consultations (Fiche individuelle de suivi et d'evaluation des agents communautaires) [Kept by CHW supervisor at health facility]				ZAM-04 Check list on community case management for mentors [Kept by CHW supervisor at health facility]
Caregiver exit-interview or follow-up	DRC-08 Caregiver interview form (Fiche d'entretien avec la mere) [Kept by CHW supervisor at health facility]					
Checklist for supervision of CHW supervisors					SOU-06 Checklist for Supervising Supervisors of Community Based Distributors [Submitted to district] SOU-07 Checklist for Health Facility visit [Submitted to district]	ZAM-05 Follow up supervision check list (health facility) [Submitted to district]

The document review highlighted differences between the monitoring tools used in each of the countries. Some countries require CHWs to aggregate and report monthly totals. Others required CHW supervisors to collect and report information. Some required CHWs to enter details of consultations in a picture-based patient register; while others required CHWs to complete a word-based sick child form for each consultation. Some sick child forms include iCCM algorithm instructions as part of the form (as a job guide), while other forms only contain fields for the results of the consultation.

In general, three types of documents were collected and reviewed:

Consultation records include sick child forms, referral forms, and registers kept by CHWs. In four countries (DRC, Madagascar, Niger and Senegal), CHWs report details of consultations on sick child forms (one form per child); in the other countries (South Sudan and Zambia), CHWs record the details of consultations in a patient register, with each row in the register representing a sick child.

Monthly reports are used to aggregate and send summary data from an individual CHW to their supervisor (usually at the nearest health facility), or to send data from a health facility to a district health office. In DRC and Zambia, CHWs compile their own monthly reports to submit to the nearest health facility. In Madagascar and Senegal, CHW supervisors aggregate consultation numbers during supervision. In South Sudan, CHW supervisors at the village level supervise CHWs; supervisors aggregate information from multiple CHWs before submitting reports to the health facility.

Supervision checklists are used by CHW supervisors during supervision for recording information about an individual CHW's medicine kit, equipment, patient register, and the CHW's ability to deliver iCCM. In some countries, this information is recorded on one checklist per CHW; in others, it is recorded on several different checklists per CHW (i.e. different checklists for different iCCM topics). South Sudan and Zambia have a checklist for district personnel to use when supervising CHW supervisors for iCCM. DRC has an interview guide for CHW supervisors to use when interviewing caregivers of children seen by CHWs.

Indicator Analysis

In order to determine the feasibility of measuring the iCCM TF's 18 routine monitoring indicators, for each of the six countries we asked the following questions for each indicator:

> *Is the indicator currently being reported? If so, at which level of the health system is it being reported: national, district or health facility?*
>
> *If the indicator is not being reported, are the numerator and denominator being reported? If so, at which level of the health system are the numerator and denominator being reported: national, district or health facility?*

For each of the six countries and 18 routine monitoring indicators, the availability of the information required for each indicator's numerator and denominator was classified on a color scale: green, for information available at the district level; yellow, for information available at the health facility level; orange, for information only available in forms or records kept by CHWs; and red, for information that is not available at all. Table 4 provides the results of this analysis.

Table 4. Summary of indicator analysis

Dark green	*Information is reported in district reports (which may or may not be sent to national level)*
Light green	*Requires data extraction from documents at district level (e.g. monthly reports from HFs)*
Yellow	*Requires data extraction from documents at health facility level (e.g. supervision checklists, monthly reports from CHWs)*
Orange	*Requires data extraction from documents at CHW level (e.g. sick child forms, patient registers)*
Red	*Requires information that is not collected at any level*

Component	Indicator	Numerator / Denominator	DRC	Madaga-scar	Niger	Senegal	South Sudan	Zambia
Component 3 Human Resources	3.2 iCCM CHW density: Number of CHWs trained and deployed for iCCM per 1000 children under-five in target areas	Numerator: Number of CHWs who are trained and deployed (to serve in a specific target area)	**District**	**District**	**District**	**District**	**District**	**District**
		Denominator: Number of children under five in target communities / 1000	**District**	**District**	**District**	**District**	**District**	**District**
	3.3 Targeted CHWs providing iCCM: Proportion of CHWs targeted for iCCM who are trained and providing iCCM according to the national plan	Numerator: Number of CHWs targeted for CCM who are trained and have provided CCM services in the last 3 months	**HF**	**District**	**HF**	**District**	**HF**	**HF**
		Denominator: Number of CHWs targeted for CCM	**District**	**District**	**District**	**District**	**District**	**District**
	3.4 Annual iCCM CHW retention: Proportion of CHWs trained in iCCM who are providing iCCM one year after initial training	Numerator: Number of CHWs providing CCM services one year after initial CCM training (time frame can be modified)	**HF**	**District**	**HF**	**District**	**HF**	**HF**
		Denominator: Number of CHWs trained in the initial CCM training	**District**	**District**	**District**	**District**	**District**	**District**

