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Review of Integrated Community Case Management Training and Supervision Materials in Ten African Countries

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Cover Photo: Family in Mali, by Abdourahmane Coulibaly, 2010

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Abbreviations and Acronyms

ACT	Artemisinin Combination Therapy
AL	Artemether-Lumefantrine
ARI	Acute Respiratory Infections
ASAQ	Artesunate Amodiaquine
ASC	*Agents De Santé Communautaires* (community health worker)
BCC	Behavior Change Communication
CBD	Community-Based Distributors
CDD	Community Drug Distributors
CCM	Community Case Management
CHW	Community Health Worker
DRC	Democratic Republic of the Congo
DSDOM	Distributeurs de Soins à Domicile
EPI	Expanded Programme on Immunization
GFATM	Global Fund for AIDS, Tuberculosis, and Malaria
HBM	Home-Based Management
HHP	Home Health Promoters
HEW	Health Extension Worker
HIV	Human Immunodeficiency Virus
iCCM	integrated Community Case Management
IMCI	Integrated Management of Childhood Illness
IMNCI	Integrated Management of Neonatal and Childhood Illnesses
IRC	International Rescue Committee
MCH	Maternal and Child Health
MCHIP	Maternal and Child Health Integrated Program
MOH	Ministry of Health
MSF	*Médecins Sans Frontières* (Doctors Without Borders)
MUAC	Mid Upper Arm Circumference
NGO	Non-Governmental Organization
NMCP	National Malaria Control Program
ORS	Oral Rehydration Salts
OTP	Outpatient Therapeutic Programming
PCIME	*La prise en charge intégrée des maladies de l'enfant* (iCCM of childhood illness)
PMI	President's Malaria Initiative
PSI	Population Services International
RAcE	Rapid Access Expansion Programme
RBHS	Rebuilding Basic Health Services
RDT	Rapid Diagnostic Test (for malaria)

RUTF	Ready-to-Use Therapeutic Food
SP	Sulfadoxine/Pyrimethamine
TB	Tuberculosis
TBA	Traditional Birth Attendant
TOR	Terms of Reference
TWG	Technical Working Group
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
WHO	World Health Organization

Executive Summary

Community Case Management (CCM) is a strategy for reaching populations with limited access to existing facility-based services. Integrated CCM (iCCM) refers to curative services for major childhood illnesses (diarrhea, malaria, pneumonia plus/minus acute malnutrition) provided by trained, but non-professional Community Health Workers (CHWs). The curative services are either provided by CHWs trained in iCCM or are added to the work of CHWs implementing community IMCI which focuses on improving family and community practices, such as care seeking for child survival.

This report reviews training materials and guidelines from ten African countries for the management of the sick child by CHWs at the community level, and compares them to the guidelines and processes in the UNICEF/WHO package Caring for the Sick Child in the Community (henceforth referred to as the "standard"). The degree of consistency/ inconsistency between national materials and the standard was recorded for: 1) disease/condition covered; 2) danger signs; 3) protocols for referral, treatment, and advice; and 4) training characteristics. This review is intended to inform both national program managers and global technical agencies about existing gaps in the following UNICEF/WHO standards.

The review was carried out in two phases: 1) a desk review of training and supervision materials solicited from various sources in the ten countries – the Democratic Republic of the Congo (DRC), Ethiopia, Guinea, Liberia, Madagascar, Mali, Rwanda, South Sudan, Senegal and Zambia; and 2) a series of in-depth interviews in two selected countries, Guinea and Liberia.

The study reveals that materials from all ten countries cover the three main killer diseases, and all ten countries also permit the use of antibiotics by CHWs to treat pneumonia. All countries have lists of danger signs indicating the need for urgent referral to the health facility, all use an appropriate artemisinin combination therapy (ACT), and with the exception of South Sudan, all have introduced the use of rapid diagnostic tests (RDTs) to confirm malaria.

The materials reviewed were in many ways more complex than the standard materials, with greater expectations of the CHWs. Differences revolve around the number (and types) of danger signs, the age ranges covered, and the number of treatments provided. Some important differences also exist in the protocols for home treatment and for home care advice. In several instances, the reviewers found that materials within the same country provided contradictory or inconsistent guidance.

The review also reveals that obtaining the latest materials from many countries is a challenge. The difficulties encountered in obtaining the most up to date materials may indicate an ongoing challenge to ensure that all partners have the latest versions of materials. It may be interpreted that there is no easily-accessible repository of these materials in the countries studied. Similarly, the review team found that there is no easily-accessible clearly described global repository of data on iCCM implementation.

Similarly, obtaining the latest rapidly evolving global materials is a challenge for countries. The development of the standard materials took several years, largely due to a series of technical updates that necessitated revisions and additional field testing. Additional changes make this a difficult moving target.

It is hoped that the findings of this review will be helpful in guiding countries in the development and/or revision of their iCCM materials, allowing each country to follow global standards and to benefit from the global evidence base. It is also hoped that the findings will guide partners in providing the most beneficial and valuable support to this process.

The methodology, which is limited to reviewing training and supervision materials, cannot report on the quality of the training and supervision without data often obtained by observation. In a

number of countries, partners are also known to modify standard guidance to both training and supervision to suit their own needs or address perceived inadequacies in standard guidance. Secondly, the ten review and two in-depth interview countries are not in any way representative of the universe of the 24 USAID priority countries which presents limitations on generalizing the findings and conclusions to countries that are not part of the review. However, in general, these findings are not unusual and echo anecdotal findings by many global experts supporting countries implementing iCCM programs. In general, field visits to selected countries to interact with government and partners could strengthen the conclusions and recommendations of this report.

Recommendations for individual countries

1. Countries implementing iCCM should consider cataloguing the various different materials developed, should maintain a central information repository, and ensure clear and widespread communication about updated government-vetted versions. This could happen, for example, during national and district level coordination meetings. Partners could be instrumental in assisting the maintenance of the central repository and the flow of information in a country.

2. Countries should consider ensuring that standardized supervision materials are used by all implementing partners.

3. Countries should consider reviewing the number and types of danger signs, and the volume of information to be communicated about prevention during the interaction with the sick child, with a view to increased simplicity. It was beyond the scope of this report to suggest a specific approach to simplification and streamlining.

4. Countries should be encouraged, and assisted if appropriate, to review their national policies concerning the treatment of pneumonia (amoxicillin instead of cotrimoxazole) and fever (inclusion of rectal artesunate, reconsideration of paracetamol at the community level), and update these to incorporate the most recent recommendations of WHO.

5. Countries should consider revising training methodologies to allow for a greater number of hours of clinical practice and problem solving related to referral.

Recommendations for global partners

1. Global partners should ensure that UNICEF/WHO generic iCCM materials are disseminated to countries and to countries' partners, with the explanation of the underlying principles and of how iCCM differs from Integrated Management of Childhood Illness (IMCI).

2. Recognizing the difficulties for countries to keep abreast of all technical updates made at the global level, supporting partner agencies should be encouraged to ensure a regular flow of technical information. This could be an appropriate task for the iCCM Task Force.

3. The development, coordination and management (including regular updating) of a global repository of countries' iCCM training materials, implementation reports and data would fill a real gap and perceived need, and would provide a great service to partners.

4. The apparent lack of awareness of the UNICEF/WHO iCCM standard materials suggests that global partners should make a greater effort to publicize these materials as the recognized standard, and to make them easily accessible to countries.

Introduction and Rationale

Community Case Management (CCM) is a strategy for reaching populations with limited access to existing facility-based services. Integrated CCM (iCCM) refers to curative services for major childhood illnesses (diarrhea, malaria, pneumonia plus/minus acute malnutrition) provided by trained, but non-professional Community Health Workers (CHWs) who reside in the communities they serve and therefore improves timely access to care. A significant number of countries globally are implementing integrated community case management of childhood illness (iCCM) at some scale beyond pilots; 21 of these are in Sub-Saharan Africa. [1] Most of these countries are implementing both Integrated Management of Childhood illness (IMCI) at facility and iCCM at community level. While some countries have added treatment or iCCM to community IMCI (c-IMCI) which focuses on improving family and community practices, some countries have created two cadres of CHWs. One group provides treatment (iCCM) while the other focuses on improving family and community practices or c-IMCI for child survival.

This report reviews training materials and guidelines from ten countries for the management of the sick child by CHWs at the community level, and compares them to the guidelines and processes in the UNICEF/WHO package *Caring for the Sick Child in the Community* (henceforth referred to as the "standard"). The package is part of a larger set of materials titled *Caring for Newborns and Children in the Community*, which also includes *Caring for the Newborn at Home,* and *Caring for the Child's Healthy Growth and Development*.

One of the key determinants of quality, and therefore effectiveness, of case management is how well the guidelines, training and supervision conform to the recommended standards. There have been a number of studies by MCHIP and others that document best practices and bottlenecks to program implementation, or that have reviewed issues related to iCCM implementation[2], for example the process of policy adoption, early implementation and challenges to the scaling up of iCCM including training and supervision. However, none of these studies have compared the content of national guidelines, training and supervision materials to the standard guidelines. This review of existing materials is intended to inform both national program managers and partners about existing gaps in following WHO standards.

Overall objective of the review

The objective of this review is to compile an inventory of iCCM training and supervisory materials for CHWs and recommend actions to be taken to better conform to UNICEF/WHO standard guidelines.

Specific objectives of the review

1. Assess the level of adherence to UNICEF/WHO standards including common modifications to the standard WHO materials.

2. Identify and describe challenges associated with the use of malaria Rapid Diagnostic Tests (RDTs) and assessment and referral of severe illness to the health facility.

3. Identify challenges associated with the process of adaptation of training and supervision materials and recommend approaches to addressing them.

[1] Community Case Management of diarrhea, malaria and pneumonia of sick children for Sub-Sahara Africa in 2010, Data report of a desk based survey of UNICEF country offices

[2] Community Case Management of diarrhea, malaria and pneumonia of sick children for Sub-Sahara Africa in 2010, Data report of a desk based survey of UNICEF country offices; Review of systematic challenges to the scale-up of Integrated Community Case Management, emerging lessons and recommendations from Catalytic Initiative, UNICEF, April 2012; Policy analysis of Integrated Community Case Management for Childhood Illnesses and Newborn Care: a six country case study, John Hopkins University (report not available yet).

Methodology

The review was carried out in two phases. First, the review team conducted a desk review of training and supervision materials solicited from various sources in the ten countries: the Democratic Republic of the Congo (DRC), Ethiopia, Guinea, Liberia, Madagascar, Mali, Rwanda, South Sudan, Senegal and Zambia. These countries were identified by MCHIP based on the scale of iCCM program, USAID priority country, and past or current MCHIP support to implementation of iCCM. This desk review was followed by a series of in-depth interviews in two selected countries, Guinea and Liberia.

This exercise was, by definition, limited to a desk review and interviews. No observations were made of training or CHW performance. It is noted that a number of outstanding questions could be clarified or substantiated by observation in the field.

Desk Review

Analysis of documents focused on training materials and supervision tools including: CHW manuals, facilitator guides, supervision check lists, sick child recording forms, CHW job aids, and Chart booklets. Additionally, the review team sought to collect policy, strategy or implementation reports available for each country in order to provide context to, and a greater degree of understanding of, the training materials.

Materials were initially sought through MCHIP contacts in each country with follow-up conducted through WHO, UNICEF, and non-governmental organization (NGO) contacts. *Annex 3* provides a list of the materials reviewed. Materials were reviewed in French, English, and Malagasy.

This review sought to focus solely on those materials that were endorsed by the national MOH as the standard for the country. The one exception is South Sudan, where training materials are still partner-specific. In this case, materials reviewed were provided by Save the Children.

The review team compared each country's materials against the UNICEF/WHO standard; see *Annex 4* for the Sick Child Recording Form. The degree of consistency/inconsistency was recorded for: 1) disease/condition covered; 2) danger signs; 3) protocols for referral, treatment, and advice; and 4) training characteristics. In order to clarify programmatic or implementation issues, or to triangulate information, the review team contacted informants via e-mail or telephone. Informants included staff from MCHIP, UNICEF, WHO, and NGOs at national, regional and HQ levels.

In-depth Interviews

Recognizing the limitation of a desk review, the design provided for key informant interviews in two countries to explore in depth issues that countries face when adapting global standards.

The two countries selected where Guinea and Liberia.
Guinea was selected to provide details of the process of adaptation to inform another MCHIP planned activity to pilot an approach to improving the quality of care and performance improvement, for both facility (IMCI) and community (iCCM) case management.

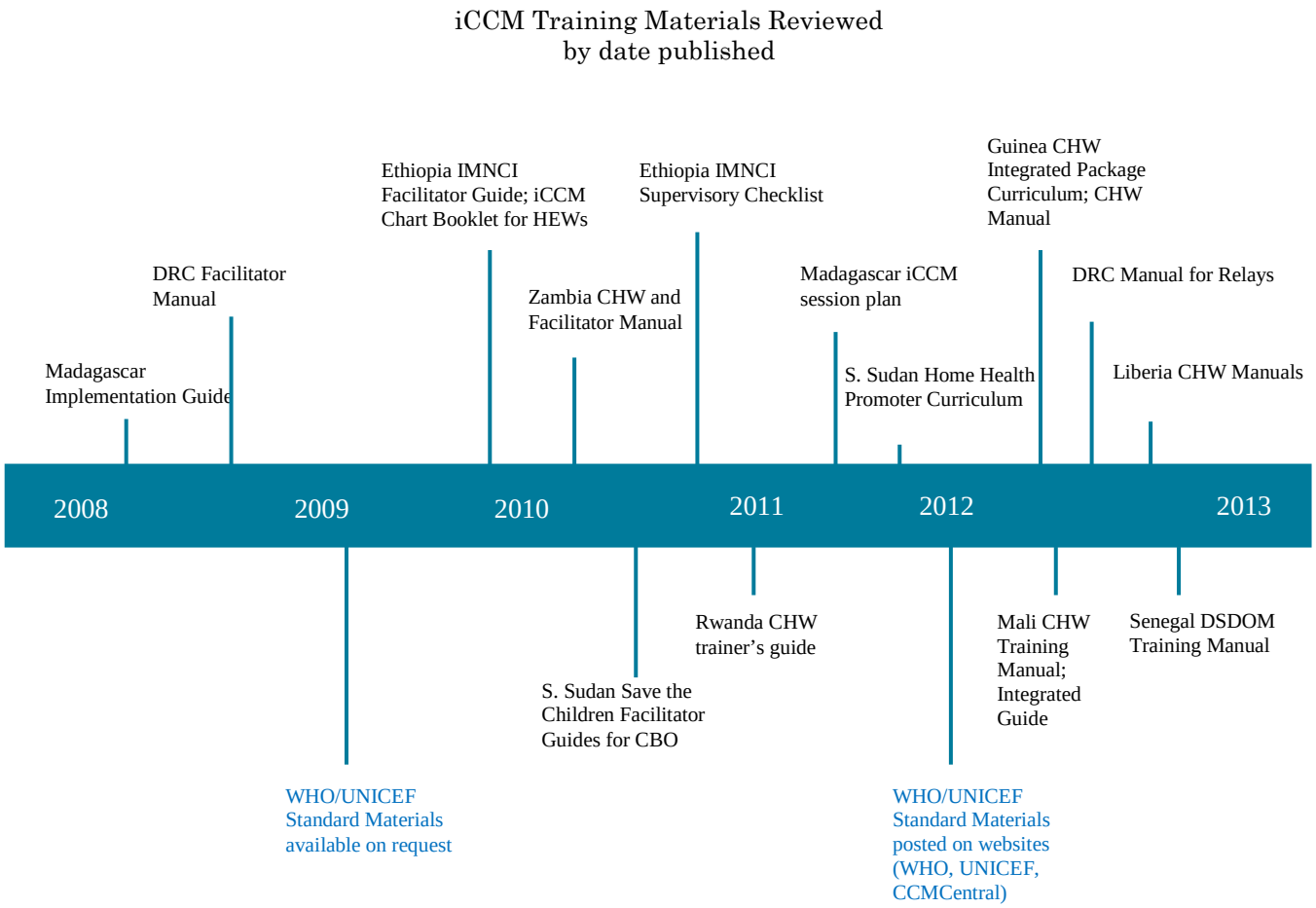
Liberia was selected partially based on the paucity of available documentation regarding their iCCM experience. Additionally, unlike other countries where there is one training guide for iCCM, Liberia has developed three different CHW modules, classification cards, and training plans; one for each disease. Finally, correspondence with colleagues from the Rebuilding Basic Health Service (RBHS) in Liberia indicated that plans were currently underway to improve various iCCM materials and that the findings from this report might be useful for this process.

Interviews were conducted by telephone with at least four key informants per country in order to gain a variety of perspectives. Interviewees included key informants from the Ministry of Health (child health and/or malaria programs), a multilateral organization (WHO or UNICEF), and an NGO. The key informants were identified by MCHIP.

Interview guides for each country covered the same basic questions with country-specific probes based on the review of the available guidelines and training. Interviews were conducted in either English or French.

The timeline below in Figure 1 shows the approximate dates of publication of the materials accessed and reviewed for each country, as well as the UNICEF/WHO standard materials. It is noted that in some countries, materials and guidelines are in the process of being revised, updated, or approved. Because they are not yet available these new materials have not been included in this report or time-line.

Figure 2. Timeline of iCCM materials reviewed, by date published (titles in English)



Description of Standard UNICEF/WHO iCCM Materials

In the standard materials, endorsed by the iCCM task force, the CHW is trained to assess and treat or refer sick children from two months to five years of age (see url: http://whqlibdoc.who.int/publications/2011/9789241548045_Manual_eng.pdf). The treatment interventions include the use of four simple medicines: an antibiotic, an antimalarial, oral rehydration salts (ORS) and zinc tablets.

The standard materials are modeled on health facility-based IMCI, with several important philosophical and practical differences. The materials avoid the need for judgment on the part of the CHW for example, the need to determine whether one presenting sign is more important than another. As an underlying principle, the iCCM standard materials are based on the concept of greatest possible simplicity, with one observation of a sign or symptom by the CHW leading to one action.

The packages are designed for workers who can read and who have completed at least six years of primary education.

The main characteristics of the standard materials are as follows:

- **The process is child-centered, rather than disease-centered:** The CHW assesses the child for all danger signs and conditions, regardless of the presenting sign for which the caregiver has come to consult. The CHW follows one single process, rather than a separate process for each potential illness or complaint.

- The materials concern only those illnesses that cause the greatest number of deaths in children from two months to five years of age: These are pneumonia, malaria, diarrhea, and severe acute malnutrition. All other problems are referred to a health facility.

- **They include only those treatments or actions that will have the greatest and most rapid impact on the child's condition:** Referral of children with danger signs, pre-referral treatment of those children, treatment at home of pneumonia with amoxicillin, treatment at home of confirmed malaria (using an RDT) with ACT (either artemether-lumefantrine, AL, or artesunate amodiaquine, ASAQ), treatment at home of diarrhea with ORS and zinc.

- With the exception of ORS plus zinc for diarrhea, there is one single treatment for each illness: ORS requires no calculation of dosage, so does not complicate the learning process.

- **The assessment and treatment process requires less judgment on the part of the CHW:** There is no classification of severity as there is in facility-based IMCI (red/yellow/green).

- **All 11 danger signs require referral:** These signs are taught in the early part of the training course and the child is checked for these before any other action is taken. Four of the danger signs require pre-referral treatment and urgent referral.

- **For all sick children treated at home, the CHW advises the caregiver on home care:** Home care includes increased feeding and fluids, when to return, and sleeping under a bed net. The CHW checks vaccination status and advises on the next vaccination needed.

- **Training lasts for six days, and includes a minimum of two hours of clinical practice every day:** Training starts on Day One, for a total of about 12 hours. Each trainee is observed assessing and treating every sign and symptom.

