

DESK REVIEW AND QUALITATIVE ASSESSMENT OF CASE MANAGEMENT SOCIAL AND BEHAVIOR CHANGE COMMUNICATION STRATEGIES IN FOUR COUNTRIES:

Ethiopia, Rwanda, Senegal and Zambia



Cover photo: A field worker collects a blood sample for malaria testing from a child in northern Zambia.
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ACRONYMS

ACT	Artemisinin-based combination therapy
BASICS	Basic Support for Institutionalizing Child Survival
BCC	Behavior change communication
CCM	Community case management
CCSP	Chikankata Child Survival Project
CHP	Community Health Program
CHW	Community health worker
CSH	Communications Support for Health
DHS	Demographic and Health Survey
EIP	Expanded impact project
HEW	Health extension worker
iCCM	Integrated community case management
IEC	Information, education and communication
IMCI	Integrated management of childhood illness
IMNCI	Integrated management of neonatal and childhood disease
ITN	Insecticide-treated net
KAP	Knowledge, attitudes, behaviors/practices
KII	Key informant interview
KPC	Knowledge, practices and coverage
MCHIP	Maternal and Child Health Integrated Program
M&E	Monitoring and evaluation
MICS	Multiple Indicator Cluster Survey
MIS	Malaria Indicator Survey
MOH	Ministry of Health
MOP	Malaria Operational Plan
NGO	Non-governmental organization
NMCP	National Malaria Control Program
NMEP	National Malaria Elimination Program
PECADOM	Prise en Charge à Domicile des Cas de Paludisme (home-based treatment of malaria)
PMI	President's Malaria Initiative
PNLP	Programme National de Lutte contre le Paludisme (National Malaria Control Program)
PSG	Peer support group
RDT	Rapid diagnostic test
SBCC	Social and behavior change communication
TSA	The Salvation Army
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
U5	Under five years old
vCHW	Volunteer community health workers
WHO	World Health Organization

INTRODUCTION

Case management of malaria has undergone profound changes over the years since the introduction and widespread use of rapid diagnostic testing (RDT) and artemisinin-based combination therapy (ACT). Recent years have seen the evolution of home management of malaria, community-based management of malaria and integrated community case management (iCCM) of malaria packages. Social and behavior change communication (SBCC) activities at the community level that address behaviors like prompt care seeking and compliance with complete ACT regimens have been the focus of some interventions. Much less SBCC has focused on service provider behaviors, like adherence to simple and complicated malaria treatment and diagnosis algorithms, and adherence to ACT and RDT protocols.

Countries like Ethiopia, Rwanda, Senegal and Zambia have shown that carefully planned malaria case management pilots, programs and activities can be extremely effective.^{1,2,3,4} This research does not, however, include documentation of SBCC components of malaria case management programming that have been measured for impact. While these countries have taken steps to develop malaria communication strategies that include malaria case management messaging, very little has been done to document the impact of resulting national activities and programs.

The purpose of this desk review is to identify promising SBCC practices related to malaria case management at both community and service provider levels in the four focus countries: Zambia, Ethiopia, Rwanda and Senegal.

SBCC and Impact Indicators

SBCC has been a vital component of malaria prevention and control strategies. Most programs, however, have not been rigorously evaluated, whether due to a lack of funding for these types of evaluations or an absence of clarity about best practices for measuring the contribution of SBCC for malaria prevention and control.⁵

A strategic SBCC approach follows a systematic process that includes a formative assessment, which identifies the important barriers and motivators to behavior change, followed by the design and implementation of a comprehensive set of interventions to support and encourage positive behaviors.⁶

Essential for any large-scale communication strategy is a form of impact assessment. Impact assessment aims to answer the question, “Did the communication strategy achieve the specified objectives?” Impact assessments look at the difference that the strategy made in the overall program environment.⁷ Impact indicators can vary depending on the approach and channels used in the strategy. An example of an impact indicator for malaria case management could be the proportion of children under five years old with fever in the last two weeks for whom advice or treatment was sought. Typical data sources can include:

- **Population-based household surveys**, such as the Demographic and Health Survey (DHS), the Malaria Indicator Survey (MIS) or the Multiple Indicator Cluster Survey (MICS).
- **Smaller sub-national surveys**, particularly in areas where malaria communications were targeted.

¹Lemma H, Byass P, Desta A, et al. Deploying artemether-lumefantrine with rapid testing in Ethiopian communities: impact on malaria morbidity, mortality and healthcare resources. *Trop Med Int Health*. 2010;15(2):241-50.

²Otten M, Aregawi M, Were W, et al. Initial evidence of reduction of malaria cases and deaths in Rwanda and Ethiopia due to rapid scale-up of malaria prevention and treatment. *Malar J*. 2009;8:14.

³Yeboah-antwi K, Pilingana P, Macleod WB, et al. Community case management of fever due to malaria and pneumonia in children under five in Zambia: a cluster randomized controlled trial. *PLoS Med*. 2010;7(9):e1000340.

⁴Ndiaye Y, Ndiaye JL, Cisse B, et al. Community case management in malaria: review and perspectives after four years of operational experience in Saraya district, south-east Senegal. *Malar J*. 2013;12:240.

⁵Malaria Behavior Change Communication Indicator Reference Guide. Roll Back Malaria Partnership. February 2014. http://www.rbm.who.int/partnership/wg/wg_communication/docs/Malaria-BCC-Indicators-Reference-Guide.pdf

⁶<https://www.k4health.org/toolkits/miycn-fp/social-behavior>

⁷A Field Guide to Developing a Health Communication Strategy. Population Communication Services Johns Hopkins Bloomberg School of Public Health/Center for Communication Programs

<https://www.jhuccp.org/sites/default/files/A%20Field%20Guide%20to%20Designing%20Health%20Comm%20Strategy.pdf>

METHODS

Part I: Desk Review

An initial review was undertaken, consisting of a thorough PubMed search for articles related to malaria case management that mentioned SBCC, in the four countries. Malaria case management country-level documents, project reports and related SBCC materials were also collected. Implementing partner reports were gathered from each country related to SBCC and/or malaria case management. A comprehensive list of search terms were used for all four countries that included:

Malaria terms:

- Malaria
- ACT
- Antimalarial
- Sulfadoxine-pyrimethamine
- Artesunate
- Microscopy
- Complicated
- Simple
- Plasmodium falciparum
- Plasmodium vivax

Case management terms:

- Case management
- Integrated case management
- Case management
- iCCM
- Integrated management of childhood illness (IMCI)
- Home management of malaria
- Home-based management of fever
- RDT
- Active, passive, reactive surveillance/case detection
- Treatment
- Diagnosis
- Adherence
- Compliance
- Test treat track, prompt care/treatment seeking behavior
- Febrile treatment for infant/children, intermittent preventive treatment for infants/children
- Algorithm
- Screening

Communication terms:

- SBCC
- Behavior change communication (BCC)
- Information, education and communication (IEC)
- Advocacy communication and social mobilization
- Communications
- Messages
- Channels
- Exposure
- Knowledge, attitudes, behaviors/practices (KAP)

Implementation/health systems terms:

- Implementation
- Interventions
- Programs
- Campaigns
- Pilots
- Supply chain management
- Stock outs
- Rural health center, health facility
- Community health worker (CHW)
- Community-based
- National malaria control (or elimination) program (NMCP/PNLN/NMEP)
- Drug/medicine vendors
- Public/private sector
- Provider
- Impact

The initial review was expanded using similar terms and included the following websites and sources—K4Health portal; HealthCOMpass; community case management (CCM) central website; The Core Group; Google Scholar; and Development Experience Clearinghouse—using an advanced search by country, with key words and filters for the project evaluations, most relevant to least relevant, special evaluations, other USAID supported study/document, other USAID evaluation, non-USAID technical, non-USAID evaluation, final evaluation report, final contractor/grantee report, evaluation summary, bibliography/literature review,

assessment and annual report. Dates for inclusion ranged from 1980 to present, although most studies and program documents are more recent.

Part II: Qualitative Analysis

Participants for Key informant interviews (KIIs) were selected in the four countries and included members of the NMCP, SBCC/BCC units within the Ministry of Health (MOH), USAID Implementing Partners and PMI staff. Questions developed for KIIs were submitted to the Johns Hopkins Bloomberg School of Public Health (JHSPH) Institutional Review Board Office and on September 12, 2014, determined not to qualify as human subjects research. J. Douglas Storey is the Principal Investigator named in the determination notice (IRB No:00005953).

A semi-structured questionnaire was used to gather information related to perceptions and first-hand experiences with:

- Examples of activities promoting malaria case management messages.
- Effects of existing Integrated Case Management of Malaria programs and related SBCC approaches.
- Knowledge of the development process and input into any existing malaria communication strategy.
- Messages that have been particularly effective in changing KAP related to malaria case management.
- The process for development of malaria case management materials.
- SBCC activities specifically at the community and/or facility level and audiences.
- What has worked best in SBCC for malaria case management.
- What SBCC foci should be considered in future malaria case management program design.