Component	Indicator	Numerator / Denominator	DRC	Madaga-scar	Niger	Senegal	South Sudan	Zambia
Component 4 Supply Chain Management	4.2 Medicine and diagnostic availability: Percentage of iCCM sites with all key iCCM medicines and diagnostics in stock during the day of assessment visit or last day of reporting period	Numerator: Number of CCM sites with all key CCM medicines and diagnostics in stock during the last assessment/observation visit or the last day of a reporting period	**HF**	**HF**	**HF**	**HF**	**HF**	**HF**
		Denominator: Number of CCM sites assessed	**HF**	**HF**	**HF**	**HF**	**HF**	**HF**
	4.3 Medicine and diagnostic continuous stock: Percentage of iCCM sites with no stock-outs of key iCCM medicines and diagnostics in the past month	Numerator: Number of CCM sites with no stockouts of key CCM medicines or diagnostics in the past month	**HF**	**HF**	**HF**	**District**	**HF**	**HF**
		Denominator: Number of CCM sites assessed	**HF**	**HF**	**HF**	**District**	**HF**	**HF**
	4.4 Medicine and diagnostic storage: Percentage of iCCM sites with medicines and diagnostics stored appropriately	Numerator: Number of CCM sites with medicines and diagnostics stored in an appropriate manner	**HF**	**HF**	**HF**		**District**	
		Denominator: Number of CCM sites assessed	**HF**	**HF**	**HF**		**District**	
	4.5 Medicine and diagnostic validity: Percentage of iCCM sites with no expired or damaged medicines or diagnostics on the day of observation	Numerator: Number of CCM sites with no expired or damaged CCM medicines, RDTs or other key products on the day of observation					**HF**	
		Denominator: Number of CCM sites assessed					**HF**	

Component	Indicator	Numerator / Denominator	DRC	Madaga-scar	Niger	Senegal	South Sudan	Zambia
Component 5 Service Delivery and Referral	5.1 iCCM treatment rate: Number of iCCM conditions treated per 1,000 children under five in target areas in a given time period	Numerator: Number of treatments for children under five provided by CCM condition in a twelve month time period in target area by point of treatment (community or facility)	**District**	**District**	**CHW**	**District**	**HF**	**HF**
		Denominator: Number of children under five in target areas at a given time divided by 1,000	**District**	**District**	**District**	**District**	**District**	**District**
	5.2 Caseload by CHW: Proportion of CHWs (or iCCM sites in cases of multiple CHWs/area) treating at least X cases per month	Numerator: Number of CHWs (or CCM sites in cases of multiple CHWs/site) treating at least X cases per month (to be defined locally)	**HF**	**District**	**CHW**	**District**	**HF**	**HF**
		Denominator: Number of CHWs (or CCM sites in cases of multiple CHWs/site) in area of interest	**District**	**District**	**District**	**District**	**District**	**District**
	5.3 Referral rate: Proportion of sick child cases recommended for referral by the CHW	Numerator: Number of sick children seen by CHWs who are recommended for referral in a target area in a given time period	**District**	**District**	**CHW**	**District**	**HF**	**HF**
		Denominator: Number of sick children seen by CHWs in a target area in a given time period	**District**	**District**	**CHW**	**District**	**HF**	**HF**

Component	Indicator	Numerator / Denominator	DRC	Madaga-scar	Niger	Senegal	South Sudan	Zambia
Component 7 Supervision and Performance Quality Assurance	7.2 iCCM supervisor training: Proportion of supervisors assigned to iCCM (at all levels of the health system) that were trained in iCCM	Numerator: Number of supervisors assigned to CCM (at all levels of the health system) that have been trained in CCM	**District**	**District**	**District**	**District**	**District**	**District**
		Denominator: Number of supervisors assigned to CCM (at all levels of the health system)	**District**	**District**	**District**	**District**	**District**	**District**
	7.3 CHW-to-supervisor ratio: Ratio of CHWs deployed for iCCM to iCCM supervisors	Numerator: Number of CHWs trained in CCM	**District**	**District**	**District**	**District**	**District**	**District**
		Denominator: Number of supervisors assigned to CCM supervision	**District**	**District**	**District**	**District**	**District**	**District**
	7.4 Routine supervision coverage: Proportion of CHWs who received at least one administrative supervisory contact in the prior three months during which registers and/or reports were reviewed	Numerator: Number of CHWs who received at least one administrative supervisory contact in the prior three months during which registers and/or reports were reviewed	**HF**	**District**	**HF**		**District**	**HF**
		Denominator: Number of CHWs trained in and deployed for CCM or number of CHWs interviewed (if survey used for measurement)	**District**	**District**	**District**	**District**	**District**	**District**
	7.5 Clinical supervision coverage: Proportion of CHWs who received at least one supervisory contact during the prior three months where a sick child visit or scenario was assessed and coaching was provided	Numerator: Number of CHWs receiving at least one supervisory contact during the prior three months where a sick child visit was observed or scenario was assessed and coaching was provided		**HF**	**HF**			**HF**
		Denominator: Number of CHWs trained in and deployed for CCM, or number of CHWs interviewed (if survey used for measurement)	**District**	**District**	**District**	**District**	**District**	**District**
	7.6 Correct case management (knowledge): Proportion of CHWs who demonstrate correct knowledge of management of sick child case scenarios	Numerator: Number of CHWs who demonstrate correct management of sick child case scenarios		**HF**				
		Denominator: Number CHWs assessed		**HF**				
	7.7 Correct count of respiratory rate: Proportion of CHWs who correctly count respiratory rate	Numerator: Number of CHWs who correctly count the respiratory rate of live case, supervisor, community infant, or video		**HF**				**HF**