Limitations

The methodology, which is limited to reviewing training and supervision materials, without observing how either of these tasks are conducted in respective countries cannot support firm conclusions about the quality of training and supervision. In a number of countries, partners are also known to modify standard guidance to both training and supervision to meet their own needs or address perceived inadequacies in standard guidance. Secondly, the ten review and two in-depth interview countries are not in any way representative of the universe of the 24 USAID priority countries which presents limitations on generalizing the findings and conclusions to countries that are not part of the review. However, in general, these findings are not unusual and echo anecdotal findings by many global experts supporting countries implementing iCCM programs. In general, field visits to selected countries to interact with government and partners could strengthen the conclusions and recommendations of this report.

Overview of Case Management

The review revealed that materials from all ten countries cover the three main killer diseases, and they all permit the use of antibiotics by CHWs to treat pneumonia. All guidelines indicate using accurate respiratory rate cut-offs, have lists of danger signs indicating urgent referral to the health facility, use an appropriate ACT, and with the exception of South Sudan, all have introduced the use of RDTs to confirm malaria.

The greatest areas of inconsistency with the standard guidelines concern danger signs and pre-referral care. Some important differences also exist in the protocols for home treatment and for home care advice. In most cases, these differences represent a greater number of actions, signs, or treatments, rather than fewer.

Eleven danger signs in *Caring for the Sick Child in the Community*

- Cough for 14 days or more
- Diarrhea for 14 days or more
- Blood in stool
- Fever for 7 days or more
- Convulsions (now or reported)
- Not able to feed or drink
- Vomits everything
- Chest indrawing
- Unusually sleepy or unconscious
- Red on MUAC strip
- Swelling of both feet

Assessment: Danger Signs

The standard materials include a list of 11 danger signs, and for reasons of clarity and simplicity do not make a weighted distinction among them. This is an important difference between the standard CHW materials and the clinical IMCI materials where there is a shortened list of general danger signs for urgent referral, plus lists of additional referral signs specific to each illness.

All ten countries include the following four signs, either as general danger signs or signs for referral: convulsions, inability to eat or drink, vomiting, and unusual sleepiness or unconsciousness. This short list is consistent with the guidelines for clinical IMCI. Additionally, all countries include blood in stool either as a general danger sign or a disease-specific sign for referral.

Inclusion of the remaining six danger signs varies considerable across countries. Three of the ten countries include the duration of cough, and six specify "diarrhea for 14 days or more". Three countries list "fever for seven days or more". However six countries who do not specify the duration of these three illnesses do recommend referral for "any illness that lasts 14 days or more". Chest indrawing (with no reference to stridor or wheeze) is mentioned by six countries. Four others mention stridor or wheeze, while one country lists chest indrawing plus stridor/wheeze. Eight countries list "red on MUAC strip" (mid-upper-arm-circumference), while six include swelling of both feet.

Many of the countries add additional danger signs beyond those recommended in the standard (shown in Table 1). The most common additions include referral for any child less than two months of age; signs of dehydration (sunken eyes, skin pinch, agitation, and/or avid thirst); bulging fontanelle and stiff neck; and palmar pallor. The total number of signs per country varies greatly, ranging from 11 in Zambia to 22 in Mali. Increasing the number of danger signs makes the guideline more complex than intended and should be addressed.

Assessment: Measuring respiratory rate to determine pneumonia

In all countries reviewed, the respiratory rate cutoffs for assessing pneumonia agree with the standard materials: 50 breaths per minute for children aged 2-12 months, and 40 breaths per minute for children aged 1-5 years.

Table 1. Danger signs, disease-specific or referral signs across countries

Danger signs, disease-specific or referral signs

UNICEF/WHO standard	DRC	Ethiopia	Guinea	Liberia	Madag-ascar	Mali	Rwanda	Senegal	S. Sudan	Zambia
General Danger Signs (GDS) included in Standard										
Cough 14 days										
Diarrhea 14 days										
Blood in stool										
Fever 7 day										
Convulsion										
Not able to drink or feed anything										
Vomits everything										
Chest indrawing (not stridor or wheeze)										
Unusually sleepy or unconscious										
Red on MUAC strap										
Swelling of both feet										
Additional signs used by countries										
Under 2 months of age										
Over 5 years old										
Illness lasting more than 14 days										
Recurrent illness										
Initial treatment without improvement										
Very cold body										
60 or more breaths per minute										
stridor or wheeze in a calm child										
visible severe wasting										
Stiff neck										
Bulging fontanella										
Fever with rash										
Under 6 months with fever										
Pallor (palmar)										
Skin tenting (skin pinch)										
Sunken eyes										
Thirsty										
Agitated										
Signs for severe measles										
Signs for acute ear infections										
Signs for anemia										
A child with a disease other than diarrhea, malaria or pneumonia										
Child whose mother, father or close relative has recently had tuberculosis (TB)										
Thermomoter reading 39.5 or more										
Yellow eyes										
Bleeding (spontaneous)										
Little or concentrated urine										
Fever > 3 days										
Very watery stools										
Hallucinations										
Difficulty breathing										
Swelling or oedema of body										
Weak										
Fever with RDT negative										
Malnutrition (defined as "dry child" or "moon face child")										

Assessment: Use of Rapid Diagnostic Tests (RDTs) to Confirm Malaria

The standard materials recommend the use of RDTs in every case of fever for less than seven days in a malarial area, if the child has no danger signs. As shown in Table 2, with the exception of South Sudan, the materials from each country reviewed include the use of RDTs to confirm malaria.

The Rwandan materials are the only ones whose guidelines on RDTs are completely consistent with those of the standard. The most common variations include whether or not to do an RDT in the presence of danger signs, and actions to take in case of a negative RDT.

When the RDT is negative, the standard materials recommend advising the caregiver when to return, and how to follow up on the sick child. Ethiopia and Zambia match the standard recommendations. Multiple countries advise the CHW to refer the RDT-negative child to the health center, whether or not danger signs are present.

One potential issue arises in situations where RDTs are not available. For example, a report from Zambia of a visit to multiple districts found "There appeared to be no RDTs at all in any of the districts visited. Per Ministry protocol, in the absence of a positive RDT result for malaria, a CHW may not give ACTs and must refer the child to the health center. Most health centers also depend on RDTs and had none but are able to offer ACTs based on clinical criteria. So, while many CHWs did have ACTs, they were unable to offer them without the RDTs."[3]

Example of policy impacting care seeking:

"The new policy for malaria treatment is that each child with fever needs to be tested with an RDT. This requires a finger prick (not a pleasant experience for child, mother or CHW); it requires waiting up to twenty minutes; then treatment only if the test is positive, and referral to the health center if the test is negative. The test is generally repeated at the health center, where drugs are more likely to be prescribed under either testing outcome. Over time, it is reasonable to expect that caretakers would be less inclined to call on a CHW when their child has fever and instead go directly to the health center (or abstain from seeking care). The evaluation could not determine how much this factor weighed but found at least some anecdotal evidence for its existence." The evaluators postulated that the reason behind the treatment at the health center might be that, "a child with fever, ill enough to be taken to a health facility by the caretaker, demands some action of the care provider. As in many settings, this encourages prescriptions of other (perhaps symptomatic) drugs, some available in facility, and some only available in private pharmacies."

According to this evaluation, MOH officials have stated that the policy was being modified to no longer require referral of all negative RDTs with fever.

- From the Final Evaluation of the Rwanda Expanded Impact Project conducted by Concern Worldwide, World Relief and International Rescue Committee, December 2011

[3] MCHIP Program Trip Report, iCCM Implementation Strength Assessment, Karen Z. Waltensperger, April 2013

Table 2. RDT Policy

	UNICEF/WHO standard	DRC	Ethiopia	Guinea	Liberia	Madagascar	Mali	Rwanda	Senegal	S. Sudan	Zambia
When RDT is indicated	For every case of fever less than 7 days in a malarial area and no danger signs	For every case of fever / hot body present or reported in previous 2 days and no danger signs	For all fevers with and without danger signs;	Fever with no presence of stiff neck or bulging fontanelle, and if child has not taken antimalarial medication in the previous 30 days	For every case of fever with no danger signs	For every case of fever **with no danger signs**	If fever now or reported, or body feels hot, or axillary temperature above 38.5°	For every case of fever less than 7 days in a malarial area and no other danger signs	For every case of fever, reported fever (preceding evening) or hot body or temperature 39:5° or more	RDTs not used	All fevers with and without danger signs
Actions for RDT positive	Treat with oral antimalarial AL or ASAQ	Treat with ASAQ and paracetamol	Treatment with antimalarial	Treat with ASAQ	Treatment with ACT and paracetamol	Treat with ASAQ	Treat with ASAQ and paracetamol	Treatment with PRIMO (ACT)	Treat with ACT	N/A	Treat with ACT
Actions for RDT negative	Advise on when to return; follow up	Refer	Advise and follow up	Check for difficult breathing, cough and diarrhoea. Refer if none of these is present.	Refer	Treat with paracetamol, refer if danger signs including stiff neck and bulging fontanelle;	Refer if RDT negative and no pneumonia	Refer (note that this policy may be changing)	Refer	N/A	Advise and follow up
Actions if fever and danger sign present	No RDT First dose antimalarial Refer	Do RDT, if positive give paracetamol and rectal artesunate, refer	Do RDT Note:Treatment provided for fever plus danger signs regardless of RDT outcome	Refer if fever plus general danger sign, stiff neck or bulging fontanella	No RDT, Pre-referral treament and referral	If fever and danger sign, give or advise oral AL	If fever and danger sign give paracetamol; Do RDT, if positive give dose of rectal artesunate	No RTD, refer urgently	Refer	N/A	RDT done for all fevers with and without danger signs

Assessment: MUAC strip

All countries except Senegal use the MUAC strip to assess the nutritional status of children six months and older.

Referral: Pre-referral Treatment and Advice

The standard materials recommend the following pre-referral treatment for children who are referred:

- ORS for diarrhea;
- Rectal artesunate for fever and one of the four general danger signs that contraindicate oral medication;
- Oral antimalarial for fever plus one danger sign; and
- Oral antibiotic for chest indrawing.

Materials from eight of the ten countries (exceptions being Rwanda and Senegal) recommend some pre-referral treatment. Refer to Table 3 for the complete list of pre-referral treatment provided in each country.

- Of those countries that recommend pre-referral treatment, all include ORS for diarrhea
- DRC, Ethiopia, Madagascar and Mali recommend rectal artesunate for fever but this is not necessarily determined by the presence of danger signs
- Three countries (Liberia, South Sudan, and Zambia) recommend an oral antimalarial in the case of a referral for fever
- Six countries (DRC, Ethiopia, Guinea, Liberia, South Sudan, and Zambia) recommend an oral antibiotic in the case of referral for pneumonia
- Ethiopia refers children classified as "very severe febrile disease" and carries out pre-treatment with cotrimoxazole, artesunate rectal suppository and/or paracetamol depending on the malaria risk in the area
- Five countries (DRC, Ethiopia, Liberia, Madagascar and Mali) add paracetamol to the list of pre-referral treatments for fever

Table 3. Pre-referral treatment provided

No pre-referral treatment	ORS	Rectal artesunate	Oral antibiotic	Oral antimalarial	Paracetamol
Rwanda Senegal	DRC Ethiopia Guinea (+zinc) Liberia Madagascar Mali South Sudan Zambia	DRC Ethiopia Madagascar Mali	DRC Ethiopia Guinea Liberia South Sudan Zambia	Liberia South Sudan Zambia	DRC Ethiopia Liberia Madagascar Mali

According to the standard materials, pre-referral advice should also include continued feeding and fluids, keeping the child warm if no fever is present, an explanation of the reason for referral, and help finding transportation if necessary. There is some variation among countries as to which of these are included; seven countries explain the reason for referral, seven (not completely overlapping) advise to give fluids and/or breast milk, three advise to keep the non-feverish child warm and two others to keep a feverish child cool. The standard pre-referral advice that is omitted most frequently is problem-solving for issues of transportation or resistance to referral. This advice is apparent only in the materials from Mali and Zambia.

Referral notes are common across all materials reviewed with the exception of Senegal.

Home Treatment Protocols

The standard materials recommend ORS and zinc treatment for diarrhea, an oral antimalarial ACT for confirmed malaria, and amoxicillin for fast breathing. All countries reviewed recommend low osmolarity ORS and zinc, in the same dosages as the standard materials, with the exception of Zambia where the zinc regimen is for 14 days instead of 10 (shown in Table 4).

Table 4. Home treatment provided

Country	ORS	Zinc	Amoxicillin	Cotrimoxazole	AL/ASAQ	Paracetamol	Vitamin A	Mebendazole	Iron folate
DRC	x	x		x	x	x	x	x	
Ethiopia	x	x		x	x	x	x	x	
Guinea	x	x	x		x		x	x	
Liberia	x	x		x	x	x			
Madagascar	x	x		x	x	x	x	x	
Mali	x	x	x		x	x	x	x	x
Rwanda	x	x	x		x			x	x
S Sudan	x	x	x		x				
Senegal	x	x		x	x				
Zambia	x	x	x		x				
TOTAL	**10**	**10**	**5**	**5**	**10**	**5**	**5**	**6**	**2**

Notes on Table 4:

- DRC has revised its policy but will revise practice once dispersible amoxicillin tables are available
- Revised Senegal policy provides for amoxicillin at health facility level, but not yet at community level
- Vitamin A and Mebendazole are in the updated EPI guidelines but not in iCCM standard, as they increase the number of commodities and are not immediate life-saving treatments

In all ten countries, CHWs treat fast breathing pneumonia with an oral antibiotic. For the treatment of malaria, all countries recommend either AL or ASAQ. In general, dosages are either consistent with or close to the standard recommendation. In Mali and Senegal slightly different age ranges are used compared with the standard for dosages of antimalarials. In Senegal the protocol is further complicated by the availability of three different but appropriate ACT medicines in the country. DRC also adds treatment with rectal artesunate for fever plus a general danger sign, with dosages marginally different from those recommended in the standard materials as a pre-referral treatment. Ethiopia adds the use of Chloroquine for *P. vivax*, when confirmed by multi-species RDTs.

One common difference in the treatment of fever is the addition of paracetamol, found in the protocols of DRC, Ethiopia, Liberia and Mali, as well as in the pneumonia protocol in Liberia. The inclusion of paracetamol could be ascribed to having based the CHW materials on those for clinical IMCI.

Unlike clinical IMCI, the standard iCCM materials do not include the use of paracetamol. This decision was based on two factors: paracetamol is not likely to have a life-saving effect, and the inclusion of another commodity risks causing difficulties by increasing the complexity of learning and by increasing problems associated with supply. A similar decision was made concerning mebendazole and Vitamin A, which should both be available at health facilities or with mobile teams as part of routine immunization activities.

Home Care Advice and Checking Vaccination Status

The standard materials recommend that the CHW discuss four main points with the caregiver of any sick child treated at home (see box extracted from standard) and also checks the child's vaccination status.

☐ For ALL children treated at home, advise on home care	☐ Advise caregiver to give more fluids and continue feeding. ☐ Advise on when to return. Go to nearest health facility immediately, or if not possible, return to CHW if child ☐ Cannot drink or feed ☐ Becomes sicker ☐ Has blood in the stool ☐ Advise caregiver on sleeping under a bed net (ITN). ☐ Follow up child in 3 days (schedule appointment in item 6 below).

Materials reviewed from all countries include some form of home care advice, most of which covers information on when the child should seek medical care (or return to the CHW), and on the correct use of bed nets. DRC, Ethiopia, Liberia, Rwanda, South Sudan, and Zambia advise on feeding and fluids for all sick children, while Madagascar, Mali and Senegal do this only for cases of diarrhea. The materials from Guinea include a complete section on nutrition counseling for the malnourished child; however, advice on continuing feeding and fluids for children consulting for diarrhea, pneumonia or fever is not evident.

A number of countries expand on this guidance to provide additional advice on disease preventive. This is covered in more depth in the section on training characteristics and in the discussion.

The vaccination status of the sick child is checked by CHWs in DRC, Ethiopia, Madagascar, Rwanda and Zambia. The remaining countries promote vaccination as a general strategy, or provide advice on illness prevention without specifically checking the child's status.

Moderate Malnutrition (Yellow on MUAC strip)

In the standard materials, if the child's arm circumference is found to be yellow on the MUAC strip, the caregiver should be counseled on feeding or referred to a supplementary feeding program if available. The materials from Guinea show only red or green on the MUAC strip, but the CHWs have mebendazole and Vitamin A to use if instructed to do so by the health worker. CHWs in DRC are instructed to refer moderate malnutrition cases to a health facility. Rwanda suggests the use of iron folate supplements for moderate malnutrition, and refers the child to the health facility until this becomes available at community level. The guidelines in Mali include albendazole, iron, folic acid, and vitamin A. CHWs in South Sudan advise caregivers on infant feeding and follow up to see if the recommendations have been applied appropriately. Zambia includes the advice for a yellow MUAC reading in the training manual but not on the recording form. Ethiopia has the most complex set of recommendations, where treatment is broken down into four categories based on MUAC, edema, appetite test, and the presence of medical complications.

Follow-up

The standard materials recommend follow up of a sick child within three days. All of the countries recommend follow-up in two to five days. The actual number of days was variable in some countries according to the illness treated and its severity.

One key informant brought up pro-active follow-up as a key difference between iCCM and clinical IMCI. In clinical IMCI, the health care provider advises the caregiver on when to return, but does not go out and visit the sick child. In DRC, by contrast, the iCCM protocol states that if the mother does not return in two days, the CHW must visit the child at home to check on their progress.

Age Range

The standard materials cover assessment, classification and treatment for the sick child from two months to five years of age. A parallel set of materials, entitled *Caring for the Newborn at Home,* covers the newborn child from birth to two months of age. Table 5 shows the distribution of age ranges addressed in the materials from each country. In two of the countries reviewed (South Sudan and Zambia), work is ongoing with NGO implementing partners to test the inclusion of the zero to two month age range in iCCM and what services should be offered to this young infant.

Table 5. Recommended actions for newborn children from birth to two months of age in each country

Refer	Provide care
DRC Guinea Liberia Madagascar Mali Rwanda Senegal South Sudan Zambia	Mali Ethiopia

Notes on Table 5:

- Care provided in Mali: home care of the healthy newborn including thermal care, kangaroo care, exclusive breastfeeding, weighing, promotion of vaccination, identification of danger signs, and special care for babies with a low-birth-weight.
- Care provided in Ethiopia: management of the sick young infants including Essential Newborn Care (ENC), newborn resuscitation, infections, jaundice, feeding problems or low weight, thrush, diarrhea, and immunizations.
- Zambia includes guidance for the caregiver of the healthy young infant on breastfeeding, cord care, and thermal care, and guides the CHW in checking their immunization status.
- In Liberia, the CHW can provide the first dose of paracetamol for fever to the sick young infant prior to referral. There are also danger signs provided specifically for the child from birth to two months of age.

Characteristics of Training

Table 6 compares the selected training characteristics of each country's materials to the standard. This information comes from various sources: For some countries, both the facilitator guides and CHW manuals were available, whereas for others only one of these was available for review.

The standard allots six days of training during which the CHW learns to assess and manage diarrhea, fast breathing and malaria, and to assess malnutrition. The CHW also learns good communication skills and how to solve problems related to referral**.** The recommended facilitator/trainee ratio is one facilitator to five to six participants in order to ensure that facilitators can give enough attention to the participants to enable them to learn the new information and skills necessary.

Most countries (DRC, Ethiopia, Guinea, Madagascar, Rwanda, Senegal, South Sudan, and Zambia) provided five to six days for training. Mali provided the shortest amount of time at three days; however iCCM is included as part of a longer training which includes other topics (15 days).

Clinical Practice

In the standard curriculum, the classroom instruction is complemented with inpatient and outpatient clinic time on each of the six days for a total of approximately 12 hours. The objectives are as follows:

1. Observe examples of signs of illness and malnutrition in children in hospitals and outpatient health facilities

2. Observe demonstrations of how to care for sick children according to the Sick Child Recording Form

3. Practice identifying signs of illness and malnutrition, and caring for sick children.

4. Receive feedback about how well they have performed each task and guidance about how to strengthen their skills.

5. Gain experience and confidence in performing the tasks described on the Sick Child Recording Form and the Referral Form.