KIIs took place from September to November 2014. When possible, interviews were conducted in person. When face-to-face interviews were not possible, Skype calls were arranged. The questionnaire was circulated via email to the informant prior to the interview so the respondent would be prepared to answer questions. When it was not possible to interview respondents, written responses were prepared and followed up via email for clarification.

A log of KIIs per country was kept and updated regularly within the team. A total of nine interviews and four written responses were collected. All interviews were recorded and transcribed. The transcribed interviews and written responses were entered into NVivo 10. An initial codebook was developed based on the semi-structured interview guide. Open and axial coding enhanced the initial codebook as themes were generated in the software.

RESULTS

The relevant research articles and documents by country are summarized below and provide a description of the aims of the program, project and/or research; what, if any, SBCC interventions were used for malaria case management; types of indicators and instruments used to measure the SBCC intervention (where applicable) and related outcomes; and additional noteworthy information from the article/document that may hold promising practices regarding measurement of impact. The KIs are summarized as they relate to each country and cross-cutting thematic results are presented according to the analysis.

Ethiopia

Micro-planning data from 2014 indicated that 83 percent of suspected malaria cases in Ethiopia were confirmed with microscopy or RDTs, and the number of presumptively treated patients has declined significantly, resulting in limited ACT waste.⁸ The health extension program allows health extension workers (HEWs) paid by the government and responsible for preventive and curative services in remote of medically underserved areas to train and work with volunteer community health workers (vCHWs) who are responsible for assisting in health promotion activities) to use RDTs. In the last two years, HEWs have used rectal artesunate for pre-referral treatment of severe febrile illness and have been trained to treat suspected pneumonia cases with antibiotics, such as cotrimoxazole. HEWs have also been trained to manage diarrheal illness with oral rehydration solution.

Ethiopia's 2012-2014 Malaria Operational Plans (MOPs) use a 2010 quantitative study on the extent and nature of adherence to malaria treatment as a guide that should inform malaria case management SBCC interventions. The study found three variables that were significantly associated with adherence to artemether-lumefantrine (AL) among plasmodium falciparum patients in the Tigray region: radio ownership, belief that malaria cannot be treated traditionally and a delay in treatment seeking.⁹ The study recommended the use of radio as a channel to promote health messages regarding the importance of adherence to AL and advocated for HEWs to carry out specific training on communicating treatment instructions.

The following is an overview of program and project evaluations to date regarding ongoing interventions in SBCC for case management of malaria in Ethiopia.

Teaching Mothers to Provide Home Treatment of Malaria in Tigray, Ethiopia

A randomized trial (2000). This study aimed to determine if home-based care of malaria could help lower the under-five-years -1d (U5) mortality rate in Ethiopia. At the time of the study, the main method of malaria treatment was facility-based. The study took place in 24 villages in two districts. The villages were paired based on similar characteristics, with one cluster of villages (tobias) being part of the control group and the other the intervention group. While both groups used mother coordinators, in the intervention groups, mother coordinators had additional responsibilities, including training mother coordinators to teach neighbor-group mothers to recognize symptoms in their U5 children that could be a result of malaria, to give the appropriate course of chloroquine for their age, to share chloroquine properly and to recognize possible adverse reactions from the drug selected, to train other mothers to recognize the symptoms and provide prompt treatment of malaria. Developed for use and reference by mother coordinators, pictorial treatment charts gave standard chloroquine doses by age. The results were measured by the U5 mortality rate following the intervention and verbal autopsies were performed to determine if the child possibly had malaria at the time of death. Below are the results from the study:

Group	U5 Mortality Rate (per 1000 deaths)	Percent Determined to Possibly Have Malaria at Time of Death
Intervention	29.8	19%
Control	50.2	57%

⁸PMI Malaria Operational Plan, Ethiopia, 2014.

6 ⁹Lemma H, Löfgren C, San sebastian M. Adherence to a six-dose regimen of artemether-lumefantrine among uncomplicated Plasmodium falciparum patients in the Tigray Region, Ethiopia. Malar J. 2011;10:349.

Of the 190 verbal autopsies, 13 (19 percent) of 70 in the intervention tabias were consistent with possible malaria compared with 68 (57 percent) of 120 in the control tabias. This study took place from 1996 to 1998 and is one of the first studies identified that is able to clearly demonstrate the impact of a SBCC intervention in malaria case management on mortality outcomes.

Midterm Evaluation Report, Innovation for Scale: Enhancing Ethiopia's Health Extension Package in the Southern Nations and Nationalities People's Region (SNNPR) Shebedino and Lanfero Woredas

The goal of this five-year project (October 2007 to September 2012) was to reduce childhood mortality in Ethiopia by addressing the four main causes of childhood death—pneumonia, malaria, diarrheal disease and neonatal infection. The project aimed to implement the Integrated Management of Neonatal and Childhood Disease (IMNCI) strategy into health centers and posts in the Shebedino and Lanfero districts. Between the two sites, 69,491 U5 children and 87,496 women of reproductive age were reached. The four intermediate results to be measured included access and availability of child health services and supplies, quality of child health services, knowledge and acceptance of key child health services and behaviors, and child health social and policy environment.

Save the Children worked within the existing Ethiopian Federal MOH Health Extension Program to provide additional training to government hired HEWs.

Twenty percent of the overall technical efforts were devoted to prevention and treatment of malaria with early care seeking and appropriate case management at health posts. Following initial training, the HEWs coordinated with the vCHWs to promote behavior change in the use of available services, early care seeking and home management of illness, among other topics. In addition, the HEWs and CHWs were supplied with IEC materials and counseling cards. HEWs were also taught to diagnose potential malaria cases with RDTs in order to provide accurate treatment.

At the midterm review, SBCC-related outputs and outcomes included:

- Sixty-eight percent of targeted HEWs were trained and 72 percent of targeted vCHWs were trained in community IMNCI, leading to increased caretaker reporting of knowledge of key family practices and illness danger signs.

While the review shows an increase in care-seeking behaviors, the study does not disaggregate the specific interventions leading to this increase. In addition, many indicators that would have been related to SBCC interventions were not measured at the time of the midterm evaluation. In focus groups during the midterm review, parents did report overall knowledge of appropriate care-seeking behavior for general illness; however, the specific percentages were not available during the midterm review.

Final Evaluation Report: Innovation for Scale: Enhancing Ethiopia's Health Extension Package in the Southern Nations and Nationalities People's Region (SNNPR) Shebedino and Lanfero Woredas (2012)

The final evaluation of the study by Save the Children provided additional results relating to SBCC. Additional HEWs were trained in clinical IMCI to diagnose and treat patients with malaria. As noted in the midterm evaluation review, while improvements in care-seeking behavior were not linked to specific interventions in the study, there was additional acknowledgement of the work of HEWs and vCHWs from the 2011 Knowledge, Practices and Coverage survey. This survey indicated an increase in the percentage of parents who were able to recognize at least two signs of the onset of illness from 51 percent at baseline to 74 percent at the end of the survey. In addition, there was an increase in the number of children treated correctly within 24 hours of the onset of fever attributed to the training and work of the HEWs and vCHWs.

Goal	Associated Activities	Indicator	Baseline Value	Midterm Value	Final Value
Child with fever receives appropriate anti-malarial	HEW/CHCW trained in clinical and community IMNCl; behavior change intervention: Health Extension Package "16 packages"	Percent of children 0-23 months with a febrile episode during the last two weeks who were treated with an effective anti-malarial drug within 24 hours after the fever began	17%	n/a	47%

Assessment of Production and Distribution of Printed IEC Materials in Ethiopia and utilization in the case of Jimma Zone, Oromiya National Regional State: A Cross-Sectional Study (2011)

This assessment aimed to assess the development, production, distribution and utilization of IEC materials of Ethiopia, and to identify gaps in the current interventions.

Quantitative and qualitative data was collected at the federal, regional, zone and health facility levels in 2009. The data collection included semi-structured questionnaires, check lists, interview guides, face-to-face interviews, in-depth interviews and observations, with 303 health workers participating. While 68 percent of workers reported ever using IEC materials for educational purposes and 59.7 percent had ever distributed them, the overall results from the analysis showed poor development and distribution of materials, and a lack of attention to ethnically sensitive messages. While this study did not have a specific malaria case management aspect, malaria was one of the main topics participants felt needed specific IEC materials.

"Supply of IEC materials is almost discontinued. Currently, IEC activities are lost attention. In addition, IEC materials are not supplied in line with the needs in terms of theme and quantity."