Component	Indicator	Numerator / Denominator	DRC	Madaga-scar	Niger	Senegal	South Sudan	Zambia
		Denominator: Number of CHWs assessed		**HF**				**HF**
	7.8 Complete and consistent registration: Proportion of CHWs whose registers show completeness and consistency between classification and treatment	Numerator: Number of CHWs whose registers show completeness and consistency between classification and treatment for at least four out of five cases reviewed	**HF**	**HF**	**HF**		**District**	**HF**
		Denominator: Number of CHWs assessed	**HF**	**HF**	**HF**		**District**	**HF**
Component 8 Monitoring and Evaluation and Health Information Systems	8.3 District reporting: Proportion of districts reporting complete iCCM data on time	Numerator: Number of implementing districts reporting complete CCM monitoring data on time	**District**	**District**	**District**	**District**	**District**	**District**
		Denominator: Number of districts implementing CCM	**District**	**District**	**District**	**District**	**District**	**District**

Key Findings from Indicator Analysis

1. **Countries are already collecting most of the information needed to calculate several of the routine monitoring indicators.**

   With the exception of some indicators for Component 3 (supply chain) and Component 7 (supervision and quality performance assurance), the information for most indicators in most countries is being collected and reported at some level of the health system.

   The information needed to calculate indicators 3.2 (iCCM CHW density), 7.2 (iCCM supervisor training) and 7.3 (CHW-to-supervisor ratio) is available at district level in all six countries. This makes sense, given that both the numerator and denominator for these indicators concern CHW deployment data, CHW supervisor deployment data, or population demographic data, which the authors have assumed to be available at the district level.

   Indicators 5.1, 5.2 and 5.3 (the three indicators for Component 5, service delivery and referral) are measureable in all countries. In some countries, the information is available at health facility level, rather than district level. DRC, Madagascar and Senegal have tools for aggregating and reporting treatment data from health facility level to district level, so in these countries the information is available at the district level. Niger does not have a tool for reporting CHW treatment data to health facility level so the indicators for Component 5 are only available at CHW level.

   No country has a tool for M&E reporting indicator 8.3 (the number of districts that have received all the health facility reports they were expecting to receive each month). However, it may be the case that districts have another mechanism (either at national level, or internally at district level) for reporting that all health facilities have submitted their reports. In any case, the information needed for this indicator is, by definition, available at district level in all countries, though data collection may require examination and counting of forms.

2. **Compiling most routine monitoring indicators would require data extraction from documents at district or health facility level (e.g. from monthly health facility reports, monthly CHW reports, supervision checklists).**

   For most indicators in most countries, the numerator or denominator is not reported in one specific document. Rather, the information is spread across multiple documents. For example: health facility reports, CHW monthly reports, and supervision checklists. To obtain the appropriate numerator or denominator, a data collector would need to extract information from each of these reports or checklists and calculate the total figure for the district or health facility (depending on level of the health system for which the indicator needs to be calculated).

   For many of these indicators, the relevant documents are kept at health facilities and not sent to district offices. For example, supervision checklists are not typically aggregated or sent to district offices: they are kept by CHW supervisors, at health

facilities. Only Madagascar requires supervisors to aggregate supervision checklists into a report for district offices; in the five other countries, the monthly reports that are sent from health facilities to district offices only aggregate information that CHWs send to health facilities in their CHW monthly reports.

For some other indicators, information is collected by CHWs but is only reported at health facility level and is not sent to the district level. The authors found this is either because the data is not aggregated in a health facility report, or because it is aggregated in such a way that pertinent information is lost. For example, for indicator 5.2 (caseload by CHW), in DRC, South Sudan and Zambia, the number of cases seen by CHWs is aggregated at health facilities before being sent to district offices. But at the district level, only the total number of treated cases is reported, not the number of CHWs who treated X number of cases, so in order to calculate this indicator a data collector would need to return to health facilities to collect individual caseload data for each CHW.

For a few particular indicators, a data collector would not only need to examine multiple documents at health facility level, but also would need to examine each document in detail to determine how to interpret it. For example, indicator 7.8 (complete and consistent registration) asks for the "number of CHWs whose registers show completeness and consistency between classification and treatment for at least four out of five cases reviewed". All countries, except Senegal, have supervision checklists which ask CHW supervisors to record the classification and treatment for a number of child cases; only the checklist in South Sudan asks the CHW supervisor to record whether the cases were consistent or not. In the four other countries, a data collector interested in indicator 7.8 would have to examine each individual supervision checklist and analyze the classifications and treatment themselves to determine which CHWs had registers that were consistent in at least four out of five cases reviewed.