In the materials reviewed, time allotted for clinical practice varied from none at all to 18.5 hours. Several countries provide clinical practice over consecutive days with total times varying from nine to sixteen hours. It is not always possible to find children displaying danger signs on which to practice. While many countries use videos to practice particular skills such as counting breaths and identifying danger signs, South Sudan created a video to be used in places where there is limited access to real life cases of sick children at hospitals. This video, based on the technical content in the standard materials, includes danger signs in addition to scripted role plays of the CHW-caregiver interaction (details are shown in table 6).

Table 6. Summary of Training Characteristics in the Countries Studied

	UNICEF/WHO standard	DRC	Ethiopia	Guinea	Liberia	Madagascar	Mali	Rwanda	Senegal	S. Sudan	Zambia
Duration of Training on Case Management	6 days	5 days	6 days	5 days	11 days	5 days	3 days	5 days	3 days (being increased to 5)	6 days	6 days
Hours of Clinical Practice During Training	About 12	At least 10	10	3	None	12 to 16	9	4	New directives: 15 days	7.5	18.5
Trainer/Facilitator Ratio	1:5-6	Not specified	1:5	Not specified	Not specified	1:3	Not specified	1:5	Not specified	2-3 trainers for 20-25 participants (1:7 - 1:13)	1:5-6
Assessment of Competency during Training	Observation Final role play	Pre test	Pre-post test	None evident	Role play for malaria Pre-post test	Pre-post test	Pre-post test	Observation	Observation	Scoring sheet Post test	Consistent with standard
Order of Training	General danger signs; Integrated assessment; classification; treatment	General danger signs Disease-specific assessment and treatment	General danger signs; Assessing and Classifying by disease; Treatment by disease	General danger signs Disease-specific assessment and treatment	Three separate disease-specific trainings	General danger signs Disease-specific assessment and treatment	General danger signs Disease-specific assessment and treatment	General danger signs Disease-specific	Disease-specific assessment and treatment	General danger signs Disease-specific assessment and treatment	Consistent with standard
Sick Child Recording Form Used	Yes	Yes	Yes	No	No	Yes	Yes	Yes	No	No	Yes
Communication Skills	With assessment and home care advice	With home care advice	With home care advice	With assessment	Emphasis is on message rather than skills	Emphasis is on message rather than skills	In other CHW training modules	Emphasis is on message rather than skills	In other CHW training modules	With assessment	With home care advice
Level of Preventive Information	Minimal: feeding, vaccination, bed nets	Significant time	Consistent with standard	Significant time	Significant time	Significant time	Significant time	Consistent with standard	Significant time	Significant time; for non-urgent interactions	Consistent with standard

Notes on Table 6:
Liberia training includes 3 days for diarrhea module, 3 days for ARI module, and 5 days for malaria and reporting, with 2 – 4 weeks between modules.

Assessment of Competency

An essential aspect of the standard training is to ensure that the CHW is competent in the assessment, classification and treatment of sick children by the end of the course. The box below summarizes the competencies expected. Competency is assessed by observing the skills of each CHW throughout the training period, particularly in the clinical sessions. The final session provides an opportunity to have each trainee perform in a role playing scenario where facilitators can assess their performance and "identify the strengths and weaknesses of each participant and the group as a whole."

Competencies Expected (from: *Caring for the Sick Child in the Community*)

At the end of this course, participants will be able to:

- Identify signs of common childhood illnesses, test children with fever for malaria, and identify malnutrition.
- Decide whether to refer children to a health facility or help the families treat their children at home.
- Help their families of children who can be treated at home provide basic home care and teach them how to give ORS solution and zinc for diarrhea, an antimalarial medicine for children with fever who test positive for malaria, and an antibiotic for cough with fast breathing.
- Begin treatment of children who are referred to a health facility and assist their families in taking the children for care.
- Counsel families to bring their children immediately if they become sicker and to return for scheduled follow-up visits.
- Identify the progress of children on scheduled follow up visits and ensure good care at home; and, if children do not improve, to refer them to the health facility.
- Advise families on using a bed net.
- Use a Sick Child Recording Form to guide the tasks in caring for a sick child and to record decisions and actions.

The reviewers noted that materials from those countries indicating competency assessments, the majority focused on pre and/or post-tests of knowledge. While useful for assessing the immediate acquisition of knowledge, these tests are limited in the capacity to measure the acquisition of skills. CHWs graduate at the end of 6 days of training. In almost all countries, CHWs are either attached to a health facility or attend monthly meetings at the health facility after training for mentorship after the formal training. However, there is no mention of required documentation before CHWs are certified competent. This warrants further investigation and documentation of best practices.

Based only on the written materials available, and in the absence of observing the training sessions, it is difficult to make firm statements about the assessment of competency in each country.

Country Profile: Assessment of Competency - South Sudan

In addition to the final test of knowledge, South Sudan provides a two-page form on "CCM Core Competency Assessment". The form is filled out for each trainee based on their performance in clinical observation, case scenarios, or video cases. The overall competency score is compiled and the trainee is assigned to one of three categories based on their score: Competency met (8-10); Requires some additional follow-up (6-7); and Requires extensive follow-up and supervision (0-5). Since South Sudan does not have a standard national curriculum, each partner has their own materials. The materials we reviewed were from Save the Children, so it is not known whether other implementers use this same assessment technique. However, it is included in this review since it provides a good example of a method for ensuring that the CHW meets the competency requirements at the end of the training. It is noted that this is one of several examples of countries having similar approaches to trainee assessment.

Organization of Training

The standard training integrates the entire process of assessment, classification, and treatment. Training starts with an integrated assessment of the child including identifying problems, signs of illness, and danger signs. The trainee is then guided to make the critical decision of whether to refer and/or treat the child. Pre-referral treatment and advice is covered for those referred; home treatment is described for each disease.

Seven out of the ten countries start training with general danger signs, but then proceed to a disease-by-disease approach for assessment, classification, and treatment. The Ethiopian training is organized in a combination of the integrated and disease-specific approaches.

Job Aids: The standard provides a 13 page "Chart booklet" that lays out an integrated flow chart as a job aid for assessing, classifying, and treating the sick child, and provides relevant details. Additionally, the sick child recording form is introduced at the beginning of training and incorporated throughout; each instruction section builds on the next section of the form to be filled out.

The types and use of job aids vary widely. DRC, Ethiopia, Guinea, Liberia, and Rwanda provide flow charts or algorithms divided by disease. Ethiopia, Guinea, and Rwanda start with a general algorithm, followed by disease-specific flow charts. These algorithms vary greatly in their complexity and design from 58 pages of text in Ethiopia to six pages of simple pictographs in South Sudan.

While using some sort of recording form or register is important in each country, the order of introduction differs. Six countries use a sick child recording form and incorporate it throughout training. Four countries seem to be using registers or ledgers in place of a sick child recording form and generally cover them in a separate section at the end of training. In some countries, these ledgers tended to be simple pictorial job aids that require less reading than the sick child recording forms.

Assisting Referrals: The standard provides a 75-minute session that discusses referral and focuses on problem solving related to reasons why families may not comply with the referral or be able to get to the health center.

A number of the training materials state that a referral will be made, and focus the training time on filling out the referral form (generally about 15 minutes of training time). Without having observed a training course, it is difficult to assess the information actually covered. Nonetheless given the known challenges of referral, it seems that assisting referral may not be given adequate attention in the training materials reviewed.

Communication skills: Communication skills are important in the initial interview with the caregiver as well as during subsequent counseling and/or advising. The standard training materials include a 90 minute session on Using Good Communication Skills on the second day, with the aim of: 1) identification of ways to communicate more effectively; and 2) phrasing questions for checking the caregiver's understanding of treatment and other tasks she must carry out. While the key pieces of advice are listed in all training materials reviewed and highlighted in many job aids, there was considerable variation with respect to when communication skills were taught, and whether more emphasis was put on message content or on building skills. Observation of training would be needed to assess the actual skills imparted.

Prevention: In the standard materials, information on disease prevention is limited to key advice related to home care, vaccines, and the use of bed nets. This is to maintain the focus of the consultation for the sick child on the immediate care for that child. Discussion of preventive interventions would be covered in separate CHW-caregiver interactions. Training for this is included in parallel materials; *Caring for the Newborn at Home*, and *Caring for the Child's Healthy Growth and Development*.

Six countries (DRC, Guinea, Liberia, Madagascar, Mali, and Senegal) provide significant training time focused on disease prevention. This covers activities including hand washing, exclusive breastfeeding, avoiding exposure to indoor air pollution, instructions for re-dipping bed nets, and indoor spraying. This prevention advice is generally included with the training chapters and algorithms for each specific illness. South Sudan also covers causation and prevention by disease, but specifically states that this information should only be discussed with the caregiver in situations where the child will be treated at home. When there is need for urgent referral, prevention should not be discussed.

Training Methodologies

An important characteristic of the standard is a focus on practical skill building with a variety of training methodologies and a strong focus on clinical practice. The standard materials include participant reading, discussion, case studies, role playing, exercises, videos, and clinical practice. The clinical practice begins on the first day of training and is repeated with increasing complexity every day. Participants' progress is tracked throughout the course with a wall chart on which participants indicate when they have observed and practiced assessing and treating each clinical sign. This system allows the facilitators to ensure that each participant has observed and practiced every sign at least twice.

All training materials reviewed used multiple training methodologies. Often, the facilitators' guides provided guidance to the facilitator on adult learning principles and instructions on ways to stimulate brainstorming and discussion. Videos were frequently used to demonstrate general and specific danger signs.

Building Practical Skill on use of RDTs:

Learning how to carry out, read and interpret an RDT is a precise, detailed task. The standard materials provide time for demonstration and practice and incorporate a job aid from the Global Malaria Program to assist CHWs with remembering and accurately conducting each step. Most countries reviewed incorporated an adaptation of this job aid.

Every country that uses RDTs included hands-on practice in carrying out and interpreting RDTs for malaria. In Zambia, the learning process for both steps includes reading text followed by demonstration or video and then practice. In most countries, CHWs practice the RDT in the classroom prior to a clinical practice session where they have the opportunity to practice on febrile children.

A Case Study: Liberia Training Design

Liberia has taken a different approach to the overall training design than other countries. The country provides a series of independent training modules, classification cards and lists of danger signs for diarrhea, pneumonia and malaria. Training on diarrhea and on ARI takes three days each; training on malaria and reporting together takes five days. Each module includes significant time on disease etiology and prevention in addition to assessment, classification, and treatment.

A pilot study conducted in 2010 – 2011 with three different implementing partners compared various training models. Some NGO partners conducted the three modules over a two-week training period, while others allowed for one month or more of practice and supervision between modules. The model of 11 sequential days was found to be too concentrated and was identified as a failure. According to a strategy document from Rebuilding Basic Health Services (RBHS), the pilot evaluation found that, "generally, the shorter training periods were most appreciated by the general Community Health Volunteers (gCHVs) who said that this allowed them to practice and get comfortable with new skills and materials before moving forward to tackle new ones." The national standard is now to provide a break of at least several weeks between training modules.

Two main issues arise from the separate module approach: 1) the ease with which the gCHVs are able to integrate the information on various diseases into one consultation with the child and caregiver; and 2) whether the gCHVs are in fact being trained in all three modules. Regarding the first issue, the pilot evaluation report identified some challenges, stating that "There was some confusion during the pilot phase period whether gCHVs should report and treat two conditions at the same time or visit. Therefore some gCHVs only reported the dominant complaint rather than both."

A comprehensive mapping study conducted in 2013 shows the proportions of gCHVs trained in the various modules (65% in malaria case management, 58% in diarrhea case management, and 30% in ARI). However, information is not available on the percentage receiving various combinations of the three modules. The mapping report also identified the problem of access to medications and supplies: only 21% and 24% of the interviewed gCHVs had received an ORS set and an ARI Timer respectively. The report concluded that "many of [the gCHVs] are not really practicing case management, mainly because of the poor quality of the training and also because no treatment drugs are available."

Source documents listed in Annex 3: Documents Reviewed

Supervision

Supervision is essential to support trained CHWs, assess and address any difficulties they may have in carrying out their necessary tasks, and ensure that they have adequate supplies. A Save the Children publication entitled, *Tools to Introduce Community Case Management (CCM) of Serious Childhood Infection,* 2011*,* identified the following common supervision-related gaps: 1) Service quality is not routinely monitored; 2) supervision strategy is lacking in most program plans; 3) supervisors are commonly not trained in supervision; and 4) supervisors themselves are lacking supervision. Additionally, MCHIP's 2011 review of best practices and bottlenecks to program implementation in Senegal found that the supervision materials reviewed lacked observation and reinforcement of case management skills during supervision.

A number of countries provided Ministry of Health (MOH) policies that reflected the norms and expectations for supervision. Others had different models for supervision based on whether there was an NGO implementing partner in place or government health services supporting iCCM activities. The review team was able to access supervision materials from five countries (DRC, Ethiopia, Rwanda, South Sudan, and Zambia). It is important to be aware that the current assessment is based solely on materials received and that there may be additional materials or different versions available in other countries that were not accessible for this review. Additionally, it is not possible to judge from a desk review how supervision visits are actually completed in the field.

Checklists are designed to help the supervisor to assess the core competencies of the CHW as well as the CCM support system, to prioritize elements to monitor and reinforce, and provide data for program monitoring and decision-making. While the style of checklists varied greatly, there were several similarities across checklists reviewed (see tables 7 and 8 for details).

Some countries have standard training developed for CHW supervisors. For example, Ethiopia provides a 1.5 day training program for supervisors. The program immediately follows CHW iCCM training and is intended to develop skills in clinical mentoring and supportive supervision in addition to reinforcing supervision skills in case management, identifying and solving problems and implementation bottlenecks, monitoring supplies drug and other essential items and ensuring a high quality of iCCM service. Even with these good standards however, the desk review could not confirm whether or not all supervisors have been trained and are supported to perform supervision which affects the quality and therefore outcomes.

NGO projects in several countries are evaluating various teamwork and supervision models. For example, Save the Children is evaluating a team approach for CHWs and TBAs in Zambia and the International Rescue Committee explored the use of peer support groups for CHWs in Rwanda. The peer support group model uses a more experienced CHW serving as a mentor to a group (about four) of CHWs. At the time of this writing, UNICEF, WHO, Save the Children, MCHIP and other CCM task force members are developing a handbook for planning the implementation of CHW activities; this handbook will include guidance on and examples of supervision and will be field tested in early 2014.

Table 7. Content of supervision checklists: general

	Direct case observation or follow up of recent patient	Confirmation that CHW has all needed supplies for CCM	Assessment of medication availability and stock outs	Assessment of proper drug storage	Review of registers and other reporting	Knowledge assessment	Place for recording and resolving any issues
DRC	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Ethiopia	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Rwanda	Yes	Yes	Yes	Yes	Yes	Yes	Not clear
South Sudan	Yes	Yes	Yes	Yes	Yes	Not clear	Yes
Zambia	Yes	Yes	Yes	Not clear	Yes	Yes	Yes

Table 8. Content of supervision checklists: direct case observation or follow-up of recent patients

	Signs and symptoms assessed	Medication(s) prescribed correctly	Medication properly used by caregiver	Proper referral made	Follow up conducted by CHW	Check of child's status
DRC	Yes	Yes	Not clear	Yes	Not clear	Yes
Ethiopia	Yes	Yes	-	Yes	Yes	Yes
Rwanda	Yes	Yes	Yes	Yes	Yes	Yes
South Sudan	Yes	Yes	Yes	Yes	-	Yes
Zambia	Yes	Yes	Yes	Yes	-	-

"CHWs interviewed reported receiving routine supervision that focused on review of registers and other documentation. Supervisors do not use checklists. Sometimes supervisors from the health centre visit the CHWs in the community, but most commonly routine supervision takes place at the health centre itself, on a monthly basis, when CHWs bring their registers in to their supervisor for inspection**. No CHWs reported having been mentored or observed in practice in the community.** It is, however, worth noting that clinical observation and mentoring sometimes take place when CHWs are working alongside health workers in the health centre, but is rarely, if ever, documented. Most CHWs agreed that supervision is motivating. They also appreciate group supervision and opportunities where they are able to exchange experiences and information with each other. They enjoy visits from outsiders very much."

MCHIP trip report from Zambia to districts having no implementation partners

Barriers to Putting the Training into Practice

Although beyond the scope of the present review, it is important to note the observation that in program reports and in-depth interviews, a common thread emerged concerning barriers to implementing iCCM. Barriers most frequently mentioned include:

- ensuring a regular supply of commodities,
- strengthening the links between the CHW and the health facility,
- strengthening the health facility itself to allow it to better support the CHWs, and
- coordinating partners within the country

Discussion

Most countries' guidelines and training courses are more complex than the standard

The materials reviewed were in many ways more complex than the standard materials, with higher expectations of the CHWs. Differences revolve around the number (and types) of danger signs, the age ranges covered, and the number of treatments. These are discussed below:

> The standard materials are based on the principal of ensuring the greatest possible simplicity in order to decrease the potential for error. Many of the countries' CHW materials reviewed were developed in parallel to the standard guidelines and materials, some even preceding their availability. In the absence of globally-vetted 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, it is much more inclusive and complex.

- The number of danger signs: The standard materials list eleven danger signs, all indicating life threatening situations needing referral. These are taught together in one section of the training course and repeated at various points throughout. Some countries' materials indicate different lists for different diseases, or specify varying degrees of urgency for the referral. The feasibility of learning a large number and different types of signs may be an important topic for investigation.

- Age ranges: All materials covered the age range from two to 59 months; the materials from Ethiopia and Mali also included care for the newborn. The tasks and training materials concerning the newborn could be the object of a separate review.

- Number of treatments: The standard materials include ORS, zinc, an oral antibiotic, an oral antimalarial, and rectal artesunate in case a sick child is unable to take medication orally. Of the materials reviewed, none of the countries have the standard list and many have additions. The most common additions to the standard list are paracetamol, mebendazole and Vitamin A. The most common treatment missing from the list is rectal artesunate; only half the countries include it. Countries may wish to examine the evidence and revise the relevant policies to be consistent with the standard.

Access to the latest country and global materials is variable

Difficulties encountered by the reviewers in obtaining the most up-to-date materials may indicate an ongoing challenge to ensure that all partners have the latest versions of materials in some countries. The question arises of whether countries have an easily-accessible repository of these materials. Similarly, the review team found that there is no easily-accessible global repository of data on and description of iCCM implementation.

The development of the standard materials took a period of several years, largely due to a series of technical updates that necessitated revisions and additional field testing. These technical and policy changes included: The change from SP to AL or ASAQ (2002), the use of rectal artesunate (2006), the use of RDTs to confirm malaria (2010), and the change from cotrimoxazole to amoxicillin for pneumonia (2011). In addition, at the time of writing, the generic materials are being adapted for the inclusion of HIV- and TB-related actions in appropriate settings, and to incorporate the latest vaccine schedules. Review is under way to assess the optimal duration of treatment for pneumonia (three days or five days), and the programmatic feasibility of community treatment of newborn

sepsis. It is clearly problematic for countries to keep abreast of all these changes, and to efficiently incorporate the newest recommendations into existing materials.

There are some inconsistencies between materials in some countries

In several instances, the reviewers found that materials within the same country provided contradictory or inconsistent guidance. In Guinea, for example, there are differences in the pre-referral treatment described in the CHW manual and in the training curriculum. Information gathered during in-depth interviews indicates that Guinea is now working on how best to reconcile these differences. In Liberia, the danger signs included in the classification cards differed slightly from those found in the CHW training modules. The Liberian materials have been through several revisions, so it is possible that inconsistencies were introduced as a byproduct of the review process. The South Sudan CHW job aid contains only general danger signs, while the facilitator's guide includes additional signs for referral. Both groups of signs are included in training exercises, but it needs to be clarified whether the absence of the additional signs on the job aid is problematic.