- Key informant at zone level

Rwanda

Rwanda has scaled up malaria control interventions successfully and has set the ambitious goal of achieving pre-elimination status by 2017.¹⁰ If the situation progresses as anticipated, with Rwanda ready for pre-elimination by 2017, SBCC efforts will support risk perception with reminders that malaria can still come back, so people should continue to sleep under nets and be sure to go to the health facility or CHW when presenting with fever. CHWs are vital to malaria case management and 30,000 of Rwanda's extensive network of 60,000 CHWs are mobilized to implement iCCM, diagnosing and treating malaria, diarrhea and pneumonia. In 2011, Rwanda developed and adopted a national integrated SBCC strategy to harmonize the communication activities and messages for health sector interventions, including malaria. The strategy emphasizes advocacy for leadership and direction and social mobilization with an aim to affect positive changes in social norms and individual behaviors. Interpersonal communication within the community is described as the cornerstone of malaria interventions in Rwanda. The 2012 MOP document advocated for operational research to measure the effects of IEC/SBCC programs and use this data to emphasize programs with the most impact. In 2012 and 2013, PMI supported a distance learning radio program aimed at building the capacity of CHWs in iCCM.

The following is an overview of program and project evaluations to date regarding ongoing interventions in SBCC for case management of malaria in Rwanda:

External Evaluation of the Pilot Phase of the Home-Based Management of Malaria Program in Rwanda: Final Report. February 2007: Per request of the Integrated NMCP (Rwanda), USAID's BASICS Project and Rational Pharmaceutical Management Plus Program conducted an interim external evaluation of the Home-Base Management of Malaria Program after two years of implementation in six districts to assess: the effects on

case management of fever in U5 children, including treatment-seeking behavior, the added value of this program to malaria control in Rwanda, lessons learned from implementation that could inform further scaling up and scaling out of the program, and major challenges encountered during implementation and the approaches used to address them. Related to malaria case management, the team found:

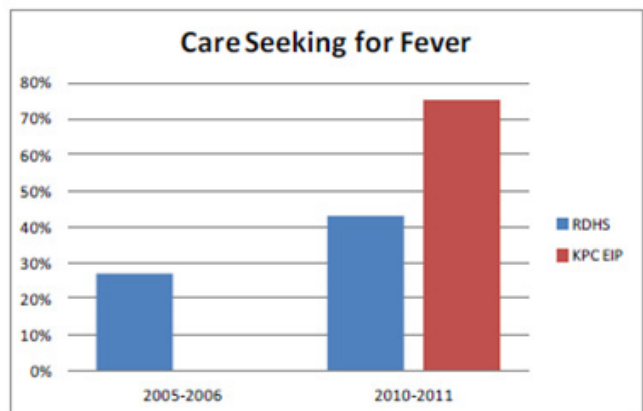
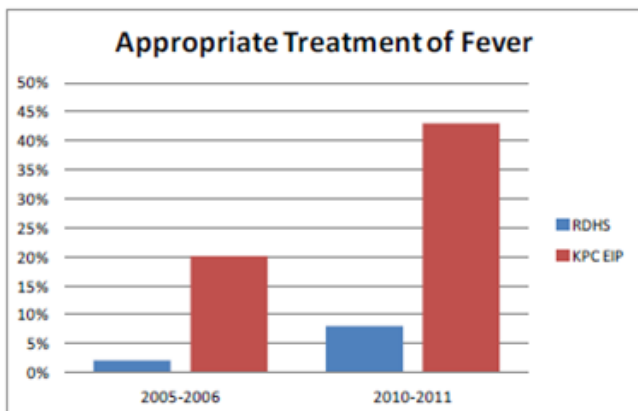
- The World Relief project in Kibogora Health District demonstrated that care-seeking within 24 hours more than doubled between 2004 and 2006, to approximately 80 percent.
- Concern Worldwide experienced an increased from 81 percent to 97 percent of children managed by Distributeurs in Kibilizi District that were brought for treatment to the Distributor within 24 hours of symptom onset.
- In the three districts that constitute Ville de Kigali, preliminary data collected by Distributeurs indicated that from 58 percent to 94 percent of caretakers sought care within 24 hours of the onset of fever within six months of implementation.
- Kirehe District Hospital saw a dramatic drop in severe malaria cases and also a drop in deaths attributed to malaria.

The evaluation included partner interviews, community surveys and other data collection, which resulted in a wide-ranging overview of the current knowledge and practices among health providers, CHWs and care takers, with recommendations that may be useful for future programming.

Final Evaluation of the Kabeho Mwana Expanded Impact Child Survival Program (2011): This report provides a comprehensive evaluation of Kabeho Mwana (“Life for a Child”), a USAID-funded five-year expanded impact projects (EIP). The purpose of the project was to offer CCM of childhood illness and promotion of key community-level health promotion and disease prevention actions in Rwanda in six districts in Southern, Western and Eastern Rwanda: Gisagara, Kirehe, Ngoma, Nyamagabe, Nyamasheke and Nyaruguru. In 2010, the project area had an estimated total population of 1,878,466, equivalent to about 18 percent of Rwanda’s total population of approximately 10.6 million at that time. The project had three main objectives: increasing access to treatment, coverage of key preventive interventions and adoption of key family health practices.

In order to increase adoption of key family health practices, the project engaged community mobilization, social behavior change, care groups and improved counseling. Specifically, this area focused on capacity building and mobilization of CHWs, care groups, local authorities, religious leaders and opinion leaders to educate families. The project used care groups as the main foci for community mobilization and BCC.

Kabeho Mwana used the BEHAVE Framework to analyze determinants of health behaviors including malaria. The formative research also identified health centers, CHWs and radio as the three main sources from which women obtain information. Formative research informed SBCC visual aids that were validated at a workshop and tested in the community, resulting in locally-appropriate illustrations.



Master trainers conducted cascade training for *binômes*, the In-charge of Social Affairs (for counseling cards), members of the Community Development and Health Committees, and religious leaders (for poster messages) in the six districts, along with the distribution of these materials.

Baseline and end-of-project knowledge, practices and coverage (KPC) surveys were the main source of information to assess the population level results of the project. The project's IMCI Bulletin provided several routine data analyses, in addition to MOH service statistics, and district and national data was provided by the MOH Community Health Desk. An end-line health facility assessment was implemented in the quarter prior to the evaluation. The project also carried out a Community Capacity Assessment for health management committees and community development committees.

From 2006 to 2011, appropriate care seeking for fever in the six districts reached 75 percent and appropriate treatment increased from 20 percent to 43 percent. This level of achievement in the six EIP-supported districts may be estimated to represent about a third of the national gains in appropriate treatment during the same period (from 2 percent to 20 percent in the RDHS 2005 and 2010) as indicated in the graphs above.

The final KPC survey indicated that CHWs were the first point of care seeking for 45 percent of caretakers in case of fever. The evaluation states that achievements in care and treatment outcomes, including malaria, are causally related to achievements in the service indicators supported by the EIP strategy. While Kabeho Mwana mobilized significant resources to bring information and health education messages to beneficiary communities, and actively promoted healthy behaviors in the homes of children under five, evaluation of the impact of specific components of communication for behavior change was difficult without better evaluation design, measures of exposure and changes in the expected determinants of behavior, such as knowledge, awareness, intentions and more. However, it is plausible to assess that the amount of communication and reinforcement of practices promoted from health centers to community levels advanced the results presented above.

The evaluation called for a more rigorous review of the data. Landegger, J. et al. provide a sound analysis of the data that supports the findings above, which is one of a series of papers on the Community Case Management (CCM) in the context of community health in Rwanda, and the experience of the Kabeho Mwana Child Survival Project in Rwanda (2006-2011). For example, logistical regression analysis of the 2005 and 2010 Rwanda DHSs evaluating project impact demonstrated that notable improvements in treatment seeking occurred between 2005 and 2010 across all districts in Rwanda. However, the increases were significantly greater in peer support group (PSG) districts than non-PSG districts. Treatment

After results from the midterm evaluation and requests from district officials, the MOH requested that care groups be rolled out to the remaining health centers in each district. This "modified care group" was made up entirely of official CHWs (including all cadres, not just *binômes*), rather than volunteers. As in the original model, each CHW is responsible for monthly visits to 10 to 15 households that included children U5. The *binômes* held their distinctive role in providing specific treatment services in the community, **but worked as a team with other CHWs for behavior change communication.**

These new care groups were rapidly scaled up starting October 2009. A total of 660 care groups were formed over the life of the project. Peer motivation, peer support and peer accountability appear to be motivators among the care groups, but were not quantified.

Some of the most positive components in the BCC approach of Kabeho Mwana to note:

- Home visits and individual counseling, allowing a measure of accompaniment and support to behavior change (although in the setting with strong national mobilization and some range in gentle encouragement to active pressure for behavioral compliance).
- Behavior modeling by and visibility of a group of CHWs in each community.
- Integration of communication into actual life-options modeled and accessible.

seeking for diarrhea and fever from a CHW could not be calculated separately due to changes in the way the questions were asked in the two surveys.