3. Information for many indicators is gathered through supervision checklists, which in most countries are not aggregated or collected routinely in the way that monthly reports from CHWs are aggregated and collected.

Nine indicators (4.2, 4.3, 4.4, 4.5, 7.4, 7.5, 7.6, 7.7, and 7.8) require information from supervision checklists. This result has four implications: first, unless a country has a robust supervision system, supervisors' checklists will be completed on an *ad hoc* basis, e.g. whenever a CHW is supervised. Possibly, these indicators cannot be calculated as frequently as other indicators. Second, as mentioned previously, information from supervision checklists is typically not aggregated in health facility reports. Of the six countries studied for this report, only Madagascar has a tool for aggregating and communicating information from supervision checklists to district level. Third, it may be the case that not all CHWs are supervised, or that some CHWs are supervised more frequently than others, and this is likely to distort indicator measurements, particularly if those CHWs that are being supervised are either better or worse performing than other CHWs. Fourth, given that many of the indicators reflect not only the performance of CHWs, but also the performance of CHW supervisors and the health system in general, CHW supervisors may be inclined to report more favorable measurements than is, in fact, the case. This could further distort indicator measurements.

4. **Information for some indicators is unavailable because the relevant question or field is not included in monitoring tools, or is not aligned with indicator guide definitions.**

   Seven indicators (4.4, 4.5, 7.4, 7.5, 7.6, 7.7, and 7.8) require information that is unavailable in one or more countries. In most cases, the appropriate monitoring tool is available but the tool does not ask for the specific information required to calculate the indicator. For indicator 7.5 (clinical supervision coverage), supervision checklists in some countries do not ask if the supervisor observed the CHW in consultation with a child. For indicator 4.5 (medicine and diagnostic validity), some supervision checklists ask whether the CHW has unexpired medicines, but do not ask if the CHW does not have expired medicines.

   In other cases, the monitoring tool captures information that relates to the indicator, but not the exact information that the indicator asks for. For example, indicators 4.2, 4.3, 4.4 and 4.5 (the four indicators for Component 4, Supply Chain Management) ask about the availability and storage of medicines and diagnostic tests, but in the relevant tools for these indicators, information is captured only for medicines and not for diagnostic tests. Indicator 4.3 (medicine and diagnostic availability) asks for the number of stockouts in the past month, but the relevant tool (for Niger only) asks for the number of stockouts in the past three months. Indicator 4.4 (medicine and diagnostic continuous stock) asks for the number of medicines and diagnostics "stored in an appropriate manner", but this could be interpreted differently in different countries.

5. **Many indicators require CHW training and deployment data, CHW supervisor training and deployment data, or population demographic data, which are not routinely reported.**

   Seven indicators (3.2, 3.3, 3.4, 5.2, 7.3, 7.4, and 7.5) require information on CHW training and deployment; two indicators (7.2, 7.3) require information on CHW supervisor training and deployment; and two indicators (3.2, 5.1) require population data on the number of under-five children in target communities. In order for these indicators to be calculated, the relevant training and deployment data needs to be available and up-to-date.

   In the analysis for this report, the authors have assumed that CHW and CHW supervisor training and deployment information is available and up-to-date at the district level. But this should not be taken for granted. Several of the key informants said they believed that CHW deployment data was available at district level, though they doubted the information was up-to-date. In a system where CHWs are recruited and trained on an *ad hoc* basis, it is understandably difficult to maintain an up-to-date register of CHWs at district level, particularly in countries where volunteer CHWs are recruited and trained at the discretion of individual health facilities or by NGOs.

   The authors also have assumed that population demographic data is available at national or district level and kept up-to-date. Though, once again, this needs to be

confirmed for each country. Demographic data may not be up-to-date or may not be disaggregated for iCCM target areas.

If CHW data is not available, it may be possible to use "CHWs assessed" as a denominator for indicators 3.3, 5.2, 7.4 and 7.5, though this may result in measurements that suggest a more positive scenario than is actually the case (as discussed below). Likewise, the number of CHWs submitting monthly reports could act as proxy data on CHW deployment for these indicators, but counting submitted reports only gives information on active CHWs, not the number of CHWs deployed. Similarly, for indicator 3.4 (annual iCCM CHW retention), monthly reports do not indicate whether a person acting as a CHW has been trained or not (though it might be reasonable to assume that CHWs providing treatment have been trained).

6. **Use of "CHW assessed" as the denominator for some indicators, particularly those collected via supervision checklists, could result in measurements that suggest a more positive scenario than is actually the case.**

Seven indicators (4.2, 4.3, 4.4, 4.5, 7.6, 7.7, and 7.8) use "CHWs assessed" as a denominator. The same tool is used to collect both the numerator and denominator (by definition, if the numerator is available then the denominator is available too). While this makes information easier to collect, it may result in measurements that suggest a more positive scenario than is actually the case. In countries with a weak routine monitoring system, it is possible some CHWs do not submit reports each month, or not all CHWs are supervised each month.