There is significant variation in the amount of time devoted to preventive vs. case management activities

The standard materials limit preventive actions, in order to allow the CHW to focus the interaction on immediate treatment for the sick child. A number of countries reviewed include substantial training material on etiology and prevention for each disease or condition. Where increased detail was included on prevention, the order of actions for the CHW to take was not always clear. In some countries' processes it seems that the CHW should assess, treat, and advise on prevention for one illness before moving on to conduct the same process for the next. This appears time-consuming, and requires the CHW and the caregiver to digest considerable quantities of information.

Most materials reviewed were developed independently rather than adapted from the standard

Contacts in ministries of health and country offices of supporting partners provided training courses, job aids, recording forms, registers, algorithms, and other materials. As the reviewers sought missing information, second or even third sets of materials were received from DRC, Ethiopia, Guinea, Liberia, Madagascar, Rwanda, and Senegal. More recent materials are under development or are being vetted by the Ministries of Health in Liberia, Madagascar and Senegal. This information sets a limit on the fidelity of the materials reviewed.

While this study sought to identify challenges associated with the process of adapting the training and supervision materials, the review team found that most countries developed their own materials independently, rather than adapting the UNICEF/WHO standard. Zambia's materials are the one exception to this finding. It appears that in this process, countries looked at the clinical IMCI guidelines, with which virtually all Ministries of Health and partners are familiar. Based on implementation reports and in-depth interviews, it seems that ministries and their partners are not as familiar with the standard iCCM materials as expected. It is also not clear whether they recognize the significance of the differences between iCCM and clinical IMCI. Thus it may be suggested that, in addition to updating medicines and dosages, countries may consider simplifying other actions to be taken during a sick child consultation in order to focus on those that will have the greatest immediate impact on the child. There is a need to disseminate the generic UNICEF/WHO materials and explain the reasons behind the differences in the IMCI and iCCM approaches.

There is an unresolved issue of integrated versus combined care

In the standard materials, the CHW assesses the child for danger signs and then, if the child does not need to be referred, treats them for the conditions identified. This follows the child-centered (as opposed to illness-centered) approach of IMCI. In contrast, in many of the countries that were reviewed the CHW assesses for and treats one illness before moving on to the next. This combined approach, as opposed to the standard integrated approach, is more time-consuming and can lead to potential confusion on the part of the caretaker. It is also likely that this sequencing affects the ability of the CHW to correctly assess, classify and treat as the CHWs are unlikely to link the steps in a way that allows them to revisit earlier decisions about treatment.

Recommendations

The present review examines iCCM materials and guidelines from ten African countries, and compares these to the standard materials developed by UNICEF and WHO, and which are endorsed by the iCCM task force. It is hoped that the findings of this review will be helpful in guiding countries in the development and/or revision of their iCCM materials, in order to match them as closely as possible to the global standards and to benefit from the global evidence base. It is also hoped that the findings will guide partners in providing the most beneficial and valuable support to this process.

Recommendations for countries implementing iCCM

1. Countries should consider cataloguing the various different materials developed, maintain a central repository, and ensure clear and widespread communication regarding updated government-vetted versions. This could happen, for example, during national and district level coordination meetings. Partners could be instrumental in assisting in the maintenance of the central repository and the flow of information in a country.

2. Countries should consider reviewing the number and types of danger signs, and the volume of information to be communicated about prevention during the interaction around the sick child, with a view to increased simplification.

3. Countries should be encouraged, and assisted if appropriate, to review their national policies concerning the treatment of pneumonia (amoxicillin instead of cotrimoxazole) and fever (inclusion of rectal artesunate, reconsideration of paracetamol) at the community level, and update these to incorporate the most recent WHO recommendations.

4. Countries should consider revising training methodologies to allow for a greater number of hours of clinical practice and problem solving related to referral

5. Countries should consider ensuring that standardized supervision materials are used by all implementing partners.

Recommendations for global partners

1. Global partners should ensure that the UNICEF/WHO generic iCCM materials are disseminated to countries and to their partners, with a clear explanation of the underlying principles and of how iCCM differs from IMCI.

2. Supporting partner agencies should recognize the difficulties countries have in keeping abreast of all technical updates made at the global level, and should be encouraged to ensure a regular flow of technical information. This could be an appropriate task for the iCCM Task Force.

3. The development, coordination and management (including regular updating) of a global repository of countries' iCCM training materials, implementation reports and data would fill a real gap and perceived need, and would provide a great service to partners.

4. The apparent lack of awareness of the UNICEF/WHO iCCM standard materials suggests that global partners should make a greater effort to publicize these materials as the recognized standard, and to make them easily accessible to countries.

Advice for Countries

The in-depth interviews conducted with child health staff in Liberia and Guinea concluded with a question on advice that could be useful to other countries implementing, or preparing to implement, iCCM. The boxes below summarize the topics stressed by interviewees in two of the MCHIP countries that have most effectively implemented iCCM.

Advice from Liberia and Guinea to other countries implementing iCCM

- A country needs to have a comprehensive plan for iCCM implementation with continuity and ongoing assessment.
- Ensure the availability of medicines and supplies before training is initiated, so that trained CHWs can carry out their work. The supply system for iCCM must be very clear, and should be integrated into the overall supply system, with committed central medical stores to ensure sustainability. It is detrimental to stop and start community-based treatment.
- It is important to monitor and support a system of logistics and supplies at the national level.
- Before starting an iCCM program, create a good reporting and supervision structure and institute a system for ensuring data quality.
- There are too many data collection tools; this tends to confuse the CHWs and is likely to be above their competency level. These should be reduced to collect only the most essential information.
- The strength of the facilitator is an important determinant for CHW outcomes. It is important that facilitators understand the material and can relate it at a level the CHW can understand.
- It is beneficial to provide field-based mentorship for lay health workers.
- The CHW doing iCCM must fit into a well-functioning district health system. The CHW can only function well if the health centre functions well, thus the first step is to strengthen the health facility.
- Think carefully through incentives and how to mobilize communities to support volunteers.
- Retaining CHWs is a challenge. Ensure that the support provided to CHWs is uniform throughout the country, and that this support is something that the health system can take on. Avoid creating dependency on donor funds.
- Supervision and follow-up need to be strong. For example, having monthly meetings where the CHW can be helped to problem-solve.
- Reinforce the quality of data collection and supervision with regular field visits.
- Long-term commitment of donors and NGOs is essential (disappointment was expressed that MCHIP will soon end). NGOs are badly needed in the field in Guinea.

Annex 1: Comparison Table – Overview with Assessment, Treatment, Advice, and Follow-Up

‡ = differences in comparison with UNICEF/WHO standard

	UNICEF/WHO standard	DRC	Ethiopia	Guinea	Liberia	Madagascar
Danger Signs	• Cough for 14 days • Diarrhea for 14 days • Blood in stool • Fever for 7 days • Convulsions • Unable to feed or drink • Vomits everything • Chest indrawing • Unusually sleepy or unconscious • Red on MUAC strip • Swelling of both feet	• Convulsions • Unable to feed or drink • Vomits everything • Chest indrawing • Unusually sleepy or unconscious • Red on MUAC strip • "Any illness that lasts 14 days or more" ‡ Refer if: • Blood in stool • Fever does not subside after 2 days of treatment or skin rash develops • Wheezing • Swelling of body • Anemia or palmar pallor • Child is often sick • Child does not get better despite home care • Child is very weak	5 general danger signs: • Convulsions • Unable to feed • Unable to drink • Vomits everything • Unusually sleepy or unconscious Other signs are disease-specific indicating referral: • Cough for 14 days • Diarrhea for 14 days • Chest indrawing with stridor ‡ • Skin pinch ‡ • Sunken eyes ‡ • 11 cm on MUAC ‡ • Swelling of both feet • Bulging fontanelle ‡ • Stiff neck ‡ • Signs for severe measles ‡ • Anemia ‡ • Acute otitis ‡	Four general danger signs taught up-front for urgent referral: • Convulsions • Unable to feed or drink • Vomits everything • Unusually sleepy or unconscious ‡ Other danger signs taught with each illness: • Cough for 14 days, chest indrawing, red on MUAC strip (newborn uses 11.5 cm rather than "red"), swelling of both feet • Diarrhea for 14 days, blood in stool, avid thirst, sunken eyes, agitation • Fever: Stiff neck, bulging fontanelle	Each illness has different list of danger signs in separate disease modules. • Unable to feed or drink (ARI/malaria) • Vomits everything (malaria/diarrhea) • Chest indrawing (ARI) • Unusually sleepy or unconscious (ARI/malaria) • Illness lasting more than 15 days (ARI) • 60 or more breaths per minute (ARI) ‡ • Fast breathing with chest indrawing or other signs of breathing difficulty (grunting, wheezing, very shallow breathing) ‡ • Malnutrition (dry child or moon face child) (ARI/diarrhea) ‡ • Very watery stools (diarrhea) ‡ • Skin pinch (diarrhea) ‡ • Sunken eyes (diarrhea) ‡ • Blood in stool (diarrhea) ‡ • Diarrhea for 14 days (diarrhea) ‡ • Additional list of danger signs for 0 - 2 months in ARI module	General: • Convulsions • Unable to feed or drink • Vomits everything • Unusually sleepy or unconscious • Referral of any child ill for 14 days Signs for referral, taught with each illness: • Blood in stool • Chest indrawing with stridor or wheeze ‡ • Fever: Bulging fontanelle and stiff neck ‡ • Malnutrition: 12.5 cm on MUAC ‡ • Swelling of both feet
RDTs	Yes, for every case of fever less than 7 days in	Yes	Yes	Yes	Yes. CHWs only allowed to treat malaria if positive	Yes

	UNICEF/WHO standard	DRC	Ethiopia	Guinea	Liberia	Madagascar
	a malarial area.				RDT.	
Pre-referral treatment	• Diarrhea: ORS • Rectal artesunate • Oral antimalarial • Oral antibiotic	• Diarrhea: ORS • Pneumonia: Cotrimoxazole ‡ • Fever, but not with danger sign: Artesunate suppository ‡ • Paracetamol ‡ • No oral antimalarial pre-referral ‡	• Diarrhea: ORS • Rectal artesunate • Fever in high or low malaria risk area plus general danger sign (stiff neck or bulged fontanel): Cotrimoxazole ‡ • Suppository if available (newborn dosages differ from standard) ‡ • Paracetamol ‡ • No malaria risk and same signs/symptoms: Cotrimoxazole, ‡ paracetamol • Chest indrawing plus danger sign: oral antibiotic	• Diarrhea: ORS and zinc • Pneumonia: First dose of amoxicillin • Severe malaria: No pre-referral treatment ‡	• Diarrhea: ORS • Fever: paracetamol ‡ • Malaria: Oral antibiotic and oral antimalarial	• Diarrhea: ORS • RDT positive: Rectal artesunate and paracetamol ‡
Pre-referral advice	• Fluids and food • Keep warm if no fever • Explain reasons • Write referral note • Transportation	• Give breast milk or sugar water • Keep child warm if less than 2 months old (newborn any sick child under two months is referred) • Write referral note • Inform the community ‡	• Fluids and food • Keep warm if no fever • Explain reasons • Write referral note	• Explain reasons • Write referral note • Advice on continued breastfeeding ‡	• Fluids and food • Write referral note	• Give breast milk or sugar water • Explain reasons • Write referral note • If fever, wrap in damp cloth.
Treatment pneumonia	• Amoxicillin	• Cotrimoxazole (policy is amoxicillin but until dispersible tables become available cotrimoxazole is being used) ‡	• Cotrimoxazole ‡	• Amoxicillin	• Cotrimoxazole ‡ • Paracetamol ‡	• Cotrimoxazole ‡
Treatment fever less than 7 days	• RDT positive: Oral antimalarial • RDT negative: Referral	• RDT positive: Oral antimalarial ASAQ • RDT negative or fever plus skin rash: Referral • Fever plus general danger sign (‡dosages	• RDT positive: Oral antimalarial (coartem for falciparum or mixed, chloroquine for vivax) • Paracetamol ‡	• RDT positive: ASAQ • RDT negative, after assessing for ARI: Referral • Rectal artesunate being added to new guidelines ‡	• RDT positive: ASAQ (dosages consistent with standard) • Paracetamol ‡	• ASAQ • Paracetamol ‡

	UNICEF/WHO standard	DRC	Ethiopia	Guinea	Liberia	Madagascar
		not consistent): Rectal artesunate suppository • Paracetamol ‡				
Treatment Diarrhea	• ORS • Zinc	• ORS • Zinc	• ORS • Zinc	• ORS • Zinc	• ORS • Zinc	• ORS • Zinc
Other	•	• Vitamin A ‡ • Mebendazole (on forms but not taught) ‡	• Ear infections ‡ • Anemia ‡ • HIV exposure and infection ‡ • Vitamin A ‡ • Deworming ‡ • Other infections: Eye infections, thrush ‡	• Vitamin A ‡ • Mebendazole, if instructed by health worker (personal communication) ‡	•	• Vitamin A ‡ • Mebendazole ‡ • Measles ‡
Yellow on MUAC strip	*N/A*	Refer	Treatment is broken out into 4 categories based on MUAC, edema, appetite test, and presence of medical complications. Various combinations of treatments include Vitamin A, amoxicillin, "treat to prevent low blood sugar", RUTF, folic acid, registration in outpatient therapeutic programming, mebendazole, referral to supplementary feeding program, and counseling.	Not included (only red or green).	Included on general ledger; not clear in modules	*N/A*
Home Care Advice	• Feeding and fluids • When to return • Use of bed net • Check vaccines	• Feeding and fluids • When to return • Use of bed net (‡ with section on fever) • Vaccine status	• Feeding and fluids • When to return • Use of bed net • Check vaccines	• When to return • Preventive measures for each illness (includes use of bed net, promotion of vaccination but not checking status) ‡	• Feeding and fluids • When to return • Use of bed net • ARI adds: Keep baby warm; Clear nose of the child; Wash hands frequently • Malaria adds: Bathe the child with cool water when the skin is hot • Prevention measures for each illness ‡	• Feeding and fluids only if diarrhea ‡ • Use of bed net only in section on malaria ‡ • When to return • Checks vaccination status
Follow-up	3 days	3 days	2-5 days (based on	Number of days not	• ARI: once a day for 3 days	2-3 days

	UNICEF/WHO standard	DRC	Ethiopia	Guinea	Liberia	Madagascar
			disease classification and severity)	specified.	if child given cotrimoxazole • Malaria: every day • Diarrhea: not specified	
Danger Signs	• Cough for 14 days • Diarrhea for 14 days • Blood in stool • Fever for 7 days • Convulsions • Unable to feed or drink • Vomits everything • Chest indrawing • Unusually sleepy or unconscious • Red on MUAC strip • Swelling of both feet	• Convulsions • Unable to feed or drink • Vomits everything • Chest indrawing or wheeze • Unusually sleepy or unconscious • Unable to sit (weak) • Red on MUAC strip • Edema in both feet • Palmar pallor ‡ • Difficult breathing ‡ • Spontaneous bleeding ‡ • Too little or dark urine ‡ • Continued illness despite home treatment ‡ • Any illness 14 days or more • Diarrhea: skin pinch, sunken eyes, Blood in stool, Very watery Diarrhea ‡ • Fever: Continued fever after three days ACT, RDT negative, Fever with skin rash ‡ • Child less than 6 months old: Nine signs of severe malaria ‡	• Blood in stool • Convulsions • Unable to feed or drink • Vomits everything • Chest indrawing • Difficulty breathing ‡ • Stridor (wheezing) ‡ • Unusually sleepy or unconscious • Red on MUAC strip • Swelling of both feet ‡ • Under 2 months, over 5 years: Any illness 14 days or more; recurrent illness; initial treatment without improvement; very cold body; fever with rash; palmar pallor; signs of dehydration (skin tenting, sunken eyes, thirsty, agitated) ‡	Separate lists of danger signs by disease, with some overlap. ARI: • Convulsions • Unable to feed or drink • Vomits everything • Unusually sleepy or unconscious • Difficult breathing with wheeze ‡ Diarrhea: • Agitation and irritability ‡ • Sunken eyes ‡ • Avid thirst ‡ • Dry lips ‡ • Skin pinch ‡ • Lethargy ‡ • Blood in stool • Diarrhea 14 days or more Malaria: • Fever 39.5° or more ‡ • ‡Nine additional signs for severe malaria: Refusal to eat/drink, repeated vomiting. yellow eyes, lethargy, convulsions, agitation/delirium, bleeding, difficulty breathing, little or concentrated urine. • Refer for RDT negative ‡	General danger signs: • Convulsions • Unable to feed or drink • Vomits everything • Chest indrawing • Unusually sleepy or unconscious • Red on MUAC strip Additional signs for referral: • Cough for 14 days • Diarrhea for 14 days • Blood in stool • Fever for 7 days ‡Under 2 months, over 5 years: • Initial treatment without improvement • Disease other than diarrhea, malaria or pneumonia • Mother, father or close relative with TB	• Cough for 14 days • Diarrhea for 14 days • Blood in stool • Fever for 7 days • Convulsions • Unable to feed or drink • Vomits everything • Chest indrawing • Unusually sleepy or unconscious • Red on MUAC strip • Swelling of both feet
RDTs	Yes, for every case of	Yes	Yes	Yes, in case of suspected	‡No, every child with a	Yes, if fever and danger

	UNICEF/WHO standard	DRC	Ethiopia	Guinea	Liberia	Madagascar
	fever less than 7 days in a malarial area.			malaria (suggests that malaria danger signs indicate referral but not specified whether or not to do RDT in this case).	fever is assumed to have malaria (as per current MOH policy).	signs present.
Pre-referral treatment	• Diarrhea: ORS • Rectal artesunate • Oral antimalarial • Oral antibiotic	• Diarrhea: ORS • ‡If fever and RDT positive: Rectal artesunate • Paracetamol ‡	• None. ‡ Treatment only if no danger signs. National policy goal is to get treatment within 24 hours.	No‡	• Diarrhea: ORS • Oral antimalarial • Oral antibiotic	• Diarrhea: ORS • Oral antimalarial • Oral antibiotic
Pre-referral advice	• Fluids and food • Keep warm if no fever • Explain reasons • Write referral note • Transportation	• Fluids and food • Keep warm if no fever • Explain reasons • Write referral note • Transportation • Problem-solving ‡	• Explain reasons • Write referral note	• Explain reasons	• Fluids and food • Explain reasons • Write referral note • Transportation	• Fluids and food • Keep warm if no fever • Explain reasons • Write referral note • Transportation
Treatment pneumonia	Amoxicillin	Amoxicillin (dosages not consistent with standard‡)	Amoxicillin (4 age ranges with varying dosages and duration ‡)	Cotrimoxazole ‡ (newborn: at facility level this is changing to amoxicillin but not yet for DSDOM)	Amoxicillin	Amoxicillin (dosages not consistent with standard‡)
Treatment fever less than 7 days	• If RDT positive: Oral antimalarial • If RDT negative: Referral	• AL (dosages consistent with standard except start at 6 months rather than 2 months ‡) • Paracetamol ‡ • Instructions on how to evaluate fever in the absence of RDTs ‡	• PRIMO (brand of ACT) dosages start at 6 months of age ‡	• If RDT positive: Oral antimalarial (age ranges differ; dosages not possible to calculate ‡) • If RDT negative: Referral	• ASAQ ‡	• If positive RDT: Oral antimalarial ACT
Treatment Diarrhea	• ORS • Zinc	• ORS • Zinc	• ORS • Zinc	• ORS • Zinc (0-6 months; not clear whether to give for 0-2 months ‡)	• ORS • Zinc	• ORS • Zinc (14 days ‡)
Other	*N/A*	• Vitamin A ‡ • Infant feeding ‡ • Counseling for yellow on MUAC strip ‡ • Mebendazole ‡ • Iron/folic acid ‡ • Newborn care ‡	• Mebendazole and Iron ‡ • Folate for moderate malnutrition when they become available ‡	• Prevention ‡	*N/A*	*N/A*
Yellow on MUAC	*N/A*	*N/A*	Mild nutrition is referred	Malnutrition is not part	CBD should alert the	Refer for supplemental

	UNICEF/WHO standard	DRC	Ethiopia	Guinea	Liberia	Madagascar
strip			to the health center until deworming tablets (Mebendazole) and Iron Folate are available at the community level.	of the DSDOM responsibilities. ‡	caregiver of the possibility of the child getting severe malnutrition and give advice on infant feeding, breast feeding and supplementary feeding. Later CBD follows up to find out if there was compliance to the recommendations given.	feeding in a community-based feeding program. Other information not available.
Home Care Advice	• Feeding and fluids • When to return • Use of bed net • Check vaccines	• Feeding and fluids • When to return • Use of bed net, with other preventive interventions • Promote vaccines	• Feeding and fluids • When to return • Use of bed net • Check vaccines • Counseling on drug administration ‡ • Additional messages on home treatment and prevention for each disease ‡	• Feeding and fluids • When to return • Use of bed, taught with multiple other preventive interventions	• Feeding and fluids • When to return • Use of bed net • Wash hands after going to the latrine, before eating and before cooking ‡ • Exclusive breastfeeding for first six months ‡ • If child is not getting better, go to the nearest health center right away ‡	• Feeding and fluids • When to return • Use of bed net • Check vaccines
Follow-up	3 days	3 days	2-3 days	2 and 5 days after treatment	3 days (treated child)	3 days

Annex 2: Country Pages

These short descriptions were developed based on the training materials reviewed, as well as various implementation reports, trip reports, and evaluation documents. Some information was also gathered through correspondence or discussion with key informants. All descriptions have been shared for comment with country sources for verification. Annex 3 details the documents reviewed by country.