Findings from this review suggest that the PSG model introduced by Kabeho Mwana was effective for integrating health promotion with preventive and curative services, in addition to facilitating CHW supervision and performance improvement. The authors state the presence and visibility of CHWs in their communities, through their home visits and community mobilization initiatives, could have been a factor in the increased CHW utilization. Compared with the standard MOH structure wherein each type of CHW is supposed to reach the whole village with messages limited to their CHW function, PSG members split up village households among the group and worked cross-functionally with regard to BCC. This repeated, familiar contact with fewer households could have contributed to CHWs' ability to influence healthy behaviors in project districts. This is further supported by a mixed methods evaluation of the iCCM project by Langston, A. et al, which found that PSGs were a unique contribution of the project and played a critical role in improving care-seeking in project districts.¹¹

Several other reports have been identified that tell the story of the Kabeho Mwana project and are listed in the Annex for reference. One of these reports worth noting is the World Relief/Rwanda Child Survival Mid-Term Evaluation September 2004. The box below highlights interesting observations to note from the evaluation team:

- The Project's unique community-based health information system and its system of local rapid assessments allow for measurement in changes in behavior on a quarterly basis to make rapid adjustments if appropriate progress is not happening.
- Key "innovations" were noted:
 - The use of peers to educate in the care groups and among volunteers is empowering, and allows for immediate application of what they have learned.
 - "Cascade approach" to training: senior project staff members are trained, they then train the junior project staff members, who then train the volunteers.
 - Simplicity of the messages, the availability of indicators to monitor progress in the implementation of the messages, and the monitoring and evaluation (M&E) methods for monitoring progress.
 - Strong presence of supervisory staff in the field to directly observe progress.

Senegal

In November 2012, Senegal updated its 2008 national strategy for malaria communication to support the goals and objectives described in the 2011-2015 National Strategic Plan.¹² The strategy includes the following indicators for case management:

- Increase the proportion of people who seek care at health facilities within 24 hours of the onset of fever from 45 percent to > 80 percent.
- Increase compliance in the treatment of uncomplicated malaria.

Currently the efforts to evaluate the impact of the different communications activities on health and malaria indicators, such as long-lasting insecticide-treated net use or care-seeking behavior, have been limited.

On the next page is a summary of the reports and evaluations to date regarding the impact of SBCC on case management in malaria in Senegal.

¹¹Langston, A. et al. Plausible role for CHW peer support groups in increasing care-seeking in an integrated community case management project in Rwanda: a mixed methods evaluation. *Global Health: Science and Practice*. 2014, Volume 2(3).

¹²Malaria Operational Plan, Senegal, 2014, PMI.

Progress and Impact Series, Focus on Senegal, Roll Back Malaria (2010)

The SBCC efforts focused on the 2005 AFRICA LIVE concert spearheaded by Youssou N’Dour, “AFRICA LIVE: The Roll Back Malaria Concert,” which was estimated to reach approximately one billion people worldwide with malaria messages. This led to a Senegalese focused campaign in 2009, launched by the initiative, Senegal Surround Sound, in association with the NMCP and Malaria No More, called Xeex Sibbiru (“Let’s beat malaria” in Wolof). The messages were spread through business and sports personalities, the media and religious leaders. The Xeex Sibbiru campaign, an innovative public-private partnership, used multiple communication channels for its malaria prevention messages, including a national singing competition, the network of CHWs and the mobilization of civil-society partners. The indicators, while not providing evidence of impact, reported details about the campaign’s reach and partner involvement.

Indicator	Before Surround Sounds (June 2009)	Since Surround Sound (Nov 2009)
Percentage of the population that remembers at least one part of the campaign.	-	64
Number of large companies or organizations actively fighting malaria.	1	8
Number of national religious institutions involved.	0	3
Number of well-known spokespeople at the national level (musicians, religious leaders, athletes, actors).	2	30

USAID/BASIC’s Senegal Program, 1994 - 2006

This report focuses on the project’s achievements working in collaboration with the Senegal MOH and its partners since 1994. The introduction of antibiotic-based (cotrimoxazole) treatment of pneumonia into Senegal’s community-integrated management of childhood illnesses structure was the main intervention supported by USAID/BASICS, while community-based treatment of malaria and diarrhea was limited. USAID/BASICS worked with partners to develop an integrated training manual for members of the relais (CHW) association, an initiative initiated by USAID to formalize health promotion, IEC and social mobilization activities. Across 123 communities, 3,000 community relais were trained in community-integrated management of childhood illnesses, which focused on home visits, counseling sessions and social mobilization events.

iCCM of Childhood Illness: Documentation of Best Practices and Bottlenecks to Program Implementation in Senegal (2013)

Methods include qualitative and quantitative data collection from a sampling of national-, regional-, district- and community-level sources and were analyzed to identify successes and challenges of the program. The documentation team noted promising practices and barriers in SBCCs, highlighted below.

Promising Practices
<ul style="list-style-type: none"> Adequate BCC materials are available for the various categories of CHWs; they combine their efforts with local theater groups targeting perceived harmful traditional practices. Specific communication campaigns, combined with home visits to provide malaria prevention and treatment messages, insecticide-treated net (ITN) distribution and re-treatment campaigns, as well as events addressing hygiene and sanitation. This can be replicated to cover other elements of iCCM to complement routine communication activities.
Challenges and Barriers
<ul style="list-style-type: none"> Informational content centered on recognition of danger signs and encouraging families to seek early care is not always sufficient in the IEC/BCC campaigns. Caregivers do not always comply with referrals, preferring to visit a religious leader instead.

The team also documented some successes in the communication and social mobilization component. Examples include two popular television series and an initiative called “Badiénu Gox,” based on the Senegalese tradition that a paternal aunt has a certain duty for the well-being of her brother’s family.

iCCM: Findings from Senegal, the Democratic Republic of the Congo, and Malawi: A Synthesis Report (2013)

As a follow-up to the 2012 documentation in Senegal, a synthesis report generated themes in SBCC that were successful and bottlenecks. The findings could be helpful in future program design and are illustrated below.

Facilitating factors: Strong mass media campaigns were well received and perceived as very efficient. Involvement of village elders increased sense of local ownership and local leaders had a positive role in their IEC/BCC campaigns.

Constraining factors: Media campaigns are expensive and not sustainable. Specific messages on danger signs and proper care-seeking behaviors were diluted in general mass communications messages. Specific messages on danger signs and proper care-seeking behaviors were diluted in general mass communications messages.

Lessons learned: Leadership from the MOH can help stakeholders establish consensus on key messaging and social mobilization approaches. Experience shows that the incorporation of local leaders into CCM programs can help increase knowledge of danger signs and usage of CCM services. A challenge is maintaining attention on key danger signs and CCM services, while not detracting attention from other important community health messages. This challenge highlights the importance of conducting a thorough landscape analysis in early planning phases to ensure the CCM program is part of a larger community health BCC strategy.

PECADOM PLUS: Increasing Care Access and Reducing Morbidity in Rural Southeast Senegal through Active, Home-Based Surveillance and Treatment of Malaria

This pilot project expanded Senegal’s home-based management of malaria program, PECADOM. The added component included training and financially motivating home-based care providers to conduct weekly, village-wide house-to-house sweeps to identify and treat malaria cases, rather than rely on passive detection. Village care groups were also trained in signs and symptoms recognition and assisted the health worker in case detection and encouraging treatment compliance. The intervention zone, Missirah Dantila, showed an increase in effective use of RDTs and among patients receiving ACTs in a timely manner for uncomplicated malaria. The high proportion of uncomplicated malaria cases identified as a proportion of the total malaria numbers in 2012 was indicative of a positive change in treatment-seeking behavior. Care group members were present in each compound and able to monitor their own families, recognizing malaria-like symptoms and encouraging early care seeking.

Lessons Learned from The USAID/SÉNÉGAL Community Health Program, Its Final Evaluation, as Implemented by ChildFund (2011)

The goal of the Community Health Program (CHP) was to ensure widespread access to a basic package of primary health care services in rural communities, mainly through revitalizing and supporting an existing, but underutilized, network of health facilities known as “health huts” or cases de santé. The team included a CHW or Agent de Santé Communautaire, responsible for treating patients in the facility and referring those requiring treatment by a trained clinician to the nearest Health Post; one or more trained birth attendants, or matrones, to provide counseling about pregnancy, attend emergency deliveries and offer family planning information to interested women; and outreach workers, who reached out to the community, organized causeries or discussion groups, with community members in their homes and villages to discuss health issues, promote healthy behaviors and encourage use of the preventive and curative services available to them.