If CHWs who do submit reports are associated with better outcomes than CHWs who do not submit reports, these indicators will appear better than they really are. The fewer CHWs that submit reports, the more pronounced this effect would be. For example, the numerator for indicator 7.6 (correct case management) asks for the number of CHWs who demonstrate correct management of sick child case scenarios, and the denominator asks for the number of CHWs assessed. If supervisors are only assessing those CHWs that are more active and more likely to get case scenarios correct, this indicator will suggest a more positive scenario than is actually the case.

Discussion

The goal of this report was to understand the feasibility of collecting the iCCM TF's 18 routine monitoring indicators with the existing iCCM monitoring systems in DRC, Madagascar, Niger, Senegal, South Sudan and Zambia. The iCCM TF developed its Indicator Guide based on limited country experience in small-scale programs. The findings of this report provide a means for understanding opportunities and challenges that countries might face, should they decide to measure the indicators at scale.

Based on the results of the indicator analysis, seemingly much of the information needed to calculate the 18 routine monitoring indicators is being collected by the six target countries already. However, the information needed for many of the indicators is not aggregated beyond health facility level, and most of the information that is reported at both health facility level and district level would need to be extracted from multiple documents.

Given these findings, it is reasonable to question whether the efforts required to measure some of the 18 routine monitoring indicators are worthwhile. It may be the case that, for some countries and some indicators, the value of the indicator is outweighed by the work required to measure it.

As a general principle, the collection and use of indicators should be driven by the value of the indicators for decision-making, either at national, district, or health facility level. If an indicator will not be used for national- or district-level decision-making, it makes less sense to aggregate the data from the health facility to the district level. If an indicator is only marginally beneficial to district offices or health facilities, but requires the completion of complex monitoring tools, the process of measuring that indicator may not be the best use of a CHW's time or of health facility resources.

Ultimately, countries must determine which of the 18 routine monitoring indicators are worthwhile to measure. Countries may decide that some of the indicators are better measured through special studies; or, for example, they may ask CHWs to collect information for an indicator that will be useful for health facilities, but not aggregate the data to the district level. Alternatively, countries might decide to measure an indicator, but not with the exact definition specified in the Indicator Guide. Countries might choose to measure some indicators differently, depending on their resources and context; given, for example, the capacity of CHWs to complete complex reporting forms, the workload of staff at health facilities, or the existing routines that health workers follow for reporting on other health programs.

These decisions should be considered by countries over time, and articulated in national iCCM M&E policies, with support from the iCCM TF.

Meanwhile, the iCCM TF should decide whether to encourage countries to collect a fixed set of routine monitoring indicators with globally agreed definitions, or encourage countries to select their own indicators and/or definitions according to their resources and contexts. A balance probably exists between requiring countries to collect a standard set of indicators,

and allowing countries the freedom to define their own set of indicators, at the expense of global standardization. This balance will best be achieved through a dialogue with countries now that the Indicator Guide has been launched and countries have had time to consider the consequences for their iCCM programs and monitoring systems.

Notes on special studies indicators and national milestone indicators

Although the focus of this report was on the 18 routine monitoring indicators, the key informants who were interviewed for the report were also asked for their thoughts on the collection and reporting of special studies indicators and national milestone indicators. Below are the key points from those conversations.

Special studies indicators

- Indicators 2.2, 2.3, 2.4, 2.5 (costing and financing): most informants suggested that cost information would be difficult or impossible to obtain, even via special studies. Information is unavailable from MoH because iCCM expenditure is pooled along with other health programs.

National milestone indicators

- Indicator 1.1 (iCCM policy): all six countries have a national iCCM strategy, but in most countries, the strategy has not been reviewed in a long time (in some cases since the beginning of the program)
- Indicators 3.1 (training strategy), 6.1 (communication strategy), 7.1 (supervision strategy), 8.1 (M&E strategy): these policies are often included as part of an overall strategy document (i.e. no stand-alone training, communication, supervision or M&E strategy document) and there is limited information on each topic in the overall strategy document
- Indicators 1.2, 1.3, 1.4 (coordination group, partner map, target areas): a coordination group and clear division of target areas do exist in most countries, but a partner map is not necessarily available on paper
- Indicator 2.1 (annual iCCM costed operational plan): most key informants said that costed operational plans were not produced in their country
- Indicator 8.2 (iCCM utilization indicators included in HMIS): none of the key informants said that iCCM-specific indicators were included in the national HMIS (though South Sudan has stand-alone HMIS for iCCM activities)

Recommendations

Recommendations for iCCM TF

- Engage countries in discussions to determine which routine monitoring indicators would best guide their iCCM decision-making
- Consider reducing the number of routine monitoring indicators to those that are most valuable for national and sub-national decision-making, given the resources required to measure each indicator
- Encourage future research on data quality issues and in-country data use