‡ = differences in comparison with UNICEF/WHO standard

<table>
<tr><th colspan="3">Democratic Republic of Congo</th></tr>
<tr><td>Brief description of iCCM</td><td colspan="2">Conceptualization and development of policies began in 2003-2004, with a Steering Committee established in the MOH in 2005. The first policy directives at that time included home-based fluids and ORS for diarrhea, treatment of malaria with ACT, treatment of ARI with cotrimoxazole, and management of moderate malnutrition. The program was reviewed in 2007, and expansion began in 2008 with the addition of zinc for diarrhea and a feasibility study on the use of RDTs. In 2010 the ARI policy was revised, and materials were updated again in 2012. It is noted that the antibiotic used is still amoxicillin.
The program is MOH supported (the Minister of Health wrote a preface to the implementation guide) but government financing is weak. Partners provide funding in limited geographic areas on a short-term basis. Families pay a small fee for services but this is not standardized across health zones. WHO, UNICEF, multiple bilaterals (USAID, France, German Cooperative Group, and NGOs are involved (IRC, Catholic Relief Services, Family Health Association, church organizations etc.). Since 2012, the Global Malaria Program has contracted a number of NGOs in DRC to promote the implementation of iCCM in a program known as RaCE. Incentives and payment of CHWs are under continued debate. The CHWs are officially unpaid volunteers.</td></tr>
<tr><td>Description of CHWs providing iCCM</td><td colspan="2">There are two types of CHW:
1. relais communautaires (promotional relays): mostly involved in prevention and promotion / social mobilization and communication.
2. relais du site iCCM (iCCM site relays): involved in curative care; this cadre receives structured training and supervision.
Site relays are chosen by the community. The status of the site relays is superior to that of the promotional relays (there is also some overlap between promotional relay and church volunteers doing BCC).</td></tr>
<tr><td rowspan="2">Characteristics of training</td><td colspan="2">Overview:
Training for relais du site (iCCM) is for five days and includes at least 10 hours of clinical practice (in four sessions) and covers a range of appropriate training methodologies.</td></tr>
<tr><td>Topics:
• Diarrhea
• Pneumonia
• Malaria
• Malnutrition (moderate)
• Vaccination ‡
• Vitamin A ‡
• Disease prevention ‡
• Growth monitoring ‡
• Deworming (mebendazole) ‡</td><td>Order of training:
1. Six danger signs and six signs of alert, all for immediate referral
2. Disease by disease

Note: Most reasons for referral are included with the relevant disease. Much information is provided on prevention, also disease by disease.</td></tr>
</table>

Democratic Republic of Congo		
	Other characteristics: • Site relays are supervised by the local head nurse who also participates in selection and in training. • There are three to five sessions of follow-up after training, one day each, at one-month intervals, to help reinforce training and correct errors, help with organizational tasks such as stock management. • No checking of the expiry date of medicines ‡ • Communication skills taught with home care advice.	
Training materials	Illnesses covered: • Diarrhea • Pneumonia • Malaria • Malnutrition (moderate) • Vaccination ‡ • Vitamin A ‡ • Disease prevention ‡ • Growth monitoring ‡ • Deworming (mebendazole) ‡	Dosage: • Zinc consistent with WHO • ASAQ consistent with WHO • Rectal artesunate: 50 mg up to one year of age,200 mg for children 1-5 years of age ‡ (WHO: 100 mg 2 months-3 years; 200 mg 3-5 years)
	Danger Signs: • Any sick child under 2 months of age • Red MUAC • Inability to eat or drink • Vomits everything • Convulsions • Unconsciousness	Alert signs: • Palmar pallor ‡ • Difficulty breathing with stridor or wheeze ‡ • Any illness lasting 14 days or more • Child often ill ‡ • Child very weak ‡ • Continued illness despite adequate home treatment ‡
	Signs for referral: *Fever*: • Continued fever after 2 days of ACT treatment ‡ • Fever with RDT negative ‡ • Fever with skin rash ‡	 *Diarrhea*: • Signs of dehydration (skin pinch, avid thirst, sunken eyes, agitation) ‡ • Blood in stool • Very watery diarrhea ‡
	Pre-referral treatment: • ORS for diarrhea • Cotrimoxazole for pneumonia ‡ • Artesunate suppository for fever ‡but not fever with danger sign • Paracetamol ‡ • No antimalarial pre-referral ‡	Pre-referral counselling: • Write referral note • Inform the community • Keep child warm if less than 2 months old (newborn. any sick child under two months is referred) ‡ • Give breast milk or sugar water ‡
	Home treatment: • ORS • Zinc • RDT for fever • ASAQ • Paracetamol ‡ • Cotrimoxazole *Note:* Personal communication indicates policy is changing to amoxicillin but	Home advice: • Feeding and fluids • When to return • Use of bednet • Follow-up with sick child • Check vaccinations

Democratic Republic of Congo	
	cotrimoxazole will continue to be used until dispersible amoxicillin is available in the country). ‡

Ethiopia		
Brief description of iCCM	Ethiopia started to use CCM in the late 1980's when community workers were trained to treat childhood pneumonia using oral antibiotics in Butajira, Southern Nations, Nationalities, and Peoples' (SNNP) region. In 2000, a study on community-based malaria treatment was conducted in the Tigray region. In this study, CHWs – known as 'mother coordinators' – educated other mothers to recognize malaria symptoms in their children, give appropriate doses of chloroquine and identify adverse reactions to chloroquine. Between 2001 and 2006, Save the Children conducted the Liben study in a remote district of the Oromia region where they trained CHWs how to assess, classify and treat children with diarrhea, pneumonia and malaria. A wider scale of CCM was introduced after the deployment of the HEWs at the national level for malaria and diarrhea in children. The operational feasibility of including pneumonia in the treatment package for HEWs was tested in Boloso Sore, in the SNNP region from 2006 to 2008 and then formally adopted as policy in 2009. From 2011 onward, HEWs are trained and deployed to treat pneumonia at the community level. The outpatient management of severe acute malnutrition by the HEWs who work out of health posts was successfully piloted in 100 "woredas" (regions) in 2008. Health posts typically provide preventive and promotive health care.	
Description of CHWs providing iCCM	Ethiopia has a national Health Extension Program (HEP) which began in 2004. The core of the HEP is the construction of Health Posts in all of the estimated 15,000 kebeles (villages) in Ethiopia and the training and assignment of two Health Extension workers (HEWs) in each Health Post. Overall, the HEP is designed to deliver 16 packages of services including health promotion, immunization, family planning, hygiene and sanitation and other disease prevention measures, as well as a limited number of high-impact curative interventions, in order to address the main causes of maternal, neonatal and child morbidity and mortality. Two female HEWs in each kebele (the lowest administrative unit, covering about 5,000 people) provide HEP services. HEWs are recruited locally, trained for one year, and are formally employed and salaried. As of October 2011, 11,754 HEWs have been trained in iCCM.[4]	
Characteristics of training	Overview: Training is conducted for six days (first day is focused on infants) and includes 10 hours of clinical practice (2.5 hours each on days 3 - 6) and a range of appropriate training methodologies.	
	Topics: Child 2 months-5 years: • Cough or difficulty breathing • Diarrhea • Fever • Ear problems • Malnutrition and anemia • HIV infection • Immunization • Vitamin A • Deworming ‡0-2 months:	Order of training: 1. General danger signs 2. Assessing and classifying for each disease 3. Treatment for each disease Other characteristics: • Supervision is supposed to occur monthly, with initial follow-up 4-6 weeks after training. The supervisor checklist includes follow up from previous visit, quality of assessment, referral, register review, treatment outcomes, well child checks, data review, supply and drug review, knowledge of HEWS, and summary of findings and actions for improvement. • Supervisors attend an additional training on supervisory skills on the seventh day of the CHW training period. • Training materials: Similarities and differences to "gold standard" (summary of

[4] Review of Systematic Challenges to the Scale-up of Integrated Community Case Management: Emerging Lessons & Recommendations from the Catalytic Initiative (CI/IHSS), UNICEF, April 2012.

Ethiopia		
	• Essential newborn care • Management of sick newborn • Assessing sick newborn for feeding problems and underweight • Treat, counsel the mother, and follow up with sick newborn	materials assessment form).
Training materials	Illnesses covered: Child 2 months-5 years: • Diarrhea • Pneumonia • Malaria • Malnutrition (moderate) • Ear infections ‡ • Anemia ‡ • HIV exposure and infection ‡ • Immunization status ‡ • Vitamin A ‡ • Deworming ‡ • Eye infections ‡ • Thrush ‡	‡0-2 months: • Essential newborn care • Resuscitation of newborn • Infections • Jaundice • Feeding problems or underweight • Thrush • Diarrhea • Immunization status • HIV status • Low birth weight • Breastfeeding counseling • Follow up care for all newborns and mothers
	Dosage: • Zinc consistent with WHO • Rectal artesunate: 3 age ranges (50 mg up to 12 months; 100 mg 13-42 months; 200 mg 43-60 months) ‡ • Antimalarial drug and dosage varies by infection, weight, age, and day ‡ • Cotrimoxazole for pneumonia ‡	Danger Signs: • Presently convulsing or has had convulsions • Unable to drink or breastfeed • Vomits everything • Lethargic or unconscious
	Signs for referral: • Cough for 14 days (with green mucus) • Diarrhea for 14 days • Blood in stool • ‡If RDT positive (yellow), fever for 7 days or more • Chest indrawing • Stridor in a calm child ‡ • MUAC less than 11 cm • Swelling of both feet • Visible severe wasting ‡	• Two of the following signs of dehydration: lethargic or unconscious; sunken eyes; not able to drink or drinking poorly; skin pinch goes back very slowly (defined as longer than 2 seconds) ‡ • Stiff neck or bulged fontanel regardless of malaria endemic area ‡ • Signs of severe measles (clouding of cornea; deep or extensive mouth ulcers) ‡ • Signs of acute ear infections (pus is seen draining from the ear and discharge is reported for less than 14 days, or ear pain) ‡ • Signs of anemia (severe or some palmor pallor) ‡
	Pre-referral treatment: Diarrhea: • Severe dehydration (diarrhea with two of more signs of dehydration): ORS • Severe persistent diarrhea (diarrhea more than 14 days with signs of dehydration): ORS and Vitamin A ‡ • Persistent diarrhea (diarrhea more than 14 days with no signs of dehydration): ORS • Dysentery (diarrhea with blood in the stool) – no pretreatment ‡	Malaria: • With danger signs classified as "Very Severe Febrile Disease" ‡ • Fever in high or low malaria risk plus general danger sign, stiff neck or bulged fontanel: Cotrimoxazole, artesunate rectal suppository if available, Paracetamol in clinic for high fever (38.5°C or above) ‡ • No malaria risk and same signs/symptoms: Cotrimoxazole , Paracetamol for high fever (38.5°C or above) ‡ ‡Acute ear infection:

Ethiopia		
	Pneumonia: • Cotrimoxazole ‡	• Paracetamol ‡Severe complicated malnutrition: Amoxicillin; Vitamin A; treat to prevent low blood sugar
	Pre-referral counselling: • Explain reasons for referral • Give fluids and continue feeding • Keep warm • Write referral note	
	Home treatment: Diarrhea: • Divides fluid guidelines into Plan A (home-based treatment) and Plan B (clinic-based ORS over 4 hour period) based on presence of signs of dehydration. Both levels include zinc treatment. ‡ Malaria: • High or low malaria area with positive RDT: Treat with Coartem for P. falciparum and for mixed infections; Chloroquine for P. vivax (as confirmed by multi species RDT); ‡paracetamol in clinic for high fever (38.5°C or above). Pneumonia: Cotrimoxazole ‡Malnutrition: • Treatment is broken out into four categories based on MUAC, edema, appetite test, and presence of medical complications. • Various combinations of treatments include Vitamin A, amoxicillin, treating to prevent low blood sugar, RUTF, folic acid, registration in OTP, mebendazole, referral to supplementary feeding program, and counseling.	Home advice: • Feeding and fluids • When to return • Use of bed net • Follow-up of sick child • Checks vaccination • Checks Vitamin A status and Mebendazole status ‡

Guinea	
Brief description of iCCM	In the late 1990s integrated management of neonatal and childhood illnesses (IMNCI) was initiated in Guinea, and a cadre of CHWs was initiated to promote the agreed key family practices (the "third component" of IMNCI). During the same period, the national malaria program put into place CHWs who identified cases of malaria and referred them to the health facility for treatment. In 2011, the Government of Guinea committed to accelerating the reduction of maternal and child mortality. Use of health facilities was found to be low. In parallel to an update and revitalization of facility-based IMNCI, and with the increased support of partners including MCHIP, UNICEF, PMI, PSI, Systems for Improved Access to Pharmaceuticals and Services (SIAPS) and WHO, an integrated package of guidelines and training materials was developed to extend treatment for diarrhea, pneumonia and malaria to the community level. In the first instance, implementation has focused on the littoral areas, with five districts in lower Guinea and three in mid-Guinea. A national policy for iCCM was also developed in 2011. The related strategy and implementation documents have not yet been finalized. The MOH confirmed that

Guinea	
	expanding the role of CHWs to include CCM would not cause controversy, since there was already planning for another CHW cadre to provide injectable contraceptives. In-country coordination is challenging, with a large number of players. Nonetheless, one of the strengths of the implementation of iCCM to date is the use of one common training curriculum and set of guidelines by all partners, including MCHIP, PSI, Plan Guinée, WHO, UNICEF, the Global Fund, and the different relevant parts of the Ministry of Health. Challenges to initiating iCCM included ensuring regular supplies, as witnessed by experience with insufficient stocks of ACT and RDT for home management of malaria; the non-functionality of many trained CHWs; and the lack of standardization of support provided to CHWs. District-level iCCM activities are supported either by the government, by MCHIP, by GFATM, and by PMI. In addition there is a pilot project supported by MSF Suisse. Each of the partners has developed its own way of remunerating CHWs: GFATM (covering 50% of the country) gave monetary compensation (in the form of a bonus), government PCIME allowed 50% of the profit made from selling drugs, PMI gave no bonus; MSF is testing a system of community support (rice and other goods). This diversity causes difficulties, and the government would like to standardize, using the same CHW for all activities with the same remuneration. The training curriculum in Guinea was developed through a series of workshops in February and March 2012. The Guinea materials are in line with the technical recommendations in the WHO standard, but it was expected that having separate algorithms for each disease (inspired by the Rwandan model) and a more detailed register to record the cases would be more user-friendly than a single integrated sick child form. By December 2012, 570 CHWs had been trained. This was more than half of those in the pilot areas. However, in order to use funds that were about to expire, the training had been done without essential commodities and without a clear process on user fees. Those CHWs trained have since been through a refresher course. Availability of commodities remains one of the most important challenges to iCCM in the country. For example, a field visit to Dalado village in May 2013 found that even the health facility was experiencing a shortage of malaria commodities. Clients buy ACTs from street vendors, and the health staff treats without RDT confirmation. There has been neither RDT nor ACT for the trained CHW to use. One implication if this is that there will be a need for refresher training once these supplies become available. The multiplicity of sources of supplies also represents a challenge. In some areas of the country UNICEF supplies amoxicillin, Global Fund and PMI provide ACT and RDTs, and MCHIP and PSI supply ORS-Zinc and MUAC strips. It has been recommended that JSI DELIVER provide assistance to coordinating the supply chains. As a backup, central medical supplies have now distributed medicines for the first round. Distribution to CHWs will be integrated into the normal health system distribution network at a later point. Although there was a relatively rapid start to iCCM, there is a perceived need for stronger integration and coordination of community-based programs, in particular "C-IMCI" (BCC to promote family practices), nutrition, and malaria. The integration requirements include training, supervision, and supply mechanisms. Supervision of CHWs is provided by the health centers. Health center directors are trained in supervision and in supply management. In principle there are five CHWs attached to each health center. This is viewed by some people as too few (coverage remains relatively low), and by others as too many (large amount of supervisory responsibilities added to the work of the health facility staff). There are two types of supervision, depending on whether the district is supported by an NGO or directly by the government. In the five government-supported districts now engaging in iCCM, the central level is integrally involved (i.e., performs the supervision along with the district health facility staff). As the second PMI project gets under way, the malaria program is revising its policies to be consistent with those of WHO (by adding rectal artesunate). This is thus an opportune time to advise on any changes, including the potential inclusion of pre-referral treatment.
Description of CHWs providing iCCM	The CHWs trained in the integrated package are for the most part the same ones previously trained in promotion of key family practices and in malaria identification. All CHWs must be able to read and write. Where possible, communities select people who have graduated from schools of community health but who have not found work. iCCM is in addition to the promotional activities.
Characteristics of training	Overview: Training is conducted over five days for approximately six hours per day (16 hours of practice, 3 of which are in clinic). It includes a range of training methodologies such as brainstorming, explanation, demonstrations, checking understanding, exercises, practice (e.g., RTD), and role playing.