This final evaluation highlights the successes, challenges and lessons learned over the five-year period, including case management of malaria. A qualitative evaluation component was included to gather information on changes that may have occurred, as a result of CHP interventions, in KAP favorable to improved health in target populations. Important highlights of this evaluation are listed below:

- During visits to areas covered by the CHP, the evaluation team saw and heard sufficient evidence that inputs from the program were leading to increased awareness among women and men regarding the causes of illness and the importance of healthy behaviors to the overall health of a community.
- The increased awareness was reflected in a gradually increasing level of confidence in, and use of, services available at the case de santé (health center).
- Important reductions in sociocultural barriers limiting utilization of health services by individuals and families, especially in rural areas, were identified.
- The CHP developed a number of innovative strategies to overcome socio-cultural barriers, including the cultivation of support from social groups, such as religious authorities, village chiefs and other community leaders.
- The “grandmother strategy,” designed by the Grandmother Project and pilot-tested by ChildFund in Mbour in 2000-2001, helped to gain support among influential figures in local society in promoting improved health of their children and grandchildren.
- From discussions with members of these committees, it became clear that generating resources from the community can be a difficult and lengthy process.
- Motivation and sustainability of the CHWs and organized community entities were highlighted as a challenge.

While not case management, it is interesting to note that data provided from the end line survey shows women who had the highest exposure to maternal health messages over the course of the program were more likely to deliver in an institution than women who had less or no exposure to the messages.

Zambia

The Zambian NMCP’s vision in their 2011-2015 Malaria Strategy is to achieve progress toward a “malaria-free Zambia” through equity of access to quality-assured, cost-effective malaria prevention and control interventions close to the household. The NMCP has a comprehensive SBCC strategy, which illustrates the challenges Zambia will face as it moves forward in malaria control. Recent data from the 2012 MIS demonstrates that women aged 15 to 49 had heard about malaria (96 percent), 67 percent had heard a message from a health provider and 42 percent had heard it from other sources (including PMI-supported BCC).¹³ In this strategy, the following main BCC objectives were identified:¹⁴

Diagnosis	Treatment
<ul style="list-style-type: none"> • To increase the percentage of people able to state the advantages of having a malaria diagnostic test when they suspect that they have malaria, from the 2011 baseline to more than 90 percent in the next two years. • To increase the percentage of health workers who regard conducting a malaria diagnostic test before prescribing malaria treatment as essential, from the 2011 baseline to near 100 percent in the next two years. • To increase the percentage of drug store and pharmacy operators able to state the importance of malaria diagnostic testing and the dangers of dispensing malaria drugs to clients who are not confirmed to have malaria, from the 2011 baseline to more than 90 percent in the next two years. 	<ul style="list-style-type: none"> • To increase the percentage of people who know the signs and symptoms of malaria, from the 2011 baseline to more than 90 percent in the next two years. • To increase the percentage of people able to describe correct medicines and dosages for treating malaria, from the 2011 baseline to 80 percent in the next two years. • To increase the percentage of men and women who recognize malaria as a serious disease and, hence, do not delay in seeking treatment, from the 2011 baseline to more than 90 percent in the next two years. • To increase the percentage of people who know the dangers of inappropriate treatment for malaria (self-administration, traditional healers and private pharmacies), from the 2011 baseline to 80 percent in the next two years.

14 ¹³Zambia Malaria Operational Plan, 2014. PMI.

¹⁴Zambia National Malaria Communication Strategy, 2001 - 2014

The following is an overview of program and project evaluations to date regarding ongoing interventions in SBCC for case management of malaria in Zambia.

Evaluation: Midterm Evaluation of the USAID/Zambia Communications Support for Health Program (2013)

The purpose of this evaluation was to help determine progress made under the Communications Support for Health (CSH) project toward achieving life-of-project targets and what components of the program were working well. Recommendations were provided for the remainder of the SCH project implementation in achieving its objectives. Both quantitative and qualitative methods were carried out to answer the evaluation questions posed. The methods evaluated three campaigns: the Safe Love Campaign, the Mothers Alive Campaign and the STOP Malaria Campaign. The malaria campaign focused on promoting the testing for malaria parasites before treatment, intermittent preventive treatment in pregnancy and the use of ITNs. Some observations were discovered worth noting:

- Stop Malaria campaign recall in Zambian communities was low; few groups could identify with the campaign as compared to other campaigns operating simultaneously through multiple channels.
- CSH carried out an institutional assessment to identify gaps in designing and implementing SBCC activities, followed by a formative research trainer of trainers workshop for Government of the Republic of Zambia staff to transfer skills on how to conduct formative research; however, M&E was not included.
- A plethora of materials have been produced that are extremely high quality, however, with the exception of TV and radio, which seem to have higher viewership and listenership, print materials are not reaching the provinces and districts.
- M&E plans were put in place for all three campaigns to track campaign inputs, processes, exposure to campaigns (campaign outputs) and outcomes (KAP); however, the qualitative analysis from this report indicates that although tracking exposure to and outcomes of IEC/BCC activities are planned, this is yet to be done.
- Gathering of evidence for evaluation of campaigns remains a challenge as no effective mechanisms exist to track exposure to and outcomes of campaigns, nor their effectiveness in promoting behavior change.

CSH Stop Malaria Campaign Champion Community Initiative Survey Report, June 2013

Although the previously mentioned evaluation did not show a strong effect from the mass media campaign, CSH also employed a community-level initiative that supported participating civil service organizations to mobilize their community members to improve uptake of various malaria control and prevention interventions and services.

District	Proportion of Population with Fever the Past Two Weeks		Proportion of Population with Fever the Past Two Weeks Who Got a Malaria Test	
	April/May 2013 (Baseline)	June 2013	April/May 2013 (Baseline)	June 2013
Chadiza	29%	n/a	85%	n/a
Chipata	23%	n/a	64%	n/a
Kasama	23%	6%	78%	85%
Kaoma	40%	25%	52%	94%
Mansa	33%	17%	91%	87%
Mongu	27%	9%	64%	63%
Mpulungu	26%	10%	68%	85%
Samfya	35%	12%	62%	83%
Total	30%	14%	71%	86%

Civil service organizations supported communities to establish their own goals and action plans, design their own community activities, conduct monthly self-monitoring and use public presentation of the data/ progress toward goals to motivate everyone in a community to participate. It was implemented through CSH sub-contracts with five civil society organizations in 131 communities across eight districts and four provinces of Zambia. Comparisons from baseline to end-line survey results showed an improvement in malaria testing, which increased from 71 percent at baseline to 86 percent at the end-line. The table below shows the results from the districts. While this indicates an impact of the Champion Community Initiative on behavioral health outcomes, the report notes that the mass media campaign took place concurrently, so the data must be viewed in this light.

Health Communication Partnership, Zambia: Life of Project Report 2004 – 2009

This report discussed the four strategic approaches of the Health Communication Partnership in Zambia over the life of the project. The aim of the project was to encourage the community and individuals to take positive action for health. Districts participating in the partnership selected the health issues most pressing to them, including malaria. As part of the malaria intervention, radio programming, community dramas and community health information cards were used to increase public awareness. The Malaria Task Force objectives were to plan, implement, monitor and evaluate, and advocate, in order to reduce the incidence of malaria. Behavior change indicators, however, were not discussed. The report states that by the end of the project, participants were more likely to take protective action (i.e. sleeping under ITNs), but does not mention case management.

RBM Progress and Impact Series Zambia (2011)

The document focuses on the successes of prevention and control interventions and subsequent scale-up from 2006 to 2011. Among the successful interventions cited, community leaders, health workers and radio were used to promote behavior change and transmit malaria messages. Aside from mentioning that using CHWs to test and treat malaria (through the use of RDT) transformed malaria case management in Zambia, no data is presented.

Country Report HSS Roundtable, Clover Country Report, Zambia

The report highlights successes of the Clover Project (phases II and III) under the Malaria Consortium in Zambia and discusses key lessons learned, with recommendations. Malaria case management training was provided to staff at rural health centers and among CHWs in five pilot districts, including administration of RDTs, diagnosis and treatment of malaria, and record keeping of RDT and ACT supplies. Outcomes reported include improved case management of non-malaria cases, reduced reported cases of malaria and numerous ACTs saved. No indicators relevant to malaria case management were discussed.

Salvation Army/Zambia (TSA), Salvation Army World Service Organization and TSA Chikankata Health Services Chikankata Child Survival Project, 2005-2010

The Chikankata Child Survival Project (CCSP) aimed to reduce maternal and under-five child mortality in the Mazabuka and Siavonga Districts of Zambia's Southern Province. The project focused primarily on The Care Group methodology. Care groups, in this case, used a paid facilitator living in the area to teach new health messages to a group of 10 to 15 care group volunteers every two weeks, wherein these messages are then shared with 10 to 15 beneficiary mothers who are neighbors. The care group volunteers are chosen by communities to ensure that all households in the village with beneficiaries are included in the program. The health education messages focused on malaria, nutrition, maternal and newborn health, and immunizations.

End-of-Project Objectives: At the end of the project, the percentage of children with fever whose parents sought care for them from an appropriate source within 24 hours showed a statistically significant increase of 23.3 percentage points. No end-of-project target was established for this indicator.