Recommendations for countries

- Determine which indicators would best inform national and sub-national decision-making, and develop an iCCM M&E policy that specifies the routine monitoring indicators to be collected and reported at each level of the health system
- Revise first-level monitoring tools (CHWs forms and supervision checklists) to ensure all relevant information is collected and, where possible, aligned with Indicator Guide definitions
- Ensure that information is aggregated and communicated to the appropriate level of the health system, according to the iCCM M&E policy
- Ensure that CHW training and deployment data is collected and kept up-to-date

Annex 1: The iCCM Benchmark Framework

Component	Advocacy & Planning	Pilot & Early Implementation	Expansion/Scale-Up
1. Coordination and Policy Setting	Mapping of iCCM partners conducted	MOH leadership established to manage unified iCCM	MOH leadership institutionalized to ensure sustainability
	Technical advisory group (TAG) established including community leaders, iCCM champion & CHW representation		
	Needs assessment and situation analysis for package of services conducted		
	Stakeholder meetings to define roles and discuss current policies held	Discussions completed regarding ongoing policy change (where necessary)	Routine stakeholders meetings held to ensure coordination of iCCM partners
	National policies and guidelines reviewed		
2. Costing and Financing	iCCM costing estimates undertaken based on all service delivery requirements	Financing gap analysis completed	Long-term strategy for sustainability and financial viability developed
	Finances for iCCM medicines, supplies, and all program costs secured	MOH funding invested in iCCM program	MOH investment in iCCM sustained
3. Human Resources	Roles of CHWs, communities and referral service providers defined by communities and MOH	Role of and expectations for CHW made clear to community and referral service providers	Process in place for update and discussion of CHW role/expectations
	Criteria for CHW recruitment defined by communities and MOH	CHWs trained, with community and facility participation	Ongoing training provided to update CHW on new skills, reinforce initial training
	Plan for comprehensive CHW training and refresher training developed (modules, training of trainers, monitoring and evaluation)		
	CHW retention strategies, incentive/motivation plan developed	CHW retention strategies, incentive/ motivation plan implemented and made clear to CHW; community plays a role in providing rewards, MOH provides support	CHW retention strategies reviewed and revised as necessary
			Advancement, promotion, retirement offered to CHWs who express desire
4. Supply Chain Management	Appropriate iCCM medicines and supplies consistent with national policies (RDTs where appropriate) included in essential drug list	iCCM medicines and supplies procured consistent with national policies and plan	Stocks of medicines and supplies at all levels of the system monitored (through routine information system and/or supervision)
	Quantifications for iCCM medicines and supplies completed		
	Procurement plan for medicines and supplies developed		
	Inventory control, resupply logistic system, and standard operating procedures for iCCM developed	Logistics system implemented to maintain quantity and quality of products for iCCM	Inventory control and resupply logistics system for iCCM implemented and adapted based on results of pilot with no substantial stock-out periods

Component	Advocacy & Planning	Pilot & Early Implementation	Expansion/Scale-Up
5. Service Delivery and Referral	Plan for rational use of medicines (and RDTs where appropriate) by CHWs and patients developed	CHWs rationally use medicines and diagnostics to assess, diagnose and treat sick children	Timely receipt of appropriate diagnosis and treatment by CHWs made routine
	Guidelines for clinical assessment, diagnosis, management and referral developed	Guidelines reviewed and modified based on pilot	Guidelines regularly reviewed and modified as needed
	Referral and counter referral system developed	Referral and counter referral system implemented; community information on location of referral facility clarified; health personnel clear on their referral roles	CHWs referral and counter-referral with patient compliance is routine, along with information flow from referral facility back to CHW with returned referral slips
6. Communication and Social Mobilization	Communication strategies developed, including messaging on prevention and management of community illness for policy makers, local leaders, health providers, CHWs, communities and other target groups	Communication and social mobilization plan implemented	Communication and social mobilization plan and implementation reviewed and refined based on monitoring and evaluation
	Community and social mobilization content developed for CHWs on iCCM and other messages (training materials, job aids, etc.)	Materials and messages to aide CHWs are available	
	Materials and messages for iCCM defined, targeting the community & other groups	CHWs dialogue with parents and community members about iCCM and other messages	
7. Supervision and Performance Quality Assurance	Appropriate supervision checklists and other tools, including those for use of diagnostics, developed	Supervision visits every 1-3 months, includes report review, data monitoring	CHWs routinely supervised for quality assurance and performance
	Supervision plan, including number of visits, supportive supervision roles, self-supervision, etc., established	Supervisor visits community, makes home visits, provides skills coaching to CHWs	Data from reports and community feed-back used for problem-solving and coaching
	Supervisor trained in supervision and has access to appropriate supervision tools	iCCM supervision included as part of the CHW supervisor's performance review	Yearly evaluation includes individual performance and evaluation of coverage or monitoring data
8. M&E and Health Information Systems	Monitoring framework for all components of iCCM developed and sources of information identified	Monitoring framework tested and modified accordingly	M&E through HMIS data performed to sustain program impact
	Standardized registers and reporting documents developed	Registers and reporting documents reviewed	Operations research and external evaluations of iCCM performed as necessary to inform scale-up and sustainability
	Indicators and standards for HMIS and iCCM surveys defined		
	Research agenda for iCCM documented and circulated	CHWs, supervisors and M&E staff trained on the new framework, its components, and use of data	