Guinea		
	Topics: • Diarrhea • Pneumonia • Malaria • Malnutrition • Use of CHW register ‡ • Stock management and storage ‡ • Monthly reporting ‡ • Disease prevention (handwashing, Vitamin A) ‡ • Nutrition advice in 6-month age blocks ‡ • Drug expiry date (mentioned but not taught) ‡ • Communication skills: checking questions (mentioned but not taught) ‡	Order of training: 1. General danger signs (4) taught under a general algorithm 2. Each of the illnesses 3. One hour on prevention and communication 4. Follow-up and administrative tasks (e.g., registers, stock management)
	Other characteristics: • Multiple algorithms: It was felt to be easier for the CHW to have separate algorithms for each illness, and the integration is described in the CHW handbook (cahier). Interviewees were not all familiar with the WHO/UNICEF standard. They will examine it and will reconsider changing the national algorithms. It may be easier if the CHW has only one page to carry and consult. ‡ • The CHW uses a register that integrates the entire consultation of a child. It is systematically filled out. The CHW is trained not to leave cells blank.	
Training materials	Illnesses covered: • Diarrhea • Pneumonia • Malaria • Malnutrition	Dosage: • Zinc (consistent with WHO recommendations) • ASAQ (consistent with WHO recommendations) • Amoxicillin (consistent with WHO recommendations)
	Danger Signs: • Cough for 14 days • Diarrhea for 14 days • Blood in stool • Chest indrawing • Red on MUAC strip (newborn. uses 11.5 cm rather than “red” ‡) • Swelling of both feet • Signs of dehydration: avid thirst, sunken eyes, agitation ‡ • Fever with stiff neck and a bulging fontanelle ‡	Signs for referral: • Convulsions • Unable to feed or drink • Vomits everything • Unusually sleepy or unconscious • Any sick child less than 2 months of age is referred.
	Pre-referral treatment: • Diarrhea: ORS and zinc • Pneumonia: Amoxicillin • Malaria: None ‡	Pre-referral counselling: • Explains reasons for referral • Writes referral note (newborn. also counter-referral) • Continue breastfeeding
	Home treatment: • ORS • Zinc • RDT • Amoxicillin • Counseling for yellow on MUAC • Vitamin A to prevent pneumonia ‡ • Mebendazole (when instructed by health worker) ‡	Home advice: • When to return (if child is unable to eat or drink, gets sicker, has fever, or has difficulty breathing ‡) • Follow-up with sick child (number of days not specified ‡)

Liberia	
Brief description of iCCM	The Rebuilding Basic Health Services (RBHS) Project provided support to the Community Health Services Division (CHSD) within the Ministry of Health and Social Welfare (MOHSW) of Liberia to develop iCCM. In order to inform policy and program decisions, RBHS hosted a study tour to Sierra Leone in 2010 for representatives of the CHSD, other MOHSW officials, and their implementing partners. A six-month pilot study was conducted from 2010 – 2011 to test the implementation of iCCM. Diarrhea case management existed in Liberia prior to the pilot study based on donor support. The diarrhea modules and classification cards were developed and rolled out in 2009. The pilot study added modules for pneumonia and malaria and provided sequential training for community health workers (who are referred to as general Community Health Volunteers, or gCHVs, in Liberia) in all three diseases. The iCCM pilot study was introduced in three counties with different NGOs (Africare, IRC and Equip) working in each county. A total of 94 gCHVs were trained. An evaluation was conducted in May 2011. Findings and recommendations from the assessment were used to revise the community health policy and strategy for the scale up of iCCM. Commodity distribution was reported as a major constraint during the pilot. The MOHSW provided all of the initial commodities (either at the time of training or at a later date). Partners were then responsible for submitting and following up on requisitions for iCCM commodities, as well as distributing commodities to the gCHVs, after the initial supply ran out. Replenishment of supplies was based on consumption, but frequent lack of supplies led to low treatment numbers, and therefore a low number of medications were approved. Following the pilot study, the iCCM technical working group revised the register and job aids to facilitate working with people of lower literacy levels, sought to have community level data integrated into the national HMIS to facilitate tracking of community contribution at higher levels without maintaining parallel data systems, and reviewed models of supervision checklists from other countries. RBHS recently received funding through October 2014 to support the MOHSW in scaling up iCCM, mainly through a series of interventions in health system capacity building at both central and county levels. The focus of RBHS is on: 1) Establishment of supportive supervision system with a designated supervisor at the health facility; 2) building capacity at county level for supply chain management including community commodities; 3) implementation of the community HMIS and integration in the overall HMIS; and 4) refresher training in iCCM for gCHVs. According to personal communications, various NGOs have tried to revitalize CCM since the pilot study, but many of these efforts have been disease specific. Parallel to the RBHS/USAID funded training, the Global Fund for AIDS, Tuberculosis and Malaria (GFATM) funded CCM training via its principal recipient Plan International, addressing only malaria. UNICEF is currently working in four counties training CHWs in all three diseases with an added one month clinical mentorship following the third disease module. A key challenge experienced in Liberia has been the lack of iCCM drugs and CHW supervision. As a result, many gCHVs have not been able to provide treatment in the community and the attrition rate is high.
Description of CHWs providing iCCM	gCHVs are expected to focus their time principally on iCCM along with some health education talks in the community. Since the training in Liberia is separated into different disease modules, many volunteers have been trained in only one or two of the three diseases. The gCHVs are not paid and incentives are expected to come from the communities or towns that selected them. The official government policy is that gCHVs should have a minimum of sixth grade education. Following the pilot study, there has been a concerted effort to focus on developing materials for people of a lower literacy level and more female volunteers whose involvement was limited with the higher education standards are being actively recruited. Key informants report that many of the trainees are semi-literate. The national policy on gCHV to population ratio states that there should be one gCHV per 250 to 500 people. Mapping studies of gCHVs in the country conducted from November 2012 to February 2013 enumerated 3,737 gCHVs. According to various estimation models, Liberia needs an additional 2,902 to 5,486 gCHVs to cover the population according to stated national policy.

<table>
<tr><th colspan="3">Liberia</th></tr>
<tr><td rowspan="3">Characteristics of training</td><td colspan="2">Overview:
There are 3 different training modules: Diarrhea (3 days), ARI (3 days), and Malaria and reporting (5 days).
Note: 3 days outlined in training guide but UNICEF and Facilitators guide both report 5 days.</td></tr>
<tr><td>Topics:
• Causation
• Assessment
• Management
• Counseling
• Prevention
• Malaria: Signs for all 3 diseases through development of song; field trip to community to identify and destroy mosquito breeding sites</td><td>Order of training:
According to different sources there is a break between modules of either two weeks or at least one month. Not all partners train with all three modules.</td></tr>
<tr><td colspan="2">Other characteristics:
• Clinical practice not included in training. As per UNICEF recommendations there is a 1 month clinical mentorship following the third module of training. MOH states this is the ideal, but funding is a barrier to ensuring transportation logistics and a range of appropriate training methodologies.
• Training materials: Similarities and differences to the "gold standard" (summary of materials assessment form). Materials include extensive additional information on disease causation, prevention and control.
• Checking vaccination status and MUAC are included on the general ledger, but not in the disease modules.
• Liberia divides their material into three different modules and classification cards; one for each disease. The danger signs for each disease are different. The danger signs listed in the classification cards and the modules within the same disease are also different. Since this may be a function of revision dates of materials, the danger signs listed above are taken from the modules. Diarrhea module, Sept. 2012; ARI module, Sept. 2012, Malaria module, March 2012.</td></tr>
<tr><td rowspan="2">Training materials</td><td>Illnesses covered:
• Diarrhea
• Pneumonia
• Malaria
• (Note: separate disease modules)‡</td><td>Dosage:
• ORS and zinc consistent with WHO
• Artesunate + Amodiaquine blister pack consistent with WHO
• Cotrimoxazole ‡
• Paracetamol for fever ‡</td></tr>
<tr><td colspan="2">Danger Signs:
Diarrhea:
• Diarrhea for more than 14 days
• Bloody or slippery (mucous) in feces
• Passing a large quantity of watery feces ‡
• High level of vomiting
• Skin pinch goes back very slowly ‡
• Very weak ‡
• Eyes retract (sunken eyes) ‡

Malnutrition:
• Looking dry ‡
• Moon face child ‡

Malaria:
• Unable to breastfeed, eat, or drink
• A high level of vomiting
• Very weak (Not able to sit without help)

ARI:
• Breathing rate over 60 per minute ‡
• Fast breathing with chest indrawing or other signs of breathing difficulty: grunting; wheezing; very shallow breathing (not deep breathing)
• Sleeping a lot or difficulty in waking up
• inability to drink or breast feed
• Sickness for more than 15 days

Additional signs only on classification cards and not in modules (Note: Some signs in modules are not on classification cards):
• ARI: Cough for three weeks; very cold body
• Malaria: Stiff neck</td></tr>
</table>

Liberia		
	• Jerking (convulsing)	
	Pre-referral treatment: • ORS • Cotrimoxazole for pneumonia ‡ • ACT for malaria • Paracetamol for fever with either pneumonia or malaria protocols ‡	Pre-referral counselling: • Fluids (no guidance provided‡) • Write referral note • Explain reasons for referral ‡ • Keep warm ‡ • Arrange for transportation ‡
	Home treatment: • ORS and zinc for diarrhea • RDT for fever • ACT • Cotrimoxazole ‡	Home advice: • Feeding and fluids • When to return • Use of bed net (malaria card only) • Watch for danger signs at home ‡ • Follow-up with sick child (no follow-up mentioned for diarrhea ‡ • *ARI*: Keep baby warm; clear the nose of the child; wash your hands frequently. ‡ • *Malaria*: Bathe the child with cool water when the skin is hot. ‡

Madagascar	
Brief description of iCCM	In 2007, C-IMCI (including iCCM) was introduced by UNICEF in Madagascar in collaboration with the public health system. In 2008, USAID began supporting the scale-up of C-IMCI through their support of NGOs under the Santénet 2 (SN2) Project. In 2010, additional support for the further expansion of iCCM was provided through a GFATM Malaria National Strategic Application grant. This provided initial and refresher training for 35,000 C-IMCI/CCM CHWs in order to expand access to community-based services including CCM for malaria, pneumonia, and diarrhea to all fokontany (villages). The grant also supported revision and standardization of the national C-IMCI curriculum, reporting, and development of supervision tools. The first version of the implementation guide for management of childhood ARI, diarrhea and malaria, developed in 2006, was modified most recently in 2011. The implementation guide aims to harmonize training, supervision, and pricing of medications. The CHW program has been through various reviews, including analysis by a USAID/Santénet consultant in 2011, by USAID in January 2013 and by PMI in February 2013. A synthesis of the evaluations was published by USAID in April 2013. Programmatic challenges noted include ensuring refresher training; incentives; stock-outs and lack of some equipment (scales); referral systems (50% of CHWs reported making referrals); and linkages with health facilities. Supervision by the health centre manager is also challenging. Supervision visits were originally planned for every three months, but changed to every six months due to the long distances involved. Supervision is reportedly carried out, but not on a regular schedule.
Description of CHWs providing iCCM	There are two types of CHWs per community: 1) CHWs who focus on mothers and work to improve reproductive health, family planning, and safe motherhood; and 2) CHWs who focus on children and carry out iCCM and nutritional monitoring. Both groups work on issues relating to hygiene and sanitation. The CHWs are selected and supported by the community in consultation with local health authorities. CHWs are literate and are allowed to earn a small proportion of the profit from selling medications. The CHWs are supported by a technical assistant from an implementing partner (NGO or other) and by the health center manager of the local basic health center. In addition, each commune has a social development committee that orients the CHWs and mobilizes the community to support their work.

<table>
<tr><th colspan="3">Madagascar</th></tr>
<tr><td rowspan="3">Characteristics of training</td><td colspan="2">Overview:
Training is conducted over 5 days, in which clinical practice comprises approximately 12-16 hours (3-4 sessions of 4 hours each). Training is organized as in the standard materials with wall chart of signs observed. A range of training methodologies are used, including brainstorming, explanation, demonstrations, checking understanding, exercises, practice (e.g. RDT), and role playing.</td></tr>
<tr><td>Topics:
• Diarrhea
• Pneumonia
• Malaria
• Malnutrition
• Use of CHW register ‡
• Stock management and storage ‡
• Monthly reporting ‡
• Vitamin A ‡
• Deworming ‡
• Expiry date (mentioned but not taught) ‡
• Communication skills ‡
• 18 key family practices for “community IMCI” ‡</td><td>Order of training:
1. General danger signs
2. Each of the illnesses
3. Checking vaccination status
4. Follow-up of the sick child
5. Administration (e.g., registers, stock management)</td></tr>
<tr><td colspan="2">Other characteristics:
• Supervision is carried out by health workers or NGO staff monthly for the first three months after training, then quarterly.
• Regular supervision of the CHWs is integral to ensuring the ongoing quality of service delivery. The graph below shows that for the child CHWs (n=5,556) evaluated, there appear to be very high standards of performance.</td></tr>
<tr><td rowspan="2">Training materials</td><td>Illnesses covered:
• Diarrhea
• Pneumonia
• Malaria
• Malnutrition</td><td>Dosage:
• Zinc (consistent with WHO recommendations)
• ASAQ (consistent with WHO recommendations)
• Amoxicillin (consistent with WHO recommendations)</td></tr>
<tr><td>Danger Signs:
• Any sick child less than 2 months old
• Convulsions
• Unable to feed or drink
• Vomits everything
• Unusually sleepy or unconscious</td><td>Signs for referral:
• If sick for more than 14 days

Diarrhea:
• Blood in stool
• Sunken eyes
• Agitation
• Skin pinch
• Avid thirst

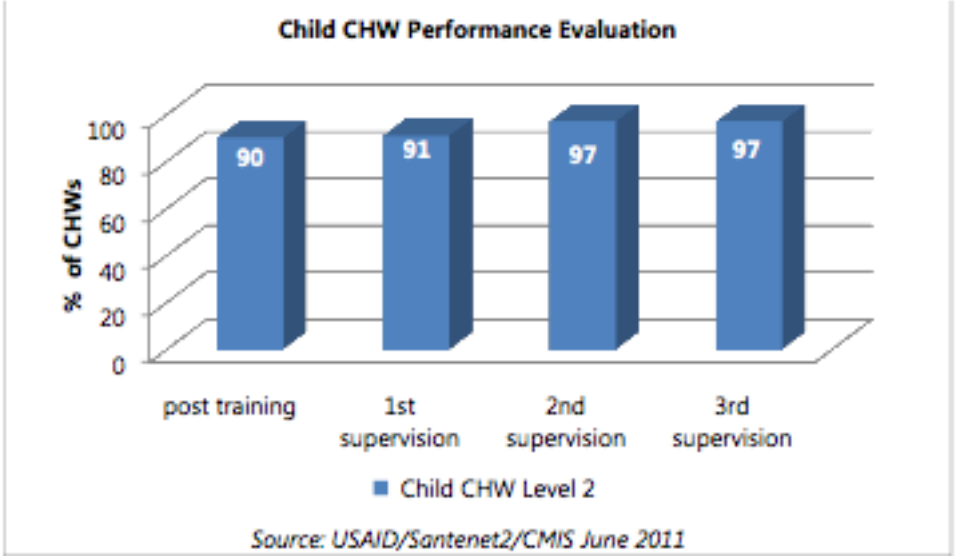
ARI: Chest indrawing with stridor or wheeze

Fever: Bulging fontanelle and stiff neck

Malnutrition:
• 12.5 cm on MUAC
• Swelling of both feet</td></tr>
</table>

Madagascar		
		• Palmar pallor
	Pre-referral treatment: • ORS • If RDT positive: Rectal artesunate • Paracetamol ‡ • *Note:* Not clear whether first dose of antibiotic given. ‡	Pre-referral counselling: • Explain reasons for referral • Give breast milk or sugar water • Keep child warm if not feverish or if newborn
	Home treatment: • ORS and zinc • RDT • ASAQ • Cotrimoxazole ‡ • Paracetamol ‡ • Counseling for yellow on MUAC strip • Vitamin A ‡ • Mebendazole ‡	Home advice: • When to return (if child can't eat or drink, gets sicker, has fever, has difficulty breathing ‡) • Follow-up with sick child (number of days not specified‡)

Santénet2: Training and Supporting Community Health Workers in Challenging Conditions in Madagascar



<table>
<tr><th colspan="3">Mali</th></tr>
<tr><td>Brief description of iCCM</td><td colspan="2">With extremely high child mortality, with 70% of the mortality occurring within the home, Mali began a process to expand access to care for childhood illness. The CSCOM (community health centers) already had a cadre of community relays who were responsible for activities of health promotion and illness prevention. It was decided in 2008 to establish the SEC (essential community care) program to reinforce the CSCOMs. One principal action was the addition of a new cadre, the Community Health Worker (ASC), who would be trained and supported to perform curative activities.

Guidelines and training materials for the new cadre were developed by the National Health Directorate (DNS), with the support of partners. The materials were developed by a small group, and were later validated by an expanded group and by the Malian cabinet. Steering committees have been put in place at the national and regional levels. At the district level decisions are made by a coordination committee.</td></tr>
<tr><td>Description of CHWs providing iCCM</td><td colspan="2">There are two types of community workers for child health: the relais communautaire (community relay) and the CHW.

1. relais communautaire – Identifies fever, cough or difficult breathing, and a red on the MUAC strip, and refers these cases to the ASC. The relais treats diarrhea with ORS and zinc, gives advice and demonstrations on various family planning methods, and advises on newborn care.
2. ASC – Attached to a health facility. In addition to the tasks of the relais, the ASC also confirms malaria using RDT, treats uncomplicated malaria with ACT, treats pneumonia with amoxicillin, gives nutrition advice for moderate malnutrition refers cases of severe malnutrition, provides post-natal care for mothers and newborns (cord care, thermal care, special care for low-birth-weight babies), refers cases of severe illness, and maintains registers for surveillance purposes.</td></tr>
<tr><td rowspan="2">Characteristics of training</td><td colspan="2">Overview:
• Training is for 15 days for the CHW, and 8 days for the relais communautaire.</td></tr>
<tr><td>Topics:
• Behavior change communication for key family practices
• Hygiene and sanitation
• Management of malnutrition
• Food groups and a balanced diet
• Exclusive breastfeeding
• Home care of the newborn: Thermal care (including kangaroo care), exclusive breastfeeding, weighing, promotion of vaccination, identification of danger signs, special care for low birth weight babies</td><td>Order of training:
1. For the CHW, iCCM training is Module 3. The relevant topics last three days, one each for ARI, malaria, diarrhea, with a total of nine hours of clinical practice.</td></tr>
<tr><td rowspan="2">Training materials</td><td>Illnesses covered:
• Diarrhea
• Pneumonia
• Malaria
• Malnutrition (moderate)
• Vaccination ‡
• Vitamin A ‡
• Disease prevention ‡
• Growth monitoring ‡
• Deworming (mebendazole) ‡
• Newborn care ‡</td><td>Dosage:
• Zinc
• AL
• Dosages consistent with standard except that it starts at 6 months, whereas standard starts at 2 months
• Amoxicillin consistent for 4-12 months and for 30-59 months; standard uses only two age ranges whereas Mali uses 4; unclear duration (3 or 5 days) ‡
• Rectal artesunate: 50 mg up to one year; 100 mg 1-3 years, 200 mg 3-5 years (WHO: 100 mg 2-mo–3 years; 200 mg 3-5 years) ‡</td></tr>
<tr><td>Danger Signs:
• Any sick child under 2 months of age
• Red on MUAC strip
• Unable to eat or drink
• Vomits everything
• Convulsions</td><td>Signs for referral:
Fever:
• Continued fever after 3 days of ACT treatment ‡
• Fever with RDT negative ‡
• Fever with skin rash for child under 6 months ‡</td></tr>
</table>

Mali		
	• Unconsciousness • Edema in both feet • Palmar pallor ‡ • Difficulty breathing with chest indrawing or wheeze ‡ • Spontaneous bleeding ‡ • Dark urine dark or lack of urine ‡ • Unable to sit ‡ • Continued illness despite adequate home treatment ‡ • Any illness lasting 14 days or more	*Diarrhea*: • Signs of dehydration (skin pinch, avid thirst, sunken eyes, agitation) ‡ • Blood in stool • Very watery diarrhea ‡ ‡*Follow-up visit*: • Red on MUAC strip • Unable to eat or drink • Vomits everything • Convulsions • Unconsciousness • Palmar pallor ‡ • Difficulty breathing with chest indrawing or wheeze ‡ • Child becomes sicker ‡ • Fever for 3 days ‡ • Skin rash ‡ • Signs of dehydration (skin pinch, avid thirst, sunken eyes, agitation) ‡ • Blood in stool • Very watery diarrhea ‡ *Note*: There are 9 signs included for severe complicated malaria.‡
	Pre-referral treatment: • ORS for diarrhea • Artesunate suppository for fever and RDT positive but not fever with danger sign ‡ • Paracetamol ‡	**Pre-referral counselling:** • Explain reason for referral • Write referral note • Inform the community • Keep child warm if less than 2 months old (newborn. any sick child under two months is referred) ‡ • Give breast milk or sugar water ‡ • Help in problem solving
	Home treatment: • ORS and zinc • RDT for fever • AL • Paracetamol ‡ • Amoxicillin • Albendazole ‡ • Iron ‡ • Folic acid ‡ • Vitamin A and food supplement for moderate malnutrition ‡ • Check expiry date (mentioned but not taught or practiced)	**Home advice:** • Preventative advice is given with each appropriate illness • Feeding and fluids • When to return • Use of bed net • Follow-up with sick child • Check vaccinations

<table>
<tr><th colspan="3">Rwanda</th></tr>
<tr><td>Brief description of iCCM</td><td colspan="2">The first phase of CCM in Rwanda focused on Home-Based Management (HBM) of Malaria. In 2003, the MOH, INGOs, bilateral and multilaterals in Rwanda established the Malaria Technical Working Group (TWG) under the leadership of the National Malaria Control Program (NMCP). From 2004–2007, HBM of malaria went to scale in 18 of 19 malaria-endemic districts. During this time, a pilot study was conducted by the International Rescue Committee, Concern Worldwide and World Relief in three project districts and expanded by UNICEF in another three districts. The Malaria TWG developed operational guidelines for HBM, which included a CHW training curriculum, CHW registers, algorithms/job aids, and referral forms. Funding was secured from Global Fund Round 5 to support HBM in 12 districts by 2006.