The second major cross-cutting strategy was strengthening of services at the health care facilities in the project area. This included quality of care assessments, training and logistical support. Refresher training

also was provided to CHWs and TTBA's in the project area on malaria, nutrition, immunizations and safe motherhood/neonatal care.

Forty percent of project efforts focused on increasing care-seeking behavior for fever as malaria at that time was the primary cause for U5 consultations at all levels of the health system in both districts. Health education messages focused on malaria (transmission, ITN importance and intermittent preventive treatment in pregnancy, signs and symptoms of malaria in children, and the importance of early care seeking from a trained provider), in addition to other child health areas. There was a significant increase in care seeking for malaria among caretakers, but original objectives and final outcomes seemed to shift in malaria case management. In the Fourth Annual Report of CCSP, one year before the project ended, the following data was reported:

Objectives	Baseline Jan 06	Mini KPC Feb 07	CG Records Ave. July-Sep 09	Target	Target Achieved (per KPC and CG data)
Percent of children 0-23 months with a febrile episode that ended during the last two weeks who were treated with an effective anti-malarial drug within 24 hours after the fever began.	10.5	25.0	Not tracked by care groups	65.0	Not yet

Qualitative data was collected at the end of the project to expand upon the end of project survey. It was noted that respondents commented on the decrease in maternal and child deaths and indicated that mothers were more able to recognize danger signs in sick children and were more willing to seek early care at health centers. While this data is promising and is one of few evaluations measuring the impact of a type of SBCC intervention on malaria case management outcomes, other factors must be considered. This includes the services strengthening and training provided in project areas.

Perceptions from the Field (KIIs)

The following is a summary of the themes generated from the KIIs.

Malaria communication strategies and coordination of messaging and approaches:

All four countries have a malaria communication strategy in place, while the detail and process varies. At the national level, each country has a type of technical working group that seems to be fairly effective in coordinating partners to align with the national communication strategy. Some respondents felt the communication strategies were rather generic and detailed implementation plans would be helpful based on specific behaviors, regions, and cultural and social determinants. In 2012, Senegal’s NMCP organized a participatory workshop with all relevant actors, including the health education service, at both central and field levels to revise the communication strategy.

Effective messages in changing KAP related to malaria case management:

Respondents cited messages, including rational drug use, timely and appropriate use of medication, completion of medication doses, enhancing early diagnosis and prompt treatment-seeking behavior and avoiding sharing anti-malaria drugs, and regarding iCCM, the awareness of mothers and caretakers on danger signs. Another key area for messaging focuses on social norms; for example, one informant in Zambia indicated that their research strongly indicated that people really truly accept malaria as part of life. This norm guided the project to focus on changing social norms around this and make people feel like they have a responsibility to their children to limit the affect malaria has on them.

Interestingly, respondents focused more on the importance of the channel or influencer in the message delivery as a factor in changing KAP. For example, one informant stated:

“And especially still in the rural areas where malaria has hit the hardest, household-level communication, IPC and community-community radio has shown to be most effective. Traditional leaders, like chief and headmen, still carry a lot of weight here and that can really go a long way with acceptance...”
- Zambia KII

Community-level and interpersonal approaches were perceived as the most effective channels for SBCC among the four countries. In Rwanda, a combination of radio and community approaches, including the use of existing gatherings, such as Umugandas, are perceived as most effective. This is similar to Senegal, where local communication activities with community involvement are combined with community radio and mass communication activities in urban areas (i.e. TV, poster campaigns). In Zambia, a case-control study was carried out in Luangwa area related to bed net use and showed the effectiveness of door-to-door community approaches. Local language and literacy are also important considerations at the community level. One respondent focused on eliciting the change rather than giving the message:

“I think we’re at the stage where people understand messages and there’s enough knowledge. Attitudes are pretty good. They understand that you need to take care of it now versus waiting it out. And that understanding can’t be done by just pushing out information. One-on-one and interpersonal communication, stronger linkages with facilities and a stronger understanding of the facility has created better dialogue between the community and the facility.”
- Zambia KII

An informant in Senegal raised a good point about targeted message development:

“I think to get back to standard approach, you have to understand where people are coming from and what’s motivating their behavior. For example, if people are waiting at home and not seeking care for two or three days if a child has a fever, well, you have to understand why they doing that and address it. So it’s a little bit hard to say, but in general, the best messages are the ones that are actually getting to people’s motivations.”

Process of messages and materials development:

In some instances, USAID implementing partners facilitate the coordination of materials and messages, as is the case in Ethiopia, through a communications taskforce. Zambia also has a committee/technical working group, which reviews materials for their suitability in its population, and recommends changes as required. With support from the CSH project, guidelines were designed for developing, evaluating, pretesting and reviewing materials, which has built the capacity of technical members. In addition, a USAID implementing partner, CSH, uses a process called Behavior-Centered Programming, which allows research to be turned into effective strategies and approaches to change behavior. The process includes extensive networks of stakeholders and is partly driven by the National Malaria Control Centre. In Senegal, partners ensure harmonization of messages between partners through an inclusive approach during the conception of the strategy and communication campaigns, and implementation of an IEC commission with all related partners.

Evaluation of SBCC interventions:

Respondents from Ethiopia and Zambia mentioned that there was evidence that certain SBCC interventions were measured and showed the impact of the intervention on malaria case management outcomes. This includes the Champion Communities intervention in Zambia. The specific reference in Ethiopia was unclear; however, another respondent from Ethiopia, when asked if SBCC activities for case management were evaluated or monitored, indicated that:

“The problem is that messages crafted by the Ministry cause a big gap. We never even test the messages, we just craft and disseminate them to the community.”

A number of KAP surveys have been carried out or planned to be carried out in the next year. In addition, data is collected from the MISs. Zambia has an ongoing community data collection through mobile technology

integrated into the DHIS2 health information system. In addition, one respondent from Zambia described a project using data to motivate behaviors and build accountability:

"...The program used monthly data collection at the household level to motivate the key behaviors—every single month, people were asked whether or not they were practicing or not practicing the key behaviors and if not, why not. They were provided on-the-spot counseling around the behaviors that were still challenges in the household. Then, the data was aggregated at the community level using a tracking tool shaped like a hut. Each month, community volunteers would present the collective data to the community. In the first meeting, communities set goals based on where they wanted to be for each indicator, and then the monthly meetings were used to chart progress. District Government of the Republic of Zambia staff were trained and supported to provide supervision to the program and to use the community data."

Perceived efficacious SBCC approaches:

Community-based and interpersonal approaches were perceived as the most effective SBCC approaches related to malaria case management. This includes door-to-door approaches, materials in local languages and made for low-literate populations, community radio, use of CHWs and job aids, community dialogues and strong linkages between community groups and clinics. One informant from Ethiopia stated:

"Creating community ownership is key for SBCC."

In Rwanda, the use of Umugandas has been particularly effective according to respondents in sharing case management messages. In Ethiopia, the Health Extension program with its iCCM is an initiative that was highly recommended for replication by other malaria programs by respondents. One informant in Zambia emphasized the need for community engagement to avoid a push system of messaging:

"...That understanding that you need to take care of [the disease] now versus wait it out, and some of the signs [of disease]. I think at the same time around case management...It's just getting to that practice from where we are right now. And that can't be done by pushing, pushing out information."

Another informant from Zambia emphasized how community approaches can lead to data for decision making:

"...The use of IPC is critical, but more than that, it is creating a system that allows communities to see their starting point and their progress, i.e. data. This has been the most powerful tool for behavior change possible."

Future SBCC approaches and programming:

Respondents recognized severe malaria in countries that are reaching pre-elimination need targeted approaches to address these arising issues, including risk perception. In areas that are considering mass drug administration, such as Zambia, this is another area that needs an SBCC focus. In addition, stronger linkages between communities and providers was recommended. This includes accountability at all levels to achieve specific behavioral outcomes within communities and a stronger focus on health care providers at the clinic level. Appropriate materials were suggested for health providers, as the messaging focus has typically focused heavily on the community level. Furthermore, additional research to hone in on particular beliefs, social norms and motivations in care-seeking behavior is needed to craft approaches and messages that go beyond the general "seek malaria treatment early" or "sleep under your ITN every night." One respondent from Zambia, when asked what future SBCC approaches should emphasize, said:

"...The provider, whether it be facility or CHW, behavior change (changing provides knowledge, attitudes and practices in regards to malaria case management), supervision is key and needs to be done regularly, documented and follow-up needs to be done consistently."

SUMMARY AND CONCLUSIONS

As PMI countries have different malaria endemicity, and some PMI countries are moving toward pre-elimination, there is a particular need to specifically tailor messaging toward these populations and malaria-specific issues. In addition, all four of these countries have experienced sharp reductions in malaria prevalence and have reached scale among certain interventions. As such, mass drug administration is being considered for countries in pre-elimination, which warrants a different SBCC approach. There is a need to build capacity of NMCP and SBCC units to undertake strategic and technical leadership. As community-based delivery systems are continuously becoming a major aspect of service delivery, it is crucial to ensure community SBCC approaches are well thought out and in line with the current epidemiological trends and social norms.