Annex 2: Complete list of 48 indicators included in the Indicator Guide for Monitoring and Evaluating Integrated Community Case Management

Component	No.	Type	Indicator	Definition
Component 1 Coordination and Policy Setting	1.1*	NMS	iCCM policy	iCCM is incorporated into national MNCH policy/guideline(s) to allow CHWs to give: ▪ low osmolarity ORS and zinc supplements for diarrhea ▪ antibiotics for pneumonia ▪ ACT (and RDTs, where appropriate) for fever/malaria in malaria-endemic countries
	1.2	NMS	iCCM coordination	An iCCM stakeholder coordination group, working group or TF (led by the MOH and including key stakeholders) exists and meets regularly to coordinate iCCM activities
	1.3	NMS	iCCM partner map	List or map of iCCM partners, activities and locations is available and up to date
	1.4	NMS	iCCM target areas defined	Target areas for iCCM are defined, based on country-specific criteria
Component 2 Costing and Financing	2.1*	NMS	Annual iCCM costed operational plan	A costed operational plan for iCCM exists (or is part of a broader health operational plan) and is updated annually
	2.2	SS	iCCM national financial contribution	Percentage of the total annual iCCM budget which comes from national funding sources
	2.3	SS	Expenditure (1): iCCM proportion of disease program	Average annual recurrent actual expenditure for iCCM in geographic target areas as a percentage of total average expenditure on child health, by type of condition
	2.4	SS	Expenditure (2): Average iCCM expenditure per capita (child) by disease program	Average annual recurrent actual expenditure in iCCM programs per capita (child) under five in target areas by type of condition
	2.5	SS	Expenditure (3): Average cost per iCCM contact	Average expenditure per iCCM contact by type of condition
Component 3 Human Resources	3.1	NMS	Training strategy	Existence of comprehensive iCCM training strategy that is competency based
	3.2	RM	iCCM CHW density	Number of CHWs trained and deployed for iCCM per 1,000 children under five in target areas
	3.3*	RM	Targeted CHWs providing iCCM	Proportion of CHWs targeted for iCCM trained and providing iCCM according to national plan
	3.4	RM/SS	Annual iCCM CHW retention	Proportion of CHWs trained in iCCM who are providing iCCM 1 year after initial training

*Global-level indicator

Abbreviations: ACT = artemisinin combination therapy; CHW = community-based health worker; HMIS = health management information system; iCCM = integrated Community Case Management; M&E = monitoring and evaluation; MNCH = maternal, neonatal and child health; MOH = Ministry of Health; NMS = national-level milestone; NRA = National Regulatory Authority; ORS = oral rehydration solution; RDT = rapid diagnostic test (for malaria); RM = routine monitoring; SS = special study; TF = task force

Component	No.	Type	Indicator	Definition
Component 4 Supply Chain Management	4.1	NMS	Medicine and diagnostic registration	All key iCCM medicines and diagnostics are registered with the NRA or similar agency (key products defined by country policy)
	4.2*	RM	Medicine and diagnostic availability	Percentage of iCCM sites with all key iCCM medicines and diagnostics in stock during the day of assessment visit or last day of reporting period (key products defined by country policy)
	4.3	RM	Medicine and diagnostic continuous stock	Percentage of iCCM sites with no stock-outs of key iCCM medicines and diagnostics in the past month (key products defined by country policy)
	4.4	RM	Medicine and diagnostic storage	Percentage of iCCM sites with medicines and diagnostics stored appropriately
	4.5	RM	Medicine and diagnostic validity	Percentage of iCCM sites with no expired or damaged medicine or diagnostics on the day of observation
Component 5: Service Delivery and Referral	5.1	RM	iCCM treatment rate	Number of iCCM conditions treated per 1,000 children under five in target areas in a given time period
	5.2	RM	Caseload by CHW	Proportion of CHWs (or iCCM sites in cases of multiple CHWs/area) treating at least X cases per month (to be defined locally)
	5.3	RM	Referral rate	Proportion of sick child cases recommended for referral by the CHW
	5.4*	SS	Treatment coverage of diarrhea and malaria	Percentage of sick children who received timely and appropriate treatment (reported separately for each iCCM condition)
	5.5	SS	iCCM treatment coverage of diarrhea and malaria by CHW	Proportion of overall treatment coverage of diarrhea and malaria being provided through iCCM by CHWs (reported separately for each iCCM condition)
	5.6	SS	Appropriate care-seeking	Proportion of sick children who were taken to an appropriate provider (appropriate provider and aspects of timeliness defined by country protocols) (reported separately for each iCCM condition)
	5.7	SS	First source of care	Proportion of sick children under five in iCCM target areas taken to iCCM-trained CHWs as first source of care
	5.8	SS	Follow-up rate	Number and proportion of cases followed up according to country protocol after receiving treatment from CHW
	5.9	SS	Successful referral	Proportion of children recommended for referral who are received at the referral facility