The second phase of CCM in Rwanda started in 2007 and expanded CCM to include malaria, diarrhea, and pneumonia in all 30 districts. A team from the MOH visited Senegal to assess the home-based treatment of ARIs and pilot studies were conducted in Rwanda to study the addition of diarrhea and pneumonia treatment.

The Community Health Policy of 2007 institutionalized both the Community Health Desk and iCCM. In 2008, the Maternal and Child Health TWG, under the leadership of the Community Health Desk, emerged to manage iCCM, IMCI and Malaria. The MOH Community Health Desk, with support from the national IMCI task force (later the Community Health Technical Working Group) developed a standardized training package covering all three conditions.

Nutrition and family planning were added to iCCM in a few districts in 2011. The operational guidelines and CHW supply kit contents have undergone several updates based on changes in treatment protocols and the addition of new interventions.</td></tr>
<tr><td>Description of CHWs providing iCCM</td><td colspan="2">In Rwanda, CHWs are central to the Ministry of Health's Community Health Strategy. As of July 2012, there were 45,011 CHWs in Rwanda, collectively tasked with providing a comprehensive package of preventive, curative, and health promotion services at the village level.
Each village elects two CHWs, one male and one female (binôme), who are trained to provide community case management and act as liaisons with the health facility serving their village. There are several other cadres of health workers active in the community, including Maternal Health Workers and Palliative Care Workers. There is also a fourth cadre the Leader of Social Affairs) an elected local authority tasked with coordinating health and social affairs at village level.

By MOH design, CHWs are elected by the community and must be literate, with at least a primary school education. The CHWs receive modest per diem remuneration during official training and from performance-based financing via CHW cooperatives. In theory, within the existing MOH structure, all CHWs are responsible for behavior change communication (BCC) on health promotion and disease prevention related to their area of practice. However, the natural focus is on curative activities.</td></tr>
<tr><td rowspan="2">Characteristics of training</td><td colspan="2">Overview:
Training is conducted over 5 days, with 4 hours of clinical practice on Day 4, split between 2 hours of RDT practice and 2 hours of case management. A range of appropriate training methodologies are used.</td></tr>
<tr><td>Topics:
• Diarrhea
• Pneumonia
• Malaria
• Malnutrition (moderate)
• Prevention ‡
• Counseling the caretaker ‡
• Referral and counter-referral form ‡
• Drug management ‡
• Supervision forms ‡
• Communication focuses on messages, not skills ‡
• Referral focuses on filling out forms, not problem solving ‡</td><td>Order of training:
1. General danger signs ‡
2. Disease by disease with symptoms, classification, and treatment‡
3. General sessions on prevention, counseling, and follow-up ‡
4. Day 5: forms, drug management, and supervision ‡</td></tr>
<tr><td>Training materials</td><td>Illnesses covered:
• Diarrhea
• Pneumonia</td><td>Dosage:
• ORS and zinc consistent with WHO
• PRIMO (brand of ACT) dosage starts at 6 months ‡</td></tr>
</table>

Rwanda		
	• Malaria • Malnutrition (moderate)	• Amoxicillin (4 age ranges with varying dosages and number of treatment days) ‡
	Danger Signs: • Blood in stool • Convulsions • Unable to drink or eat • Vomits everything • Difficulty breathing ‡ • Chest indrawing • Stridor (wheezing) ‡ • Unusually sleepy or unconscious • Red on MUAC strip • Swelling of both feet	‡ *Under 2 months of age or over 5 years of age*: • Illness lasting more than 14 days • Recurrent illness • Initial treatment without improvement • Fever with rash ‡ *Under 6 months*: • Fever • Pallor • Dehydration: sunken eyes, thirsty, agitated, skin tenting *Note*: Danger signs listed in sick child recording form and algorithm are slightly different. The content is essentially the same, but the wording is different, so it may be related to translation; training is done in CHW's health center catchment area in Kinyarwanda (local language). ‡
	Pre-referral treatment: None ‡	**Pre-referral counselling:** • Explain reason for referral • Write referral note
	Home treatment: • ORS and zinc • RDT for fever • PRIMO (brand of ACT) • Amoxicillin	**Home advice:** • Feeding and fluids • When to return • Use of bed net • Follow-up with sick child • Checks vaccination • Counseling on drug administration and additional messages on home treatment and prevention for each disease ‡

<table>
<tr><th colspan="3">Senegal</th></tr>
<tr><td>Brief description of iCCM</td><td colspan="2">The CHW training is part of the PECADOM strategy (Prise en Charge à Domicile) – home case management. This grew out of a malaria-control strategy (in some places integration with malaria-specific actions or workers needs to be strengthened).

This is a continuation of early community health efforts that began in Senegal in the late 1960s. Policies for community management of malaria and pneumonia were updated in 2002-2004, followed by integration and expansion. Guidelines and training materials were revised in 2007 and 2010. These have been updated in 2013 specifically to introduce amoxicillin in place of cotrimoxazole. The new versions are under validation by the MOH and are not yet available for review (personal communication with WHO country office and with country MCHIP staff).

iCCM is supported in different regions by NGOs, leading to effective local implementation but dependence on donor funds. CHWs are volunteers but this may not be sustainable. Issues remaining to be resolved include strengthening the links between the CHWs and the health facilities, and ensuring regular supplies to the CHWs.</td></tr>
<tr><td>Description of CHWs providing iCCM</td><td colspan="2">The term “CHW” encompasses a number of different types of community actors, literate or non-literate, who work as a team:
• DSDOM (Distributeurs de Soins à Domicile) – originally home care dispensors for malaria, recently expanded to include pneumonia and diarrhea. The training materials reviewed concern this cadre, which is literate.
• Relais communautaire (community relay), who conducts mostly promotional and BCC activities
• Matrone (TBA), who helps with pregnancy, delivery, post-partum (also trained in iCCM)
• Agent de Santé communautaire, who treats all three diseases at a health hut (newborn. difference between ASC and DSDOM seems to be only the place of treatment)</td></tr>
<tr><td rowspan="3">Characteristics of training</td><td colspan="2">Overview:
Training is offered for 3 days for malaria only (PECADOM) with no clinical practice apparent. A range of training methodologies are taught, such as brainstorming, presentations, discussions, role playing, and group work (includes some practice). There is a post-test and skill acquisition is also assessed by the head nurse who leads the training. New training for DSDOM will be 5 days plus 2 weeks of practice at a health facility.</td></tr>
<tr><td>Topics:
• Diarrhea
• Pneumonia/ARI
• Malaria (confirmed with RDT)
• Management and prevention included with each illness ‡
• Some nutrition in section on diarrhea (3rd rule of home care for diarrhea) ‡
• Use of CHW register</td><td>Order of training:
1. Seven hours malaria ‡
2. Seven hours diarrhea ‡
3. Six hours ARI ‡</td></tr>
<tr><td colspan="2">Other characteristics:
• Supervision should be provided by the head nurse at the nearest health facility. However, there are inadequate resources to ensure regular supervisory visits.
• The order of some trainings for DSDOM, TBAs, and other community actors seems confusing. Danger signs are re-taught with each illness, each list overlapping but having its specificities.
• It is not clear how respiration rate and chest indrawing are taught/learned.
• The trainer’s guide from 2010 does not indicate pre- or post-test, nor does the CHW training manual from 2012.
• In the overall training (but outside of the case management section), there are sessions on referral, counter-referral and follow-up.
• Communication skills are included in the module on family planning and the sessions on growth monitoring (again outside of the specifics of case management).</td></tr>
<tr><td>Training materials</td><td>Illnesses covered:
• Malaria: Use of thermometer‡; severe‡; non-severe‡ (hot body, especially at night; chills and sweating; headaches; joint pain)
• Diarrhea: Acute (no number of stools specified) ‡; persistent‡; bloody‡
• ARI: Fast breathing cutoffs; three classifications of pneumonia (red/yellow/green) ‡: cough plus one danger sign (red, refer); cough plus fast</td><td>Dosage:
• Zinc: consistent with standard except “less than 6 months” (rather than 2-6 months) ‡
• ORS consistent with WHO standard
• Three kinds of ACT: ASAQ, AL and dihydroartemisinine and piperaquine (Duo-Cotexcin), each with four age ranges (2-11 months, 1-5 years, 6-13 years, adult)</td></tr>
</table>

Senegal		
	breathing (yellow, treat at home); cough with no danger sign (cold, no pneumonia) *newborn. These are consistent with the WHO standard, although expressed differently*.	‡ (WHO standard accepts all 3 drugs but age ranges 2 months-3 years, 3-5 years). Number of tablets specified but not formulation so impossible to assess correct dosage
	Danger Signs: *Diarrhea*: • Agitation and irritability ‡ • Sunken eyes ‡ • Avid thirst ‡ • Dry lips ‡ • Skin pinch ‡ • Lethargy *Malaria*: • Fever 39.5°C or more (no duration specified) ‡ • For severe malaria: hot body / fever 39.5°C or more; refusal to eat or drink; yellow eyes; lethargy; convulsions; agitation or delirium; bleeding; difficulty breathing; little or concentrated urine	*ARI*: • Convulsions • Vomits everything • Unusually sleepy or unconscious / lethargy • Unable to feed or drink • Difficulty breathing with wheeze ‡ • Cough included (no duration specified) ‡ *Note*: No danger signs for malnutrition (not part of DSDOM responsibilities).
	Signs for referral: • Blood in 14 days or more	
	Pre-referral treatment: No pre-referral treatment specified	Pre-referral counselling: • Explains reason for referral • Follows up child after referral
	Home treatment: • ORS and zinc for diarrhea • ACT for confirmed malaria • Antibiotics for fast breathing (cotrimoxazole)‡ *Note:* Personal communication with WHO and MCHIP country office staff indicates that guidelines for health facility treatment have changed to amoxicillin; at present CHWs will continue to use cotrimoxazole but that will also change in the near future.	

<table>
<tr><th colspan="3">South Sudan</th></tr>
<tr><td>Brief description of iCCM</td><td colspan="2">In December 2005, IRC, with support from CIDA, launched a pilot program in Ganyliel Payam of Panyjiar county, Unity State, to train, supply and supervise Community Based Distributors (CBDs) to identify and refer children with danger signs and provide home treatment for children for diarrhea, fever and pneumonia. An external evaluation was conducted in December 2007 to measure changes in mortality, treatment and coverage as compared to 2005 baseline data. The conclusion from this study as well as other global evidence led the country to determine that CCM was a viable strategy for South Sudan, and should be scaled up.

In January 2009, the Government of Southern Sudan (officially recognized as the sovereign state of South Sudan in 2011) developed the Basic Package of Health and Nutrition Services for Southern Sudan that created a new cadre of CHWs known as Home Health Promoters (HHPs). The government has laid out several key policy documents to guide implementation, but currently, iCCM training documents are partner-specific. According to a draft Terms of Reference document dated October 2012, an iCCM Technical Working Group has been formed to conduct activities including reviewing the existing training manuals from different agencies and developing a nationally-endorsed manual for training CHWs and supervisors.</td></tr>
<tr><td>Description of CHWs providing iCCM</td><td colspan="2">Home Health Promoters (HHPs) are elected by the community and trained as CHWs for a minimum of nine months. Literacy is an advantage, but not mandatory. HHPs are not intended to be full-time professionals of the health system and as such receive no salary, but are motivated through other material and non-material incentives. HHPs should be residents in the community they serve and committed to serve all residents without distinction. Training is done at facilities which are then responsible for overseeing and coordinating the community based activities implemented in collaboration with the network of HHPs.

Key HHP functions include; (i) health education and promotion; (ii) dispensing of household level preventive health commodities such as condoms and water-guard (chemicals), water filters and the limited number of medications allowed for household level use for prompt treatment especially of children, which include, co-trimoxazole, ORS and zinc, and ACT; (iii) active case finding of pregnant women and referral for antenatal care attention; (iv) active case finding and treatment and guidance for children with diarrhea, ARI and fever, and referral of severe cases or those that have developed complications; (v) enumerating cases and keeping surveillance and notification of disease; and (vi) alertness to unusually high rates of any type of illness to provide early warning signals of outbreaks of epidemic diseases.

Several other cadres of CHWs exist. Save the Children, IRC and a few other partners refer to CHWs trained in iCCM as “Community Based Distributors (CBDs)”. Malaria Consortium calls the CHWs that they train Community Drug Distributors (CDDs). The current thinking is that some of the CBDs or CDDs will transition to HHPs if they fit the selection criteria.</td></tr>
<tr><td rowspan="3">Characteristics of training</td><td colspan="2">Overview:
Since South Sudan does not have a standard national curriculum, each partner has their own materials. The materials reviewed were from Save the Children. The Save the Children training lasts six days, includes 7.5 hours of clinical practice and/or videos (in five sessions), and a range of appropriate training methodologies.</td></tr>
<tr><td>Topics:
• Diarrhea
• Pneumonia
• Malaria
• Malnutrition (moderate)
• Good communication skills
• Ethics of being a CBD and drug handling ‡
• Relationship with health center ‡
• Checking expiry date of ORS ‡
• Note: Testing children with fever for malaria is not included due to government policy of presumptive treatment. ‡</td><td>Order of training:
1. General danger signs
2. Disease by disease with causes, symptoms, assessment; classification; and treatment</td></tr>
<tr><td colspan="2">Other characteristics:
• “CCM Core Competency Assessment” is filled out for each trainee based on their performance in clinical observation, case scenarios, or video cases.</td></tr>
<tr><td>Training materials</td><td>Illnesses covered:
• Diarrhea</td><td>Dosage:
• All consistent with WHO</td></tr>
</table>

South Sudan		
	• Pneumonia • Malaria • Malnutrition (moderate)	• No Rectal artesunate ‡
	Danger Signs: • Convulsions • Unable to eat or drink • Vomits everything • Chest indrawing • Unusually sleepy or unconscious • Red on MUAC strip	Signs for referral: • Cough for 14 days ‡ • Diarrhea for 14 days ‡ • Blood in stool ‡ • Fever for seven days ‡ ‡*Under two months of age and over five years of age*: • Initial treatment without improvement • Child with a disease other than diarrhea, malaria or pneumonia • Child whose mother, father, or close relative has recently had tuberculosis *Note:* The danger signs listed in the training manual and job aid are slightly different from the list in a 2009 MOH document. Additional signs for referral are only listed in the facilitators training manual. ‡
	Pre-referral treatment: • ORS for diarrhea • Amoxicillin for pneumonia • ACT for malaria	Pre-referral counselling: • Write referral note • Explain reason for referral • Give fluids • Arrange transportation
	Home treatment: • ORS and zinc • Amoxicillin • Artesunate/amodiaquine	Home advice: • Feeding and fluids • When to return or go immediately to health center ‡ • Use of bed net • Follow-up with sick child • Exclusive breastfeeding for first six months ‡ • Handwashing ‡

Zambia		
Brief description of iCCM	The Zambia Integrated Management of Malaria and Pneumonia Study (ZIMMAPS) conducted by Boston University pioneered CCM in Zambia from 2006 - 2009. This study confirmed the capacity of CHWs to correctly use RDTs, ACT and amoxicillin to manage malaria and pneumonia at the community level. As a result, Zambia's National Malaria Control Center and Child Health Unit decided to integrate pneumonia treatment into the existing home management treatment of malaria and diarrhea. iCCM in Zambia was initiated as a national strategic program in 2010 and, as of September 2012 had rolled out in all 10 provinces, and in 36 of 81 districts (prior to the more recent creation of the new districts). Some 2,339 volunteer CHWs and 403 CCM supervisors had been trained by September 2012. The Zambian iCCM package includes the use of RDTs and case management of malaria, diarrhea, pneumonia and moderate malnutrition. Many of the early-adopting districts benefited from the technical and material support of international partners (Malaria Consortium, PSI, Save the Children, Churches Health Association of Zambia, USAID/ Zambia Integrated Systems Strengthening Program (ZISSP), GlaxoSmithKline, Project for Strengthening Community-based Child Health Promotion System in Urban Areas (SCHePS) and UNICEF). The level of support from external partners is variable, and other districts have no ongoing support following UNICEF-sponsored training. The Ministry of Health and partners provide guidance for iCCM through the IMCI Technical Working Group. There is no dedicated partner supporting Monitoring & Evaluation for iCCM, although WHO, UNICEF, Save the Children, and others have all contributed. At present, there is no functioning community HMIS and hence it is difficult to capture community-based treatment and referral data. This is intended to be developed as part of the CHA initiative.	
Description of CHWs providing iCCM	Available data indicate that more than 2,339 CHWs in 36 of 105 districts have been trained in iCCM in Zambia. By policy, CHWs must be certified by the district and it is only these certified CHWs that can be trained by partners in iCCM. In reality, however, some partners have bypassed the certified CHWs and trained their own volunteers. Since the CHW has already been certified, they come to iCCM training with previous experience in a variety of health issues. Depending on the district and partners, they may have a background and be tasked to support health issues including water and sanitation, MCH, nutrition, HIV, vaccination, and antenatal care. One partner reported that the iCCM training had served to revitalize the CHWs in many districts as they gained the ability to provide a service in demand from the community. Save the Children conducted a review of time allocation of CHWs and found that the addition of iCCM work to their existing portfolio of responsibilities often doubled their time commitment. Follow-up and refresher training are partner-dependent. There is now a new cadre of community health worker; the Community Health Assistant (CHA) who is a paid government worker. CHAs are trained for 12 months during which time the iCCM training is also conducted. There are currently only about 300 CHAs deployed nation-wide, most to health facilities. The CHAs and CHWs are currently housed under different ministries; the MOH oversees the CHA program and the new Ministry of Community Development, Maternal and Child Health (MCDMCH) oversees the CHWs.	
Characteristics of training	Overview: Training in Zambia is an adaptation from the standard materials, so most information and methodologies are identical. Training lasts six days, with 18.5 hours of clinical practice spread across all 6 days (3.5 hours of inpatient; 15 hours of outpatient). A range of appropriate training methodologies are taught.	
	Topics: • Diarrhea • Pneumonia • Malaria • Malnutrition (moderate)	Order of training: Same as WHO/UNICEF standard: • General danger signs • Assessment • Classification • Treatment
Training materials	Illnesses covered: • Diarrhea • Pneumonia • Malaria • Malnutrition (moderate)	Dosage: • Zinc for 14 days ‡ • Coartem consistent with WHO • Amoxicillin dosage is half of WHO standard ‡