Limitations in Desk Review

As in any desk review, there are limitations to note. While a comprehensive approach resulted in quality evidence for this review, it was limited to the English language. Some of the KII's were challenging due to poor Skype connections, availability of informants and some language barriers. Despite these limitations, the desk review and qualitative analysis provide concrete documentation, as well as solid recommendations for future SBCC design and programming in malaria case management.

Below provides a summary of the evidence, the future vision and how to achieve that vision, followed by recommendations based on the analysis in the desk review and qualitative data.

Where are we now?

Evidence of impact of SBCC interventions on malaria case management:

While the review was not able to find a substantial amount of material to show gains in the ability to measure impact of SBCC interventions in malaria case management outcomes, it did identify one randomized study in Ethiopia that could demonstrate the impact of an SBCC intervention on malaria case management and U5 child mortality.¹⁵ In addition, several of the programs were able to measure changes in care-seeking behavior and uptake of ACTs; however, these types of programs need to be refined in order to measure the specific contribution of malaria SBCC interventions.

Variety of interventions and definitions:

Within SBCC programs, often multi-channel, multi-level interventions are used to maximize impact on KAP in target populations. It can be difficult to find SBCC details specific to case management and/or CCM, partly because these strategies are often embedded in projects delivering many other interventions.¹⁶ Nonetheless, projects and programs are making a concerted effort to collect data on KAP related to malaria case management, as seen from this four-country analysis.

The review of the literature also revealed that frequently malaria case management research does not include an analysis of the SBCC components, nor is it factored into the research design. It is interesting to note that most of the projects that showed promising practices in this review consist of smaller pilot projects or smaller grants, with fewer examples from five-year USAID-funded contracts and/or grants. This could be due to the nature of a smaller program and ability to dedicate more financial and human resources to M&E, as opposed to a larger flagship program.

In iCCM, it may be difficult to say which SBCC interventions are the most effective, depending on how they are defined. Integrated programming with CHWs as health promoters has shown to increase health care-seeking behavior, but it has been difficult to show what specific component of SBCC may have contributed to changes in care-seeking for malaria, as highlighted by Seidenberg, P., et al.¹⁷

¹⁵Kidane, G. and Richard H Morrow. Teaching mothers to provide home treatment of malaria in Tigray, Ethiopia: a randomised trial. *The Lancet*. Vol. 356. August 12, 2000.

¹⁶Marsh, D. et al., What Did USAID's Child Survival and Health Grants Program Learn about Community Case Management and How Can It Learn More? A Review of 22 Projects since 2000. June 29, 2012. http://ccmcentral.com/wp-content/uploads/2014/08/CSHGP-CCM-Report-Combined_MCHIP_2014.pdf

¹⁷Seidenberg, P., et al. Impact of Integrated Community Case Management on Health-Seeking Behavior in Rural Zambia. *Am. J. Trop. Med. Hyg.*, 87(Suppl 5), 2012, pp. 105–110. http://www.ajtmh.org/content/87/5_Suppl/105.long

Lastly, what is meant by “impact” is defined differently among organizations. The Roll Back Malaria Communication Community of Practice’s Malaria SBCC Indicator Reference Guide is a good example of a document that can be used to help define what is meant by impact, versus outputs and outcomes.¹⁸ The guide provides the purpose, indicator definition, numerator and denominator, measurement of the indicator, interpretations, strengths and limitations of each indicator. It would be valuable to enhance the document based on this review with ways to design programs, using the indicators provided, to measure impact of SBCC interventions on malaria case management.

Social science’s role in malaria case management:

A critical review related to social science in malaria control showed that decisions about provider choices and which drugs to use are made systematically, based on prior illness and treatment experiences, local beliefs about how illnesses should be treated, comprehension of illness etiologies, recognition of patterns of symptoms, influence of social networks and a realistic appraisal of available options.¹⁹ Furthermore, the review cites several factors that may limit the potential contributions of SBCC to malaria case management. These include:

- Lack of involvement of trained social scientists in malaria control.
- Lack of awareness by MOHs, malaria-control programs and many non-social science researchers of the variety of disciplines within social and behavior science and the expertise and assistance each could offer.
- Lack of awareness by social scientists themselves of the constraints faced by malaria-control programs and the presentation of results that often are not easily interpreted or used by program personnel.
- The expectation that including a “social scientist” on a program can solve all the issues related to challenges in social and behavior change in malaria control.

What is the future vision?

There is evidence that it is feasible to ensure SBCC interventions are well defined within malaria case management programs, that these interventions are linked to quantifiable measurements and can attribute impact to specific interventions. Although the evidence is limited, both human and financial resources exist through donor funding, projects and programs, as well as coordinating mechanisms that can foster discussions to expand the evidence. These include:

- Advocacy and capacity building among MOH and country programs to include extensive planning, training, and M&E planning in SBCC for malaria case management.
- Alignment and integration of SBCC and malaria case management planning, from the Malaria Operational Planning stages through program implementation and evaluation, including key participants in social science and malaria prevention and control.
- Emphasizing the focus on producing SBCC evidence of the same scientific standard and rigor which is produced for other public health interventions.

How will the future vision be achieved?

Care groups and community approaches as a SBCC intervention:

The effectiveness of the Care Group approach has been documented in multiple project evaluations outside malaria case management.²⁰ This review also demonstrates effectiveness, albeit not solely on malaria care management, of the Care Group approach, specifically considering PSGs. Some evaluators of this methodology within completed projects feel this should be considered a strong SBCC intervention, and can be very powerful and effective provided resources to scale up.²¹ One of the weaknesses of the care group approach as implemented thus far is its dependence on non-governmental organizations (NGOs) to

¹⁸Malaria Behavior Change Communication (BCC) Indicator Reference Guide. Roll Back Malaria, February 2014.

¹⁹Williams, H. and Caroline O.H. Jones. A critical review of behavioral issues related to malaria control in sub-Saharan Africa: what contributions have social scientists made? *Social Science & Medicine* 59 (2004) 501–523.

²⁰Perry H, Morrow M, Davis T, Borger S, Weiss J, DeCoster M, Ernst P. 2014. Care Groups – An Effective Community-based Delivery Strategy for Improving Reproductive, Maternal, Neonatal and Child Health in High-Mortality, Resource-Constrained Settings: A Guide for Policy Makers and Donors. CORE Group: Washington D.C. http://www.coregroup.org/storage/documents/meeting_reports/Care_Group_Policy_Guide_Final_8_2014.pdf

²¹Personal communication, Henry Perry, November 13, 2014.

develop and facilitate the activities; however, Concern Worldwide carried out an operations research project in Burundi measuring the effectiveness of the traditional NGO care group project structure (in which the care group facilitators are paid by the NGO) against an alternative approach wherein care group facilitators are MOH CHWs. The findings indicate that MOH CHWs are as effective as NGO-paid promoters in expanding the coverage of key interventions and the MOH of Burundi is now considering integrating the care group approach into its delivery system.

Each country reviewed presented a program/project related to either the care group model or a model with a strong community component, and holds promise for further exploration in terms of launch points to expand the measurement of SBCC impact, as illustrated in the table below.

Senegal	PECADOM Plus	<ul style="list-style-type: none"> • Program is being scaled up and is timely to explore the potential to add measurements for SBCC impact. • Unable to quantify the impact of volunteer care groups played in increasing the total number of cases tested and treated to reduce the burden of severe malaria.
Zambia	Salvation Army World Service Organization	<ul style="list-style-type: none"> • The Care Group model was very successful in increasing care seeking for malaria among caretakers. • Forty percent of the overall project was dedicated to increasing care seeking behavior for fever as malaria. • It is difficult to assume the same results without the secondary components included in the approach.
Ethiopia	HEW working with vCHWs	<ul style="list-style-type: none"> • By linking vCHWs to established HEWs and training, both with IEC materials, significant gains in malaria case management were achieved. • It is difficult to distinguish the SBCC component that may have contributed to these results.
Rwanda	Kabehe Mwana	<ul style="list-style-type: none"> • Through the care group approach, measured changes at several levels in behavior on a quarterly basis to make rapid adjustments as necessary. • Peer education/PSGs were innovative and empowering, and proved to increase care seeking.

An example of one country able to scale up the care groups approach is Mozambique. The Vurhonga IV Child Survival Project appears successful from multiple sources, including KPC surveys, interviews with community and MOH officials, and information from the community-based health information system.²² The Vurhonga staff developed the Care Group model initially and has been refining it now in this geographic area for the past 15 years. The Lives Saved Tool, developed at Johns Hopkins University, was used to determine that project saved an estimated 534 lives of under-5 children, and the overall decline in under-5 mortality was estimated to be 21 percent.