*Global-level indicator

Abbreviations: ACT = artemisinin combination therapy; CHW = community-based health worker; HMIS = health management information system; iCCM = integrated Community Case Management; M&E = monitoring and evaluation; MNCH = maternal, neonatal and child health; MOH = Ministry of Health; NMS = national-level milestone; NRA = National Regulatory Authority; ORS = oral rehydration solution; RDT = rapid diagnostic test (for malaria); RM = routine monitoring; SS = special study; TF = task force

Component	No.	Type	Indicator	Definition
Component 6 Communication and Social Mobilization	6.1	NMS	Communication strategy	Communication strategy for childhood illness exists and includes iCCM
	6.2	SS	Caregiver knowledge of CHW location and role	Proportion of caregivers in target areas who know of the presence and role of their CHW
	6.3*	SS	Caregiver knowledge of illness signs	Proportion of caregivers who know two or more signs of childhood illness that require immediate assessment and, if appropriate, treatment
Component 7 Supervision and Performance Quality Assurance	7.1	NMS	Supervision strategy	A national supervision strategy exists and outlines designated cadres, job descriptions and standardized supporting materials (e.g. checklists, training materials)
	7.2	RM	iCCM supervisor training	Proportion of supervisors assigned to iCCM (at all levels of health system) that were trained in iCCM
	7.3	RM	CHW-to-supervisor ratio	Ratio of CHWs deployed for iCCM to iCCM supervisors
	7.4*	RM	Routine supervision coverage	Proportion of CHWs who received at least one administrative supervisory contact in prior 3 months during which registers and/or reports were reviewed
	7.5	RM	Clinical supervision coverage	Proportion of CHWs who received at least one supervisory contact during the prior 3 months during which a sick child visit or scenario was assessed and coaching was provided
	7.6*	RM/SS	Correct case management (knowledge)	Proportion of CHWs who demonstrate correct knowledge of management of sick child case scenarios
	7.7	RM/SS	Correct count of respiratory rate	Proportion of CHWs who correctly count respiratory rate
	7.8	RM/SS	Complete and consistent registration	Proportion of CHWs whose registers show completeness and consistency between classification and treatment
	7.9	SS	Correct case management (observed)	Proportion of sick children visiting a trained CHW who receive correct case management from that CHW
	7.10	SS	Appropriate RDT use	Use of RDTs (for child presenting with fever where RDTs are part of the iCCM package)
	7.11	SS	Appropriate prescribing practice for positive RDTs	Appropriate prescribing practices are used when results of RDTs are positive (where RDTs are part of the iCCM package)

*Global-level indicator

Abbreviations: ACT = artemisinin combination therapy; CHW = community-based health worker; HMIS = health management information system; iCCM = integrated Community Case Management; M&E = monitoring and evaluation; MNCH = maternal, neonatal and child health; MOH = Ministry of Health; NMS = national-level milestone; NRA = National Regulatory Authority; ORS = oral rehydration solution; RDT = rapid diagnostic test (for malaria); RM = routine monitoring; SS = special study; TF = task force

Component	No.	Type	Indicator	Definition
	7.12	SS	Appropriate prescribing practice for negative RDTs	Appropriate prescribing practices are used when results of RDTs are negative (where RDTs are part of the iCCM package)
	7.13	SS	First dose	Proportion of sick children provided first dose of treatment in the presence of a CHW
	7.14	SS	Counseling quality	Among children receiving prescription medicines for an iCCM condition, the proportion in which the caregiver receives counseling on how to provide the treatment(s)
	7.15	SS	Correct referral	Proportion of children with danger signs that were correctly recommended for referral
Component 8 M&E and HMISs	8.1*	NMS	National M&E plan for iCCM	Existence of a comprehensive, integrated M&E plan for iCCM
	8.2	NMS	iCCM utilization indicators included in HMIS	One or more indicators of community-based treatment for diarrhea, pneumonia and/or malaria are included in the national HMIS
	8.3	RM	District reporting	Proportion of districts reporting complete iCCM data on time

*Global-level indicator

Abbreviations: ACT = artemisinin combination therapy; CHW = community-based health worker; HMIS = health management information system; iCCM = integrated Community Case Management; M&E = monitoring and evaluation; MNCH = maternal, neonatal and child health; MOH = Ministry of Health; NMS = national-level milestone; NRA = National Regulatory Authority; ORS = oral rehydration solution; RDT = rapid diagnostic test (for malaria); RM = routine monitoring; SS = special study; TF = task force