Zambia		
	Danger Signs: • Cough for 14 days • Diarrhea for 14 days • Blood in stool • Fever for 7 days • Convulsions • Unable to feed or drink • Vomits everything • Chest indrawing • Unusually sleepy or unconscious • Red on MUAC strip • Swelling of both feet	
	Pre-referral treatment: • ORS for diarrhea • Antibiotic if chest indrawing or fast breathing and danger sign • Antimalarial if fever, danger sign, and positive RDT‡	Pre-referral counselling: • Explain reason for referral • Advise to give fluids and continue feeding • Advise to keep child warm • Write referral note • Arrange transportation
	Home treatment: • ORS and zinc • RDT for fever • Coartem • Amoxicillin	Home advice: • Feeding and fluids • When to return • Use of bed net • Follow-up with sick child • Checks vaccination

Annex 3: Documents Reviewed

DRC:

- Prise en charge integrée des maladies de l'enfant, Sites des soins communautaires, Manuel du relais (version décembre 2012, revised NE)
- Ibid, Manuel de l'encadreur (revised 2008)
- Integrated Community Case Management: Findings from Senegal, the Democratic Republic of the Congo, and Malawi, A synthesis report, MCHIP November 2012
- Comparison entre la fiche OMS et RDC (Comparison done by IRC)
- Modèle de rapport de formation des SITES (2008) (*Annex 4*: Fiche d'evaluation du relais pendant la formation)
- Note de déroulement de la formation des formateurs des sites des soins communautaires (2008)
- Guide de pratiques clés du relais communautaire, février 2010
- Guide de mise en oeuvre PCIME-C, 2007
- Job aids pour rélais, 10 mai 2008

Ethiopia:

- IMNCI Facilitator's Guide for Health Extension Workers, October 2010
- iCCM Chart Booklet for Health Extension Workers, May 2010
- Form C Supportive supervision checklist, July 18, 2011
- ICCM follow up after training and supportive supervision, Facilitator's Guide, July 2011
- National Implementation Plan For Community Case Management of Common Childhood Illnesses, February 2010

Guinea:

- Programme PCIMNE, curriculum de formation des agents communautaires sur le paquet integré, Conakry, Février 2012 (revised 9/10/12) (includes four algorithms)
- Cahier de l'Agent Communautaire, Conakry novembre 2012
- Registre de l'Agent Communautaire
- Rapport de mission de l'atelier de formation des agents communautaires et agents PEV des sites de Beyla, Mandiana, et Dabola en PCIMNE communautaire, février-mars 2013
- Rapports de mission de S Raharison, MCHIP

Liberia:

General Community Health Volunteer Manuals:

- Module 1: Community Based Management of Diarrhea in Childhood, September 2012
- Module 2: Community Based Management of ARI in Childhood, September 2012
- Module 3: Community Based Management of Malaria in Childhood , March 2012

General Community Health Volunteer Training Guides:

- Training for Facilitators, February 2012
- Diarrhea Facilitator Guide, February 2012
- Malaria Facilitator Guide, February 2013
- ARI Facilitator Guide, February 2012

Classification cards:

- ARI, Feb 2012
- Malaria, Feb 2012
- Diarrhea, Feb 2012

Reports:

- Scaling up Integrated Community Case Management (iCCM), Draft Position paper, Rebuilding Basic Health Services (RBHS) (Liberia)
- Results and Findings of Integrated Community Case Management ICCM for Malaria, ARI, and Diarrhea Pilot Project IN 93 Targeted Communities of 4 (Bong, Gbarpolu, Lofa and Nimba) counties, Community Health Services Division, Ministry of Health and Social Welfare
- Liberia Community Health Road Map, Objectives and Strategic Plan, draft, August 2013
- Comprehensive Mapping of Community Health Volunteers (CHVS) and Community Health Structures in all Health Districts of Liberia, Community Health Services Division, Ministry of Health and Social Welfare, June 2013

Madagascar:

- L'introduction de la prise en charge des infections respiratoires aigues, de la diarrhée et du paludisme au niveau communautaire – plan de session, janvier 2011 ("Introduction to case management of ARI, diarrhea and malaria at the community level, session plan")
- Ibid, Facilitator guide. These are the "old versions".
- Guide de mise en œuvre pour l'introduction de la prise en charge communautaire des infections respiratoires aigues, de la diarrhee et du paludisme chez les enfants de moins de 5 ans a Madagascar (no date, probably 2007)
- Plan de session, Formation des Agents Communautaires sur l'Introduction de la prise en charge des infections respiratoires aigues, de la diarrhee et du paludisme au niveau communautaire (Updated agenda and session plan in French; ASC manual available only in Malagasy)
- Fisy Teknika (technical form)
- Fisy fandraisana an-tanana ny zaza marary (recording form)
- Pre-post test
- Suivi individual AC pendant la formation
- Santénet2: Training and Supporting Community Health Workers in Challenging Conditions in Madagascar, November 2011
- PMI Research and Evaluation Report Program Functionality and Performance in Madagascar: A Synthesis of Qualitative and Quantitative Assessments, April 2013
- PMI Evaluation of the Quality of Community Based Integrated Management of Childhood Illness and reproductive Health Programs in Madagascar, February 2013

Mali:

- Soins essentiels dans la communauté, Guide intégré de formateur de l'ASC, mai 2011
- Soins essentiels dans la communauté, Manuel de formation ASC: Prise en charge de l'enfant malade (IRA, paludisme, diarrhea et malnutrition aigüe, et soins simples du nouveau-né, mai 2011)
- Soins essentiels dans la communauté, Manuel de formation ASC: Communication pour la promotion des pratiques familiales essentielles, et hygiène et salubrité publique
- Soins essentiels dans la communaute, guide national pour la mise en oeuvre, novembre 2010
- Fiche individuelle de prise en charge intégrée de l'enfant (recording form)

Rwanda:

- Community Health Workers Trainer's Guide "Community Integrated Management of Child Illness, English version, January 2011
- Final Evaluation of the Kabeho Mwana Expanded Impact Child Survival Program, A partnership of Concern Worldwide, the International Rescue Committee, and World Relief, December 2011.

Senegal:

- Manuel de Formation du DSDOM sur la Prise en charge du paludisme, de la diarrhée et des infections respiratoires aigües, juillet 2012
- Programme Santé communautaire, Guide de formateur, Module Prise en charge des maladies, nutrition, SMNI (Relais, ASC, Matrone) Septembre 2010
- Programme Santé communautaire, Guide de formateur, Module Paludisme (Relais, ASC, Matrone) Septembre 2010
- Integrated Community Case Management: Findings from Senegal, the Democratic Republic of the Congo, and Malawi, A synthesis report, MCHIP November 2012

South Sudan:

Government of South Sudan, Ministry of Health:

- Home Health Promoter Curriculum Outline, May 2011
- Approach to Working with Health Committees, May 2011
- Community Mobilization Approach, March 2011
- Home Health Promoters Implementation Guide
- The Basic Package of Health and Nutrition Services in Primary Health Care, July 2011
- Implementation Guide for Community Based Management of Malaria, Pneumonia and Diarrhea: A Community Child Survival Program, Feb 2009
- Terms of Reference for iCCM Technical Working Group, Draft, October 2012

Save the Children:

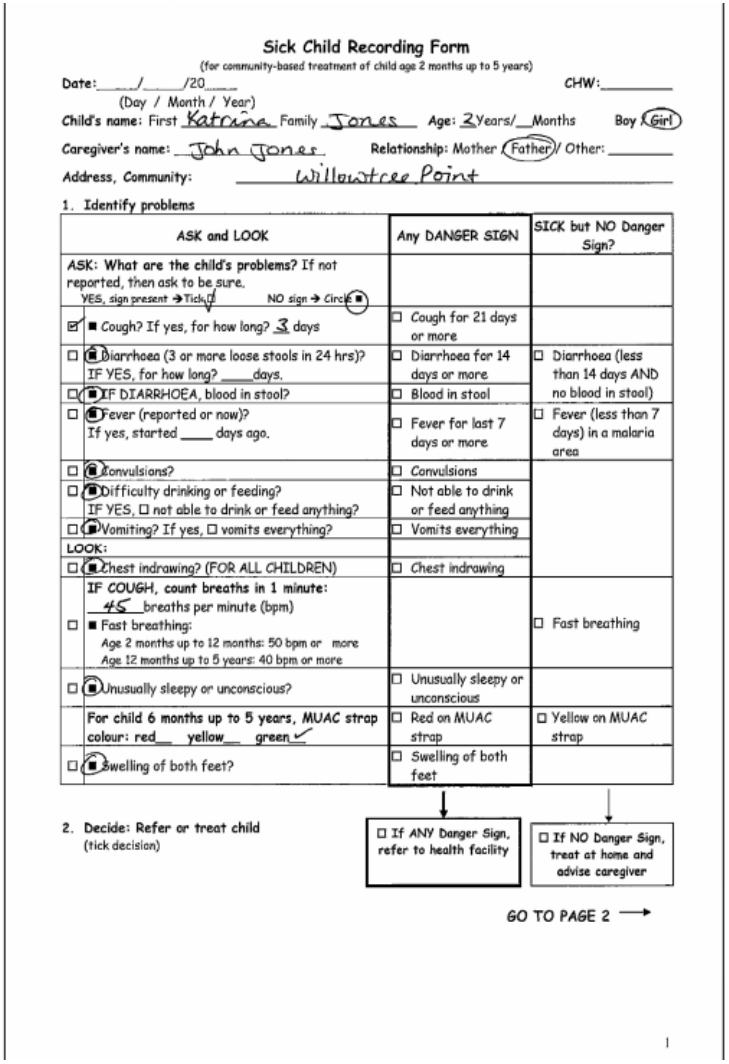
- Facilitator guidelines for training of Community Based Distributors, July 2010
- Note: The facilitator guidelines provided by Save the Children are based on the International Rescue Committee Facilitator guidelines for training of Community Based Distributors for the Community Based Treatment, Child Survival Program in Southern Sudan - October 2007
- Facilitator guidelines for training of Community Based Distributor Supervisors, March 2010

- Note: The MOH training guide for CBD Supervisors was informed by Southern Sudan-specific training materials previously developed by WHO, the International Rescue Committee (IRC) and PSI Sudan. The version reviewed for this study for further adapted by Save the Children.
- CCM Job Aid, November 2010
- M&E forms: CBD Patient Register, Stock summary, Supervisor checklist, March 2010

Zambia:

- Manual for the Community Health Worker: Caring for the Sick Child in the Community, June 2010
- Facilitator Notes: Caring for the Sick Child in the Community, May 2010
- Sick Child Recording Form, August 2011
- C-IMCI and iCCM Data Collection and Monitoring Tools and Indicators
- Health for the Poorest Populations: Implementation Guide, Draft, August 2012
- Lufwanyama Integrated Neonatal and Child Health Project in Zambia (LINCHPIN): Mid-Term Evaluation Report, Save the Children, October 2012.
- MCHIP Program Trip Report, iCCM Implementation Strength Assessment, Karen Z. Waltensperger, April 2013.

Annex 4: UNICEF/WHO Sick Child Recording Form



Sick Child Recording Form

(for community-based treatment of child age 2 months up to 5 years)

Date: ___/___/20___ (Day / Month / Year) CHW: _____

Child's name: First Katrina Family Jones Age: 2 Years/ Months Boy (Girl)

Caregiver's name: John Jones Relationship: Mother (Father) / Other: _____

Address, Community: Willowtree Point

1. Identify problems

ASK and LOOK	Any DANGER SIGN	SICK but NO Danger Sign?
ASK: What are the child's problems? If not reported, then ask to be sure. YES, sign present → Tick ☑ NO sign → Circle ■		
☑ ■ Cough? If yes, for how long? 3 days	☐ Cough for 21 days or more	
☐ ■ Diarrhoea (3 or more loose stools in 24 hrs)? IF YES, for how long? ____days.	☐ Diarrhoea for 14 days or more	☐ Diarrhoea (less than 14 days AND no blood in stool)
☐ ■ IF DIARRHOEA, blood in stool?	☐ Blood in stool	
☐ ■ Fever (reported or now)? If yes, started ____ days ago.	☐ Fever for last 7 days or more	☐ Fever (less than 7 days) in a malaria area
☐ ■ Convulsions?	☐ Convulsions	
☐ ■ Difficulty drinking or feeding? IF YES, ☐ not able to drink or feed anything?	☐ Not able to drink or feed anything	
☐ ■ Vomiting? If yes, ☐ vomits everything?	☐ Vomits everything	
LOOK:		
☐ ■ Chest indrawing? (FOR ALL CHILDREN)	☐ Chest indrawing	
IF COUGH, count breaths in 1 minute: 45 breaths per minute (bpm) ☐ ■ Fast breathing: Age 2 months up to 12 months: 50 bpm or more; Age 12 months up to 5 years: 40 bpm or more		☐ Fast breathing
☐ ■ Unusually sleepy or unconscious?	☐ Unusually sleepy or unconscious	
For child 6 months up to 5 years, MUAC strap colour: red__ yellow__ green✓	☐ Red on MUAC strap	☐ Yellow on MUAC strap
☐ ■ Swelling of both feet?	☐ Swelling of both feet	

2. Decide: Refer or treat child (tick decision)

☐ If ANY Danger Sign, refer to health facility

☐ If NO Danger Sign, treat at home and advise caregiver

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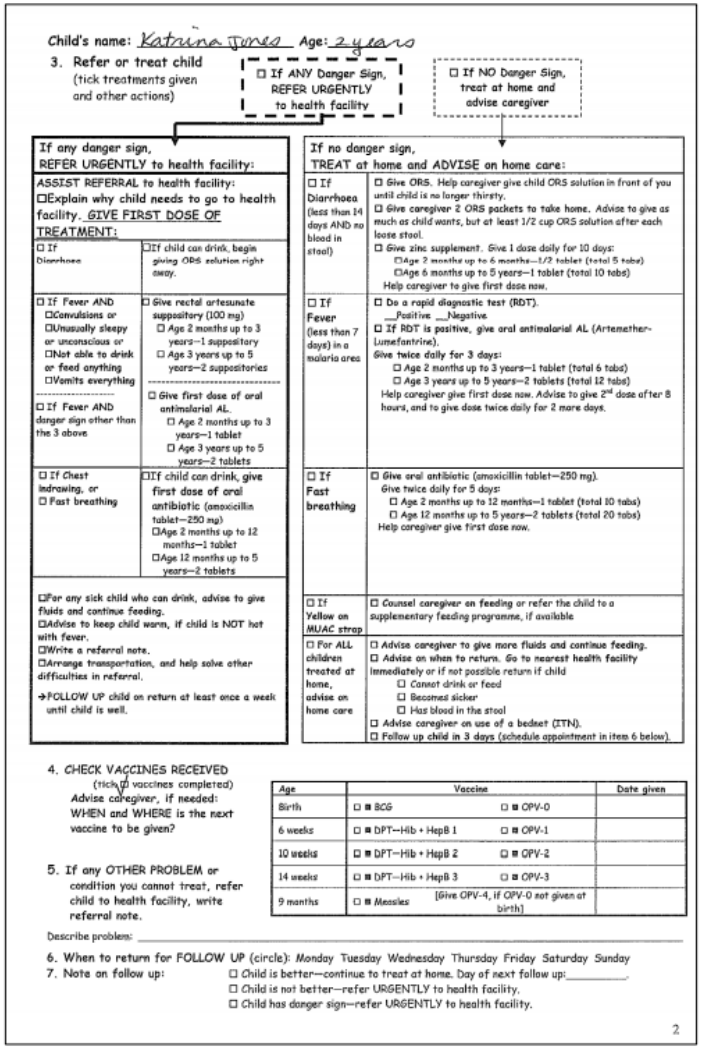

Child's name: Katrina Jones Age: 2 years

3. Refer or treat child (tick treatments given and other actions)

☐ If ANY Danger Sign, REFER URGENTLY to health facility

☐ If NO Danger Sign, treat at home and advise caregiver

If any danger sign, REFER URGENTLY to health facility:

ASSIST REFERRAL to health facility:
☐Explain why child needs to go to health facility. GIVE FIRST DOSE OF TREATMENT:

☐ If Diarrhoea	☐If child can drink, begin giving ORS solution right away.
☐ If Fever AND ☐Convulsions or ☐Unusually sleepy or unconscious or ☐Not able to drink or feed anything ☐Vomits everything	☐ Give rectal artesunate suppository (100 mg) ☐ Age 2 months up to 3 years—1 suppository ☐ Age 3 years up to 5 years—2 suppositories
☐ If Fever AND danger sign other than the 3 above	☐ Give first dose of oral antimalarial AL. ☐ Age 2 months up to 3 years—1 tablet ☐ Age 3 years up to 5 years—2 tablets
☐ If Chest indrawing, or ☐ Fast breathing	☐If child can drink, give first dose of oral antibiotic (amoxicillin tablet—250 mg) ☐Age 2 months up to 12 months—1 tablet ☐Age 12 months up to 5 years—2 tablets

☐For any sick child who can drink, advise to give fluids and continue feeding.
☐Advise to keep child warm, if child is NOT hot with fever.
☐Write a referral note.
☐Arrange transportation, and help solve other difficulties in referral.
→FOLLOW UP child on return at least once a week until child is well.

If no danger sign, TREAT at home and ADVISE on home care:

☐ If Diarrhoea (less than 14 days AND no blood in stool)	☐ Give ORS. Help caregiver give child ORS solution in front of you until child is no longer thirsty. ☐ Give caregiver 2 ORS packets to take home. Advise to give as much as child wants, but at least 1/2 cup ORS solution after each loose stool. ☐ Give zinc supplement. Give 1 dose daily for 10 days: ☐Age 2 months up to 6 months—1/2 tablet (total 5 tabs) ☐Age 6 months up to 5 years—1 tablet (total 10 tabs) Help caregiver to give first dose now.
☐ If Fever (less than 7 days) in a malaria area	☐ Do a rapid diagnostic test (RDT). __Positive __Negative ☐ If RDT is positive, give oral antimalarial AL (Artemether-Lumefantrine). Give twice daily for 3 days: ☐ Age 2 months up to 3 years—1 tablet (total 6 tabs) ☐ Age 3 years up to 5 years—2 tablets (total 12 tabs) Help caregiver give first dose now. Advise to give 2nd dose after 8 hours, and to give dose twice daily for 2 more days.
☐ If Fast breathing	☐ Give oral antibiotic (amoxicillin tablet—250 mg). Give twice daily for 5 days: ☐ Age 2 months up to 12 months—1 tablet (total 10 tabs) ☐ Age 12 months up to 5 years—2 tablets (total 20 tabs) Help caregiver give first dose now.
☐ If Yellow on MUAC strap	☐ Counsel caregiver on feeding or refer the child to a supplementary feeding programme, if available
☐ For ALL children treated at home, advise on home care	☐ Advise caregiver to give more fluids and continue feeding. ☐ Advise on when to return. Go to nearest health facility immediately or if not possible return if child ☐ Cannot drink or feed ☐ Becomes sicker ☐ Has blood in the stool ☐ Advise caregiver on use of a bednet (ITN). ☐ Follow up child in 3 days (schedule appointment in item 6 below).

4. CHECK VACCINES RECEIVED (tick ☑ vaccines completed)
Advise caregiver, if needed: WHEN and WHERE is the next vaccine to be given?

Age	Vaccine		Date given
Birth	☐ ■ BCG	☐ ■ OPV-0	
6 weeks	☐ ■ DPT–Hib + HepB 1	☐ ■ OPV-1	
10 weeks	☐ ■ DPT–Hib + HepB 2	☐ ■ OPV-2	
14 weeks	☐ ■ DPT–Hib + HepB 3	☐ ■ OPV-3	
9 months	☐ ■ Measles [Give OPV-4, if OPV-0 not given at birth]		

5. If any OTHER PROBLEM or condition you cannot treat, refer child to health facility, write referral note.

Describe problem: _____

6. When to return for FOLLOW UP (circle): Monday Tuesday Wednesday Thursday Friday Saturday Sunday
7. Note on follow up:
☐ Child is better—continue to treat at home. Day of next follow up: _____.
☐ Child is not better—refer URGENTLY to health facility.
☐ Child has danger sign—refer URGENTLY to health facility.

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