Criteria for introduction and scale:

Each country has its unique technical, economic, structural, social and cultural landscape, as well as unique government structures and partnerships. Criteria for the introduction of care groups or other community-emphasized approaches should be considered by these components. It may be advisable to start in districts that are at the highest attainment among the criteria and gather lessons learned from those districts. This could assist in an incremental scale-up, recognizing that the most resource-poor, high-burden areas will need additional support. The table on the next page illustrates examples of criteria across the components to consider.

Component	Criteria to Consider
Technical	<ul style="list-style-type: none"> Evidence of demonstrated success in community-based interventions. CHWS trained and literate/moderately literate at the community level. Capacity to design and train with simple, effective educational messages.
Government Structures and Partnerships	<ul style="list-style-type: none"> Political willingness and/or readiness to support introduction. Effective partnerships within MOH and among partners at the national, sub-national, district and community level. Managerial and technical support from key donors. Leadership and coordination skills among implementing partners and MOH.
Economic	<ul style="list-style-type: none"> Financial support secured from donors and MOH. Support/involvement from the Ministry of Finance. Microfinance schemes available for sustained income generation.
Structural	<ul style="list-style-type: none"> Strong cadre of CHW/village health teams. Evidence of robust community capacity. Infrastructure, including transport systems, in place. Retention strategy prepared or in the process of being prepared.
Social/Cultural	<ul style="list-style-type: none"> Acceptability of considering changes in current social norm structure within the community. Presence of champions/community leaders to support initiative.

New orientation for field work:

The field must move beyond understanding behaviors through solely documentation (at individual, community, health facility or governmental level). There must be an understanding and exploration of the larger contexts in which those behaviors operate, examining the relative 'weights' of factors influencing behavior within specific contexts.²³ This type of research requires a different orientation than the typical ways in which SBCC components of many malaria research projects have operated.

In addition, care-seeking must be fully understood, and this comes from appropriate formative research available across a variety of determinants including socio economic factors, rural vs. urban settings, gender, behavioral influencers, social norms and so forth. Some formative data used for planning tends to be quite broad and does not take into account the nuances in cultural and traditional beliefs and practices. For example, one study showed that in Zambia, mothers recognize symptoms, treat quickly and give the correct medication if the drugs are available; however, in Kenya, it was found that the focus needed to be on recognition of malaria, but most efforts need to be directed toward encouraging prompt treatment with the correct drugs, and only those drugs.²⁴ As noted, these findings have different implications for communication and program design.

Through mini KAP surveys, rapid CATCH surveys,²⁵ and participatory mixed and qualitative methods, including concept mapping,²⁶ community/social mapping and most significant change,²⁷ there may be an opportunity to make modest investments in targeted formative research, triangulated with secondary data, such as DHS, MICS, MIS and other quantitative surveys. This type of data inquiry may help bridge the gap between perceived knowledge and attitudes and actual behaviors, and allow for more targeted and effective program design, development and M&E. In addition, as mentioned in the Synthesis Report (2013), it is critical to include a thorough landscape analysis in early planning phases to ensure the CCM program is part of a larger community health SBCC strategy.

²³Heggenhougen, K., Hackethal, V., & Vivek, P. (2003). The behavioral and social aspects of malaria and its control: An introduction and annotated bibliography. Geneva: UNCP/World Bank/WHO Special Programme for Research and training in Tropical Diseases (TDR). (TDR/STR/SEB/VOL/03.1).

²⁴Carol Baume. Comparing Care-seeking for Childhood Malaria: Lessons from Zambia and Kenya. Published by the Basic Support for Institutionalizing Child Survival Project (BASICS II) for the United States Agency for International Development. Arlington, Virginia, April 2002.

²⁵The Rapid CATCH (core assessment tool on child health) is a set of questions to be used in household surveys which is intended to provide a snapshot of the target population in terms of child health. The measurement of these indicators is required of all USAID Child Survival and Health Program grantees even though some of the indicators may not be relevant to the goals and objectives of a particular project.

²⁶<http://www.socialresearchmethods.net/kb/conmap.php>

²⁷<http://mande.co.uk/special-issues/most-significant-change-msc/>

Caution, however, should be taken in program design. Some controlled studies may provide data on how specific SBCC interventions modify particular determinants of health behaviors, but adapting that model may not deliver the kind of concise arguments stating and predicting that particular programs will necessarily change the myriad social determinants that influence malaria case management. Programs might be able to change knowledge and attitudes and affect malaria case management behaviors, as long as those are the main social determinants of specific practices, and there are no other significant obstacles, such as access to health services or negative social norms.²⁸ Lastly, when measuring outcomes, given the seasonal changes in malaria endemicity, attention to matching seasons for outcomes measurement is crucial.

A recent systematic review of the effectiveness of mass media interventions for child survival in low- and middle-income countries posited that stronger evaluations are needed to measure SBCC impact. These include evaluations with an unbiased sample and making an effort to address threats to inference through a combination of multiple comparison groups, statistical controls, and, in some cases, advanced statistical methods like propensity score matching, bivariate probit models or fixed effects analysis, as recommended in mass media review.²⁹ The table below illustrates examples of further rigor programs and projects can use to measure SBCC impact and related examples:

Design/Approach	Reason	Example
Stepped wedge design, wait list case/control, comparative effectiveness trials	Useful for evaluating the population-level impact of an intervention that has been shown to be effective in an individually randomized trial.	Ghana, iCCM ³⁰
Propensity analysis scoring	Allows to more accurately measure a SBCC program impact and to make a strong case for causal attribution.	Cameroon, Night Watch, ITN use ³¹ Zambia, ITN use ³²
LiST tool	When commodity measurements (i.e. uptake of ACTs) are included, able to determine mortality rate declines linked to specific interventions.	Mozambique, Vurhonga IV Child Survival Project
Randomized Control Trial	Gold standard, ability to randomize and control for certain variables, while matching case and control districts for specific characteristics.	Ethiopia, Tigray Mother study

Recommendations

Include SBCC inception:

This review indicates most programmatic efforts to document SBCC activities' contribution to malaria case management activities (in the countries reviewed) weren't necessarily included at program inception, if at all. Malaria program coordinators and implementing partners should consider including SBCC personnel early in the program design phase, ensuring intentional, deliberate planning, monitoring and measurement of changes in knowledge and attitudinal behavioral determinants (for guidance, see the RBM Malaria BCC Indicators Guide).

Use inquiry to inform design:

Formative research is a necessary component of any SBCC program or activity. Behaviors are highly localized in nature and change over time based on context. Findings from one country or region may not reflect behaviors

²⁸Silvio Waisbord (2014) Where Do We Go Next? Behavioral and Social Change for Child Survival, *Journal of Health Communication: International Perspectives*, 19:sup1, 216-222, DOI: 10.1080/10810730.2014.933288

²⁹Danielle A. Naugle & Robert C. Hornik (2014) Systematic Review of the Effectiveness of Mass Media Interventions for Child Survival in Low- and Middle-Income Countries, *Journal of Health Communication: International Perspectives*, 19:sup1, 190-215, DOI: 10.1080/10810730.2014.918217

³⁰Chinbuah, M. et al. Impact of Community Management of Fever (Using Antimalarials With or Without Antibiotics). on Childhood Mortality: A Cluster-Randomized Controlled Trial in Ghana *Am. J. Trop. Med. Hyg.*, 87(Suppl 5), 2012, pp. 11–20

³¹Bowen, H. Impact of a mass media campaign on bed net use in Cameroon. *Malaria Journal* 2013, 12:36.

³²Boulay, M. et al. Comparing two approaches for estimating the causal effect of behaviour-change communication messages promoting insecticide-treated bed nets: an analysis of the 2010 Zambia MIS. *Malaria Journal* 2014, 13:342

in another. This is particularly true in malaria case management, where behaviors, such as treatment seeking, are influenced by seasons, malaria endemicity and structural factors, including availability of commodities and services (see Baume et al. example).

Test promising practices:

This review found a number of promising programs that used varying forms of care groups to organize CHWs and mobilize community members. While no deliberate effort has yet been made to determine what value SBCC contributed to these programs' success, a systematic effort to introduce SBCC and measure its impact would be the first step in determining whether or not to use it. As the Rwanda Kabeho Mwana example shows, care groups have been successfully piloted and brought to scale (see care group selection criteria described earlier in this review to determine whether or not this is an appropriate program component in different contexts).

Evaluate the impact of SBCC:

Pilots, programs and research reviewed found few examples of attempts to measure anything beyond SBCC inputs or outputs. This review has listed a number of SBCC programs implemented at different levels (community, regional, national) and paired them with appropriate methods of evaluation. While malaria case management programming is often one of many components in larger campaigns, it is possible to measure change in attitudes and behavior as a result of exposure to messaging.

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